

**GERIATRIC CARE AND QUALITY OF LIFE AMONG
ELDERLY PERSONS LIVING WITH DIABETES IN GUJARAT,
INDIA**

**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF DOCTOR OF
PHILOSOPHY**

MAKWANA GAUTAM SURESHBHAI

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**GERIATRIC CARE AND QUALITY OF LIFE AMONG ELDERLY
PERSONS LIVING WITH DIABETES IN GUJARAT, INDIA**

BY

MAKWANA GAUTAM SURESHBHAI

Department of Social Work

Prof. H. ELIZABETH

Supervisor

Submitted

In partial fulfillment of the requirement of the Degree of Doctor of Philosophy in
Social Work of Mizoram University, Aizawl.

MIZORAM UNIVERSITY

OCTOBER, 2025

SUPERVISOR'S CERTIFICATE

This is to certify that the thesis titled **Geriatric Care and Quality of Life among Elderly Persons Living with Diabetes in Gujarat, India** submitted by **Makwana Gautam Sureshbhai** for the award of Doctor of Philosophy in Social Work is carried out under my guidance and incorporates the student's bonafide research and this has not been submitted for award of any degree in this or any other University or Institute of learning.

(PROF. H. ELIZABETH)

Supervisor

Department of Social Work

Mizoram University

Aizawl 796 004 Mizoram

DECLARATION
MIZORAM UNIVERSITY
OCTOBER, 2025

I, **Makwana Gautam Sureshbhai**, hereby declare that the subject matter of this thesis is the record of work done by me, that the contents of this thesis did not form basis of the award of any previous degree to me or to the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any other University/Institute.

This is being submitted to the Mizoram University for the degree of Doctor of Philosophy in Social Work.

(MAKWANA GAUTAM SURESHBHAI)

Research Scholar

(PROF.KANAGARAJ EASWARAN)

Head

Department of Social Work

Mizoram University

Aizawl 796 004 Mizoram

(PROF. H. ELIZABETH)

Supervisor

Department of Social Work

Mizoram University

Aizawl 796 004 Mizoram

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"Embraced by spirit and grace, Mizoram is a land where love and culture intertwine, her hills carry timeless stories; her people sing songs of tradition, unity, peace and resilience, captivating the heart and soul"

(MAKWANA GAUTAM SURESHBHAI)

Candidate

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CONTENTS

		Page No
	Certificate	I
	Declaration	II
	Acknowledgement	III-IV
	Contents	V-VIII
	List of Tables	IX-XII
	List of Figures	XIII
	List of Abbreviations	XIV-XV
I	Introduction	1-29
	1.1 Global Scenario of Elderly	1
	1.2 Elderly in India	2
	1.3 Aging and World Health Organization (WHO)	11
	1.4 Sustainable Development Goals (SDGs) and Elderly	13
	1.5 Quality of life of Elderly	14
	1.6 Geriatric care and Social work	17
	1.7 Approach Model of Elderly Care	19
	1.8 Diabetes and Elderly	22
	1.9 Challenges in Elderly Care in India	24
	1.10 Chapterization	26
II	Overview of Literature	30-90
	2.1 Demographic profiles of the Elderly Persons among Living with Diabetes	30
	2.2 Challenges and Coping Strategies of Elderly Persons Living with Diabetes	38
	2.3 Assessing Family Support, Institutional Care, and Services for Elderly Persons Living with Diabetes	46

	2.4 Evaluating the Quality of Life among Elderly Persons Living with Diabetes	53
	2.5 The Relationship between Geriatric Care and Quality of Life among Elderly Persons Living with Diabetes	58
	2.6 Geriatric Care	65
	2.7 Quality of Life of the Elderly	71
	2.8 Social Work Practice with Elderly	78
	2.9 Exploring the perspectives of Elderly in India	80
	2.10 Population Ageing Dynamics	83
	2.11 Research Gap	87
	2.12 Statement of Problem	87
	2.13 Objectives of the study	89
	2.14 Hypotheses	89
III	Methodology	91-125
	3.1 The setting: Profile of the study area	91
	3.2 Research Design	108
	3.3 Sampling	109
	3.4 Pilot Study	115
	3.5 Tools of Data Collection	116
	3.6 Data Processing and Analysis	120
	3.7 Operational Definitions	120
	3.8 Limitations of the Study	124
IV	Structural Basis of the Respondents	126-152
	4.1 Demographic Profile of the Universe	126
	4.2 Socio Economic Structure	131
	4.3 Composition of the Familial Structure	135
	4.4 Health Profile and Diabetes Management of the	142

	Respondents	
	4.5 Comprehensive Care Services for Respondents	145
	4.6 Perception on the Spiritual & Religious Activities	148
	4.7 Support System for Geriatric Care	149
V	Geriatric Care in India	153-183
	5.1 Geriatric Care	153
	5.2 Diabetes and the Elderly	159
	5.3 Geriatric Diabetes Management	164
	5.4 Government of India Initiatives	169
	5.5 Geriatric Care Service Delivery & Utilisation in India	179
	5.6 Issues & Challenges	181
VI	Quality of Life among Elderly Persons Living with Diabetes	184-205
	6.1 Quality of Life of among Elderly Persons Living with Diabetes	184
	6.2 Overall Quality of Life of among Elderly Persons Living with Diabetes	187
	6.3 Patterns of Relationship in Geriatric Care with Quality of Life among Elderly Persons Living with Diabetes	187
	6.4 Correlation	197
	6.5 Binary Logistic Regression Analysis	199
VII	Case Study Analysis	206-230
	7.1 Introduction	206
	7.2 Methodology	209
	7.3 Case Studies Analysis	210
	7.4 Discussion	222
	7.5 Recommendations	227

	7.6 Conclusion	230
VIII	Key Findings, Recommendations, and Conclusions	231-275
	8.1 Answering the Research Questions: Key Findings	231
	8.2 Geriatric Care and Quality of Life: An Empirical Analysis by the objectives	241
	8.3 Statistical Relationships between Geriatric Services and Quality of Life	251
	8.4. Hypothesis Testing and Conclusions	257
	8.5 Recommendations for Improving Quality of Life	260
	8.6 Research Contributions, Limitations, and Future Directions	267
	8.7 Final Conclusion: Synthesis and Implications	272
	Appendices	275-325
	Questionnaire	275-297
	Focus Group Discussions (FGDs) Guide	298-299
	Key Informant's Interviews (KIIs) Guide	300-301
	Consent Form for the Respondent/Participant	302-303
	Bibliography	304-319
	Bio-Data of the Candidate	320-324
	Particulars of the Candidate	325-325

LIST OF TABLES

Table No	Detail of the Table	Page No.
Table 1	Profile of Rajkot City per 2011 census	97
Table 2	Profile of Junagadh City per 2011 census	101
Table 3	Profile of Jamnagar City per 2011 census	105
Table 4	Distribution of Respondents	113
Table 5	Sources of Data	114
Table 6	Age Classification of Universe Sample	127
Table 7	Age Classification of the Respondents	128
Table 8	Gender Distribution of Respondents	128
Table 9	Religion of Respondents	129
Table 10	City-wise location of Respondents	130
Table 11	Marital Status of Respondents	130
Table 12	Domicile of the Respondents	131
Table 13	Profession Types of Respondents	132
Table 14	Annual Income of Respondents	133
Table 15	Sources of Income	134
Table 16	Education of Respondents	135
Table 17	Level of Economic Dependency	136
Table 18	Family Support Received by the Respondents	137
Table 19	Direct Family Support Received by the Respondents	138
Table 20	Indirect Family Support of Respondents	139
Table 21	Psychosocial Support of Respondents	140
Table 22	Daily Physical Activities of the Respondents	141

Table 23	Safety & Living conditions of Respondents	142
Table 24	Average duration of Diabetes of the Respondents	143
Table 25	Types of Diabetes of Respondents	143
Table 26	Treatment Sources of the Respondents	144
Table 27	Voluntary Care & Services for Respondents	145
Table 28	Institutional Care and Services for Respondents	146
Table 29	Community Based Supportive Services for Respondents	147
Table 30	Perception on Spiritual & Religious Activities	148
Table 31	Palliative care and End-of-Life Care for Respondents	149
Table 32	Perceptions on Social work Care, support and Services	150
Table 33	Comprehensive Analysis of the Demographic Health Profile of Elderly Persons among Living with Diabetes across three cities in Gujarat	162
Table 34	Domains of Quality of Life among Elderly Persons Living with diabetes	184
Table 35	Overall Domain Scores of Quality of Life among Elderly Persons Living with Diabetes	187
Table 36	Relationship between Family Support and Domains of Quality of Life among Elderly Persons Living with Diabetes	188
Table 37	Relationship between Indirect Family support and Domains of Quality of Life among Elderly Persons Living with Diabetes	189
Table 38	Relationship between Daily Physical Activities and Domains of Quality of Life among Elderly Persons Living with Diabetes	191
Table 39	Relationship between perceptions on Social work care, support, services and Domains of Quality of Life among Elderly Persons Living with Diabetes	192
Table 40	Relationships between Communities Based Supportive Services and Domains of Quality of Life among Elderly	193

	Persons Living with Diabetes	
Table 41	Relationship between Safe and General Living Environment and Domains of Quality of Life among Elderly Persons Living with Diabetes	194
Table 42	Relationship between perception on the Spiritual & Religious Activities and Domains of Quality of Life among Elderly Persons Living with Diabetes	195
Table 43	Relationship between Government Services and Domains of Quality of Life among Elderly Persons Living with Diabetes	196
Table 44	Correlation between Domains of Quality of Life among Elderly Persons Living with Diabetes	198
Table 45	Spearman's rank Correlation between Domains of Quality of Life among Elderly Persons Living with Diabetes	198
Table 46	Binary Logistic Model of Physical Domain of Quality of Life	200
Table 47	Binary Logistic Model of Psychological Domain of Quality of Life	201
Table 48	Binary Logistic Model of Social Relationship Domain of Quality of Life	202
Table 49	Binary Logistic Model of Environment Domain of Quality of Life	202
Table 50	Binary Logistic Model of Overall of Quality of Life	203
Table 51	Diabetes Prevalence in Elderly Populations across Gujarat	207
Table 52	Gender-Based Comparison of HbA1c Levels across Cities	211
Table 53	Comparative Impact of Community Interventions	221

LIST OF FIGURES

Sl. No.	Detail of the Figures	Page No.
Figure 1	Political Map of India	93
Figure 2	Political Map of the Districts with their capitals cities in Gujarat state	94
Figure 3	Political Map of the cities in Gujarat state	96
Figure 4	Map of the Rajkot District in Gujarat in India	98
Figure 5	Figure 5 Map of Rajkot District with Taluka	99
Figure 6	Map of Rajkot City with the municipal wards	100
Figure 7	Map of the Junagadh District in Gujarat in India	102
Figure 8	Map of Junagadh District with Taluka	103
Figure 9	Map of Junagadh city with the municipal wards	104
Figure 10	Map of the Jamnagar District in Gujarat in India	106
Figure 11	Jamnagar District Map with Taluka	107
Figure 12	Map of Jamnagar city with the municipal wards	108
Figure 13	Sampling Framework	112
Figure 14	Domains of the WHOQOL-BREF	119

LIST OF ABBREVIATIONS

	Abbreviations
ADL	Activities of Daily Living
AI	Artificial Intelligence
AIIMS	All India Institute of Medical Sciences
AWCs	Ayushman Bharat Health and Wellness Centers
BMI	Body Mass Index
BPSSM	Bio-Psycho-Social-Spiritual Model
BPL	Below Poverty Line
CDC	Centers for Disease Control and Prevention
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
COPD	Chronic Obstructive Pulmonary Disease
COVID-19	Coronavirus Disease 2019
DALYs	Disability-Adjusted Life Years
DM	Diabetes Mellitus
DSMES	Diabetes Self-Management Education and Support
FGD	Focus Group Discussion
GDP	Gross Domestic Product
GHI	Global Hunger Index
HbA1c	Hemoglobin A1c (Glycated Hemoglobin)
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome
IADL	Instrumental Activities of Daily Living
ICT	Information and Communication Technology
IDEC	Integrated Diabetes and Endocrine Care Program

IDF	International Diabetes Federation
IDSP	Integrated Disease Surveillance Programme
IGR	Income Generation Resources
ICMR	Indian Council of Medical Research
JMC	Jamnagar Municipal Corporation
JUMC	Junagadh Municipal Corporation
KII	Key Informant Interview
LASI	Longitudinal Aging Study of India
MDG	Millennium Development Goals
NCDs	Non-Communicable Diseases
NFHS	National Family Health Survey
NFHS-5	National Family Health Survey (5th round)
NHM	National Health Mission
NGO	Non-Governmental Organization
NITI	National Institution for Transforming India
NPCDCS	National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke
NPHCE	National Programme for Health Care of the Elderly
NSS	National Sample Survey
NSSO	National Sample Survey Office
OAH	Old Age Home
PADL	Physical Activities of Daily Living
PHC	Primary Health Center
PRSS	Partially Receiving Support and Services
QoL	Quality of Life
RMC	Rajkot Municipal Corporation

RSBY	Rashtriya Swasthya Bima Yojana
SCHIS	Senior Citizens' Health Insurance Scheme
SDG	Sustainable Development Goals
SRS	Sample Registration System
T2DM	Type 2 Diabetes Mellitus
TFR	Total Fertility Rate
UN	United Nations
UNFPA	United Nations Population Fund
UNICEF	United Nations International Children's Emergency Fund
WHA	World Health Assembly
WHO	World Health Organization
WHO-QOL	World Health Organization Quality of Life
WHOQoL-BREF	World Health Organization Quality of Life - BREF
WHOQoL-100	World Health Organization Quality of Life - 100

CHAPTER I

INTRODUCTION

The present study attempts to understand “Geriatric Care and Quality of Life among Elderly Persons Living with Diabetes in Gujarat, India”, the introduction chapter serves as a foundational overview of the research problem, presenting essential components that set the stage for the entire study. This section provides critical contextual information, including the background, purpose, and significance of the research, while also outlining the organization of the project. The introduction articulates the relevance of the thesis, demonstrating its original contributions to the existing body of knowledge. By presenting comprehensive information that situates the research within its broader academic context, this chapter underscores the unique contributions of this thesis to the field.

This chapter is organized into ten parts such as global scenario of elderly, elderly in India, aging and world health organization (WHO), sustainable development goals (SDGs) and elderly, quality of life of elderly, geriatric care and social work, approach model of elderly care, diabetes and elderly, challenges in elderly care in India and chapterization

1.1 Global Scenario of Elderly

According to the 2011 Census of India, the overall old-age dependency ratio indicates that there are more than 14 senior citizens for every 100 individuals of working age, although this figure varies notably across different states. Given the ongoing demographic shift, it is expected that the number of elderly persons requiring care services will surpass this ratio in the near future. Data from the Sample Registration System (SRS) reveals that life expectancy at age 60 rose from 14 years during 1970–1975 to 18 years in the period 2010–2014, with women consistently living around two years longer than men. This improvement in life expectancy has been observed in almost all Indian states, with elderly women outliving their male counterparts across the country (Sample Registration System - Registrar General of India, 2010-2014).

The sex ratio among the elderly in India has shown an upward trend—from 938

women per 1,000 men in 1971 to 1,033 in 2011—and is expected to rise to 1,060 by 2026, with variations across states. This shift is largely attributed to the relatively slower decline in mortality among elderly men. According to the *Aging India Report (2017)*, while India's total population is projected to grow by 56 percent between 2000 and 2050, the elderly population aged 60 and above is expected to increase by 326 percent. More strikingly, the population aged 80 and above may rise by as much as 700 percent during the same period, predominantly comprising widowed and highly dependent older women. The proportion of elderly women is likely to become increasingly higher than that of elderly men with advancing age. Consequently, there is a growing need to focus specifically on the care and support requirements of this 'oldest old' group. Given the evolving demographics, the scope for addressing aging-related issues is immense. It demands innovative strategies, fresh perspectives, and evidence-based approaches to ensure a healthier aging experience—aligned with the vision of the United Nations for healthy and active aging (World Population Ageing Report 2015, United Nations Decade of Healthy Ageing 2021–2030).

1.2 Elderly in India

In India, the term "elders" is often interchangeably used with "aged" and "senior citizens." From a medical perspective, the word "geriatric" is also used to refer to this population group. Legally and by age definition, individuals aged 60 years and above are classified as elderly. As per the 2011 Census, India had approximately 104 million elderly persons—comprising 51 million men and 53 million women. According to the 2017 report by the United Nations Population Fund (UNFPA), this number is projected to rise to 173 million by 2026 and could potentially triple by 2050. The proportion of elderly in the total population has shown a steady rise—from 5.6% in 1961 to 8.6% in 2011. A gender-wise breakdown reveals that elderly women slightly outnumber elderly men, with 9% of the female population compared to 8.2% of males. This upward trend is expected to continue, with projections suggesting an increase to 10.1% in 2021, 13.1% in 2031, and reaching nearly 19% by 2050 (Indian Census 2011, UNFPA Report 2017).

As per the *Report of the Technical Group on Population Projections for India and States (2011–2036)*, the elderly population in India was projected to reach approximately 138 million by 2021, including 61 million males and 71 million

females. By 2031, this number is expected to rise by nearly 56 million. Notably, the rate at which the elderly population is growing surpasses the growth rate of the overall population.

The spatial distribution of the elderly in India reveals that a significant majority—around 71%—reside in rural areas, with only 29% living in urban settings. Employment patterns among the elderly differ by location and gender: in rural regions, 66% of older men and 28% of older women were engaged in some form of work, whereas in urban areas, these figures drop to 46% for men and approximately 11% for women. The sex ratio among the elderly, which stood at 1,028 females per 1,000 males in 1951, saw a decline over the years but rose again to 1,033 by 2011. During 2009–2013, life expectancy at birth was estimated at 69.3 years for females and 65.8 years for males. In 2018, the age-specific death rate for those aged 60–64 was 20.4 per 1,000 in rural areas and 17.7 per 1,000 in urban areas, with a combined national average of 19.5. For the age group 65–70, mortality rates were reported at 22.2 for males and 16.7 for females per 1,000 individuals. The crude death rate for the total population was 7.2 during 2011–2015, and projections suggest it will slightly rise to 7.3 during the period 2031–2035 (Population Projection Report 2011–2036).

India has witnessed a steady rise in the old-age dependency ratio, growing from 10.9% in 1961 to 14.2% in 2011. This ratio is projected to further rise to 15.7% in 2021 and reach 20.1% by 2031. In terms of education, the literacy rate among the elderly population improved from 27% in 1991 to 44% in 2011. However, a significant gender gap persists—only 28% of elderly women are literate compared to 59% of elderly men (Sample Registration System 2021).

The occurrence of heart-related illnesses among the elderly is notably higher in urban regions compared to rural areas. Most common disability among the aged persons was locomotors disability and visual disability (Census 2011). The highest crime rate per lakh population against the senior citizen (60 years and above) has been found in Delhi (93.8) followed by Gujarat (85.4), indicating the vulnerability to crime (National Crime Records Bureau 2019).

From these statistics, it is evident that there is growing trend of increasing

number of elders, which speaks about the scale and size of the problem. Further, in the context of increased longevity, more and more elders are alive, who are bound to be taken care by families, communities and states. Given this, it is pertinent to focus attention on the thematic area of elders, which is both an immediate and emerging problem in India and abroad. Given the increasing scale of the problem, increasing study of elders in different geographical regions will be useful to understand the area specific problems of elders and to evolve location specific interventions to suit the needs of differential social groups.

In fact, taking care of the elders, who were/are aged above 60 years in India has been part of the family responsibility and obligation. Aging is part of human growth and development, in which, no one will escape from the being aged, which is the end of the human cycle. Aging is part of the nature and human life cycle. Aging equally denotes to weak and declining physical health status (National Council on Ageing 2022).

When elders reached advanced age, they require multiple support systems and services to cope up with aging related problems and issues. Earlier, the communities and families took the entire responsibility of taking care of the elders, as it was part of the family/community cultural and social heritage. With the breakdown of self-sustainable family and community systems, the family and community centric support and care system got weakening. In the process, more and more reliance on external support is sought and is now essential part of the health and social system to deal with the multifaceted problems professionally and an integrated way. Here comes the role of government, private entities and multiple professional interventions to supplement and complement with family services to the elders to deal with their clinical and non-clinical problems, if it is beyond the care possibilities of families and communities.

Caring the sunset and evening period of human life is part of the welfare system of States. Geriatric care is a specialized field of study of elders with medical, social, mental, psychological and economic care interventions, which are part and parcel of service continuum. With the increase in longevity, there is increased attention and action to harmonize and humanize the services. This is intended to reach out to the unreached aged adults to meet their immediate and emerging needs

of elderly people, as part of the last mile service connectivity.

Geriatric services have been also pursued, as part of ‘Health for All’ and ‘Universal Health Care (UHC)’ initiatives, which were/are now a part of the global and national mandates of governments. It is also part of the health rights and entitlements of elders, which is integral to the Article 21 of the Indian Constitution on right to life, which is a foremost right of any human being, as it is linked with dignity of human existence. Any threat to human dignity and existence and right to life even in the late part of the human life is to be insulated and protected by the families, communities and States (National Council on Ageing 2022, National Institute of Ageing USA 2019).

Helping the helpless elder population is part of the human values and ethos of Indian life. This is also part of the moral, social and cultural fabric of safeguarding and securing the life of the elders. As aging is connected with weakening of health, physical stability with debilitative demeanor, elders invariably need external support for mobility and health and social care needs. Elderly care is linked with varying needs and interventions to suit their multi-faceted needs. We need to handle them sensitively and empathetically by putting the service providers in the shoes of elders to evolve right solutions. One size fit for all approach may not work, as each individual is unique and have their own, aspirations of life, for which, case to case intervention is required by keeping in view of their unique context. This calls for services customized to their personal need and requirement with wider options and choices of services. This is a big challenge, which requires deeper study, analysis and resolution to renew the knowledge and practices (National Institute on Ageing, 2019).

With the advent of time, multi and cross-disciplinary approach to care with best quality geriatric services has been part of the human intervention. Earlier, community and domicile care and family centric support to elders have been the heart and soul of the elder care. With the increase in urbanization, breaking down of joint family system and switching over to non-agricultural livelihoods, added more stress and strains and pressures on communities, families and the elders. Therefore, there is a greater sense of frictions and fractures in the traditional system of care and support to elders in the twilight zone of elder care. With the advent of changes from

family and social care mode to hospital, institutional and hospice care modes for betterment of elders, new forms of professional care and support are warranted. With the changing time and amplification of differential needs and choices of elders, we need new and innovative modes of elderly care services, which is, therefore the topic of the time.

With the rapid advancement in medicine, social, mental and psychological care, geriatric medicine and care became a new arena with multi-disciplinary ramifications and services dawned to save and to prolong the life of elders and to care them with greater sense of human touch. The geriatric medicine takes care of the clinical features of the elders, as, with the increase in age, weakening of body part has been part of the elderly life. Therefore, providing clinical services to the aged became a niche service to elders. In view of the increasing need, now Geriatric medicine is a specialized medical field to take care of the clinical health of the elders with multi-disciplinary perspectives and practices. This requires a rethinking of services to meet the immediate and emerging care needs of the elders in the context of overlapping and crisscrossing other fields of human care services. The study is conceptualized in this backdrop.

1.2.1 National Perspective on Elderly in India

India's elderly population, approximately 138 million as of 2021 (MoSPI, Elderly in India 2021), is growing faster than any other demographic group due to improved healthcare and living standards, resulting in an average life expectancy of around 70 years. However, this population faces several challenges:

Health Challenges: Non-communicable diseases such as hypertension, diabetes, arthritis, and cognitive decline dominate health concerns. Access to geriatric care is particularly limited in rural areas where healthcare infrastructure remains underdeveloped (LASI Report 2020).

Economic Dependence: Only 10–15% of the elderly have access to formal pensions, leaving the majority financially dependent on their families. This issue is more acute for informal workers and women, who often lack retirement savings (NSSO Aging Reports 2020).

Social Dynamics: Urbanization and the rise of nuclear families have diminished traditional caregiving roles, leaving many elderly persons vulnerable to neglect and isolation (NSSO Aging Reports, 2020).

To address these concerns, the Indian government has introduced initiatives such as:

The National Policy on Senior Citizens (2011), focusing on financial security, healthcare, and social inclusion (Government of India, Ministry of Social Justice and Empowerment (MoSJE)).

The Rashtriya Vayoshri Yojana, providing assistive devices to economically disadvantaged elderly persons (MoSJE Scheme Reports 2019).

The Maintenance and Welfare of Parents and Senior Citizens Act (2007), which mandates legal support for elder care (GoI 2007).

Additionally, programs like the Pradhan Mantri Vaya Vandana Yojana and Indira Gandhi National Old Age Pension Scheme (IGNOAPS) aim to enhance economic security for senior citizens. Private-sector initiatives and NGOs, such as HelpAge India, are also stepping up to offer elder care services and create community engagement opportunities (GoI 2020).

1.2.2 Elderly in Gujarat

The Registrar General and Census Commissioner, India 2021 Survey (SRS) found that approximately 8% of the state's population falls within the 60 to 85 years age bracket, while those aged above 85 years constitute just 0.3% of the total population. According to UNFPA, According to the 2011 Census, individuals aged 60 to 69 made up 4.7% of the population, those between 70 and 79 accounted for 2.6%, while the elderly aged 80 and above comprised 0.8%. For the year 2026, UNFPA projected the increase of 8% for 60-69 age population, 4.2% for 70-80 population and 1.5% for 80+ populations (United Nations Population Fund (UNFPA 2023). The life expectancy at age 60 is 17.5 years for males and 20.3 years for females, highlighting gender disparities in longevity (IJFMR 2021, UNFPA 2023).

The elderly population in Gujarat is disproportionately affected by chronic diseases with 51.3% suffering from one or more conditions. Hypertension and

diabetes are the most prevalent, while other common ailments include heart disease, asthma, stroke, and acute upper respiratory tract infections. According to the United Nations Population Fund, at least 26% of the elderly in Gujarat are affected by chronic conditions, surpassing the national average of 23.3% (UNFPA India 2021).

Moreover, a considerable portion of the elderly population faces economic challenges, with 78% of elderly females and 30% of males relying on others for financial support. The old-age dependency ratio stands at 12.6 as of 2011, indicating the number of dependents relative to the working-age population. Additionally, the perception of illness among the elderly persons reveals a significant disparity: 38% of men and 26% of women report health concerns. According to the National Health Systems Resource Centre & Health Dossier 2021;

This proportion of aged is expected to increase 10.1% in 2021 and is projected to further increase to 13.1% in 2031 (United Nations Population Fund (UNFPA 2023)).

The life expectancy at birth for male in Gujarat increased from 47.3 to 67.2. According to the demographic analysis, UNFPA projected that the longevity is 71.9 in 2025. For female, longevity increased from 46.5 to 71.0. The projected increase in 2025 is 74.9 for female. The life expectancy improvement by gendering 2014 for Gujarat is 17.3 for male and 20.1 for female, which shows that women have higher longevity than men (United Nations Population Fund (UNFPA 2023)).

The sex ratio, as per 2011 census for 60 to 64 age group was 96, for the age group 65-69, sex ratio was 106 and for the age group 70 plus age group, sex ratio was 129 indicating high survival of females among the aged (2011 Census of India).

Elderly living alone constituted 4.8% against 5% for India, 60.3% of the elders in Gujarat are living in rural areas, 20.2% living with spouse, 41.8% living with children and spouse (India Aging Report 2017).

The dependency ratio as per 1961 was 9.4%, which increased to 11.8 % in 2011 and is projected to increase to 20.9% according to UNFP projection (UNFPA India 2023).

The work participation in Gujarat for 60+ age group is 30.8% and those with

80 plus engage in work are 7.2% (Gujarat Institute of Development Research 2019).

As per the Longitudinal Aging Study of India (LASI), in Gujarat 17.7% of the elders are afflicted with diabetes, as per the self-reported prevalence (LASI 2018).

Literacy among the aged above 60 is 54.4%. The female literacy is 47.9%. 51.7% of elders worked in agriculture (LASI 2020).

Retired person constituted 7.6% and yet 4.7% received pension in Gujarat (LASI 2020).

India offers various pension schemes for the elderly, including the Indira Gandhi National Old Age Pension Scheme (IGNOAPS), Pradhan Mantri Vaya Vandana Yojana (PMVVY), National Pension Scheme (NPS), Senior Citizen Savings Scheme (SCSS), Atal Pension Yojana (APY), Public Provident Fund (PPF), and PM-SYM, each with varying monthly pension amounts (Ministry of Finance India, 2020).

The Indira Gandhi National Old Age Pension Scheme offers a monthly pension of ₹200 to ₹500 for those aged 60 or older, living below the poverty line (Ministry of Rural Development, Government of India 2021).

The Indira Gandhi National Old Pension, State Government's financial assistance scheme, and the National Family Support Scheme- Sankat Mochan (NFBS) are integrated programs for destitute older persons (Revised Scheme effective from 01.04.2008). (Ministry of Rural Development, Government of India, 2019).

Government employees receive a pension of 50% of their emoluments or average emoluments, with a minimum of ₹9,000 per month and a maximum of 50% of the highest pay in India (Department of Pension and Pensioners' Welfare, and the Ministry of Finance 2019).

The State Government's initiative provides financial aid to indigent elderly persons aged 60 or older. To qualify, applicants must meet specific criteria, such as having a mentally ill or severely ill son, a disability greater than 75%, an annual

income of Rs. 1,20,000 in rural areas or Rs. 1,50,000 in urban areas, and must have been a permanent resident of Gujarat for at least 10 years. Eligible individuals over the age of 75 receive a monthly pension of Rs. 1,000 (Department of Social Justice and Empowerment, Government of Gujarat 2018).

According to *The Business Line* on May 17, 2018, the Gujarat government has introduced an innovative program aimed at offering doorstep primary healthcare services to elderly persons, in response to the growing elderly population. A pilot project for the same is launched for Gandhinagar urban area. As per the scheme, citizens above 70 years need to get themselves registered with the government hospital by paying a token amount of Rs 1,000 for which, elders are provided with all the basic health facilities at their doorstep by trained attendants, staff nurse and doctors (The Business Line 2018).

As per the Budget announcement, now the senior citizens above the age of 80 years will receive an old age pension of Rs 1250 per month while those above 60 years will get Rs 1000 (News18, March 3, 2022).

Gujarat Government launched helpline Toll Free Number 14567 for Senior Citizens on 20.1.2022 to provide government related schemes.

The state government of Gujarat has come up with a new scheme in October 2020 called Gujarat Vadil Sukhakari Yojana. The scheme was originally launched by the Ahmedabad Municipal Corporation. It is a health care scheme that will take care of the elderly people of the state. The senior citizens with co-morbidities will get special care under the scheme (Ahmedabad Municipal Corporation 2020).

In addition to chronic diseases, Gujarat has faced outbreaks of various infectious diseases, including Crimean-Congo haemorrhagic fever, avian influenza, chikungunya, and Zika virus. Recently, the state has also witnessed an increase in cases of dengue and chikungunya, highlighting the ongoing public health challenges facing the region. These statistics underscore the urgent need for comprehensive healthcare strategies and interventions to address both chronic and infectious diseases among the elderly population in Gujarat (United Nations Population Fund UNFPA 2021).

1.3 Aging and World Health Organization (WHO)

Knowing the gravity of the problems of elders, in the area of health, World Health Organization (WHO) has been articulating and escalating the cause of elders by presenting guidelines and documenting the elderly issues as part of the effort to find solution. In pursuance of it, in its publication *Active Ageing: A Policy Framework*, the WHO defines active ageing as "the process of optimizing opportunities for health, participation, and security to enhance quality of life as people age." It highlights the importance of actions across various sectors, aiming to ensure that "older persons continue to be a valuable resource to their families, communities, and economies."

The WHO policy framework identifies six key determinants of active ageing: economic, behavioral, personal, social, health and social services and the physical environment. It recommends four components necessary for a health policy response, prevent and reduce the burden of excess disabilities, chronic disease and premature mortality; reduce risk factors associated with major diseases throughout the life course. It also envisages developing a continuum of affordable, accessible, high-quality and age-friendly health and social services that address the needs and rights of people as they age.

On an international scale, the theme "Building a Society for All Ages" was adopted for the 1999 International Year of Older Persons, focusing specifically on the needs of the elderly. The same was the theme for second World Assembly on Ageing held in 2002 and the first Assembly was conducted in 1982. The outcome of the global meeting was the Madrid International Plan of Action on Ageing and the Political Declaration. The commitment focused on three key areas: the development of older persons, promoting health and well-being in old age, and creating enabling and supportive environments (United Nations, 1982: The First World Assembly on Ageing, United Nations (UN), 1999, United Nations, 2002).

The World Health Assembly developed the *International Plan of Action on Ageing*, which was endorsed by the United Nations General Assembly in 1982. Additionally, the United Nations Principles for Older Persons, adopted in 1991, offered guidance on key aspects such as independence, participation, care, self-

fulfillment, and dignity. The *Global Strategy and Action Plan on Ageing and Health 2016–2020* were formulated with the vision of a world where everyone can live a long and healthy life.

The declaration of the United Nations Decade of Healthy Ageing (2021-2030) marks a significant step forward in advancing the well-being of the elderly through global collaboration. Aligned with the Sustainable Development Goals, it unites governments, civil society, international organizations, professionals, academia, media, and the private sector to enhance the lives of older individuals.

Therefore, at the global level, though the UN seized up elderly care as an agenda for action, though, we do not have a strong framework with specific conventions to protect and promote the rights and entitlements of elders, similar to children, women and laboring segments of population. This reminds us that elders are still lagging far behind in securing protection, promotion and ensuring equal rights at the global level. Therefore, undertaking any study on elders is of greater relevance that will in all likelihood will contribute towards building a strong system at the global level for healthy aging.

In tune with the World Health Organization's (WHO 2019) conception, health denotes "complete state of physical, mental, social wellbeing and not mere absence of disease or infirmity". The Geriatric clinical medical services will deal with the "physical" aspects of elderly health. It is evident that there is greater prominence to clinical care of elders in the delivery of physical health measures through specialized and general hospital services. Whereas, the social and mental health wellbeing services gained momentum in recent times through Geriatric Social Work and clinical psychological services for the elders to address the social, mental and psychological care elements of health, which is integral to holistic health.

Geriatric Social work gained momentum with the increase in hospitalization and institutionalization of the elderly care in Western Countries, where community and family system is in weak state of affairs. Added to it, the mental and psychological health care is equally part of the specialized services to elders to deal with mental and psychological disturbances, disorders and problems. Similarly, economic care is an additional service to take care of the economic problems of the elders. As part of

the holistic and complete health care for the elders, we are in need of multiple professional care and support interventions to deal with the entire spectrum of elder problems (WHO 2019).

Given this, focusing attention on elders is not only add greater values in terms of rendering effective and efficient care services to the elders, but also bring in elderly perspectives and practices to deal with their problems in their own way. This calls for new thinking and practices to fill the gaps in elderly care continuum, which is the centre of gravity of this research, as these are new facets of elderly services. In this context, constant renewal of knowledge and practices and continuous harvesting of new knowledge to feed the practitioners is required. This study is conceptualized to keep the momentum of geriatric social work practice with elders forward.

1.4 Sustainable Development Goals (SDGs) and Elderly

The Sustainable Development Goals (SDGs) call on all countries to commit to ensuring equitable living standards for everyone by 2030. This includes enhancing the mental, physical, emotional, and social well-being of elderly persons. SDG further states that nobody including elders should suffer from hunger, violence, segregation and multidimensional poverty. With the increasing number of natural calamities such as COVID-19 and the growing concerns about the pandemic, which has devastated millions of elders and plunged many more into abject poverty and distress in many nations and states? This is more so with elders, as their problems are still invisible and submerged under different goals and targets and therefore, their problems required attention and action to integrate them within the framework of SDG to resolve their problem, using development opportunities (United Nations 2017, WHO Report on Ageing and Health 2020, UN Briefing Series on the Rights of Older Persons 2021).

Elders, invariably faces triple burden of exclusion, alienation and isolation. While SGD-3 focuses on health and well-being for all including elders, which will be achieved only if intersectoral collaboration and co-operation by way of family, community, governments and other development actors to reach out to elderly people with clear strategies and programmes for improving their health, social protection and poverty reduction (World Health Assembly 2012, 65.4).

While the SDGs focus on health and well-being, they also emphasize inclusive development aimed at reducing hunger and poverty (SDGs 1 and 2). SDG 3 is specifically dedicated to ensuring healthy lives and promoting well-being for people of all ages. The MDGs aim to enhance gender parity (SDGs 5 and 8), which would help reduce disparities and inequalities. Additionally, SDG 16 promotes peaceful and inclusive societies for sustainable development, ensuring access to justice for all and building effective, accountable, and inclusive institutions at all levels. Through these efforts, the SDGs encourage fostering global partnerships (SDG 17) (UNDP 2015 UNICEF 2019).

Though SDG is couched in sustainable development perspective, its concern is “leaving no one behind”, which includes elders. Therefore, SDG is a big opportunity to integrate elder issues within development and disaster frameworks to address the problems. SDG and its targets are anchored strongly on poverty alleviation, increase in income opportunities, improving health, ensuring social protection, bringing about equal, fair and inclusive opportunities to vulnerable families and communities. Aligning SDG at in-country level and to a greater extends at the regional and local level with specific focus of the aged is the need of this hour. Lots of customization and tailoring the SDG and its targets with elders requires lots of reconfiguration and reconciliation to make SDG relevant to the elders. More action-oriented works and research remains to be required in the context of poverty among elders and exclusion of elderly persons at various levels. In line with SDG, addressing poverty among elders is one of the approaches to do address poverty, which is nothing but low/deficient income, low and poor health status, low human development with limited education, skills, knowledge and capacities. Therefore, SDG approach to elderly care is one of the options to address elderly problems. This requires more research and in-depth investigation to study poverty reduction from elderly perspectives and practices. Therefore, the above facts further reflect the need for more research from SDG point of view to add greater development values for elders.

1.5 Quality of life of Elderly

The global elderly population is expanding at an unprecedented pace, with the United Nations estimating that by 2050, there will be 1.5 billion people aged 65 or older (UN 2019). This demographic transformation is driven by increased life

expectancy and declining birth rates, especially in developed and middle-income nations (WHO). The quality of life for older adults is shaped by several key factors:

Health: Chronic conditions such as cardiovascular disease, diabetes, and arthritis are widespread among the elderly, necessitating long-term care services. Additionally, mental health issues, including dementia and depression, are prominent concerns, with a lack of adequate mental health resources exacerbating the problem in many regions (WHO 2019).

Economic Security: Financial stability among older adults varies significantly across the globe. Developed nations often provide robust pension systems and social security benefits, whereas low- and middle-income countries struggle with inadequate safety nets, leaving many elderly financially dependent or impoverished (UN, 2019, World Bank 2022).

Social Inclusion: Ageism, social isolation, and the loss of traditional community roles undermine the mental and emotional well-being of elderly persons. A sense of purpose and active engagement in society are crucial for their quality of life (WHO 2015, UN 2019).

Infrastructure and Accessibility: The presence of age-friendly infrastructure, including accessible housing, transportation, and healthcare, plays a pivotal role in fostering independence and quality of life for older populations (WHO 2007, UN 2019).

Recognizing these challenges, global organizations like the World Health Organization (WHO) have initiated programs to improve elderly well-being. For instance, the Decade of Healthy Ageing (2021–2030) emphasizes coordinated action among governments, communities, and private entities to develop inclusive environments and bolster healthcare systems for the elderly. Some nations have already implemented successful models to address these issues. Japan's long-term care insurance system, for example, provides comprehensive support for its aging population, while Scandinavian countries offer integrated welfare systems that ensure economic and healthcare security. These initiatives serve as benchmarks for improving the quality of life for elderly populations globally (Japan's Long-Term Care Insurance System 2019, World Bank 2022).

The Quality of Life (QoL) of elderly persons is a multidimensional concept encompassing various physical, emotional, social, and environmental factors that contribute to an individual's overall well-being. As the global population ages, understanding the factors that influence QoL in older adults is crucial for improving health outcomes and promoting healthy aging. The components of QoL for the elderly can be broadly categorized into physical health, mental well-being, social relationships, economic stability, and autonomy.

1. Physical Health: Physical health is a core determinant of QoL in elderly. Chronic conditions, mobility issues, and sensory impairments significantly impact an elderly individual's ability to function independently, which in turn affects their overall satisfaction with life. Maintaining good physical health is essential for improving the quality of life as people age (WHO 2002). It has further illustrates that how regular physical activity positively influences the health and QoL of the elderly (Rashid, F., & Dhand, A. 2020)

2. Mental and Emotional Well-being: Mental health, including the absence of conditions such as depression and anxiety, is crucial for elderly persons. Emotional well-being is often influenced by factors such as cognitive decline and life satisfaction. This also explores how depression in late life correlates with lower QoL Blazer, D. G. (2003). Additionally it focuses on cognitive decline, specifically Alzheimer's disease, and its detrimental effects on the autonomy and QoL of older adults (Bredesen, D. E., & Brenner, W. 2017).

3. Social Relationships and Support: Social connections are vital for maintaining QoL in the elderly, with positive relationships linked to improved emotional and physical health. The loneliness significantly lowers QoL, making social support an essential component for elderly well-being (Perlman, D., & Peplau, L. A. 1981). This also highlights that loneliness in older adults has serious health implications and negatively affects their QoL (Cacioppo, J. T., & Patrick, W. 2008).

4. Economic Stability and Living Conditions: Financial security and suitable living conditions are critical for the elderly to access necessary resources such as healthcare and social activities, which contribute to a higher QoL. As it is discussed how economic and social factors shape health outcomes and the overall quality of life in

older populations (Ruggeri, M., & Burini, M. 2019), also emphasize that older adults with financial security experience better QoL compared to those facing economic insecurity (Choi, H., & Kim, S. (2015).

The QoL of elderly persons are shaped by the interplay of these factors, and research continually highlights the need for comprehensive support systems to enhance the well-being of aging populations.

1.6 Geriatric care and Social work

Social work is a helping profession to deal with the individual, group and community problems with greater focus on psycho-social perspectives and practices. Social Work's emphasis has been helping the person with problems to find solutions by their efforts and their own accord with the facilitation and catalytic support of trained social workers. In this context, tackling the problems of elderly living with diabetes is highly challenging for the reason that aging is part of the human development and is an end-of-life cycle.

Geriatric Social Work, which is also called as Gerontological Social Work is a new branch in Social Work, which is in its infancy stage in India, has greater potential in solving the problems of aged from non-clinical point of view. After all, diseases and disorder have its roots arising out of personal, social and local context with specific reasons.

The social work methods such as case work, group work, community work, social welfare administration and social actions have direct application with elders, in the light of elder's problems with frail health, evolving solutions with the active participation and engagement may be difficult in reality. Yet, we have system in place to work with children by engaging parents, family members, communities and other stakeholders. Similar strategy and framework may work with elders, despite different causes and etiology of elderly people's problems. In consideration of the facts and realities, the study is ground from the context of Gujarat State with an expectation to draw distilling lessons, which the researcher is optimistic to contribute to social work research and practice by drawing insights from Gujarat.

Diabetes social workers play a vital role in supporting patients and families as

they navigate life with diabetes, working as integral members of the treatment team. Recognizing the common emotional and psychological challenges that accompany diabetes, social workers provide essential guidance and support to help patients manage distress and adapt to lifestyle changes. They offer psychological support, facilitate social and family support networks, and help build trust between patients and their healthcare providers. By helping patients understand their illness, cope with emotional stress, and make informed lifestyle adjustments, social workers empower persons to manage diabetes more effectively. Additionally, they connect patients with practical resources, such as food assistance programs and medical education, and act as liaisons to ensure that families and caregivers fully understand the medical and social implications of the condition, fostering a supportive care environment.

After gaining deeper insight into the elders multi-faceted problems, working from multi-disciplinary perspectives and practices to address health, social, economic, emotional, mental and spiritual problems and issues is the way forward to holistically address elder problems. Given this, the study “Geriatric Care and Quality of Life among Elderly Persons Living with Diabetes in Gujarat, India” has attempted to venture into new arena of social work with multidisciplinary perspectives and practices, by drawing insights from medical field. Geriatric social work application is widely seen in family setting, community settings, old age homes, geriatric hospitals with inpatient and outpatient elderly care services and to the hospice services for elders with terminal illness. Management of chronic illness such as diabetes-type 2 presents profound challenges to Social Work for the reason that long period of care is required in view of chronic nature of the problem of diabetes. Further, elders have to manage the illness throughout their life. Therefore, this research effort is in pursuit of filling the gaps in the existing knowledge domains of social work, which will hopefully through much light into the bottom of the problem. This in all possibility will contribute towards the finding of new solutions by applying geriatric social work tools, techniques and methods. In this respect, National Association of Social Workers, America identified that improving the health and quality of life of older people is one of the thematic areas of research in social work.

1.7 Approach Model of Elderly Care

1.7.1 BPSM Model

The Biopsychosocial Model (BPSM) combines biological, psychological, and social factors to provide a comprehensive understanding of health and illness. In contrast to the traditional biomedical model, BPSM focuses on the interconnections between physical, mental, and social aspects of well-being. In the context of elderly care, it supports a holistic approach to address the multifaceted challenges of aging. This model is crucial for delivering thorough and effective geriatric care (Engel, G. L. (1977).

The BPSM suggests that health is influenced by biological, psychological, and social factors. Biological factors involve genetics and physical health, psychological factors cover mental health and emotional well-being, and social factors include social support and community resources. This integrated approach helps healthcare professionals understand and address all aspects of an individual's health (Engel, 1977).

As aging brings physical, mental, and social changes, the BPSM helps in understanding how these factors interact. For example, older adults with chronic diseases often face emotional stress and social isolation. The BPSM ensures that healthcare providers address these dimensions to improve overall well-being (Wright & Treacher, 1982).

How the BPSM Helps in Elder Care

1. Holistic Assessment: The BPSM allows healthcare providers to assess biological, psychological, and social factors in elderly care, leading to more comprehensive care (Engel, 1977).

2. Personalized Care Plans: By considering all aspects of an individual's health, the BPSM helps create personalized care plans, improving outcomes in conditions like stroke recovery (Blazer, 2003).

3. Improved Mental Health Support: The BPSM emphasizes addressing both mental health and physical health needs, such as treating depression alongside chronic pain (Glenister & Wilkins, 1991).

4.Social Connectivity: The model highlights the importance of social factors, encouraging interventions to combat social isolation and promote community involvement (Cohen, 2006).

5.Chronic Disease Management: The BPSM aids in managing chronic diseases by addressing psychological stress and social support, improving health outcomes in elderly patients (Hoh, 2010).

6.Prevention and Early Intervention: The BPSM supports early intervention by recognizing the interconnections between health factors, such as screenings for cognitive decline (Hertzog et al., 2011).

The BPSM is applied through multidisciplinary teams of doctors, psychologists, and social workers who create integrated care plans for elderly patients, improving outcomes in recovery and rehabilitation (Ryan et al., 2013). The Biopsychosocial Model offers a comprehensive approach in elderly care, addressing biological, psychological, and social factors to improve overall well-being. This model is essential in modern geriatric care to enhance the quality of life and health outcomes for older adults.

1.7.2 Well-Being and Wellness Approach to Elderly Care

Conceptual Framework and Physical Dimensions: The well-being and wellness approach to elderly care has emerged as a comprehensive framework emphasizing the integration of physical, mental, emotional, and social dimensions of health. This paradigm shift moves beyond the traditional biomedical model, which primarily focuses on treating diseases, to a holistic approach that seeks to improve the overall quality of life for older adults. The successful aging involves three critical components: avoiding disease, maintaining high physical and cognitive function, and sustaining active engagement with life (Rowe and Kahn 1997). These pillars align closely with the well-being and wellness framework by addressing the interplay between physical health and psychosocial factors.

Physical wellness is a cornerstone of this approach, as aging naturally brings challenges such as decreased mobility, chronic conditions, and vulnerability to infections. Interventions such as regular exercise programs, balanced diets, and

access to preventive healthcare are essential to prolonging independence and enhancing physical vitality. The elderly persons participating in structured physical activities reported improved balance, reduced fall risks, and better cardiovascular health compared to sedentary peers. This finding underscores the necessity of proactive health management to foster long-term well-being among elderly (Wang et al. 2019).

Furthermore, physical health intersects with other dimensions of well-being. Poor physical health can exacerbate mental health issues such as depression and anxiety, emphasizing the importance of addressing these areas collectively. This perspective informs initiatives like integrated wellness programs, which provide elderly persons with access to fitness activities alongside mental health counseling, peer support groups, and nutritional education, fostering a multifaceted improvement in their overall well-being.

Emotional, Social, and Spiritual Dimensions: Emotional, social, and spiritual well-being are equally crucial in promoting a comprehensive wellness framework for elderly care. Emotional wellness focuses on maintaining positive psychological states by managing stress, cultivating meaningful relationships, and finding joy in daily activities. The social connectedness is a vital determinant of emotional health among older adults, with strong social bonds linked to lower rates of depression and enhanced life satisfaction (Cacioppo et al. 2014). Programs encouraging intergenerational activities and community engagement can address feelings of loneliness and isolation, which are prevalent among the elderly.

Social wellness also includes fostering a sense of belonging through participation in group activities, volunteering, or engaging in hobby-based communities. Research by Holt-Lunstad et al. (2010) shows that the elderly with robust social networks experience better cognitive outcomes and reduced mortality rates. These findings highlight the critical role of social support in extending both the quantity and quality of life.

Spiritual wellness, often overlooked, can significantly influence an elder's sense of purpose and inner peace. Practices such as meditation, religious activities, or exploring personal philosophies can offer solace and meaning during later life stages.

As Tornstam (2005) posits in his theory of gerotranscendence, many elderly persons undergo a shift toward a more spiritual outlook, finding fulfillment in transcending material concerns and focusing on self-reflection. Care frameworks incorporating spiritual support align with these intrinsic needs, fostering a balanced approach to aging.

By addressing all dimensions of health, the well-being and wellness approach creates a nurturing environment that empowers older adults to lead fulfilling lives, paving the way for a more compassionate and inclusive model of elderly care.

1.8 Diabetes and Elderly

Diabetes, often referred to as a 'silent killer,' is posing serious health challenges, particularly within the elderly population. As a progressive metabolic disorder, it amplifies vulnerabilities in older adults, weakening their immune resilience and overall health. With rising incidence rates, an increasing number of elderly persons are developing diabetes, which exacerbates health complications such as poor blood sugar regulation, delayed wound healing, vision impairment, frequent urination, and general fatigue.

India is now a diabetes hub as one in six people in the world with diabetes is from India. Between 2015 and 2019, diabetes prevalence in India showed a marked increase, especially in rural and urban areas. In rural India, diabetes rates climbed from 2.4% in 1972 to 8.9% in recent years, with a dramatic rise to 15.0% reported between 2015 and 2019. In urban areas, this rate was even higher, reaching 19.0% during the same period (NFHS-5 (2019-2021)). These increases were observed across both sexes, with pre-diabetes also rising at comparable rates in both men and women, indicating a growing public health challenge. The steady escalation in diabetes prevalence underscores the need for targeted interventions and awareness campaigns to address risk factors in both rural and urban populations. The prevalence of diabetes in India has increased from 7.1% in 2009 to 8.9% in 2019. Currently, approximately 77 million individuals in India (1 in 11) are diagnosed with diabetes, positioning the country as the second most affected globally, following China.

Co-morbidities with multiple diseases and disorders are part of the elderly problems. Living with chronic diseases, disorders and disabilities is part of the

elderly life. For instance, the problems of Alzheimer Disease, Dementia, Parkinson's disease and diabetics are chronic in nature, which calls for continuous care throughout the life of the elders. These diseases and disorders demand spontaneous care and treatments for the elders with the family support. Diabetes is a chronic metabolic condition that affects how the body utilizes blood sugar. The scientific term for diabetes is diabetes mellitus. Diabetes mellitus (DM) is a condition marked by the body's inability to regulate blood glucose levels properly. It occurs either due to inadequate insulin production or the body's inability to use the insulin produced effectively.

The hosts of diseases and disorders are afflicting to aging, the looming threat of diabetes, which is a big threat to elders, in view of increased infliction of diabetes to elderly persons.

The International Diabetes Federation project an increasing trend to reach 134 million by 2045 (International Diabetes Federation (IDF). Diabetes imposes a substantial global health burden, as evidenced by data from the Global Burden of Disease (GBD) Study 2019. In 2019, diabetes accounted for 1.47 million deaths worldwide and resulted in 66.3 million Disability-Adjusted Life Years (DALYs), with the majority of these impacts 95.4% attributable to type 2 diabetes (Global Burden of Disease Study 2019). By 2021, the total DALYs associated with diabetes had increased to 79.2 million, indicating a worsening global impact. Additionally, in 2019, there were 437.9 million prevalent cases of diabetes globally, with an age-standardized mortality rate of 18.5 deaths per 100,000 population and a DALY rate of 801.5 per 100,000. These figures highlight the urgent need for effective preventive and therapeutic strategies to combat the rising burden of diabetes worldwide (DALY 2019).

The Longitudinal Ageing Study in India (LASI) indicates that 16.4% of the Gujarat population suffers from diabetes or high blood sugar. Diabetes prevalence among senior citizens and persons aged 45-59 in India is notably higher in the southern states and union territories, with Delhi and Punjab reporting the highest rates in these age groups. The central regions show relatively low diabetes prevalence, whereas the northeastern states exhibit higher rates. Kerala leads with the largest number of diabetes cases among elderly populations, followed closely by

Meghalaya, Nagaland, Madhya Pradesh, Uttar Pradesh, and Bihar. These geographic disparities highlight the need for tailored regional strategies to manage and prevent diabetes, particularly in high-prevalence areas such as Kerala, Delhi, and the northeastern states (Research Square, 2021). Acknowledging the link between elderly persons living with diabetes, the World Health Assembly Resolution- WHA emphasize on strengthening the non-communicable disease policies to promote active ageing, noticing the prevalence of non-communicable diseases among older persons. The World Health Assembly (WHA) emphasized the urgent need to prevent disabilities associated with such diseases and to develop long-term care strategies accordingly. Additionally, WHA Resolution 67.19 (2014) focuses on strengthening palliative care as an integral part of comprehensive care throughout the lifespan, aiming to address the chronic care needs of the elderly.

Recognizing the health burden of diabetes, the Government of India launched the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke (NPCDCS) in 2010, initially targeting 100 districts. The program was expanded nationwide in 2017. It aims to strengthen infrastructure, human resource development, health promotion, early diagnosis, management, and referral services. The primary focus of the program has been on the treatment of diabetes. Given that diabetes is a lifelong condition, the Diabetes Research Foundation of India emphasizes that it is mainly a lifestyle and behavioral disease, and providing free medications alone is insufficient. As a result, a dedicated national program for diabetes has been proposed.

1.9 Challenges in Elderly Care in India

In India, there has been a shift from traditional hierarchical models of elder care to more nuanced approaches, with some states adopting culturally specific strategies. These changes have facilitated the development of community-based living options and inclusive ecosystems for elderly persons with chronic health conditions and severe disabilities. Additionally, there has been a growth in peer-led initiatives and collaborative care models, incorporating critical and reflective thinking. These approaches involve multiple stakeholders and seek to address the needs of elders from a holistic perspective. While these new service horizons are emerging for the elderly, studies that focus on their lived experiences remain limited.

In this regard, bridging the knowledge and practice gaps by integrating the lived experiences of elders is crucial at local, regional, national, and global levels.

The intersectional and multiple reinforcing factors has been transmitted from generation to generation and always affect people's quality of life (QoL) and it thus often resulting in deprivation and feelings of hopelessness. This is more so among elders in view of the frailties by virtue of their age. According to the Global Hunger Index 2021, as a combined result of COVID-19, ill-health, other connected issues of elders always influence with alarming or serious levels of hunger (GHI, 2021). Moreover, 39% of the world's population still lacks basic health services and facilities (World Health Organization, 2009). Investments in the health of the elderly, including their social, emotional, and mental well-being, have been insufficient. Moreover, many health systems worldwide were overwhelmed by the recent pandemic, which exposed significant health shocks and a critical shortage of infrastructure and services. COVID-19 was brought to light the fact about poor health and disrupted health care of many people without any services. Among them, elders are the worst affected all over the world including India. In the wake of the devastating impact of the COVID-19 pandemic, which disproportionately affected the elderly, there have been increased commitments to address the needs of disadvantaged and highly vulnerable elderly populations. Prioritizing their well-being and safety, while considering their exposure to trauma and violence, has become an urgent necessity.

The recent COVID-19 pandemic made older people more vulnerable and rendered "useless" according to Sanghmitra Choudhry and Yogita Suresh (Wire 2020). It is further stated that older people are more likely to die of COVID-19. This further made them lonely and feeling vulnerable. Added to it, during the pandemic, shortage of beds, medical equipment and weakening of health system made elders redundant. Therefore, the burden of life rests with the elder people themselves. The weakened and broken social system further made elders disposable. (Wire 2020).

In addition, in India, the older are more affected and afflicted with chronic and acute illness such as diabetes, hypertension, high blood pressure, aside from locomotors debility. They are more at risk of cancer, renal diseases, and musculoskeletal disorders such as arthritis. It is further evident that 83% of their

health expenses are out of pocket, leaving them financially vulnerable as well. These illnesses made elders to become more in risk of COVID-19 due to the decreased immunity and co-morbidities arising out the above-mentioned diseases and disorders worsening the condition of the elderly particularly during COVID-19 and even in the post COVID-19 pandemic (National Family Health Survey 2020, WHO 2021).

In addition, the lack of support networks and sufficient assistance for the elderly leaves them vulnerable to income insecurity, poor nutrition, and abuse. Such individuals often face heightened vulnerability, making them more prone to stress and health issues. It is estimated that nearly 1 billion people globally experience some form of mental health issue, with 150 million of them being Indian citizens, and 32% of these individuals have long-term mental health needs (WHO, 2020). Psychosocial disabilities in elders often lead to a downward spiral, primarily due to persistent structural barriers they face. Therefore, in any natural calamity and more so during the recent pandemic, elders are the worst sufferers, and they require special support for care and protection from their life hazards.

1.10 Chapterization

This research study is presented eight chapters, which are described below.

Chapter I Introduction: In this chapter it has been conducted a comprehensive review of existing literature on geriatric care, particularly examining the intersection of diabetes management and quality of life in elderly populations. The review highlights significant conceptual gaps in current research, particularly in understanding how diabetes affects the overall well-being of older adults. By synthesizing findings from various studies, the researcher aims to demonstrate the urgent need for further investigation in this area. Additionally, the review emphasizes quality-of-life considerations for seniors, setting the stage for a deeper exploration of how diabetes impacts their daily lives and care outcomes. This framework establishes the critical backdrop for the present study.

Chapter II Review of Literature: This chapter presents a thorough analysis of the key concepts underpinning this study, offering clarifications and detailed explanations to elucidate their relevance. By systematically relating these concepts to the research objectives, the chapter emphasizes the necessity for reconceptualization

within the field. It contextualizes the study by highlighting prevailing gaps and limitations in current understanding, thereby advocating for innovative perspectives and approaches in geriatric diabetes care. Furthermore, this chapter outlines the pressing need for new research initiatives that address these gaps, paving the way for improved care strategies and outcomes for elderly persons with diabetes.

Chapter III Methodology: The present chapter gives a comprehensive ideology on the methodology adopted for the research study such as study areas, research design, sampling, universe of the study, sample units, sampling method, sources of data, pilot study, pre-testing, tools of data collection, reliability and validity of tool, justification for the tool, data processing and analysis, operational definitions, limitations of the study, and summary this chapter.

Chapter IV Structural Basis of the Respondents: This chapter presents the primary data was analyzed using frequency distribution and standard deviation to illustrate the demographic characteristics effectively. The chapter is structured into two main sections: the first section outlines the socio-demographic profile of elderly persons living with diabetes, highlighting key variables such as age, gender, socioeconomic status, and health conditions. The second section delves into the specific issues and challenges faced by these persons, providing insights into how these factors impact their quality of life and management of diabetes.

Chapter V Geriatric Care in India: This chapter presents geriatric care in India, highlighting the challenges and opportunities specific to the elderly population. It proposes a framework focused on their unique needs, advocating for integrated services to improve quality of life. The chapter explores current practices, particularly in elderly diabetes care, and serves as a basis for further research and service development in Indian geriatric care

Chapter VI Quality of Life among Elderly Persons Living with Diabetes: This chapter explores the quality of life among elderly persons living with diabetes, focusing on four key domains: physical health, psychological well-being, social relationships, and environmental factors. This aims to uncover the unique challenges and broad impacts that diabetes has on daily life for elderly persons. This comprehensive analysis provides a holistic understanding of how health, emotional

well-being, social support, and environmental conditions interact to shape the overall quality of life. The findings also inform strategies for improving the well-being of elderly persons living with diabetes in India.

Chapter VII Case Study Analysis: This chapter analyzes the challenges of managing Type 2 diabetes in elderly people in Gujarat, India. It addresses factors like aging, cognitive decline, comorbidities, and medication non-adherence. Socio-cultural influences, such as family structures and dietary habits, are also explored. The chapter emphasizes the need for personalized interventions, combining medical treatment, psychological support, and community involvement. Through case studies, it highlights the complex nature of diabetes care for the elderly, focusing on medical, social, cultural, and psychological aspects.

Chapter VIII Key Findings and Recommendations: In this concluding chapter, the key findings of the research, which are based on empirical evidence demonstrating the reciprocal relationship between geriatric care and the quality of life of elderly persons living with diabetes. These findings directly address the research question. The chapter offers recommendations for enhancing geriatric care services and improving the quality of life, with a focus on the perspectives and practices of social work.

The introduction chapter provides a detailed overview of the rapid growth of the elderly population globally and in India, emphasizing challenges like high dependency ratios, chronic diseases, and social vulnerabilities. The chapter discusses gaps in healthcare, financial support, and holistic services, particularly in rural areas. It advocates for culturally sensitive interventions, aligning with Sustainable Development Goals, and emphasizes the role of social work in addressing elderly needs. This sets the stage for exploring the intersection of diabetes and quality of life among Gujarat's aging population.

The next chapter will conduct a thorough review of existing studies, concentrating on the literature to identify research gaps that require further exploration. It will clarify key concepts relevant to the study, presenting them analytically to demonstrate their importance. By evaluating previous research findings, the chapter will reveal conceptual gaps in current knowledge, thereby

justifying the necessity for new research in this field.

CHAPTER II

REVIEW OF LITERATURE

In this chapter, a comprehensive literature review is conducted, focusing on prior studies relevant to the current research. It includes a synthesis of existing literature, offering a critical assessment of these studies to identify gaps in research and practice. By analyzing similarities and differences with past research, this highlights the unique contributions of the current study and establishes a strong rationale for its necessity. The findings from the literature review inform the methodological choices made in this research, ensuring alignment with established methods while considering the specific context of the study. This chapter emphasizes the importance of identifying various types of gaps substantive, theoretical, methodological, conceptual, and operational as a means to guide future research and enhance methodological rigor. Overall, this literature review is essential for framing research questions, justifying the study's relevance, and contributing to the broader body of knowledge in the field.

This chapter is categorized into 14 sections such demographic profiles of the elderly persons living with diabetes with its context to global, national and regional, challenges and coping strategies of elderly persons living with diabetes with its context to global, national and regional, assessing family support, institutional care, and services for elderly persons living with diabetes with its context to global, national and regional, evaluating the quality of life among elderly persons living with diabetes with its context to global, national and regional,, the relationship between geriatric care and quality of life of elderly persons living with diabetes, geriatric care with its context to global, national and regional, quality of life of the elderly with its context to global, national and regional, social work practice with elderly, exploring the perspectives of elderly in India, population ageing dynamics, research gap, statement of problem, objectives of the study and hypotheses

2.1 Demographic profiles of the Elderly Persons among Living with Diabetes

The demographic profile of elderly persons living with diabetes reveals diverse and complex factors. This population typically includes individuals aged 60 years and above, with prevalence rising significantly in those over 70. Gender disparities are

often observed, with slightly higher rates in elderly men, though this can vary by region. Urban areas exhibit higher prevalence due to lifestyle factors, while rural populations are increasingly affected. Socioeconomic status plays a critical role, as lower-income groups face challenges accessing healthcare resources. Certain ethnic groups, including South Asians, African Americans, and Hispanics, are more susceptible to diabetes in older age. Common comorbidities include hypertension, obesity, and cardiovascular diseases, compounded by reduced physical activity and dietary changes. Limited access to routine screenings exacerbates the issue, while polypharmacy complicates disease management. Finally, psychosocial factors such as loneliness and inadequate social support often affect the overall well-being of elderly diabetics, highlighting the multifaceted nature of their demographic profile.

2.1.1 Global context

Dr.Sharjeel Babar et al (2022) '*Nutritional status and dietary habits of elderly population and their association with socio-demographic factors in a village of Punjab*'. the study aimed to evaluate the nutritional status and dietary habits of the elderly population in a rural area of Pakistan. A cross-sectional study was conducted in Jia Bagga, with 100 elderly aged 60 or above. The results showed that 22% were malnourished and 50% at risk. The study concluded that the nutritional status of the elderly is not satisfactory, with most at risk or malnourished. Malnutrition is link to age, financial dependency, physical activity, and overall eating habits. Therefore, interventions are needed to improve nutritional status in low-income older age individuals in rural areas.

Pushpamala Ramaiah Ponaiah et al (2020) '*Self-Management Experiences and Challenges of Elderly Women with Type 2 Diabetes*', Diabetes can impact individuals across all age groups; however, its management becomes particularly complex in older adults due to the presence of additional health conditions. Addressing the physical and emotional needs of elderly persons, especially those experiencing cognitive and functional decline, has become an area of growing concern. Among this demographic, diabetes substantially increases the likelihood of mental health challenges, positioning it as one of India's most significant health issues in the 21st century. Effective self-care practices are critical for achieving better blood sugar control and improving overall well-being. This research focuses on examining the experiences and obstacles encountered by older women with

diabetes through virtual group discussions.

International Diabetes Federation (2013) '*Global Guidelines on Managing Older People with Type 2 Diabetes*', this study states that the The phenomenon of population ageing is unprecedented, characterized by a significant increase in the number of older individuals and a concurrent decline in the younger population. This demographic shift presents substantial challenges for welfare, pension, and healthcare systems. Compounding these issues, diabetes is being diagnosed at epidemic levels worldwide, with projections estimating a prevalence of 592 million cases by 2035. Regions such as the Pacific Islands and the Middle East report the highest rates of diabetes prevalence, which poses a major public health burden and complicates national healthcare systems' ability to provide effective diabetes care. The International Diabetes Federation (IDF) has recognized the urgent need for evidence-based clinical guidelines tailored for older adults with diabetes. To inform these guidelines, the IDF has sought insights from various studies. Contemporary diabetes management strategies must be closely aligned with individual patient characteristics, including functional status, comorbidity profiles, and life expectancy. These factors are critical in shaping treatment goals and care models. The Guideline aims to assist clinicians in making informed decisions regarding the functional status and comorbidity levels of older patients aged 70 and above. It offers recommendations on safe glucose-lowering therapies, enhances patient safety, and seeks to minimize hospitalizations and the need for residency in aged care facilities while preventing hypoglycemia. Furthermore, the World Health Organization underscores the importance of directing healthcare resources towards preventative care and public health interventions to effectively manage diabetes rates. The guideline recognizes informal caregivers as the primary sources of advice and emotional support for older adults living with diabetes. While the guideline provides essential information on resource allocation and sets standards for diabetes care, it highlights the lack of well-designed studies focused on cost-effective diabetes management for older populations. The IDF Working Group specifically addresses type 2 diabetes in older adults, emphasizing principles of care, prevention of complications, educational interventions, quality medication management, assessment methodologies, and metabolic targeting. Overall, the Guideline aims to

assist diabetes services globally in delivering high-quality care tailored to the needs of older individuals living with diabetes.

2.1.2 National context

Lalchhuansangi Khiangte (2023) studied based on the title *"Coping, Social Support and Quality of Life among Persons with Diabetes in Mizoram"*, this study summarizes significant findings related to the challenges faced by individuals with diabetes in Mizoram, along with their coping strategies, levels of social support, and overall quality of life. Utilizing both qualitative and quantitative research methods, the study assesses the relationships between coping mechanisms, social support, and quality of life among diabetes patients. Key findings indicate that middle-aged individuals, particularly those residing in urban areas, exhibit higher rates of diabetes, primarily attributed to their urban lifestyles. The predominant coping strategies identified include positive reappraisal, self-control, and social support, with notable patterns observed among rural residents and males. Furthermore, the study reveals that social support tends to decline with age, highlighting the urgent need for enhanced support structures, especially for the elderly and those managing type 2 diabetes. Additionally, the research establishes a connection between coping strategies, social support, and quality of life, emphasizing that physical health and social relationships are significant contributors to well-being. The study advocates for health interventions, psychosocial support, and social work initiatives to assist individuals with diabetes. It also recommends community engagement and policy measures aimed at diabetes prevention and lifestyle education within Mizoram. Future research directions include a focus on gestational diabetes, the management of diabetes in geriatric populations, and the impact of diabetes on family dynamics. The findings underscore the necessity for a multi-level approach encompassing individual and family support, as well as community and policy interventions, to enhance the quality of life for diabetes patients.

Priyanka Patel et al (2022) *'Impact of Economic Dependency on Perceived State of Health Among Elderly in India'*, the study highlights the rapid growth of India's elderly population, which continues to face socio-economic challenges compared to those in developed countries. It investigates how economic dependency influences the perceived health status of older adults in India, utilizing data from the

National Sample Survey's 71st and 75th rounds. The analysis reveals that 30.1% of elderly persons are economically independent, while 22.9% are partially dependent, and 47% rely entirely on others. Moreover, elderly persons who are partially or fully dependent are less likely to report excellent health. The research emphasizes the difficulties encountered by economically dependent older adults and advocates for policy interventions to improve their living conditions.

Shailedra Kumar et al (2021) '*Socio-economic and Demographic Correlates of the Health Status of Older Adults in India: An Analysis of NSS 71st Round Data*' this study examines the health status of older adults in India using data from the 71st round of the National Sample Survey. The analysis reveals that 30% of individuals aged 60 and above experience chronic or acute morbidity, while 22% rate their health status as poor, and 8% are physically immobile. Additionally, the study identifies significant associations between age, religion, and expenditure quintile with poor overall health outcomes. These findings underscore the urgent need to enhance healthcare services and improve economic and social security programs for older adults, particularly in light of their growing population and the substantial proportion experiencing poor health status.

Mouli, Mriganka Saha et al (2013) '*An Overview of Diabetes Mellitus in Elderly Population*', this study, conducted at a tertiary care center, aimed to investigate the prevalence and risk factors associated with diabetes among the elderly population, as well as the relationship between glycosylated hemoglobin levels and diabetes management. Diabetes mellitus poses a significant public health challenge, particularly among older adults, and is associated with various risk factors and complications in this demographic. The cross-sectional observational study took place from July 2011 to June 2012 and involved patients attending the outpatient departments of Medicine and Gynecology at IPGMER, Kolkata. A total of 280 elderly persons (aged 60 years and older) diagnosed with diabetes were included in the study. Findings revealed a prevalence of recognized diabetes of 35.71% in males and 42.86% in females, based on assessments of serum lipid profiles and glycosylated hemoglobin (HbA1c) levels. The study identified several risk factors linked to diabetes, including fast food consumption, dyslipidemia, smoking, hypertension, sedentary behavior, obesity, and a positive family history of the

disease. Notably, the prevalence of diabetes was found to increase in the elderly population up to the age of 75, after which it declined for both men and women. This study underscores that diabetes mellitus is a significant concern among geriatric patients in a tertiary care setting, with a heightened association with hypertension, dyslipidemia, obesity, and sedentary lifestyles. The findings emphasize the urgent need for a comprehensive, population-based approach to address the rising incidence of diabetes among the elderly population.

2.1.3 Regional context

Angel Christian et al (2021) '*Understanding Patients Experiences Living with Diabetes Mellitus: A Qualitative Study, Gujarat, India*', this study indicate that Diabetes mellitus is a significant public health concern in India, affecting approximately 72.9 million adults over the past four years. This study aims to evaluate the quality of life and experiences of individuals living with diabetes, focusing on how the progressive stages of the disease impact various life dimensions. A qualitative, exploratory, and descriptive design was employed to investigate the experiences of diabetes patients in the Kheda district of Gujarat, utilizing a phenomenological approach within the qualitative paradigm. The findings indicate that diabetes continues to induce considerable suffering among participants, manifesting as fear, depression, and anxiety, alongside challenges related to dietary modifications. Emotional support was primarily provided by family members and friends; however, participants reported absenteeism from work during the early stages of their diagnosis due to both health complications and emotional distress. Psychologically, patients experienced significant anxiety and fatigue, exacerbated by the chronic nature of the condition. Physically, common complaints included giddiness, weakness, and headaches, contributing to various functional limitations. Economically, while some participants benefited from stable family incomes that enabled them to manage dietary and medication expenses, others faced financial strain. In terms of vocational impact, participants initially struggled with concentration at work; however, improvements were noted after the commencement of treatment. Spiritually, only two participants expressed a strong faith in God, while the majority reported engaging in daily prayers.

Ruchita T. Lunagariya et al (2020) '*An epidemiological study on diabetes and*

its determinants among urban slum women of Rajkot city, Gujarat', this study highlights significant concerns regarding diabetes prevalence among slum-dwelling women in Rajkot, India, underscoring the urgent need for targeted healthcare interventions. Here's a summary of the key findings and their implications such as the study focused on 405 women aged 35 and older living in slums. A total of 64 women were diagnosed with diabetes, indicating a substantial prevalence within this population, Among the diagnosed women, only 56.25% (36 women) were aware of their diabetes diagnosis, of those aware, 80.66% (29 women) were receiving treatment, highlighting gaps in awareness and treatment uptake, Among the women on treatment, only 55.17% had their blood sugar levels under control, which is concerning as uncontrolled diabetes can lead to severe complications, Diabetes is linked to factors such as BMI, household work, walking, healthy habits, and family history. Overweight and obesity contribute to diabetes risk, while regular physical activity is protective. Healthy habits and a family history of diabetes are also known risk factors, the study highlights the need for improved healthcare access for urban poor populations, especially in slums, by raising diabetes awareness, encouraging screening, and improving treatment access. Programs promoting healthy lifestyles, targeted interventions, and government policies should address the unique challenges faced by these marginalized populations, Overall, this study underscores the urgency of addressing diabetes in vulnerable populations and highlights the multifaceted approach needed to improve health outcomes among slum-dwelling women in Rajkot

Nirmal Brahmbhatt et al (2019) '*A cross-sectional study of health and psychosocial problems among elderly people living in old-age homes of Ahmedabad and Gandhinagar districts, Gujarat, India*' , this study investigates the health and psychosocial difficulties encountered by elderly persons in the Ahmedabad and Gandhinagar districts of India. A cross-sectional survey was conducted with 500 participants residing in nine old-age homes within Ahmedabad district. Among the respondents, 42.20% were men and 57.80% were women. The majority of residents (59.60%) had been living in these facilities for a duration of 3 to 10 years, with family disputes being the primary reason for their relocation (45.60%). Commonly reported symptoms included joint pain (47.20%), vision problems (30.20%), sleep disturbances (28.00%), fatigue (23.20%), and memory issues (23.20%). Major health

conditions identified among this group consisted of cancer, anemia, diabetes, cataracts, hypertension, coronary heart disease, asthma, and osteoarthritis. The study concluded that many elderly persons felt overlooked by their families, although two-thirds of the old-age homes provided regular health check-ups.

Dr. Dipeshkumar D. Zalavadiya et al (2016) '*A Comparative study of the Socio demographic and activity profile of elderly residing in Old Age Homes and in the Community of Rajkot, Gujarat, India*', this study aims to explain that the global population is rapidly aging, with the proportion of individuals over the age of 60 expected to double between 2000 and 2050. This trend has resulted in an increase in the number of elderly persons residing in old age homes. A study conducted in Rajkot city, which included 88 elderly residents in these homes and 180 individuals from the community, found that 76.7% of the elderly in the old age homes were classified as "young old," compared to 84.4% in the community. None of the elderly persons in the homes were married, and only 2.6% participated in recreational activities. The study suggests that engaging the elderly in productive and recreational activities could enhance their quality of life.

Jayesh Dalpatbhai Solanki et al (2014) '*Knowledge, attitude, and practice of urban Gujarati type 2 diabetics: Prevalence and impact on disease control*', this study examines the rising prevalence of type 2 diabetes globally, with a particular focus on developing countries such as India, where rapid urbanization is a significant contributing factor. The existing literature on knowledge, attitude, and practice (KAP) studies related to diabetes management in India is limited, highlighting the urgent need for enhanced education and self-awareness among patients. A cross-sectional KAP study was conducted involving 200 type 2 diabetic patients under the care of MD physicians. The findings revealed an average KAP score of 19 out of 30, which significantly impacted glycemic control. Notably, only 40% of the participants achieved good glycemic control, and those with better KAP scores demonstrated superior glycemic control compared to those with lower scores. A positive correlation was identified between KAP scores and glycemic control, particularly with regard to glycosylated hemoglobin levels. The study concludes that type 2 diabetic patients treated by physicians in this region possess moderate KAP scores, which are influenced by age and education levels. These factors may adversely affect

glycemic control and underscore the importance of targeted educational interventions.

H Chandwani et al (2008) '*Health And Social Problems of Geriatric Population In An Urban Setting Of Gujarat, India*', this study examines the health and social challenges faced by the elderly population in an urban area of Gujarat. A total of 311 individuals aged 60 to 69 were interviewed, with 66% falling within this age range. Among the participants, 13% were illiterate, and 56% reported feelings of unhappiness. The majority reported experiencing health issues, including hypertension, arthritis, diabetes, and constipation. Notably, 44% expressed feelings of being unloved by their family members. The findings underscore the necessity for the establishment of geriatric counseling centers to effectively address the physical and psychological needs of this demographic.

2.2 Challenges and Coping Strategies of Elderly Persons Living with Diabetes

Elderly persons living with diabetes face multifaceted challenges, spanning physiological, cognitive, social, and economic dimensions, which necessitate personalized and holistic management approaches. Physiologically, they contend with multiple comorbidities, weakened organ function, and increased risks such as hypoglycemia. Cognitive impairments, including memory loss, dementia, and depression, further complicate disease management, while social isolation and emotional distress exacerbate these issues. Financial constraints, limited access to quality healthcare, and caregiver burdens are additional barriers, often worsened by systemic inefficiencies in healthcare delivery. To address these challenges, comprehensive and integrated care strategies are crucial. Multidisciplinary approaches involving gerontologists, endocrinologists, mental health professionals, and primary care providers can offer tailored solutions. Simplifying medication regimens, promoting the use of self-management tools like glucometers and health apps, and encouraging low-impact physical activities such as walking or yoga can empower elderly persons to manage their condition effectively. Innovations like telemedicine enhance convenience, while caregiver support programs and respite care alleviate burnout. Community interventions, mental health services, and support groups help mitigate feelings of isolation and depression. Additionally, advocacy for better insurance coverage, age-friendly policies, and systemic reforms ensures more

equitable access to care. A holistic framework that integrates personalized care, caregiver support, cognitive health monitoring, and systemic advocacy can significantly improve the quality of life and health outcomes for elderly persons with diabetes.

2.2.1 Global context

Fanu Omolade Oyindamola et al (2022) '*Challenges Facing the Elderly in Nigeria: A Gerontological Perspective*', this paper examines the challenges faced by the elderly population in Nigeria, focusing on social, psychological, and health-related issues. It concludes that there is a significant care gap, as many elderly persons rely heavily on their children and family for support. To address these challenges, the paper recommends that government policies be developed to ensure the inclusion of elderly care in the national budget. Furthermore, it advocates for the establishment of nursing homes in each state to accommodate the needs of older adults. This recommendation is particularly pertinent given the declining support from family members, which has led to an increased reliance on children and relatives for care.

Komang Achjar et al (2021) '*Knowledge, Attitude, and Skill of Family to Treat Elderly with Diabetes Mellitus at Home through the Empowerment of Elderly Cadre in Lampung*', the study mentioned that the Diabetes is a chronic disease that significantly impacts the elderly, leading to cognitive decline and increased dependence on disciplined management strategies. This study aims to empower elderly cadres in Lampung by enhancing their knowledge, attitudes, and skills for managing diabetes at home. Utilizing a quasi-experimental research design, the study involved 64 elderly respondents and 64 family members. The findings indicated a significant increase in knowledge and skills within the intervention group; however, there was a decline in attitudes. Conversely, the control group also demonstrated improvements in attitude and skill variables. An independent t-test revealed no significant increase in family capability following the implementation of the elderly cadre empowerment program.

Tiny Masupe et al (2021) '*Diabetes self-management: a qualitative study on challenges and solutions from the perspective of South African patients and health*

care providers', this study focused on identifying barriers to self-management and offering recommendations for enhancing diabetes and hypertension care in a peri-urban township in Cape Town, South Africa. Researchers conducted eight detailed interviews with healthcare providers and organized four focus group discussions with patients. The findings highlighted challenges in behavioral, medical, role, and emotional management. Specific difficulties included limited self-discipline in adopting lifestyle changes, inadequate collaboration between patients and healthcare providers, and emotional distress following a diagnosis. Patients identified barriers such as stigma, socio-economic and cultural factors, and communication breakdowns with providers, a mismatch between institutional care and daily life experiences, and insufficient community-based services. To overcome these challenges, patients proposed community-driven solutions like establishing multidisciplinary diabetes care teams, offering counseling services, strengthening family support systems, creating patient buddy programs, initiating community-led projects, and advocating for better care. Healthcare providers suggested using tailored communication strategies with audio-visual tools and prioritizing patient-centered consultations to improve outcomes.

Sarah Abdi et al (2019) '*Understanding the care and support needs of older people: a scoping review and categorization using the WHO international classification of functioning, disability and health framework (ICF)*', the study highlights the growing number of older individuals in the UK with unmet care and support needs, largely due to challenges within formal and informal care systems. This issue has become a public health priority, necessitating a deeper understanding of the specific needs of this demographic. Using the Arksey and O'Malley framework, a scoping review was conducted focusing on older adults living at home with chronic conditions in the UK. The review analyzed 40 studies, comprising 32 academic papers and 8 from grey literature. Findings revealed that older adults face diverse physical, social, and psychological challenges, requiring assistance with social engagement, mental health, mobility, self-care, and daily living activities. Environmental barriers such as insufficient professional guidance, poor communication, and limited information about available services further exacerbate these difficulties. Additionally, the review identified a significant knowledge gap regarding the care and support needs of older workers and caregivers. Addressing

these gaps is critical for improving care outcomes for this vulnerable population

Dunning et al (2018) '*Palliative and end of life care of people with diabetes: Issues, challenges and strategies*', the study advocates for the integration of early palliative care and proactive end-of-life planning for patients with diabetes. It emphasizes the importance of early management to enhance comfort and quality of life while reducing the disease burden and unnecessary treatments. Tools such as the Gold Standard Framework and diabetes-related indicators can assist in identifying high-risk individuals. Furthermore, skilled conversations are essential for developing appropriate care plans tailored to individual needs.

Elizabeth A. Beverly et al (2016) '*The Psychosocial Challenges and Care of Older Adults with Diabetes: "Can't Do What I Used To Do; Can't Be Who I Once Was"*', this illustrated that the prevalence of diabetes is increasing globally, significantly impacting older adults who face unique psychosocial and medical challenges. These challenges encompass psychological, social, and medical factors. Timely identification and intervention are crucial for effective diabetes care. This review summarizes current literature, research findings, and clinical recommendations for providing psychosocial care to older adults with diabetes.

2.2.2 National context

Suraj Maiti et al (2023) '*Socioeconomic inequality in awareness, treatment and control of diabetes among adults in India: Evidence from National Family Health Survey of India (NFHS), 2019–2021*', this study estimates the prevalence and access to treatment for diabetes among adults in India, using data from the National Family Health Survey (NFHS-5) conducted between 2019 and 2021. Diabetic individuals were defined as those with a random blood glucose level above 140 mg/dL, those taking diabetes medication, or those diagnosed with diabetes by a doctor. The study found that the prevalence of diabetes was 16.1%. Among these individuals, 27.5% were aware of their condition, 21.5% were receiving treatment, and only 7% had their diabetes under control. The adjusted rates of awareness varied across different states, showing lower rates among poorer and less educated individuals, males, rural residents, and socially disadvantaged groups. Furthermore, the wealthiest fifth of individuals with diabetes were more likely to be aware of their condition, receive treatment, and have their diabetes under control compared to the

poorest fifth. The concentration indices for access to treatment were 0.089, 0.083, and 0.017, respectively. Targeted interventions and management strategies are necessary to reduce the diabetes burden in India.

Mala Kapur Shankardass (2021) '*Gerontological Concerns and Responses in India*', this book examines the issues and challenges related to gerontology that affect the quality of life of older adults in India. It incorporates insights from various fields, including sociology, anthropology, psychology, health sciences, social work, demography, gender studies, and legal perspectives. The book highlights the expanding field of gerontology and the specific concerns faced by older individuals, particularly in diverse contexts such as tribal communities, LGBT groups, and conflict zones. Additionally, it addresses gender-related aspects in healthcare, policy responses, and strategies aimed at empowering older adults. This book serves as a valuable resource for researchers, academics, practitioners, and policymakers in the fields of gerontology, demography, and sociology.

Naushira Pandya et al (2020) '*Challenges and Strategies for Managing Diabetes in the Elderly in Long-Term Care Settings*' , Research has shown that diabetes significantly impacts many patients in long-term care (LTC) settings, leading to complications associated with multimorbidity, disability, dependency on caregivers, and geriatric syndromes. This population includes individuals in short-term rehabilitation, long-term residency, and palliative care. An individualized approach is essential, taking into account clinical complexity, the trajectory of diabetes, and patients' preferences. Challenges in this context include varying staff competencies, inconsistent communication among interdisciplinary teams, complex medication regimens, and poorly executed transitions of care.

Ajay Kumar et al (2020) studied on '*Indian Reality of Managing Type 2 Diabetes: An Expert Review of Global and National Guidelines for Optimum Insulin Use*', this expert review examines the recommendations for insulin therapy for individuals with type 2 diabetes mellitus (T2DM) both in India and worldwide. It highlights the importance of a patient-centered approach, taking into account glycemic levels, psychosocial factors, and the practicalities of managing T2DM. Due to high carbohydrate diets and post-meal blood sugar spikes, co-formulated and premixed insulin are preferred. Insulin analogs are considered safer and provide more

flexibility in dosing, while faster-acting insulin apart offers improved control of postprandial glucose levels and greater dosing flexibility.

Sanjay Kalra et al (2018) '*Emotional and Psychological Needs of People with Diabetes*' Diabetes is a chronic metabolic disorder that significantly impacts individuals' physical, social, and mental well-being. This review underscores the importance of addressing psychosocial issues in diabetes patients, as these problems can adversely affect their social interactions and overall quality of life if not properly managed. The study demonstrates that unaddressed psychosocial challenges can create psychological barriers that hinder effective self-care and diabetes management. By integrating psychosocial support into treatment interventions, healthcare providers can facilitate better emotional and psychological outcomes for patients. Key stakeholders, including diabetologists, mental health professionals, and clinical psychologists, play a vital role in identifying and addressing these psychosocial needs. Early identification and support for patients experiencing psychosocial issues can enhance their ability to self-manage diabetes, ultimately leading to improved health outcomes. This review emphasizes the necessity of a holistic approach in diabetes care, recognizing that emotional needs are as critical as physical health needs in the successful management of the disease.

Tattwamasi Paltasingh (2015) '*Theories and Concepts in Gerontology: Disciplines and Discourses*' , this study explored the phenomenon of population aging, driven by factors like increased life expectancy, reduced infant mortality, medical advancements, and improved nutrition and public health. Aging is influenced by both environmental and genetic factors, and understanding these is essential. Various disciplines including biology, sociology, psychology, economics, and feminism have analyzed aging theories, highlighting the need for interdisciplinary approaches that integrate biological, psychological, and social perspectives for promoting healthy aging. There have been critiques of different theoretical perspectives: psychological, biological, social, political, feminist, and economic, emphasizing their limitations in addressing the complexities of constructive aging. Special attention is given to feminist theory and gender-specific issues. A key focus is on social gerontology and the importance of research on positive aging. The chapter concludes by summarizing the discussed issues and advocating for policies

that support active and positive aging, stressing the role of academics in influencing effective implementation.

2.2.3 Regional context

Dr Ravi Sankar Erukulapati (2024) '*Diabetes Care in the Elderly: A Pragmatic Approach*', this study has illustrated that the Diabetes care in the elderly faces challenges due to increasing prevalence, multiple comorbidities, and dependence. Healthcare providers must consider the individual's overall health, risk for low blood sugar, affordability, and projected survival period when prescribing medication and devising individual care pathways. Screening for dementia and depression during clinic visits can aid in detection, referrals, and management. Setting realistic glucose targets and using medication with low risk of low blood glucose is crucial. Blood glucose target values may need to be relaxed without being overambitious, while educating patients on avoiding dehydration and preventing hyperglycemic complications. Regular screening for complications like neuropathy, nephropathy, retinopathy, and heart disease, as well as hypertension and high cholesterol, is essential. Foot care is often neglected in elderly diabetics, leading to ulcers and amputations. Education and prevention of foot problems are crucial. Old Age Homes should train staff on diabetes care, including low blood sugar treatment and insulin administration. Palliative care should focus on comfort, preventing distressing symptoms, and preserving quality of life. Telemedicine portals can help elderly diabetics during COVID-19 complications. Overcoming challenges in diabetes care in the elderly requires blending common sense, realism, and compassion with medical science.

Parth Shastri (2022) '*Diabetics more than double in Gujarat in four years*' A recent report has shown that the prevalence of high and very high random blood glucose (RBG) among women in Gujarat has nearly tripled, while the number of diabetic men has more than doubled. Gujarat ranks fourth for high RBG among women and fifth among men, with 12.4% of women and 14.4% of men reporting elevated levels. Kerala has the highest percentage of diabetic women at 21.4%, followed by Tamil Nadu at 18.6% and Andhra Pradesh at 17.4%. In men, Gujarat is preceded by Kerala, where 23.6% of males are diabetic. Dr. Tiven Marwah, an endocrinologist, noted that diabetes is primarily a lifestyle disorder, with factors such

as stress and hormonal imbalances contributing to its increase. The number of Gujaratis experiencing high blood pressure has also risen, with 20.5% of women and 20.3% of men reporting hypertension. Obesity rates have remained relatively stable, with 22.7% of women and 20% of men classified as obese based on their BMI.

Bhoomika G. Brahmbhatt et al (2020) '*Prevalence of fracture risk among middle-aged and elderly population of Gujarat, India: an observational study*', the study aimed to estimate fracture risk among middle-aged and elderly persons in Gujarat and to determine the prevalence and impact of clinical risk factors (CRF) on fracture risk. It included 500 participants aged 40 to 80 years, of whom 56.8% were male and 43.2% female. Researchers used the Fracture Risk Assessment Tool (FRAX) to calculate the 10-year probability of major osteoporotic fractures (MOF) and hip fractures (HF). Results indicated that 22% of participants fell within the treatment zone and 78% within the safety zone for HF risk; for MOF risk, 24% were in the treatment zone. Women showed higher fracture risks than men for both HF and MOF. The study concluded that FRAX effectively identifies fracture risk, with a greater proportion of participants falling in the safety zone than in the treatment zone.

Rohit Sane et al (2020) '*Role of comprehensive diabetes care in known diabetes patients from Gujarat state*', this study has been explored that the Diabetes mellitus (DM) is a widespread global health issue, with a prevalence rate exceeding 8% in Gujarat. The CDC therapy, an Ayurvedic approach based on Panchkarma, has demonstrated effectiveness in managing DM. A retrospective study conducted at Madhavbaug clinics in Gujarat showed that among 98 patients, the proportion of those with controlled DM increased, while those with uncontrolled DM decreased by week 12. Additionally, the mean HbA1c level dropped from 8.55 to 7.15 by week 12, and other anthropometric and cardiorespiratory parameters significantly improved following 12 weeks of CDC therapy. The study concludes that CDC therapy may be an effective approach for managing type 2 DM.

Sandul Yasobant et al (2017) '*Improving knowledge about diabetes among diabetic population of Gujarat, India: A community based Interventional study*', this study has mentioned that Diabetes mellitus (DM) is a significant global health concern, with India's diabetic population projected to reach 80 million by 2025. This

study aims to assess baseline knowledge of diabetes among patients with Type 2 diabetes in Gujarat, India. A pilot questionnaire was administered to 713 and 577 patients across three districts, gathering data on diabetes causes, symptoms, complications, and management practices. The findings indicated limited baseline knowledge about diabetes, but an intervention program led to notable improvements in both knowledge and practices. The study concludes that community-based intervention programs can enhance knowledge and attitudes towards diabetes management. This research underscores the importance of health education programs in addressing the diabetes epidemic.

NV Mehta et al (2016) '*Diabetes knowledge and self-efficacy among rural women in Gujarat, India*', this study has overview that the incidence of Type II diabetes has risen sharply among rural women in India, especially in states such as Gujarat, Karnataka, Tamil Nadu, and Uttar Pradesh. This study employs the Health Belief Model to assess whether increased diabetes awareness enhances self-efficacy among diabetic women in two rural villages in Gujarat. A cross-sectional study was conducted involving 126 women with diabetes from Rajpur and Valam, Gujarat. The results revealed a significant positive correlation between diabetes knowledge and self-efficacy. Future diabetes education interventions should prioritize increasing knowledge among rural women, specifically addressing gaps in understanding the causes of diabetes, its complications, and treatment options. Tailored educational programs for rural women will be essential to improve their self-efficacy in managing diabetes.

2.3 Assessing Family Support, Institutional Care, and Services for Elderly Persons Living with Diabetes

Effective diabetes management for elderly persons relies heavily on the integration of family support, institutional care, and social services. Social work and support systems play a critical role in providing comprehensive health management, emotional counseling, advocacy, and education on self-care. Social workers act as vital coordinators, bridging the gap between healthcare providers and patients, ensuring consistent care, and addressing logistical barriers such as transportation and insurance. For individuals from lower socioeconomic backgrounds, they advocate for essential resources like affordable medications and nutritious food. Family support

serves as a cornerstone of diabetes care, offering emotional encouragement and practical help with daily tasks. However, caregiving can be stressful, highlighting the need for training programs to equip caregivers with skills for managing diabetes complications. Institutional care, including nursing homes and assisted living facilities, offers specialized services such as medical monitoring, diabetes education, and chronic disease management programs. These services focus on maintaining glycemic control, adherence to treatment plans, and preventive care, significantly improving the quality of life for residents. Social workers also address social determinants of health by connecting elderly persons with community resources, promoting independence through home health services, and arranging for personal care aides. Their role extends to facilitating support groups, providing emotional and psychological support, and reducing feelings of isolation among elderly diabetics. Through advocacy, education, and resource coordination, social workers empower elderly persons to navigate the healthcare system and achieve better health outcomes. This comprehensive, multi-dimensional approach enhances overall well-being and ensures a higher quality of life for elderly persons living with diabetes.

2.3.1 Global context

Haijing Zan et al (2024) '*Factors associated with quality of life among elderly patients with type 2 diabetes mellitus: the role of family caregivers*', this study examines the relationship between caregivers' sense of coherence, caregiver competence, and the quality of life of patients with Type 2 diabetes mellitus (T2DM). The research included 392 caregiver-patient pairs from two hospitals in Jinzhou City, Liaoning Province, and utilized various questionnaires and statistical analyses. The findings indicated that the average quality of life score for T2DM patients was 61.14. There was a negative correlation between this score and the caregivers' sense of coherence, while a positive correlation was found with caregiver competence. Key predictors of quality of life included age, disease duration, daily living activities, sense of coherence, and caregiver competence scores. Higher levels of sense of coherence and caregiver competence among family caregivers were linked to improved quality of life for patients. Additionally, better quality of life was associated with younger age, shorter disease duration, and lower levels of dependence.

Satoshi Ida et al (2022) '*Social Participation Benefit in Elderly Patients with*

Diabetes: A Scoping Review', this scoping review aimed to assess the level of social participation among elderly patients with diabetes and the factors associated with it. The study utilized various databases to collect data. The results indicated that the average age of the participants was 67 years, with 42% being women. Social participation levels ranged from 13% to 36%. Factors contributing to social participation included self-management of treatment, lifestyle choices, mobility, subjective health assessments, and quality of life. Further research is needed to evaluate the causal relationships, mechanisms, and connections between social participation and other outcomes in elderly patients with diabetes.

J. Speight et al (2020) '*Assessing the impact of diabetes on quality of life: what have the past 25 years taught us*', Over the past 25 years, the importance of evaluating the impact of diabetes on quality of life has been acknowledged, yet challenges persist. There is little agreement on how to define quality of life because it is complex and subjective. While comprehensive measures can increase the burden on respondents, shorter questionnaires may fail to capture all relevant aspects. This lack of clarity may explain why diabetes-specific quality of life is not consistently assessed in research or clinical practice. Often, there is a disconnect between the concept being examined and the measurement used, leading to misinterpretation of data as evaluating diabetes-specific quality of life when related concepts have been assessed instead. Immediate attention is needed to enhance the lives of individuals with diabetes.

Rievu Agiri (2019) '*Social Workers and Early Intervention with Diabetic Clients*', The main goal of this study was to investigate the role of social workers in promoting early interventions for clients with Type 2 diabetes in the USA using a conceptual framework. The results indicated that early interventions are rarely provided in social work services for individuals with Type 2 diabetes. These findings could positively impact social change by providing valuable information to social workers, nurses, and other health professionals seeking ways to reduce the increasing risks of diabetes complications and exacerbation.

Ralph Hampson et al (2019) '*Diabetes: The social work role in Australia*', the study highlight that the role of social workers in this field is examined through current studies and case examples that highlight their contributions when working with individuals with diabetes who have complex needs. The conclusion emphasizes

that social workers are essential members of the healthcare team. They provide a psychosocial perspective that helps the team better understand each individual's situation by offering support, challenges, and facilitation. Additionally, social workers collaborate with individuals and their families to ensure access to evidence-based therapeutic and functional services that enhance the quality of life for people with diabetes.

Ummuhan Pinar Kaya et al (2019) '*Association between Social Support and Diabetes Burden among Elderly Patients with Diabetes: A Cross-Sectional Study from Turkey*', this study aimed to evaluate the relationship between social support and disease burden among elderly patients with diabetes in Turkey. The research included 271 participants from three state hospitals in Balikesir, Turkey, who visited the internal medicine and diabetes clinics between April and November 2017. The average age of the participants was 72 years, with a majority being female and living with their families. The mean score on the Elderly Disease Burden Scale (EDBS) was 35.21 ± 6.94 , while the mean score on the Multidimensional Scale of Perceived Social Support (MSPSS) was 67.81 ± 17.33 . A significant negative correlation was observed between the total scores of both assessment tools, indicating that higher diabetes burden was associated with lower levels of social support. The study concluded that, in Balikesir, Turkey, elderly patients with diabetes primarily received social support from their families, and their diabetes burden decreased as social support levels increased.

Deborah J. Wiebe et al (2016) '*The Social Context of Managing Diabetes across the Life Span*', Research indicates that diabetes self-management is essential for maintaining quality of life and preventing long-term complications. Social relationships significantly impact the management of both type 1 and type 2 diabetes, involving family, peers, romantic partners, and healthcare providers. These relationships evolve over a person's lifespan, particularly during childhood and adolescence, emerging adulthood, and later adulthood and aging. Despite differences in social contexts, the findings consistently highlight factors that either promote or hinder effective diabetes management. Support and involvement from family members are linked to positive diabetes outcomes when characterized by warmth, collaboration, and acceptance. Conversely, lack of involvement or interactions marked by conflict and criticism are associated with negative outcomes.

Furthermore, intrusive involvement can hinder diabetes management, especially when it affects a person's self-efficacy.

2.3.2 National context

Gautam Makwana (2022) '*Early Intervention with Elderly Diabetics by Social Workers*', this review study has summarized Diabetes mellitus has indeed become a significant public health issue among the elderly globally, and the role of social work in addressing this is increasingly crucial. In both developed and developing countries, the prevalence of diabetes is on the rise due to factors like aging populations, lifestyle changes, and increased life expectancy. Elderly persons often face complex challenges related to diabetes management, which requires a comprehensive approach beyond just medical treatment. This is where social workers play a critical role. Social work provides holistic treatment by integrating health, social, and emotional support services tailored to individual needs. Social workers conduct psychosocial assessments that consider the full range of a person's social, emotional, and physical health needs, helping healthcare providers to create more tailored diabetes care plans. Additionally, social workers are skilled in navigating complex health and social care systems to connect elderly persons with necessary resources, such as home care services, transportation to medical appointments, and financial assistance for medications. During times of transition such as moving to assisted living facilities or long-term care homes social workers offer emotional and logistical support to ease the adjustment process. In their advocacy role, social workers ensure that elderly persons' voices are heard and their needs addressed, which can be particularly important for those with limited mobility or cognitive challenges. Counseling and psychosocial support provided by social workers also help elderly clients and their families manage the psychological impact of chronic disease, reducing feelings of isolation, anxiety, and depression often associated with diabetes. In summary, social work professionals contribute significantly to the well-being of elderly persons with diabetes by addressing both the physical and emotional aspects of care, ensuring they receive the support needed to manage their condition and maintain their quality of life

Ramya. M. S et al (2022) et al '*Psychological Well-Being and Quality Of Life among Patients with Type 2 Diabetes Mellitus*', Diabetes represents a substantial disease burden in India, with the International Diabetes Federation (IDF) projecting

that by 2030, the country could account for 101.2 million of the world's 552 million diabetes cases. A study examining the relationship between psychological well-being and quality of life among Type 2 diabetes patients in Palakkad District revealed a notable difference in psychological well-being between male and female patients, though it found no significant difference in their overall quality of life. Nonetheless, the study identified a meaningful correlation between psychological well-being and quality of life among Type 2 diabetes patients.

Saizampuii Sailo et al (2019) '*Social Network, Social Support And Life Satisfaction Among Elderly in Aizawl city*', this study highlights the multifaceted challenges faced by elderly persons in Aizawl, where aging brings both physical and psycho-social difficulties. These challenges include heightened stress, low self-esteem, a diminished sense of responsibility, cognitive impairments like poor memory, and a profound sense of loneliness. The root causes of these issues are both physical, such as illness and bodily weakness, and psychological, reflecting a holistic struggle associated with aging. To navigate these difficulties, elderly persons in Aizawl rely heavily on emotional coping mechanisms, often rooted in resilience and personal agency, and they actively seek social support. While modernization has eroded some traditional values that once ensured high social status for the elderly in Mizoram, strong familial and secondary social networks remain intact, providing essential emotional and practical support. This supportive network appears to be sufficiently robust to negate the need for institutionalized elder care facilities, as there is no indication of nursing homes or elder care homes emerging in Aizawl. This dynamic reveals an interesting balance where, despite shifts in societal structures, the elderly still find substantial support within their community, mitigating the impacts of modernization on their social standing and well-being.

2.3.3 Regional context

Bansi Trivedi (2023) '*Quality of life among geriatric population residing in Bhavnagar city, Gujarat, Western India*' , A study conducted in Bhavnagar City aimed to evaluate the quality of life (QOL) among 260 individuals aged 60 and above, utilizing the WHO QOL BREF-25 scale and the General Health Questionnaire-12. The results indicated that physical health was superior among Muslim participants, individuals under the age of 75, and those without substance

abuse or co-morbid conditions. Furthermore, elderly persons from higher socio-economic backgrounds reported better social relationships. Scores in the environmental domain were significantly higher among males and elderly persons without co-morbidities. This study highlights the critical role of active aging interventions in enhancing quality of life.

Gayatri S. Desai et al (2023) '*Health profiling of elderly in Gujarat: evidences from longitudinal ageing study in India*', this study investigates the health profile and factors associated with health issues among the elderly in Gujarat, utilizing data from the Longitudinal Ageing Study in India (LASI) Wave-1. The results indicate that 51.3% of the elderly population experiences chronic diseases, with hypertension being the most prevalent condition. The risk of developing chronic diseases escalates with age, and alcohol consumption further exacerbates this risk. Furthermore, education, employment status, and physical activity significantly contribute to a reduced prevalence of chronic diseases. These findings can inform and enhance national preventive and healthcare programs targeting the elderly population in Gujarat and address the specific health challenges they face.

Kailash Nagar (2021) '*Understanding Patients Experiences Living with Diabetes Mellitus: A Qualitative Study, Gujarat, India*', the study identified diabetes mellitus as a significant public health concern in India, impacting approximately 72.9 million adults over the past four years. This condition is primarily linked to unhealthy lifestyles and poor dietary habits. Various factors including personal, familial, social, and economic circumstances affect the management of the disease. The objective of this study is to evaluate the quality of life and experiences of individuals living with diabetes mellitus, with particular attention to how the progressive stages of the disease influence all dimensions of their well-being.

Venu Shah (2017) '*Quality of life among elderly population residing in urban field practice area of a tertiary care institute of Ahmedabad city, Gujarat*', A community-based cross-sectional study was conducted in Ahmedabad, Gujarat, to assess the quality of life (QOL) among elderly persons. The study found that the average age of participants was 65.8 years, with most being married and living with their spouses. Common health issues included joint pain, cataracts, hypertension, diabetes mellitus, and dental problems. The QOL assessment revealed that none of the elderly participants reported a poor quality of life; 56% rated their QOL as 'good', and 50.8% considered it 'excellent' Males had significantly better QOL in

four domains, while educated and married individuals living with their spouses reported better scores in the physical, environmental, and psychological domains. Overall, the quality of life was rated as good to excellent.

Donalds Christian et al (2017) '*Quality of life among elderly population residing in urban field practice area of a tertiary care institute of Ahmedabad city, Gujarat*', a community-based cross-sectional study conducted in Ahmedabad, Gujarat, found that the quality of life (QOL) among elderly persons is generally rated as good to excellent. The study revealed that most elderly participants are married and have a living spouse. Common health issues reported included joint pain, cataracts, hypertension, diabetes mellitus, and dental problems. The QOL assessment indicated that none of the elderly persons had a poor quality of life; instead, 56% rated their QOL as 'good', while 50.8% rated it as 'excellent'. Males demonstrated significantly better QOL in four specific areas, and those who were educated and married, living with their spouses, also reported higher QOL. Social factors such as education, marital status, and gender significantly influence the perceived quality of life among respondents.

Jain Naresh et al (2012) '*Main Life Concerns of Elderly in Urban Slums of Surat City, South Gujarat, India*', the principles of the United Nations emphasize the independence, participation, care, self-fulfillment, and dignity of older individuals. A study was conducted with elderly people aged 60 and above to identify their primary life concerns. The findings revealed that many enter old age after experiencing a lifetime of poverty, inadequate nutrition, and strenuous physical labor. Loneliness emerged as the most significant concern, followed by issues related to livelihood, housing, and recreation. More than 90% of respondents expressed worries about health problems and accessing healthcare due to poverty and poor health. Therefore, governments should focus on improving social security programs, providing tailored recreational facilities, and fostering political will to address the health issues and life concerns of the elderly.

2.4 Evaluating the Quality of Life among Elderly Persons Living with Diabetes

Assessing the quality of life for elderly persons with diabetes is essential, as the condition profoundly affects their physical, mental, and social well-being.

Diabetes-related complications, such as neuropathy, retinopathy, and cardiovascular diseases, can impair mobility, reduce independence, and limit participation in daily activities. These physical challenges are compounded by mental health concerns, including anxiety, depression, and cognitive decline, which hinder effective disease management. Social issues, such as isolation, inadequate support networks, and loneliness, further diminish their emotional resilience and overall quality of life. To address these challenges, tailored interventions are critical. Encouraging regular physical activity, balanced nutrition, and participation in diabetes education programs enhances self-management and physical health. Psychosocial support through counseling, peer support groups, and community engagement helps alleviate emotional distress and build social connections. Regular medical check-ups and accessible healthcare services ensure early detection and timely management of complications, reducing the disease's impact. A holistic and integrated approach that addresses the physical, mental, and social aspects of diabetes care empowers elderly persons to lead healthier, more fulfilling lives. By prioritizing these measures, healthcare systems can foster better health outcomes and improve the overall well-being of elderly persons living with diabetes.

2.4.1 Global context

López Revuelta, R., Kleefstra, N., et al. (2018) conducted study on '*Health-Related Quality of Life and Mortality in Elderly Patients with Type 2 Diabetes Diabetes Care*', this study focuses on the relationship between poor health-related quality of life (HRQoL) and increased mortality rates in elderly patients with type 2 diabetes. It indicates that poor physical functioning, pain, and mental well-being among elderly diabetics are strongly correlated with higher mortality. The authors argue that improving integrated care, which includes managing complications like neuropathy and cardiovascular diseases, is critical to enhancing long-term outcomes and improving the HRQoL of elderly diabetics. Furthermore, mental health plays an important role, and interventions targeting both mental and physical aspects are necessary. This approach could reduce mortality and improve overall health outcomes.

Ciechanowski, P., Katon, W., et al. (2017) studied on '*Psychosocial Factors and Diabetes Quality of Life in Elderly Populations Diabetes Care*', this article

provides insights into the psychosocial challenges faced by elderly persons living with diabetes. It highlights the role of depression and social isolation as major determinants of reduced HRQoL. Elderly people with diabetes often experience higher levels of depression, which exacerbates the disease's physical symptoms. The study stresses that addressing mental health issues and providing social support could significantly improve both physical and mental health outcomes, advocating for a more holistic care approach in managing elderly diabetics.

Redekop, K., Van der Does, F., et al. (2020) studied on '*The Impact of Diabetes on Health-Related Quality of Life in Elderly People Journal of Diabetes Research*', this study highlights the multidimensional impact of diabetes on HRQoL, particularly on physical functioning, social engagement, and psychological well-being. Complications such as neuropathy, retinopathy, and cardiovascular diseases significantly lower HRQoL in elderly diabetics. The research calls for the integration of medical care with psychosocial interventions and comprehensive management programs to address the multifaceted needs of elderly patients. The study emphasizes that such interventions could substantially improve long-term well-being and prevents complications.

Zhao, X., Smith, L., et al. (2021) studied on '*Global Perspectives on Diabetes and Elderly Health: A Systematic Review Global Health Action*', this systematic review presents a global comparison of diabetes care and its impact on the HRQoL of elderly people. It underscores the disparities in healthcare access and quality of care across different countries. Elderly persons in low- and middle-income countries experience significantly lower HRQoL due to poorer access to healthcare services, limited medications, and lack of diabetes management education. The review calls for global health policy reform to address these gaps, particularly by improving healthcare access, providing tailored interventions for elderly diabetics, and fostering mental health awareness in diabetes management programs.

Miller, A., Patel, H., et al. (2019) studied on '*Diabetes and Mental Health: A Review of the Elderly Population The Lancet Diabetes & Endocrinology*', this review examines the mental health implications of diabetes in the elderly population. It finds that depression and anxiety are common in elderly diabetics and severely hinder their quality of life. The study advocates for integrating mental health care

with diabetes management programs to address the psychosocial burden of diabetes. The review also highlights the importance of family support, community engagement, and reducing social stigma to improve HRQoL and overall health outcomes for elderly people with diabetes.

2.4.2 National context

Gupta, P., Bhandari, M., et al. (2020) studied on ‘Quality of Life of Elderly with Diabetes in India Indian Journal of Medical Research’, this study assesses the socio-economic factors influencing the quality of life of elderly diabetics in India. It identifies that elderly persons in rural India experience lower HRQoL compared to their urban counterparts due to limited access to healthcare, financial constraints, and lack of awareness about diabetes management. The study calls for improving healthcare infrastructure, enhancing public health education, and promoting early diagnosis to improve diabetes care for elderly persons in rural areas.

Ravi, M., Yadav, S., et al. (2018) studied on ‘Challenges in Diabetes Management for the Elderly in India Journal of Diabetes & Metabolic Disorders’, this review highlights the barriers to effective diabetes management in elderly people in India, including inadequate healthcare infrastructure, financial constraints, and lack of awareness. Elderly diabetics, especially in rural areas, struggle with managing their condition due to high medication costs and insufficient access to healthcare professionals. The study emphasizes the need for affordable healthcare and education programs tailored to the elderly to improve HRQoL and diabetes outcomes.

Kumar, A., Sharma, R., et al. (2021) studied on ‘*Impact of Diabetes on Mental and Physical Well-being of Elderly in India Asian Journal of Diabetes Nursing*’, this research explores the combined physical and mental health burdens of diabetes on elderly people in India. It shows that common complications such as neuropathy, cardiovascular disease, and poor glycemic control significantly deteriorate both physical and mental health. The study recommends integrated care models that address both medical and psychosocial factors to enhance HRQoL in elderly diabetics.

Singh, B., Sharma, D., et al. (2020) studied on ‘*Socioeconomic Determinants of Diabetes in Elderly Populations in India Indian Journal of Public Health*’, this article examines how socioeconomic status influences diabetes outcomes in elderly

persons in India. It finds that those from lower-income groups or rural areas often lack access to the necessary care, leading to worse health outcomes and lower HRQoL. The study suggests that healthcare policy reforms and better access to medications and healthcare services could improve diabetes management and HRQoL for elderly Indians.

Patel, N., Desai, S., et al. (2019) studied on '*Community-based Health Education and Quality of Life in Elderly Diabetic Patients in India International Journal of Diabetes and Clinical Research*', this research demonstrates that community-based interventions, such as diabetes education programs and healthcare workshops, can improve the quality of life of elderly diabetics in India. These programs help raise awareness and improve disease management, leading to better physical health and mental well-being. The study advocates for scaling such interventions across rural and urban regions to enhance the HRQoL of elderly diabetics nationwide.

2.4.3 Regional context

Mehta, P., Desai, V., et al. (2021) studied on '*Impact of Rural Healthcare on Elderly Diabetics in Gujarat Journal of Rural Health in India*', this article explores how limited healthcare access in rural Gujarat negatively impacts the quality of life of elderly diabetics. It identifies that elderly persons in rural areas experience worse diabetes outcomes and higher rates of complications due to insufficient healthcare resources. The study advocates for improving rural healthcare infrastructure and expanding diabetes management programs to address these challenges.

Joshi, V., Patel, M., et al. (2020) studied on '*Improving the Quality of Life for Elderly Diabetics: Case Study from Gujarat International Journal of Diabetes Care*', this case study evaluates the effectiveness of a diabetes management intervention in Gujarat, where increased access to healthcare services and diabetes education led to improvements in HRQoL for elderly diabetics. The study found significant enhancements in both physical health and mental well-being as a result of the intervention, suggesting that similar programs should be scaled up in Gujarat and other regions.

Patel, R., Shah, A., et al. (2020) studied on '*Diabetes and Elderly Care: Insights from Gujarat Journal of Gujarat Medical Society*', this review explores the healthcare challenges faced by elderly diabetics in rural Gujarat, where limited

access to healthcare services contributes to poor diabetes management and low HRQoL. It emphasizes the need for community-based care and better infrastructure to support elderly diabetics. The study calls for a multidisciplinary approach that includes educational outreach and social support to improve HRQoL.

Sharma, S., Bhatt, M., et al. (2019) studied on 'Diabetes and Elderly Well-being in Gujarat: A Regional Perspective Indian Journal of Diabetes Research', this study assesses the disparities in diabetes care within Gujarat, with a focus on the urban-rural divide. It highlights that elderly persons in rural areas face worse health outcomes due to limited access to specialized care. The study recommends strengthening healthcare infrastructure and expanding diabetes education to improve the HRQoL of elderly diabetics, especially in underserved regions of Gujarat.

Singh, R., Parmar, S., et al. (2018) studied on 'Social Support and Diabetes Management Among Elderly in Gujarat Gujarat Journal of Health', this study investigates the role of social support in the management of diabetes in elderly persons in Gujarat. It finds that elderly diabetics with strong family and community support report better outcomes in managing their condition and experience improved HRQoL. The research highlights the importance of family involvement and community-based interventions to address the complex needs of elderly diabetics.

2.5 The Relationship between Geriatric Care and Quality of Life among Elderly Persons Living with Diabetes

Gerontological social work is a specialized field dedicated to addressing the unique challenges faced by the elderly, particularly those with diabetes. This approach emphasizes holistic care, encompassing not only medical management but also emotional and psychological support. Social workers provide essential advocacy, helping clients access resources like diabetes management programs and nutritional guidance. They empower elderly persons through education on self-management techniques, such as blood sugar monitoring and diet maintenance. The quality of life (QoL) for elderly persons with diabetes is influenced by various factors, including physical health, psychological state, and social relationships. A study focusing on QoL in this demographic aims to assess the roles of geriatric care and geriatric social work, exploring their impact on QoL. Utilizing a mixed-method approach, the study will analyze the relationship between variables such as access to geriatric care, social support services, diabetes severity, and overall quality of life.

Key findings are expected to demonstrate that improved access to care and social support can enhance emotional well-being and QoL. These insights could guide healthcare policymakers toward integrated geriatric care systems and holistic diabetes management strategies.

2.5.1 Global context

Tukino (2023) '*The Challenges and Strategies of Social Workers in the Care of the Elderly with Chronic Illness*', this research highlights the multifaceted challenges social workers encounter when supporting older adults with chronic diseases, underlining both systemic and interpersonal difficulties. The findings reveal that issues like medical complexity, social isolation, mobility limitations, and financial constraints significantly affect care quality. Social workers face additional obstacles in coordinating care across multiple health services, often necessitating strong communication and organizational skills. To counter these challenges, the study emphasizes the effectiveness of strategies like collaborative care teams, intensive emotional support, and educational initiatives. These approaches not only enhance the quality of life for elderly patients but also provide crucial assistance to their families. The research underscores the vital role of social workers in navigating the intricate needs of older adults with chronic conditions, advocating for strengthened resources and support networks to better equip social workers in this essential field.

Julie Abraham et al (2022) '*Changing social dynamics and older population: A qualitative analysis of the quality of life among older adults in Kerala*', The study highlights Kerala's demographic shift, with a significant proportion of its population now in the older age bracket, creating an urgent need to address various challenges associated with aging. As Kerala advances in socio-economic indicators within the context of a low middle-income country, older adults' Quality of Life (QoL) emerges as a crucial area of focus, impacted by both positive and negative factors. The themes identified financial security and insecurity, psychological well-being, lifestyle choices, health-care access, and social engagement provide a nuanced understanding of the specific influences on QoL among Kerala's older population. This aging trend introduces the challenge of balancing resource allocation for healthcare, social support, and economic stability, as Kerala navigates the broader implications of an

aging society. The study suggests that the QoL for older adults in Kerala, previously rated as ‘fair to good’, could shift depending on how these emerging factors are managed. This also implies that as societal values and healthcare needs evolve in Kerala, the strategies for maintaining or improving QoL for older adults may need adaptation, especially considering the state’s limited resources and increasing demands.

Manizheh Younesi Kafshgiri et al (2017) ‘*A comparative study of the quality of life of the elderly between the members of the supportive community and the non-members*’, this study investigates the comparative quality of life (QoL) of elderly persons who are members of supportive communities versus those who are not. It offers valuable insights into the role of social support networks in enhancing the well-being of elderly populations, particularly those with chronic conditions like diabetes. The findings contribute to our understanding of how community membership and social support can significantly improve the QoL of older adults. The evidence underscores the importance of fostering supportive environments to promote better health outcomes among older populations, especially for those managing chronic conditions.

Victoria M. Rizzo et al (2014) ‘*Cost-Effectiveness of Social Work Services in Aging: An Updated Systematic Review*’, this study examines the effects of social work interventions on quality of life (QOL) and cost outcomes in four areas: health, mental health, geriatric evaluation and management, and caregiving. A systematic review of 464 articles revealed that 71% of the studies reported significant improvements in QOL. Among these, 21 studies included cost outcomes, with 71.4% showing significant cost savings. The study concludes that social work interventions in aging have a positive impact on both QOL and cost outcomes, highlighting their potential applications in social work practice and research.

2.5.2 National context

Renaldo Stanley Rajkumar et al (2023) ‘*Social Work Practice with Elderly*’ this study aims to highlight the significant factors of inclusion and exclusion faced by the elderly population worldwide and underscores the crucial role of social work in addressing these challenges. Geriatric social work, a specialized branch within the

field, focuses on the vulnerabilities and social insecurities experienced by older adults. Social workers are essential in integrating the value of the elderly into the educational curricula for younger generations, equipping them with the skills to address crisis situations independently and prevent elder abuse. Additionally, this paper discusses the necessity, significance, and scope of geriatric social work, and it offers recommendations to enhance the quality of life and well-being of the elderly through effective social work practices.

S. Siva Raju et al (2021) '*Gerontological Social Work in India: The Emerging Trends*', the discourse on aging recognizes the necessity for practitioners who are competent in aging and for dynamic interventions. However, there is insufficient focus on Gerontological Social Work in India. Current interventions primarily concentrate on organizing and empowering older adults for their development and well-being. This paper examines the context of Gerontological Social Work in India, including its role, approaches, concerns, challenges, and the potential for developing interventions in elder care. It also highlights selected best practices adopted by various agencies in India and discusses solutions to enhance the competencies of Gerontological Social Work professionals in addressing the challenges of population aging in developing countries.

Anitha Rayirala et al (2016) '*A cross sectional comparative study assessing the quality of life in elderly living in old age homes and community and association of various factors with QOL*', the study analyzed the quality of life (QOL) of elderly persons in nursing homes and those in the community. It found no significant difference in QOL, suggesting that the overall perceived quality of life may be similar for both groups. Socio-demographic factors, such as age, gender, income, and education, played a significant role in determining QOL. Spouse factors, such as marital status, relationship quality, and support from spouses, also influenced QOL. Engagement in habits and hobbies was also linked to QOL. Policy and care approaches should consider socio-demographic factors and promote programs that encourage social interaction, physical activities, and hobbies, regardless of living arrangements. Enhancing support systems for spouses and implementing holistic care models may further improve QOL for elderly persons, especially those living in nursing homes. Further research may focus on these variables to develop targeted

interventions to enhance life satisfaction for elderly persons.

Debalina Datta et al (2015) '*Association of quality of life of urban elderly with socio-demographic factors*', the purpose of this study was to investigate how socio-demographic factors affect various dimensions of the quality of life (QOL) of elderly persons. The quality of life among the elderly often deteriorates due to a variety of reasons. A community-based cross-sectional study was conducted from January to December 2013 in Kolkata and Sonarpur, West Bengal, India. The World Health Organization's Quality of Life (QOL) questionnaire (BREF) was used for this research. The QOL scores were analyzed in relation to several socio-demographic factors. The results indicated that QOL was significantly lower among older individuals, females, those who were illiterate, those who were entirely financially dependent, and those with a lower socioeconomic status. In conclusion, QOL is a key indicator of the living conditions of the elderly, and socio-demographic factors play a significant role in influencing QOL in this age group.

2.5.3 Regional context

M.N. Parmar et al (2023) '*A comparative study of Quality of life of elderly people living in old age home & with family of Vadodara city*', the study aimed to assess and compare the quality of life (QOL) of elderly persons residing with family versus those in Out-of-Home Care (OAHs) in Vadodara city, Gujarat. A total of 80 elderly participants were interviewed, with 67.5% living with family and 32.5% in OAHs. The primary reasons for residing in OAHs included a lack of familial support and insufficient caretaking. The findings indicated that the QOL of elderly persons living with family was superior to that of their counterparts in OAHs. However, many participants reported experiencing psychological distress stemming from their separation from family, relatives, friends, and the broader community.

Mr.Ashvinkumar et al (2020) '*Social Work in Gujarat: A Challenging Profession from the Perspective of Educators*', this paper aims to explain that education is essential for shaping human life and transforming individuals into better, more humble, kind, and intelligent people. Educators play a vital role in creating a better world, and social work education is an important field that addresses human existence and life on our planet. This study focuses on social work education in Gujarat, highlighting the challenges faced by educators, such as a lack of job

security, limited opportunities for publication, and insufficient practical experience for professional development. The primary data collected in this study seeks to provide a comprehensive understanding of the challenges faced by social work educators in the state.

Sandul Yasobant et al (2017) '*Improving knowledge about diabetes among diabetic population of Gujarat, India: A community based Interventional study*', this study aims to assess baseline awareness of diabetes among patients with Type 2 diabetes in Gujarat, India, followed by an intervention to evaluate changes in their knowledge levels. Diabetes mellitus (DM) is a leading cause of premature death and disability worldwide. Currently, approximately 50.9 million people in India are affected by diabetes, a number expected to rise to 80 million by 2025, making the country the "Diabetic Capital" of the world. Research indicates that effective health education programs can enhance diabetic patients' knowledge and attitudes toward their condition. This is a multi-center prospective study with an intervention phase involving diabetic patients from three distinct districts in Gujarat: Mehsana (rural), Chota Udaipur (tribal), and Ahmedabad (urban). A total of 713 and 577 Type 2 diabetic patients completed a pre-tested, pilot-validated questionnaire in their native language at baseline and end line, respectively. Data were collected on the etiology, symptoms, complications, and management strategies related to diabetes. Epi Info 7 was utilized for data entry and tracking, while IBM SPSS 20 was employed for analysis. The study found that baseline knowledge regarding the causes, symptoms, and complications of diabetes was insufficient. The appropriate intervention program led to significant improvements in knowledge and practices as demonstrated in the endline survey. Ultimately, this study suggests that effective community-based intervention programs can positively influence individuals' perceptions and practices regarding diabetes management.

Anil Kumar Mishra et al (2016) '*Physical Status of Elderly People in Old Age Homes in South Gujarat: An Overview*', this study conducted empirical research on active individuals within the Gujarati community in southern India. Aging is undoubtedly a natural biological process. India has the second-largest population of seniors aged 60 and above. Advances in healthcare are increasing life expectancy, with projections suggesting a significant rise in the elderly population by 2050.

However, elderly persons often face stigma, being perceived as non-productive and a burden to their families. Addressing their unique needs through tailored healthcare and social support is crucial to ensure their well-being. A person's health status significantly influences their quality of life. During the same period, the percentage of elderly persons in countries classified as "more developed" by the United Nations is expected to rise from 14.3% to 26.8%. Poor health is frequently cited by the elderly as one of their main challenges as they age. Additionally, the health of older individuals in India's senior care facilities is continually deteriorating. Consequently, this study focused on health and functional abilities rather than vulnerability, risk, and illness. This is because a significant majority of healthy elderly persons in developed countries are active members of society, particularly in Gujarat, India.

Petiwale Mital (2013) '*Social Vulnerability and resilience to climate change in Gujarat a social work response to vulnerable communities*', a study conducted in Gujarat highlights the region's challenges related to climate change, characterized by both social vulnerability and resilience. Social work is vital in supporting vulnerable populations, particularly those disproportionately affected by poverty, limited resources, and inadequate infrastructure. Key factors contributing to Gujarat's vulnerability include geographic risks, economic and social disparities, and marginalized populations. Geographic risks encompass coastal areas that are susceptible to cyclones, flooding, and rising sea levels. Economic and social disparities often lead to seasonal migration and limited employment opportunities. Marginalized groups, including tribal communities, women, children, the elderly, and individuals with disabilities, face significant challenges in adapting to climate shocks. Social workers can enhance community resilience by promoting awareness and education, empowering local governance, and prioritizing climate adaptation in development plans. This approach ensures long-term resilience and amplifies community voices in decision-making processes. Climate change can strain social networks, making it essential for social workers to encourage community activities, peer support groups, and collective storytelling. Furthermore, social workers can advocate for sustainable practices and environmental stewardship by engaging youth and community members in conservation efforts. They can also build knowledge of traditional and indigenous practices and collaborate across various sectors. This collaboration includes partnerships with NGOs and community-based organizations,

leveraging government programs and initiatives, and working with academic institutions. These efforts can strengthen resilience and address climate vulnerability in Gujarat. By educating communities, advocating for policy changes, fostering resilience, and supporting mental health, social work can play a transformative role in creating climate-resilient societies. Overall, social work is crucial in building climate resilience in Gujarat.

2.6 Geriatric Care

Geriatric care is a multidisciplinary approach designed to address the complex health needs of elderly persons, enhancing their quality of life. It involves a Comprehensive Geriatric Assessment (CGA) to evaluate functional, physical, mental, and socio-environmental aspects, with chronic disease management through medication, lifestyle adjustments, and physical therapy. Care includes mental health support, fall prevention, mobility assistance, and nutritional guidance. Social and community services address loneliness, while palliative care supports end-of-life needs. Care models vary globally, from community-based to technology-driven systems, with access affected by healthcare infrastructure and disparities. Challenges include workforce shortages, caregiver burnout, and rising costs, especially in low-income regions. Ethical and cultural considerations, particularly around end-of-life care, influence care models. Innovations like telemedicine and AI, alongside preventive care, aim to reduce hospitalizations and improve elderly well-being. As life expectancy increases, international collaboration and culturally sensitive practices are essential to advancing equitable geriatric care.

2.6.1 Global

Namirah Jamshed et al (2024) '*Prioritizing the 5Ms in Geriatric Care: A Holistic Approach to Care of the Older Adult*', this study concludes that the aging population, projected to reach 95 million by 2060, poses a significant challenge for healthcare systems globally. The Geriatric 5Ms framework—Mind (mentation), Mobility, Medications, Multicomplexity, and What Matters Most—offers a comprehensive, patient-centered approach to geriatric care. It emphasizes interdisciplinary coordination to address the complex needs of older adults. Evidence demonstrates that applying the 5Ms improves health outcomes, reduces low-value services, and enhances cost-effective care utilization. This framework is widely

recognized for promoting holistic care by aligning medical interventions with patients' goals, managing chronic conditions, and fostering better communication between healthcare providers and patients.

Samer H. Sharkiya et al (2023) '*Impact of healthcare service quality on older people's satisfaction at geriatric medical centers: a rapid review*', this rapid review examines how the quality of healthcare services affects the satisfaction of older adults in geriatric medical centers. The studies indicate that better healthcare service quality leads to increased patient satisfaction and positive health outcomes. The thematic analysis identified four critical themes: perceived quality of healthcare services, patients' quality of life, patient satisfaction, and communication between providers and patients. Nurses are encouraged to improve geriatric care by focusing on effective leadership, implementing quality improvement initiatives, and ensuring clear communication. Additionally, adopting a patient-centered approach that involves family members in care planning is essential for enhancing outcomes.

Kiran Ghimire et al (2023) '*Geriatric Care Special Needs Assessment*', the global population of older adults is increasing, resulting in higher hospitalization rates and a rise in chronic conditions. This aging population is at greater risk of adverse outcomes due to multiple comorbidities and frailty. Older adults exhibit varying levels of cognitive, physical, and social functioning, which necessitates different care approaches tailored to their individual needs and functional status. Geriatric assessment employs a coordinated approach to evaluate the physical, functional, and psychosocial aspects of elderly patients, leading to the development of an integrated care plan. An interprofessional team is essential for coordinating the evaluation and care of geriatric patients to achieve the best possible outcomes. Management considerations for older patients are complex and multifaceted, requiring a comprehensive approach to ensure optimal care. Advances in medical science have contributed to a significant increase in the aging population, with approximately 49 million people in the United States aged 65 or older as of 2016. This demographic often experiences impaired health outcomes and a reduced quality of life, underscoring the need for thorough assessments to facilitate early diagnosis and treatment. Effective geriatric assessment relies on collaboration among interprofessional healthcare teams, which include clinicians, nurses, social workers, and other allied health professionals. A systematic review of 29 randomized

controlled trials indicates that hospitalized older patients who receive comprehensive geriatric assessments have higher survival rates and a greater likelihood of living independently at home.

Terry Fulmer et al (2021) '*Actualizing Better Health And Health Care For Older Adults*', this study assesses that the U.S. healthcare system is insufficiently prepared to meet the needs of its diverse older adult population, a challenge intensified by the COVID-19 pandemic. The National Academy of Medicine's initiative, Vital Directions for Health and Health Care: Priorities for 2021, identifies six key areas for improvement. These include developing a well-equipped workforce, enhancing public health initiatives, addressing health disparities, creating innovative care models, allocating resources for patient-centered care, and restructuring long-term service systems.

Matteo Cesari et al (2016) '*Defining the role and reach of a geriatrician*', this has been illustrated that population aging is a global issue; however, a shortage of health professionals with geriatric competencies hinders the provision of high-quality care for older adults. Strengthening the health workforce is a global priority, with geriatricians playing a crucial role in shifting care towards an integrated, person-centered system. To accurately assess the current workforce and provide adequate training in geriatrics, a standardized, competency-based definition of a geriatrician is necessary. The International Association of Gerontology and Geriatrics and the European Geriatric Medicine Society endorse an approach to enhance global support for older adults. This strategy aims to reduce ambiguities and improve resource allocation, ensuring better care through clearer support and monitoring.

2.6.2 National

Deepali Kausshik et al (2023) '*Elderly Empowerment: Why Geriatric Care Needs More Focus in India*' this study highlights India's significant demographic shift, with the elderly population projected to exceed 347 million by 2050. This increase will impact health, the economy, and society. The article underscores the urgent need for enhanced geriatric care, focusing on specialized healthcare, cognitive support, and social engagement to empower the elderly. By investing in these areas, India can promote healthier and more fulfilling lives for its senior citizens, ultimately

benefiting society as a whole.

Tattwamasi Paltasingh et al (2023) '*Toward Healthy Aging: Emerging Geriatric Health Care Issues in India*', The study reviewed that Population aging is becoming a global concern, with a rapidly increasing proportion of older individuals. In India, the 2011 Census reported that 8.6% of the population was aged 60 and above, attributed to declining fertility rates and rising life expectancy. Older adults are more susceptible to various physical and psychological health issues, compounded by socioeconomic barriers. They face numerous challenges, including limited social security and increasing healthcare needs. Although India has implemented policies and programs aimed at geriatric care over the past few decades, there remains a shortage of geriatric health clinics and caregivers. This paper emphasizes the critical nature of elderly care within the public health system, highlighting health challenges faced by older individuals both globally and in India. It calls for improved policies to enhance the quality of life for the elderly in the Indian context.

Gautam Makwana (2022) '*Healthy Aging, Health Awareness and Elderly Care in India*', this review study reflected that the population aging is a major global concern, especially in India, where the elderly population has quadrupled over the past 50 years. The concept of Healthy Aging focuses on enhancing healthcare and quality of life for older adults, emphasizing education and empowerment. This study examines the demographic profile of older individuals in India to inform the development of long-term programs and care strategies. Findings indicate that socioeconomic and demographic differences lead to inequities in the ability of older Indians to age healthily. Key factors for promoting successful aging include social capital, low levels of frailty, improved health behaviors, and food security.

Lokesh Mukut Vaishnav et al (2022) '*The National Programme for Health Care of the Elderly: A Review of its Achievements and Challenges in India*', the National Programme for Health Care of the Elderly (NPHCE) in India is a critical initiative addressing the needs of the rapidly aging population, which represented 6.57% of the total population by 2020. It focuses on preventive care, illness management, geriatric service empowerment, and rehabilitation for older adults. This study evaluates the program's achievements and challenges, assessing its

effectiveness in providing care amidst India's growing elderly demographic.

Ritika Girdhar et al (2019) '*Geriatric mental health problems and services in India: A burning issue*', It has detailed about the India's demographic shift towards an aging population, projected to surpass 10% by 2021, brings significant social and psychological challenges, including increased rates of depression and dementia among the elderly. However, the country faces a shortage of mental health services and professionals, and general societal awareness remains low. The government has introduced initiatives like the National Programme for Health Care of the Elderly and the Maintenance and Welfare of Parents and Senior Citizens Act to enhance elderly welfare and healthcare.

Jaya Prasad Tripathy (2017) '*Geriatric care in India: A long way to go*', this has been seen in the study that India's senior population is projected to reach 12% of the total population by 2025, driven by demographic shifts and an increasing prevalence of chronic non-communicable diseases. This growth presents significant social and financial challenges, placing considerable strain on the healthcare system. Sociological shifts in India, such as urbanization and changing family structures, underscore the need for increased focus on geriatric issues. The elderly population is diverse, with morbidity influenced by factors like gender, geography, and socioeconomic status, necessitating tailored healthcare and social interventions. Notably, at least 65% of elderly persons live in rural areas, are often uneducated, and rely on government assistance. Consequently, there is a pressing need to address the medical and socioeconomic challenges faced by this vulnerable group, as well as to promote healthy aging initiatives.

2.6.3 Regional

Department of Health and Family Welfare (2024) '*Palliative Care Implementation Plan*', Life expectancy has improved markedly worldwide and in India, with the average rising from 66.8 to 73.3 years between 2000 and 2019. However, the focus is shifting towards enhancing the quality of these extended years. Palliative care is central to this effort, aiming to improve the well-being of patients and their families by addressing physical, psychosocial, and spiritual needs. Although global Healthy Life Expectancy (HALE) has increased by 8%, this is largely due to reduced mortality rates rather than a decrease in years lived with disability, raising concerns about quality of life amidst increasing chronic and Non-communicable Diseases (NCDs). India, which comprises one-sixth of the global

population, faces a significant burden of life-limiting illnesses, with an estimated 5.4 million people needing palliative care each year. However, India's palliative care system is still rated at level 3a, indicating a fragmented and under-resourced approach that is donor-dependent, with limited morphine availability and services falling short of population needs.

Shivani Siddharth Sheth et al (2023) '*Prevalence of frailty in geriatric population of Ahmedabad, Gujarat: A cross-sectional study*', this research study conducted to see the Frailty syndrome, shaped by physical, psychological, and social factors, is prevalent among elderly populations. A study in Ahmedabad, Gujarat, used the Tilburg Frailty Indicator (TFI) to assess frailty in 200 seniors over 60 years old, finding a 26.5% prevalence rate, with higher rates in women (36.7%) compared to men (18.6%), and an average frailty score of 3.3 ± 2.15 . These findings underscore the need for broader studies with larger, more evenly distributed age groups across various regions to generalize results. Further research exploring associations of frailty with depression, balance, cognition, and related mortality could offer critical insights into the risks facing frail elderly populations in India.

Sumi Patel (2018) '*Understanding Geriatric Care: How does it differ from normal care?*' Geriatric care encompasses the healthcare needs of elderly persons and includes services provided by medical professionals such as doctors and nurses, as well as coordination with specialized caretakers. While doctors primarily focus on the physical health and well-being of seniors, caretakers play a crucial role in managing daily routines, diet, exercise, and personal care associated with aging. Medical professionals involved in geriatric care are trained to address the complex health issues that arise with aging. They understand the physiological changes that occur and can prescribe appropriate treatments and medications for older adults. These specialists are also equipped to handle medical emergencies, such as rapid dehydration or delirium. Key components of geriatric care include home care, assisted living, and professional caregiving. These services ensure that elderly persons live in safe environments, maintain proper diets, engage in social routines, and exercise regularly. Assisted living facilities or home care providers manage various aspects of seniors' lives, enhancing their quality of life by addressing medical, social, emotional, physical, and psychological needs. This holistic approach

allows seniors to live more independently and care freely, alleviating the burdens of property management, grocery shopping, and other everyday tasks.

H. Chandwani et al (2008) '*Health And Social Problems of Geriatric Population in an Urban Setting of Gujarat, India*', the study conducted by the Department of Community Medicine at Medical College, Vadodara, Gujarat, investigates the health and social challenges faced by the elderly in an urban area. A total of 311 participants aged 60 to 69 were interviewed, with 66% falling within this age group. The findings reveal that 13% of the respondents were illiterate, and over half (56%) reported feeling unhappy in their lives. Common health issues identified among the participants included hypertension, arthritis, diabetes, and constipation. Additionally, 44% expressed feelings of being unloved by their family members. The study highlights the necessity for establishing geriatric counseling centers to effectively address both the physical and psychological needs of the elderly population.

2.7 Quality of Life of the Elderly

The quality of life (QoL) in the elderly population is shaped by multiple factors, including physical and mental health, social connections, economic stability, living conditions, and caregiver support. Declines in physical health, such as cardiovascular diseases and mobility issues, greatly affect QoL, while mental health challenges like depression and anxiety necessitate support and therapy. Strong social connections are vital for alleviating isolation and loneliness. Economic stability and access to healthcare and resources are linked to higher QoL, with independent living arrangements generally preferred over nursing homes or assisted living. Access to public services enhances QoL by facilitating social activities and medical care. The impact of urban versus rural living on QoL shows mixed results. Social support systems, including family and caregivers, play a critical role in maintaining QoL. Participation in community services and activities positively influences well-being. Psychological and spiritual well-being, including a sense of purpose and autonomy, are important for the elderly. Interventions to improve QoL include physical activity programs, technological aids, and social engagement initiatives. Cultural and socioeconomic factors, such as income inequality and education, also affect QoL experiences. The literature emphasizes the need for holistic approaches in elderly care, advocacy for supportive policies, and personalized care that respects individual

preferences and cultural backgrounds.

2.7.1 Global

Sathees Santhalingam et al (2022) '*The effect of socioeconomic factors on quality of life of elderly in Jaffna district of Sri Lanka*', the study has shown that The elderly population in Sri Lanka is experiencing rapid aging, rendering them a vulnerable demographic that necessitates targeted attention to promote a long and healthy life. A study conducted in the Jaffna district of Sri Lanka aimed to assess the quality of life (QOL) among the elderly and to examine the association between socioeconomic factors and QOL. This study involved 813 elderly persons living in their communities and used the WHOQOL-BREF questionnaire to assess quality of life across four key areas: physical health, psychological well-being, social participation, and environmental factors. The results showed significant connections between quality of life in these domains and several factors, including marital status, education level, living arrangements, employment status, income, perceived income adequacy, and home ownership. Additionally, age, sex, religion, number of children, and monthly income were also identified as significant determinants. The findings indicate that the quality of life among the elderly in the Jaffna district is relatively low and is influenced by multiple socioeconomic factors. Therefore, interventions aimed at enhancing the quality of life for the elderly are recommended, with a particular focus on fostering social relationships.

Hamed Rezakhani Moghaddam et al (2022) '*Determinants of quality of life among elderly patients with type 2 diabetes in northwest of Iran: based on problem areas in diabetes*', the study investigates the determinants of quality of life (QOL) among elderly patients with type 2 diabetes, utilizing the Problem Areas in Diabetes (PAID) questionnaire. Conducted at a diabetic clinic in Ardabil, Iran, the research employed the PAID, the SF-12, and a socio-demographic questionnaire to gather data. The study found a significant negative correlation between quality of life (QOL) dimensions and the three domains assessed by the Problem Areas in Diabetes (PAID) tool. Key predictors of QOL included barriers to treatment, psychological distress related to diabetes management, type of treatment, age, and duration of diabetes. The research highlights the need to consider individual characteristics and

healthcare service factors in intervention programs designed to improve the quality of life for elderly patients with diabetes.

Tommaso Cai et al (2021) '*The Quality of Life Definition: Where Are We Going?*', a study conducted in Italy has explored the evolving concept of quality of life (QoL), emphasizing that it now encompasses new dimensions related to patient well-being. QoL is increasingly viewed as a personal perception rather than an objective and measurable entity. This narrative review discusses the key aspects of QoL in the fields of urology and andrology, highlighting several critical considerations for managing uro-andrological patients. The goals of treatment should extend beyond merely achieving disease absence or symptom relief; they must also focus on enhancing a patient's QoL in relation to their internal state and interpersonal relationships. Consequently, therapeutic approaches should prioritize the patient's perspectives in addition to relying on instrumental and laboratory findings. Moreover, the role of a patient's sexual partner is considered an important factor, adding an additional dimension to the patient-centered approach within the QoL framework in andrology.

Statistics Poland, Social Surveys Department (2021) '*Quality of Life of Elderly People in Poland*', the study examined the interplay between psychophysical state and various factors influencing quality of life, including material living conditions, social interactions, the amount of leisure time, and the ability to utilize that time according to personal preferences. Additionally, the significant dimensions of values and spirituality, particularly in relation to religious life, must not be overlooked, as they are essential components for a substantial portion of society.

Leonie Klompstra et al (2019) '*Factors related to health-related quality of life in older people with multimorbidity and high health care consumption over a two-year period*', the study investigates factors influencing Health-Related Quality of Life (HrQoL) among older adults in Sweden with multimorbidity who heavily utilize healthcare services. HrQoL was assessed using indicators such as symptom burden, activities of daily living, depression, and symptom changes over time. Findings emphasize the importance of monitoring HrQoL to improve healthcare delivery for this group, ensuring tailored interventions to address their complex needs.

2.7.2 National

Abhishek Singh et al (2023) '*Health related quality of life among rural elderly using WHOQOL-BREF in the most backward district of India*', the elderly population in India is projected to rise to 11.6% by 2026, leading to increased chronic morbidity and negatively impacting their quality of life (QOL). A study conducted in Nagina focused on 430 elderly persons (aged 60 years and above) who had been living in the same location for over a year. The results indicated that nearly half of the participants resided in joint families, and 67.7% reported a history of chronic morbidity. Approximately 50% of the participants exhibited poor QOL in terms of physical health. The analysis revealed several factors independently linked to lower quality of life (QOL) scores among older adults. These factors included advanced age, male gender, lack of formal education, absence of a spouse, lower economic status, and the presence of chronic conditions. The study concludes that family physicians should implement preventive and promotional strategies to reduce chronic morbidity among the elderly, thereby improving their overall quality of life.

Grace M. Basanshrieh (2021) '*Quality of Life and Mental Health of Elderly in Meghalaya, India*', the study assessed the quality of life and mental health of 476 elderly persons in Meghalaya, India, focusing on factors such as residence, gender, marital status, education, occupation, and family type. The results indicated high scores across all facets of the questionnaires. The unique matrilineal family structure and Khasi culture contributed positively to the respondents' perceptions, while robust social relationships helped maintain high quality of life and psychological well-being, despite physical discomforts and chronic morbidity. The study recommends conducting similar research in other Indian states and emphasizes the need for effective elderly care services.

Prakash R. Kengnal (2019) '*A comparative study of quality of life among elderly people living in old age homes and in the community*', the study compared the quality of life (QOL) of elderly persons living in old age homes, urban areas, and rural areas. Findings revealed that urban participants scored higher in physical, psychological, and social domains compared to their rural and old-age home counterparts. However, rural elderly had higher scores in the environmental domain than those in urban areas or old-age homes. These results highlight the influence of

living environments on different aspects of QOL among older adults.

Debalina Datta et al (2015) '*Association of quality of life of urban elderly with socio-demographic factors*', this study aimed to examine the impact of socio-demographic factors on various dimensions of quality of life (QoL) among elderly persons. The QoL of older adults often declines due to a range of contributing factors. A community-based cross-sectional study was conducted from January to December 2013 in Kolkata and Sonarpur, West Bengal, India, utilizing the World Health Organization's Quality of Life (QoL) questionnaire (BREF). QoL scores were assessed in relation to key socio-demographic factors. Findings revealed that QoL was significantly lower among older adults who were female, illiterate, financially dependent, and of lower socioeconomic status. These results indicate that QoL serves as an essential indicator of living standards among the elderly, with socio-demographic factors playing a crucial role in influencing QoL in this age group.

Jitendra Kumar (2014) '*Gender dimension of quality of life among elderly in India*', This has been examined that the concept of quality of life (QoL) encompasses both subjective and objective components. Subjective quality of life pertains to an individual's self-perception and overall contentment with life, while objective quality of life focuses on fulfilling societal and cultural expectations related to financial stability, social standing, and physical well-being. Younger individuals, those with higher education levels, and those with greater financial resources generally report higher QoL. In India, the joint family system often provides enhanced social support, which contributes to improve QoL. Conversely, the structure of one's living arrangements—whether in a nuclear family or distanced from relatives—also plays a role. Data for this study were analyzed using the SPSS statistical software. A quality of life index was developed based on thirty-one questions, utilizing data from the SAGE study and the WHO QoL framework. These questions were organized into five primary domains: physical health, psychological well-being, independence, social support, and environment. Each domain was assessed through multiple questions and classified into three levels: high, medium, and low. The raw scores for each domain ranged from 0 to 5, with higher scores indicating better QoL. Means and standard deviations were calculated for all domains. In the analysis, gender served as the primary independent variable, while age, marital status, religion,

education, and wealth were considered secondary independent variables influencing QoL. Multiple regression models were employed to evaluate the impact of various socio-economic factors on the QoL of elderly persons, assessing predicted probabilities for both genders as well as a combined model. The findings underscore the importance of a comprehensive QoL across physical, psychological, social, spiritual, and environmental dimensions. An individual's overall QoL is significantly enhanced when fulfillment is achieved in these areas. There is an urgent need to improve geriatric healthcare services in our country and to provide training for healthcare professionals. Additionally, special surveys conducted by government agencies should be implemented to better identify and address the needs of the elderly population.

2.7.3 Regional

Venu R. Shah et al (2017) '*Quality of life among elderly population residing in urban field practice area of a tertiary care institute of Ahmedabad city in Gujarat*', the study investigated the quality of life (QoL) and morbidity trends among individuals aged 60+ in urban health training centers associated with a medical college in Ahmedabad. It compared QoL across sociodemographic factors, highlighting influences such as education, marital status, and gender. Common morbidities included joint pain, hypertension, and diabetes. The study emphasizes improving healthcare access and support systems to enhance QoL for the elderly. The analysis included comparisons across the physical, psychological, environmental, and social domains based on diverse demographic and social characteristics. The geriatric population surveyed exhibited a range of morbidities and faced challenges in accessing government healthcare facilities, primarily due to travel distances. To address this issue, it is recommended that government health services, particularly for minor ailments, be delivered directly to homes via mobile medical vans. Overall, the quality of life was rated as decent to excellent; however, the environmental domain fell short, indicating a need for improvement. This could be enhanced through family support and the establishment of geriatric support networks. Additionally, social factors such as education, marital status, and gender significantly influenced respondents' perceptions of their QoL. Improving the educational level within the community is likely to yield positive outcomes for the quality of life among the elderly population.

Dr. Dipeshkumar D. Zalavadiya et al (2016) '*A Comparative study of the Socio demographic and activity profile of elderly residing in Old Age Homes (OAH) and in the Community of Rajkot, Gujarat, India*'. The world is experiencing a rapid aging trend, with projections indicating that the proportion of individuals aged over 60 will double from 11% to 20% between 2000 and 2050. This demographic shift is accompanied by significant social changes, such as the decline of the joint family system and the rise of nuclear families, often leading to increased physical and economic dependence among the elderly. As a result, more elderly persons are residing in old age homes. A recent study conducted in Rajkot city compared the lives of elderly persons living in old age homes with those living in the community. The study involved 88 elderly residents from six old age homes and 180 elderly persons from the community. The analysis revealed notable differences between the two groups. For instance, in old age homes, 76.7% of elderly males and 55.2% of elderly females were classified as "young old," compared to 84.4% of males and 82.5% of females in the community. Interestingly, none of the elderly persons in old age homes were currently married, whereas 58.9% of those in the community were. Additionally, the study found that only a small percentage of elderly persons in old age homes lacked engagement in recreational activities, compared to a significantly higher percentage in the community. However, participation in physical activities like exercise, yoga, or meditation was low across both groups. These findings underscore the importance of engaging elderly persons in various productive and recreational activities to enhance their quality of life. By promoting such engagement, we can better support the well-being of this growing demographic and address the challenges associated with aging in modern society.

Ambati Nageswara Rao et al (2015) '*Assessing the Life Satisfaction of Elderly Living in Old Age Homes in the City of Ahmedabad*', the study aimed to assess the quality of life and coping strategies of elderly inmates in old age homes in Ahmedabad. Findings revealed that many elderly residents experienced a lack of love, gratitude, and affection from their families, leading to dissatisfaction with their children's behavior. Family members often perceived the elderly as a burden, negatively impacting their emotional well-being. Additionally, declining health and reduced independence severely affected their self-esteem. These results highlight the importance of addressing emotional and social needs to improve the quality of life

for seniors in old age homes.

Akanksha Kumari (2021) '*Assessment of quality of life of elderly people in old age homes in Ahmedabad*', this analysis indicates that aging is a complex process influenced by fertility, mortality, and migration rates. As fertility rates decline, mortality rates decrease, and migration rates rise, the global elderly population continues to grow. This phenomenon is a significant concern for both developed and developing nations. In India, modernization has brought about shifts in demographics, characterized by improvements in medical facilities, increased longevity, enhanced education, and access to birth control. However, the traditional emphasis on family and children's needs has contributed to a sedentary lifestyle among the elderly population. As a result, there has been a rapid increase in both government and privately run old age homes across the country, often with long waiting lists for admission. Despite India's long history of advancing elderly care facilities, personal satisfaction among residents has not kept pace with the rising levels of incapacity and disability. Quality of life (QoL) serves as a crucial measure of satisfaction experienced by individuals across various dimensions of their lives, encompassing both tangible and intangible aspects.

2.8 Social Work Practice with Elderly

Social work practice with elderly populations is rooted in diverse theoretical frameworks and methodologies that prioritize autonomy, dignity, and comprehensive care. Key approaches such as person-centered care, the life course perspective, and ecological systems theory emphasize the strengths and unique needs of older adults. Core issues addressed in elderly social work include mental health, social isolation, chronic health conditions, and access to healthcare and community resources. Social workers play a crucial role in facilitating case management, providing emotional support, and advocating for resources to ensure the well-being of older adults.

Nancy Hooyman (2022) '*Empirical Research on Gerontological Social Work in USA*'. this study worked to show that that empirical research in gerontological social work in the USA explores various dimensions of social work practices focused on aging populations. It highlights the importance of evidence-based interventions, the need for more comprehensive training for social workers in gerontology, and the challenges faced by practitioners in addressing the complex needs of older adults, the

key findings highlight the diverse needs of older adults, encompassing physical, mental, and social dimensions. Effective intervention strategies, such as case management and community engagement, have been identified. Systemic barriers to accessing social services include economic factors, stigma, and geographic limitations. Policy recommendations aim to improve social work services for the aging population, while future research is encouraged to include longitudinal studies to assess the long-term effectiveness of these interventions.

George Mois et al (2020) et al '*Visioning the Future of Gerontological Digital Social Work*', the paper emphasizes the significant impact of digital technologies on Gerontological Social Work education, underscoring the necessity for training in research, policy, and practice. It stresses the importance of preparing future professionals for Digital Therapeutic Teams through enhanced digital social work education. Additionally, the paper discusses the innovative opportunities that emerging technologies present, while offering training programs aimed at equipping social work educators with the skills to effectively utilize these digital tools and therapeutics.

M Mahalakshmi et al (2020) '*Social work practices in the field of old age in India in the state of Tamil Nadu*', This work aims to illustrate social work strategies related to aging, emphasizing that challenges related to old age have long been a concern for social workers, even before they became widely recognized as societal problems. Social workers have historically focused on elderly persons facing low wages, poverty, loneliness, alienation, illness, and other related issues. The significance of a life course perspective in understanding older adults and the aging process is well acknowledged within the field of eldercare. This perspective is characterized as a multidisciplinary approach that integrates sociological and psychological insights, examining processes at both macro and micro levels. By employing this approach, social workers can better understand the complexities of aging and develop effective strategies to address the needs of older adults.

Mark Novak et al (2019) '*Social Gerontology*', the authors provide a comprehensive overview of social gerontology, focusing on the multifaceted aspects of aging and its societal implications. They address significant global demographic shifts, such as increased life expectancy and a growing older adult population, emphasizing the importance of understanding these trends for developing effective

social policies tailored to aging societies. Key themes include the impact of demographic changes on healthcare systems, housing, and community resources. The authors also examine how evolving family structures, including rising divorce rates and changing roles, can lead to isolation and decreased support for older individuals. They advocate for research on family caregiving roles and the integration of social support systems that strengthen family bonds during crises. The authors stress the need for targeted social policies that address older adults' unique needs and advocate for a robust infrastructure encompassing healthcare, social services, and community engagement initiatives. They propose interdisciplinary approaches to create effective programs that promote active aging and enhance the quality of life for older adults. Their work serves as a call to action for policymakers, researchers, and practitioners to collaborate in addressing the complex needs of an aging population. It emphasizes the importance of improving their integration into society, ensuring that older adults are supported and valued as contributing members. This collaborative approach can lead to more effective policies and interventions that enhance the well-being and quality of life for seniors.

Anoop et al (2019) 'Towards a Pro-Elderly Social Work', this study explores the necessity of adopting a pro-elderly framework in social work practice. It emphasizes the importance of recognizing the unique challenges and needs of the elderly population in society. The authors advocate for social work strategies that prioritize the well-being and empowerment of older adults, promoting their rights and addressing issues such as social isolation, health care access, and economic insecurity. The article argues that social workers should be equipped with the skills and knowledge necessary to advocate for policy changes that benefit the elderly, as well as to implement community-based programs that foster social engagement and support. Anoop et al. highlight the role of collaboration among various stakeholders, including families, healthcare providers, and community organizations, in creating a comprehensive support system for older individuals. Overall, the authors call for a shift in social work practice to ensure that the elderly are treated with dignity, respect, and as active participants in their own lives.

2.9 Exploring the perspectives of Elderly in India

Older adults prioritize autonomy, functionality, and quality of life over

longevity. They face significant challenges in accessing healthcare, including mobility issues, financial constraints, and difficulties with telemedicine. While some adopt technology, many struggle with usability, privacy concerns, and limited digital literacy, making inclusive design essential. Social connections are vital for mental health, with strong networks reducing loneliness and enhancing well-being. Many older adults prefer aging at home, valuing independence and community ties, which require accessible housing and services. Financial security remains a concern, especially for those on fixed incomes. Additionally, intergenerational relationships and community engagement help maintain a sense of purpose and social connection. Addressing ageism is crucial for fostering inclusivity and ensuring older adults are valued. Retirement can affect their identity, but some look forward to new pursuits. Ultimately, improving healthcare, social support, and technology access can significantly enhance older adults' quality of life.

Sachi Joshi (2020) '*Covid-19 and Elderly in India: Concerns and Challenges*', In the wake of COVID-19, the study aims to explore the problems and challenges faced by the aging population. The pandemic has had a widespread impact, particularly affecting older adults who are at a higher risk of severe illness due to several factors. These include a weakened immune system, physiological changes associated with aging, reliance on others for care, and the presence of co-morbidities. As of 2011, India's elderly population reached 104 million, with the old-age dependency ratio increasing from 10.9% in 1961 to 14.2% in 2011. This demographic shift highlights the need for comprehensive policies to address the growing needs of the elderly. This growth in the senior demographic highlights the significant challenges that the country faces. During the initial phases of the pandemic, individuals over the age of 60 accounted for 63 percent of COVID-19-related deaths in India, underscoring their vulnerability. The implications of this reality present numerous direct and indirect issues for the elderly, including heightened health risks, social isolation, economic challenges, and difficulties accessing healthcare. The study emphasizes the urgent need for targeted interventions and support systems to address the unique needs of the aging population during and after the pandemic.

Dinesh Nair et al (2018) '*Impact of health care on geriatric population and need for adult day care centers - a cross-sectional study of Kerala population*', the aim of this research is to assess the feasibility of establishing an Adult Day Care Center (ADC) in the study area, alongside an evaluation of hospitalization costs for the elderly and the financial implications of opening an ADC through the proposal of an ideal model for an Adult Healthcare Center. The research was conducted in the Kanayannur taluk of the Ernakulam district. A total of 398 elderly persons aged 60 and above were interviewed using a standardized questionnaire, employing simple random sampling to gain insights into their morbidity issues and the associated treatment costs. The study comprised 205 males (52%) and 193 females (48%), focusing on quality of life, disease burden, healthcare expenditure, and the acceptance of ADC services. Findings revealed that 60% of the elderly participants reported having one, two, or three chronic illnesses. Additionally, 46% expressed interest in the proposed ADCs. The analysis indicated that hospitalization costs were significantly associated with diabetes, hypertension, and elevated cholesterol levels. Ultimately, the study underscores the urgent need for a comprehensive policy addressing the healthcare needs of geriatric patients in Kerala, as well as the establishment of dedicated Adult Day Care Centers.

Sunita Menezes et al (2018) '*Status of the Elderly and Emergence of Old Age Homes in India*', the study has concluded that the global population is rapidly aging, with Asia poised to surpass Europe as the world's oldest region. In India, the traditional joint family system is declining, largely due to the reorganization of family structures. The rise of nuclear families, coupled with increasing living costs, has compelled family members who previously provided care for the elderly to seek employment outside the home. As a result, many older adults are now residing in old age homes, driven by the growth of nuclear families and a significant increase in the elderly population. Literature has underscored the challenges and anxieties that older adults encounter as they age, emphasizing the necessity for old age homes to create environments that enable meaningful living in their later years. These facilities are beginning to address the wishes, aspirations, and beliefs of older adults in India. However, there is a scarcity of research that allows older individuals to share their experiences in care facilities. It is essential to recognize that older adults are a valuable resource for younger generations, necessitating a shift in societal attitudes

towards aging. This study aims to provide insights that will assist counselors, social workers, and caregivers in better understanding the needs and experiences of the elderly.

Ilango Ponnuswami et al (2017) '*Long-term care of older persons in India: Learning to deal with challenges*', the study explores the challenges associated with long-term care for the aging population in India, highlighting key issues such as insufficient infrastructure, socioeconomic factors, cultural attitudes, policy gaps, and the urgent need for trained professionals. It underscores the necessity for comprehensive policies, community engagement, and the establishment of sustainable care models. The authors advocate for a multifaceted approach to enhance the quality of care for older adults in India. Educating all stakeholders, including older individuals and caregivers, is crucial for navigating long-term care complexities. A national survey is proposed to assess care delivery processes, facilities, workforce availability, and eldercare program quality, aiming to improve care systems for older adults. It calls for an evaluation of regulatory and monitoring systems, as well as legal measures in place. A greater understanding of the significant need for long-term care, the increasing professionalism within the field, and the various socio-political and economic challenges associated with these developments is essential.

2.10 Population Ageing Dynamics

Population aging is a critical issue with profound social, economic, and health implications. This trend is prevalent in both high- and low-income countries, with aging populations presenting unique challenges such as age-related diseases and a shrinking workforce. The "compression of morbidity" hypothesis suggests that healthcare advancements could reduce the duration of illness at the end of life. Economic systems, especially pensions, face sustainability concerns, necessitating reforms. Aging also impacts labor supply and productivity, highlighting the need for innovative solutions. Socially, older adults' well-being, intergenerational relationships, and combating ageism are essential. Policies must adapt to support older populations through age-friendly urban planning, preventive healthcare, and technology solutions. The gap in healthcare infrastructure and social support systems is particularly evident in developing countries. Studies emphasize the need for

inclusive, sustainable policies to address these challenges and promote healthy aging. Effective interventions should include enhancing digital literacy and fostering community-based care.

Lekha Subaiya et al (2024) '*Demographics of Population Ageing in India*', this study has shown that the population aging is becoming increasingly prevalent in both developed and developing countries, with developing nations aging more rapidly. In India, the proportion of the population aged 60 and older is projected to reach 20% by 2050. This demographic shift, driven by health improvements, presents significant policy challenges due to the growing number of elderly persons and the declining number of children. Consequently, there is a decreasing support base and rising levels of old-age dependency. Vulnerabilities associated with this transition include a reduced number of working-age individuals supporting a larger elderly population, a higher likelihood of individuals losing spouses, and low literacy rates among older adults. The aging process is not uniform across India; certain states, particularly in the southern region, are experiencing this transition more rapidly. There is a need for harmony between development and demographic changes by enhancing economic and social support for the elderly

Charles H. Jones et al (2024) '*Healthcare on the brink: navigating the challenges of an aging society in the United States*', the study concludes that the U.S. healthcare system faces critical challenges due to an aging population and workforce shortages. Addressing these issues requires innovative solutions and targeted policy reforms. This paper aims to foster dialogue among stakeholders and promote proactive measures to meet the needs of older adults, emphasizing the urgent need for healthcare system restructuring.

Mashkooor Ahmad et al (2023) '*Ageing and age structural transition in major states of India from 1961 to 2011*', the study reveals that the latter half of the 20th century experienced a decline in infant, child, and maternal mortality rates, contributing to a global rise in the older population, including in India. This demographic shift has significant socio-economic implications for the country. The study analyzes aging trends and age structure transitions in India and its 15 major states from 1961 to 2011, utilizing Indian Census data. It examines the levels of aging and age indices by specific age groups and across the major states. Findings indicate a substantial increase in the older population, with notable regional

differences in aging levels and indices. The study recommends targeted policy interventions in education, skill development, employment, migration, and healthcare.

United Nations Population Fund (UNFPA) India (2023) '*India ageing report 2023 unveils insights into elderly care challenges and solutions*', the India Ageing Report 2023, published by UNFPA India and IIPS, highlights the challenges and opportunities in elderly care. Drawing on comprehensive data, it emphasizes the need for enhanced geriatric care, government empowerment schemes, community-based digital initiatives, and policy reforms. The report also stresses the importance of corporate and social support systems to ensure dignified aging for India's growing elderly population.

Ashish Goel et al (2022) '*The State of Elderly in India: Life and Challenges in the Decade of Healthy Aging*', this study described that the Public Health measures and antibiotics have extended human longevity, setting the stage for the 21st century's 'silver tsunami,' where older adults will represent a larger share of the global population. In India, over 138 million people, or 10.1% of the population, are aged 60 or above. By 2051, this figure is projected to reach 301 million, accounting for 22.5% of the total population. To accommodate the needs of an aging society, developing nations must balance this priority with other health goals, including managing non-communicable diseases, controlling infectious diseases, and improving maternal and child health. The COVID-19 pandemic highlighted inequities and vulnerabilities in healthcare, with older adults particularly affected by severe illness, social isolation, loneliness, and mental health challenges. The World Health Organization's *Decade of Healthy Aging* (2021-2030) aims to foster longer, healthier, and more fulfilling lives for older adults. To support independent living in age-friendly environments, new technologies, interventions, and initiatives such as in cosmetology are essential. While advancements in information technology have the potential to support healthy aging, they also risk widening the digital divide; enhancing digital literacy is therefore crucial. Embracing lifelong learning, building older adults' capacities, and implementing a collaborative, multidisciplinary approach among public health experts, stakeholders, and caregivers are fundamental for promoting healthy aging and advancing care quality for older populations.

Indira Jai Prakash (2021) '*Ageing India: Psychological Concerns and Responses*' in titled book '*Gerontological Concerns and Responses in India*', the study highlights critical challenges faced by India's ageing population, which is experiencing increasing rates of physical morbidity, psychological distress, and mental health issues, such as depression and dementia. These conditions contribute to higher risks of disability and cognitive decline, underscoring the urgent need for effective, accessible healthcare and long-term support systems for the elderly. Despite several government programs aimed at supporting senior citizens, including the National Programme for Health Care of the Elderly (NPHCE), gaps in implementation, monitoring, and resource allocation reduce their impact. Key barriers include limited healthcare infrastructure, inadequate mental health resources, and issues with accessibility, particularly in rural areas, where these services are most needed. Chronic diseases, mobility limitations, and a higher susceptibility to disabilities remain significant health concerns for the elderly population. This multi-pronged approach could significantly improve the well-being of India's ageing population by addressing the root causes of healthcare gaps and enhancing the overall quality of elder care.

Marcin Pawel Jarzebski et al (2021) '*Ageing and population shrinking: implications for sustainability in the urban century*', the study explores the impact of ageing and shrinking urban populations on sustainability, highlighting both challenges and opportunities for achieving Sustainable Development Goals (SDGs). It suggests that sustainable adaptation requires coordinated interventions across various domains, including technological innovation, socioeconomic adjustments, institutional and governance reforms, and collaborative policy frameworks. Technological innovations can optimize resource use, manage waste, and reduce emissions in urban areas with ageing populations. Socioeconomic adjustments support workforce participation among older adults, while institutional reforms strengthen urban governance and institutions to be more inclusive of demographic realities. Collaborative policy frameworks, emphasizing environmental responsibility, economic equity, and social inclusion, can create more resilient urban ecosystems. These interventions can turn demographic challenges into opportunities, fostering long-term urban sustainability and resilience.

Eric S. Kim et al (2021) '*Resilient Aging: Psychological Well-Being and*

Social Well-Being as Targets for the Promotion of Healthy Aging’, this concludes that the Population ageing is a significant social trend in the 21st century, with a projected 50% increase in individuals aged 65 or older within the next 15 years. Despite efforts to curb harmful risk factors, disability-adjusted life years are rising and life expectancy gains are slowing. To address these challenges, experts suggest incorporating resilience-building strategies and psychosocial assets into prevention and treatment programs. Key areas for exploration include psychological well-being and chronic conditions, biopsychosocial pathways, and resilience-focused programs. By focusing on these biopsychosocial dimensions, research can uncover innovative strategies to enhance well-being, reduce disability, and improve life expectancy in an ageing society. This holistic approach will support the physical health of older populations while addressing their psychological and social needs, fostering a more resilient and engaged ageing demographic.

2.11 Research Gap

Despite the growing elderly population in India and the increasing prevalence of diabetes among them, there remains a significant lack of studies addressing the intersection of geriatric care and diabetes from a social work perspective. The following gaps have been identified:

There is no study conducted on geriatric diabetes and quality of life in Gujarat and there is a rare study in the context of India.

Since India is a developing country, the quality of life of the geriatric diabetes may differ from those developed countries. Therefore, the study attempts to explore the quality of life of the geriatric diabetes in Gujarat.

There is a lack of special geriatric clinics where they could be comprehensively assessed and rehabilitated. The aids such as physiotherapy, psychological support, and constant medical help are not available in general.

There is no availability of home health care programs specifically for geriatric diabetes patients.

2.12 Statement of Problem

The elderly population in India is growing rapidly, with a significant proportion affected by chronic diseases such as diabetes. This trend presents a considerable public health and social challenge, as diabetes is associated with increased morbidity, comorbidities, and a declining quality of life. In Gujarat, where the prevalence of diabetes is substantial, elderly persons face compounded difficulties due to limited geriatric care infrastructure and inadequate support systems. Gerontological social work holds great potential for improving the quality of life for elderly persons with diabetes, yet it remains underutilized. Integrating social work into diabetes care can enhance emotional support and practical assistance, leading to better health outcomes and a more dignified aging experience. Prioritizing this field through training and community initiatives is crucial for effective support.

The challenges faced by elderly persons are often severe and chronic, threatening their sense of self, dignity, and personhood. Globally, and in India, care approaches have traditionally overlooked the diverse lived experiences of elders, relying instead on one-size-fits-all solutions. This has been exacerbated by poor attitudes towards service provision, short-sighted care planning, and inadequate policy development. Addressing these gaps requires incorporating the voices and lived experiences of elders into care strategies, thus tackling stigma and empowering them to address their unique challenges.

Sustainable elder care demands a shift from over-reliance on institutionalization to community- and family-based care models. In rural areas, deinstitutionalization and strengthening family and community support systems can provide more viable solutions. Meanwhile, in urban settings, where joint family systems are breaking down, localized and customized care strategies are essential to meet the specific needs of elders. Tailoring solutions to their lived realities and engaging them at their own pace and interests is central to meaningful and dignified elderly care.

This study seeks to address these gaps by investigating the psycho-social, economic, cultural, and spiritual dimensions of elderly persons living with diabetes in Gujarat. By amplifying their lived experiences, it aims to identify effective social work practices, propose evidence-based recommendations, and contribute to the

development of geriatric care policies that enhance the quality of life for elderly persons living with diabetes.

2.13 Objectives of the Study

This research aims to investigate the challenges faced by elderly populations living with diabetes in the urban areas of Rajkot, Junagadh, and Jamnagar in Gujarat. The study seeks to identify the unique needs, barriers, and health outcomes of these persons and to propose targeted solutions to improve their quality of life and healthcare support

The following study objectives constitute the core of this research which are as follow

1. The purpose of this study is to study and understand the demographic profiles and dependency status of elderly persons living with diabetes in the Rajkot, Junagadh, and Jamnagar cities of Gujarat in India.
2. To explore the family support, institutional care, and services available for elderly persons living with diabetes, as well as the significance of social work services for the elderly.
3. To assess and understand the quality of life of elderly persons living with diabetes. It aims to investigate the relationship between geriatric care, geriatric social work, and quality of life outcomes.
4. To identify the challenges and co-evolve solutions from gerontological perspectives to mitigate the challenges experienced by the elderly persons living with diabetes and to improve the quality of care for elders.

2.14 Hypotheses

1. There is a relationship between geriatric care and quality of life of the elderly persons living with diabetes (BMC Geriatrics or *The Gerontologist*)
2. The better the socio-economic conditions, the better it resulted in the quality of life of the persons living with diabetes (Borhaninejad et al.,2016 Sharifirad et al.,2016)
3. Relationship between Family Engagement and Quality of Life of Elderly (Better Socio-Economic Conditions Result in Better Quality of Life (Evandrou M et al.,2004, Glaser K et al., 2004)
4. Elderly Friendly Institutional Care Services and QOL (*Rautavuori et al. 2016, Rijnaard et al. 2016*)

This chapter critically examines the literature concerning elderly persons living with diabetes, focusing on several key areas: demographic profiles, health implications, social support, the role of social work, gerontological social work, challenges faced, strategies for improving quality of life, geriatric care, perspectives of elderly persons in India, and population aging dynamics. This has aimed to provide a comprehensive understanding of the complexities surrounding elderly persons living with diabetes and highlights the vital role of social work in enhancing their quality of life. By exploring these interconnected themes, the chapter contributes to a deeper understanding of the challenges and opportunities present in supporting elderly persons living with diabetes.

In the next chapter will present the research methodology, including study design, sampling, data collection, tool validation, data analysis, and study limitations.

CHAPTER III

METHODOLOGY

This chapter has presented the details the research methodology for the study's theme, emphasizing the importance of a clear roadmap for conducting systematic and objectivity in research. Adopting the right methodology for elderly living with diabetes is crucial, as it ensures the validity of facts and truths. It is imperative to adopt systemic procedures in any manner of empirical or scientific investigation which is of the paramount traits to cultivate the desirable objectives of the studies.

The present chapter gives a comprehensive ideology on the methodology adopted for the research study such as study areas, research design, sampling, universe of the study, sample units, sampling method, sources of data, pilot study, pre-testing, tools of data collection, reliability and validity of tool, justification for the tool, data processing and analysis, operational definitions, limitations of the study, and summary this chapter.

3.1 The setting: Profile of the study area

This section describes the setting and profile of the present study. It elaborates on the profiles of the state of Gujarat and its urban cities such Rajkot, Junagadh and Jamnagar that were chosen purposively for the study.

3.1.1 The state of Gujarat

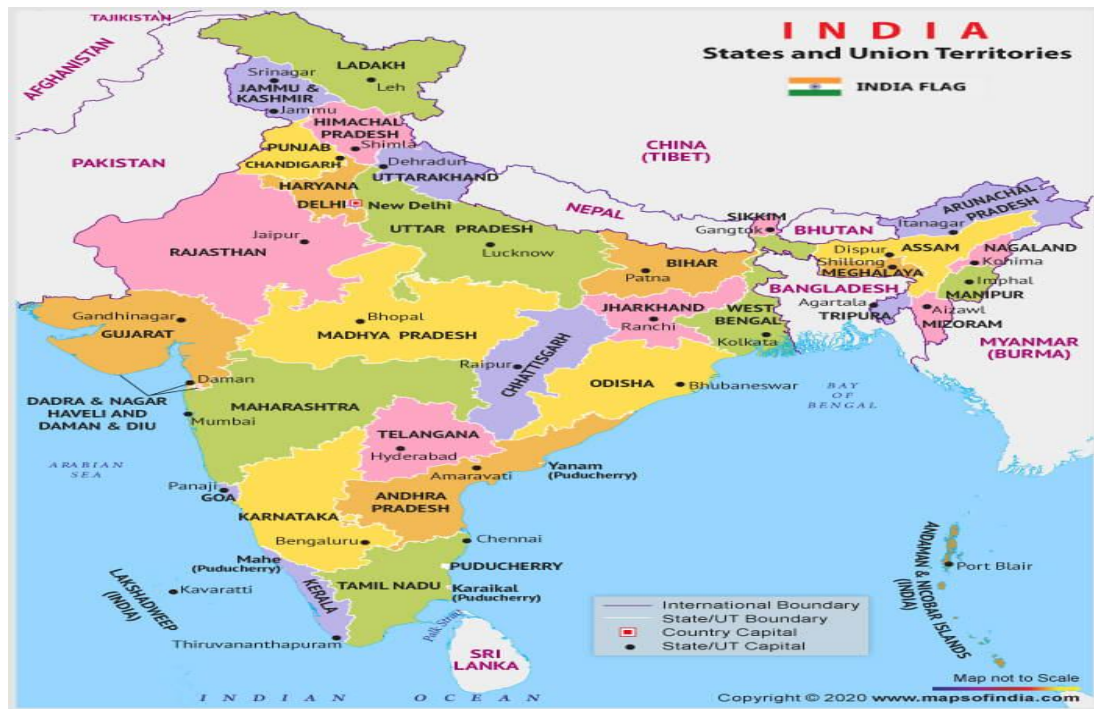
Gujarat is situated on the western coast of India, along the Arabian Sea. It includes the Kathiawar Peninsula (Saurashtra) as well as the neighboring regions on the mainland. It occupies 6% of the land area and constitutes about 4.99% of the total population of India. The literacy rate in Gujarat has seen upward trend and is 79.31% as per 2011 population census (Government of India, Census 2011). The state is bordered mainly by Pakistan to the northwest and by the Indian states of Rajasthan to the north, Madhya Pradesh to the east, and Maharashtra to the southeast. Additionally, Gujarat has a brief southeastern border with the Indian union territory of Dadra and Nagar Haveli, and, along with the Arabian Sea, it encloses the territory of Daman and Diu. The coastline of Gujarat is 992 miles (1,596 km) long, and no part of the state is more than 100 miles (160 km) from the sea (Government of India, 2011). Gandhinagar, the capital of Gujarat, is located on the northern outskirts of Ahmedabad, which was the former capital and is the state's largest city. Ahmedabad

is a major hub for textiles and business in India and is also renowned for diamond polishing and trade.

The state of Gujarat has a population of 60,439, 692 with 31,491,260 males and 28,948,432 females. Gujarat is positioned 6th in India with a geographical spread of 196,024 KM. The density of population is 308 persons per square miles, which is lower than other Indian states. The sex ratio was 918 females for every 1000 males. The sex ratio is one of the lowest ranked (24) among the 29 states of India. In terms of religion, the Hindus constituted 88.57%, Muslims accounted for 9.67% and the remaining 1.76% are Christians, Sikhs and other religious groups. As per 2011 census, 26% of the total population belongs to general category, 6.44% scheduled caste (SC) population, and 14.75% Scheduled tribe (ST) population and another 40% of the population belongs to Other Backward Castes (OBC) (Registrar General & Census Commissioner, Ministry of Home Affairs, Government of India 2011).

The economic position of Gujarat shows that it is the third largest state with a stated Domestic Products of 23.03 lakh Crores (USD 288,73 billion) in 2021-22. People living below the poverty line (BPL) recorded for 16.6%, which is less than the all-India average (20%) in 2020 (Ministry of Statistics and Programme Implementation 2021, NITI Aayog 2020). In addition, 13% were female-headed household as given in NFHS-5 (2020-21)

Figure 1 Political Map of India



Source: Maps of India, 2022

Figure 1 on the political map of India illustrates the country's administrative divisions, including 28 states and 8 union territories, each with its respective capital. It also shows the international borders with neighboring countries such as Pakistan, China, Nepal, Bhutan, Bangladesh, Myanmar, and Sri Lanka. The map highlights key cities like New Delhi, Mumbai, Kolkata, and Chennai, which are important cultural and economic hubs. Additionally, it marks the geographical diversity of India, from the Himalayan mountain range in the north to the coastal regions in the south. This map is an essential tool for understanding India's political and geographical landscape (MapsofIndia, 2020)

Figure 2 Political Map of the Districts with their capitals cities in Gujarat state



Source: Maps of India, 2022

Figure 2 on the Political Map of the Districts with their capitals cities in Gujarat state shows the 33 districts of Gujarat, highlighting their district capitals. The state capital of Gujarat, Gandhinagar, is located near the northern region of the state, while Ahmedabad, a prominent city and commercial hub, serves as the district headquarters for Ahmedabad district. Other significant district capitals include Surat, Rajkot, Vadodara, and Bhavnagar, which are important cultural and economic centers of the state. The map also outlines the international boundary with Pakistan in the northwest, and the boundaries with Maharashtra and Madhya Pradesh in the south and east. The Arabian Sea lies to the southwest of the state, influencing Gujarat's coastal economy (MapsofIndia, 2019).

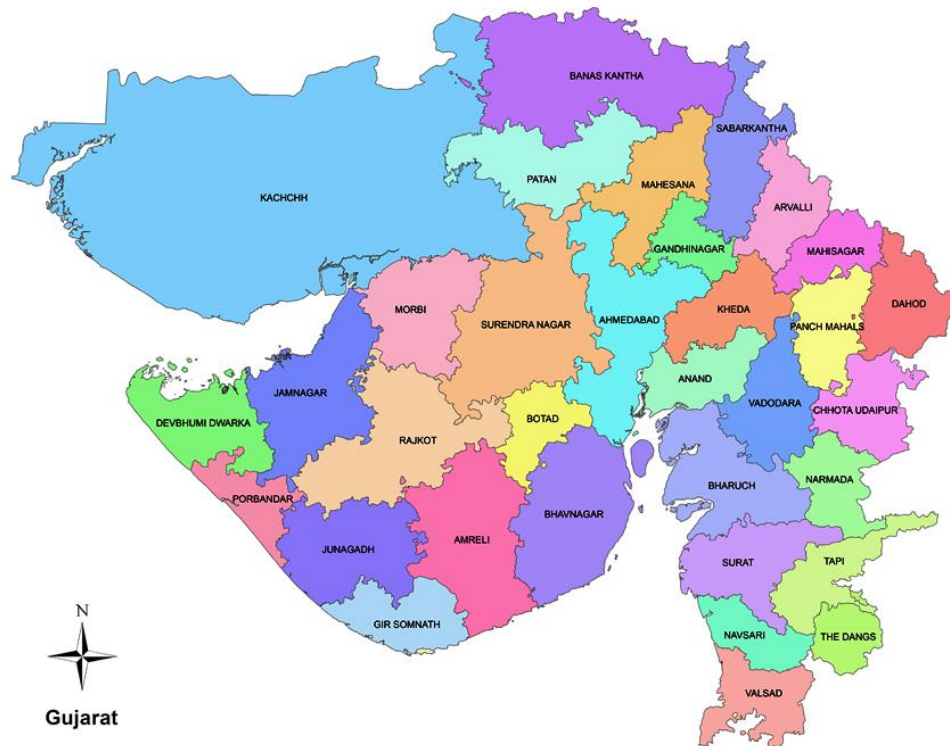
3.1.2 Landscape of Gujarat's cities

Gujarat, an Indian state, boasts a vibrant cultural heritage evident in its arts, music, literature, religious practices, cuisine, and a variety of fairs and festivals. Gujarat's major cities include Ahmedabad, Surat, Baroda, and Rajkot, each offering a blend of tradition, history, architecture, culture, and philosophy. Gujarat's principal

language is Gujarati, but it encompasses many languages and dialects across its regions, castes, and traditions. The social life in Gujarat is diverse, with various languages, customs, festivals, celebrations, costumes, food habits, and dwellings. The Gujarati are hardworking and humble, have expanded their economy and business ventures globally. Gujarat's lifestyles vary across the region, with fairs and festivals showing casting enthusiasm, entertainment, and spirituality. The Navratri celebration is a global event, with dance forms influenced by unique styles in different cities (India Tourism Board, Ministry of Tourism 2021-2022).

Gujarat, often referred to as "The Urbanized State of India," is on the brink of witnessing more urban residents than rural ones for the first time in its history. With a per capita GDP nearly double the national average, Gujarat boasts the fastest-growing economy in the country. However, rapid urbanization and industrial growth have adversely affected both the quality of life and the environment. Inconsistent regulatory actions have resulted in poor air and water quality, insufficient wastewater management, intermittent power supply, and environmental degradation. The swift rise in coal-based electricity generation has led to higher greenhouse gas emissions, exacerbating local pollution and contributing to climate change. In response, the state government has been proactive in encouraging renewable energy initiatives and introduced a comprehensive solar energy policy in 2009. A holistic approach to sustainability is essential, integrating persons solutions into master planning to improve urban life quality and reduce ecological footprint (NITI Aayog 2020, Ministry of Environment and Forests 2021).

Figure 3 Political Map of the cities in Gujarat state



Source: Maps of India, 2022

Figure 3 on the Political Map of the cities in Gujarat state showing the state's districts in different colors. Each district is labeled, and the map highlights the regional boundaries across the state. This map includes significant districts like Ahmedabad, Rajkot, Vadodara, and Surat, which are known for their economic, cultural, and industrial importance. Gandhinagar serves as the state capital, and cities such as Bhavnagar, Jamnagar, Porbandar, and Junagadh are important for both historical and administrative purposes. The map also includes Kutch in the northwest, known for its unique geographical features. This map provides a clear view of the state's geographical divisions, helping to understand the political structure and the distribution of districts within Gujarat.

3.1.3. The Study area

The study was conducted in three urban cities of Gujarat from Rajkot, Junagadh and Jamnagar with their urban wards only.

3.1.3.1. Rajkot city

Rajkot district, one of the 33 districts in Gujarat, is situated in the Saurashtra Peninsula. Rajkot city serves as the district's administrative center. It ranks as the

third-most developed district in Gujarat and the fourth most populous city in the state. The district is bordered by Morbi to the north, Surendranagar and Botad to the east, Amreli and Junagadh to the south, and Porbandar and Jamnagar to the west (Government of Gujarat, Department of Revenue or District Administration Reports, 2021). Covering an area of 11,203 square kilometers, Rajkot district had a population of 3,804,558 according to the 2011 census, ranking 68th in India among a total of 640 districts. The population density is 339 people per square kilometer (880/sq mi). The district's population grew at a rate of 19.87% from 2001 to 2011. Rajkot city has a sex ratio of 924 females for every 1,000 males, and the overall literacy rate stands at 82.2%. (Government of India, Census Authority 2011). The 2011 Census of India reported that 96.31% of the population in Rajkot district are speaking Gujarati and 1.95% Hindi as their first language (Government of India, Census Authority 2011).

Table 1 Profile of Rajkot City per 2011 census

Category	Total	Male	Female
Total population	38,04,558	51.89%	48.10%
City + Out Growths	1,323,363	52.40%	47.59%
City Population	1,286,678	52.41%	47.58%
Households with 60+	2,86,526	-	-
Elderly Above 60+	1,06,746	48.68%	51.31%
Children (0-6)	138,052	54.47%	45.52%
Literates	1,008,485	54.33%	45.66%
Literacy Rate > 60	6,93,473	49.10%	33.10%
Literacy Rate < 60	9,63,486	83.01%	65.93%
Average Literacy (%)	11,29,952	91.46 %	83.81 %
Sex Ratio	908	--	--
Child Sex Ratio	836	--	--

Source: Official Directorate of Census Operations (Rajkot District) in Gujarat 2011 of India

Table 1 on the profile of Rajkot city per census reveals a population of 3,804,558, with a slightly higher male population (51.89%) compared to females (48.10%). The city and its outgrowth areas have a total population of 1,323,363, maintaining a similar gender distribution. The elderly population (60+) is 106,746, with women slightly outnumbering men. In terms of literacy, the total literate population is 1,008,485, with a higher literacy rate for males (91.46%) compared to females (83.81%). The sex ratio is 908 females per 1,000 males, and the child sex ratio is 836 females per 1,000 males, indicating a male skew. The data shows that while Rajkot has high literacy rates, there are noticeable gender disparities,

particularly in the older population (Census of India, 2011).

Figure 4 Map of the Rajkot District in Gujarat in India



Source: Author, Milenioscuro, 2021

Figure 4 on the map of the Rajkot district in Gujarat in India illustrates the Rajkot district in Gujarat, India, highlighted in red to distinguish it from neighboring districts. It provides a clear view of Rajkot's geographical boundaries within Gujarat and includes an inset showing Gujarat's location within India for broader spatial context.

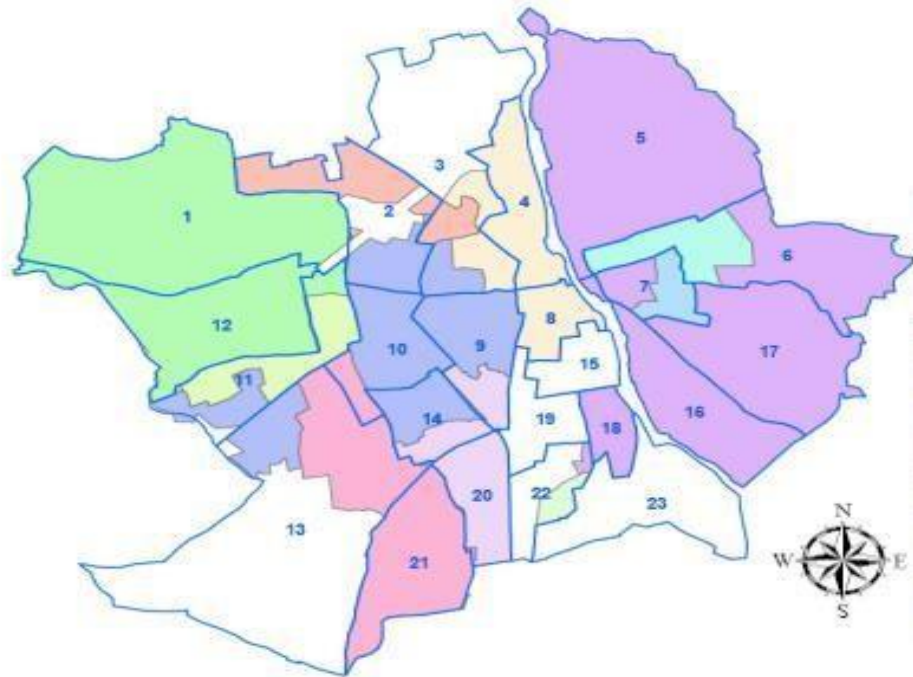
Figure 5 Map of Rajkot District with Taluka



Source: Author, Milenioscuro, 2023

Figure 5 on the map of Rajkot district with taluka map provides a detailed view of the Rajkot district in Gujarat, India, showcasing its division into talukas. Each taluka is distinctly color-coded and labeled, including prominent areas such as Rajkot, Gondal, Jasdan, and Jetpur. This illustration emphasizes the administrative subdivisions within the district, aiding in understanding its local governance structure.

Figure 6 Map of Rajkot City with the municipal wards



Source: Rajkot Municipal Corporation RMC

Figure 6 on the map of Rajkot city with the municipal wards divides the area into 23 municipal wards, each numbered for easy identification. Wards like 1, 5, 6, and 12 cover larger regions, while central wards such as 8, 9, and 10 form the core urban area. The map uses distinct colors to differentiate each ward, with a compass provided to denote cardinal directions, ensuring clarity in orientation and urban planning reference.

3.1.3.2 Junagadh city

Junagadh is both a city and the administrative headquarters of Junagadh district in Gujarat, India. Situated at the base of the Girnar hills, it lies 355 kilometers (221 miles) southwest of Ahmedabad and Gandhinagar, the state capital. It is the seventh-largest city in Gujarat. Historically, Junagadh was part of both the Saurashtra state and later Bombay state. Following the Maha Gujarat movement in 1960, it became a part of the newly established Gujarat state (Government of Gujarat, District Administration Records 2021).

According to the 2011 census, the population of Junagadh municipality was 319,462, with a sex ratio of 955 females for every 1,000 males. The male and female literacy rate was 92.46% and 83.38% respectively. While, the urban slum constituted

7.87% of the district population as per the municipal cooperation occupying 19.5 square kilometers (7.5 sq mi) that is 14.5% of the total municipal area (Government of India, Census Authority, Junagadh Municipal Corporation 2011).

Table 2 Profile of Junagadh City per 2011 census

Category	Total	Male	Female
Total Population	27,43,055	51.19%	48.80%
City + Out Growths	3,26,789	51.09%	48.90%
City Population	3,19,462	51.15%	48.84%
Households with 60+	67,698	--	--
Elderly Above 60+	28,283	47.79%	52.20%
Children (0-6)	40,950	53.66%	46.33%
Literates	10,46,981	681,209	365,772
Literacy Rate > 60	19,122	58.57%	41.42%
Literacy Rate < 60	2,80,870	92.46 %	83.38 %
Average Literacy (%)	2,46,720	85.46%	69.01%
Sex Ratio	953	--	--
Child Sex Ratio	903	--	--

***Source: Official Directorate of Census Operations (Junagadh District) in Gujarat
2011 of India***

Table 2 Profile of Junagadh City per 2011 census shows that according to the 2011 Census, Junagadh City had a total population of 27,43,055, with males constituting 51.19% and females 48.80%. The city's population, including outgrowths, was 3,26,789, and the urban core had 3,19,462 residents. Households with elderly persons aged 60 and above numbered 67,698, while the elderly population totaled 28,283, with a higher female proportion (52.20%) compared to males (47.79%). Children aged 0–6 accounted for 40,950, with males forming 53.66% and females 46.33%. The literacy count was 10, 46,981, with 58.57% literacy among those over 60 and 92.46% for those under 60. The average literacy rate stood at 85.46% for males and 69.01% for females. The city's overall sex ratio was 953 females per 1,000 males, while the child sex ratio was 903. These figures highlight the demographic, literacy, and gender distribution in Junagadh.

Figure 7 Map of the Junagadh District in Gujarat in India



Source: Author, Milenioscuro, 2022

Figure 7 on the map of the Junagadh district in Gujarat in India depicts a political map of Gujarat, a state in western India, highlighting the Junagadh district in red. The district is located in the southwestern part of Gujarat, bordering the Arabian Sea. The map outlines all the districts in the state with clear boundary markings. Additionally, an inset at the bottom-left corner provides a larger map of India, with Gujarat highlighted, showing the state's location within the country. The visual emphasizes Junagadh's geographical prominence within the state's coastal region.

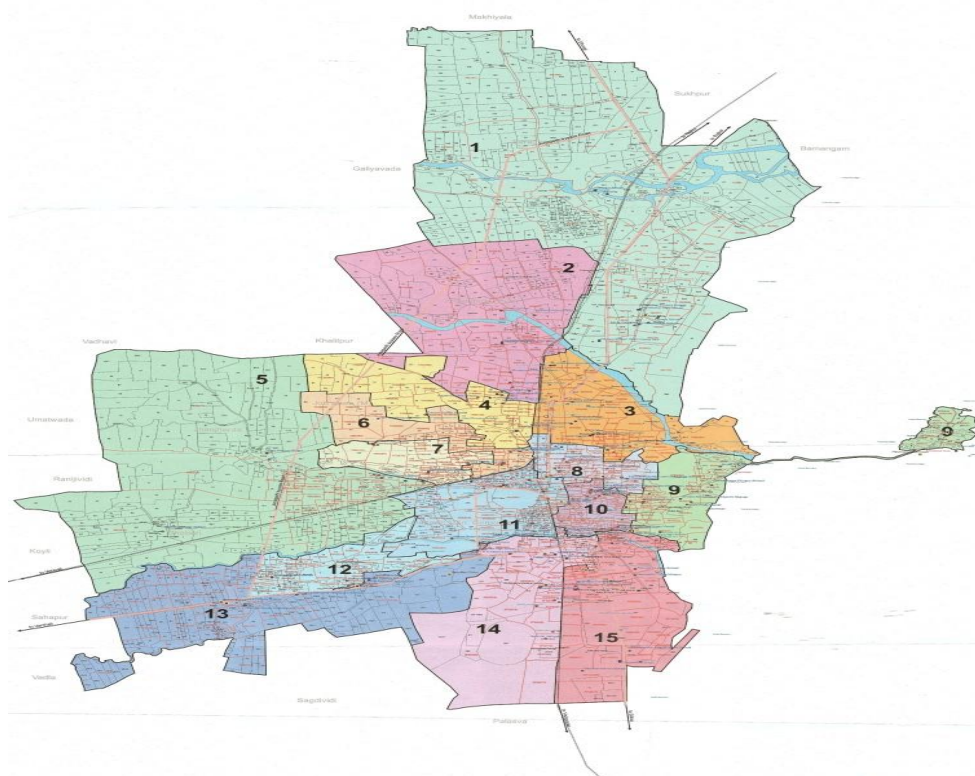
Figure 8 Map of Junagadh District with Taluka



Source: Author, Milenioscuro, 2022

Figure 8 on the map of Junagadh district with taluka illustrates the Junagadh district in Gujarat, India, divided into its talukas (sub-districts), each represented by distinct colors for easy identification. The talukas include Junagadh City, Junagadh, Visavadar, Bhesana, Manavadar, Vanthali, Keshod, Malia, Mendarda, and Mangrol. A compass rose at the bottom-right corner indicates the cardinal directions. The visual highlights the administrative division of the district, emphasizing its diversity and geographic distribution. Let me know if you'd like further explanation or a focused description of any specific taluka.

Figure 9 Map of Junagadh city with the municipal wards



Source: Junagadh Municipal Corporation JUMC

Figure 9 on the map of Junagadh city with the municipal wards depicts Junagadh city divided into municipal wards, each uniquely colored and numbered for identification. The wards are numbered sequentially from 1 to 15, representing different administrative areas within the city. Key landmarks, roads, and surrounding areas are included to provide a detailed view of the city's urban layout. The map highlights the structured organization of Junagadh's municipal governance, ensuring clarity in managing city services and local administration.

3.1.3.3 Jamnagar City

Jamnagar is a city situated on the western coast of India, in the Saurashtra region of Gujarat. It serves as the administrative headquarters of Jamnagar district and is the fifth-largest city in the state. The city is located just south of the Gulf of Kutch, approximately 337 kilometers west of Gandhinagar, the state capital (Government of Gujarat, District Administration Records 2021).

As per 2011 census, Jamnagar city has a population of 660,000. The metro population of Jamnagar is estimated now at 828,000 due to increasing population. The city is divided into 21 wards. As per the 2011 census, there were total of

125,538 families residing in the Jamnagar city. The average sex ratio is 919. The Family Health Survey, 2015-16 has reported that 9.5% women were detected with diabetes. The data on elders is not available officially, which is a big gap in elderly health care (Government of India, Census Authority; Family Health Survey (2015-16)).

Table 3 Profile of Jamnagar City per 2011 census

Category	Total	Male	Female
Total population	11,89,054	51.30%	48.69%
City + Out Growths	600,943	52.12%	47.87%
City Population	479,920	51.87%	48.12%
Households with 60+	1,25,028	-	-
Elderly Above 60+	51,605	47.45%	52.54%
Children (0-6)	50,097	53.64%	46.35%
Literates	353,058	54.66%	45.33%
Literacy Rate > 60	40,135	73.67%	26.32%
Literacy Rate < 60	3,53,029	81.50%	65.63%
Average Literacy (%)	3,94,206	86.90 %	77.05 %
Sex Ratio	928	-	-
Child Sex Ratio	864	-	-

Source: Official Directorate of Census Operations (Jamnagar District) in Gujarat 2011 of India

Table 3 on the profile of Jamnagar city per 2011 census shows that as per the 2011 Census, Jamnagar city had a total population of 11, 89,054, with males constituting 51.30% and females 48.69%. The city population, including outgrowths, stood at 6, 00,943, while the urban core housed 4, 79,920 person, with a slightly higher male percentage (52.12%) compared to females (47.87%). Households with members aged 60+ numbered 1, 25,028, and the elderly population totaled 51,605, of which 52.54% were female and 47.45% male. Children aged 0–6 accounted for 50,097, with 53.64% males and 46.35% females. The city recorded 3, 53,058 literates, with males (54.66%) outnumbering females (45.33%), and an average literacy rate of 86.90% for males and 77.05% for females. Among the literates aged above 60, 73.67% were male, while below 60; literacy rates were 81.50% male and 65.63% female. The overall sex ratio was 928 females per 1,000 males, and the child sex ratio was lower at 864.

Figure 10 Map of the Jamnagar District in Gujarat in India



Source: Author, Milenioscuro, 2021

Figure 10 on the map of the Jamnagar district in Gujarat in India highlights Jamnagar district, located in the western state of Gujarat, India. Known for its strategic coastal position along the Arabian Sea, Jamnagar is a hub of industrial activity, housing some of the world's largest oil refineries. Historically significant, the district was once the princely state of Nawanagar and is renowned for its cultural landmarks like Lakhota Fort and natural attractions, including the Marine National Park. It plays a vital role in Gujarat's economy and heritage, blending industrial prominence with rich traditions and biodiversity.

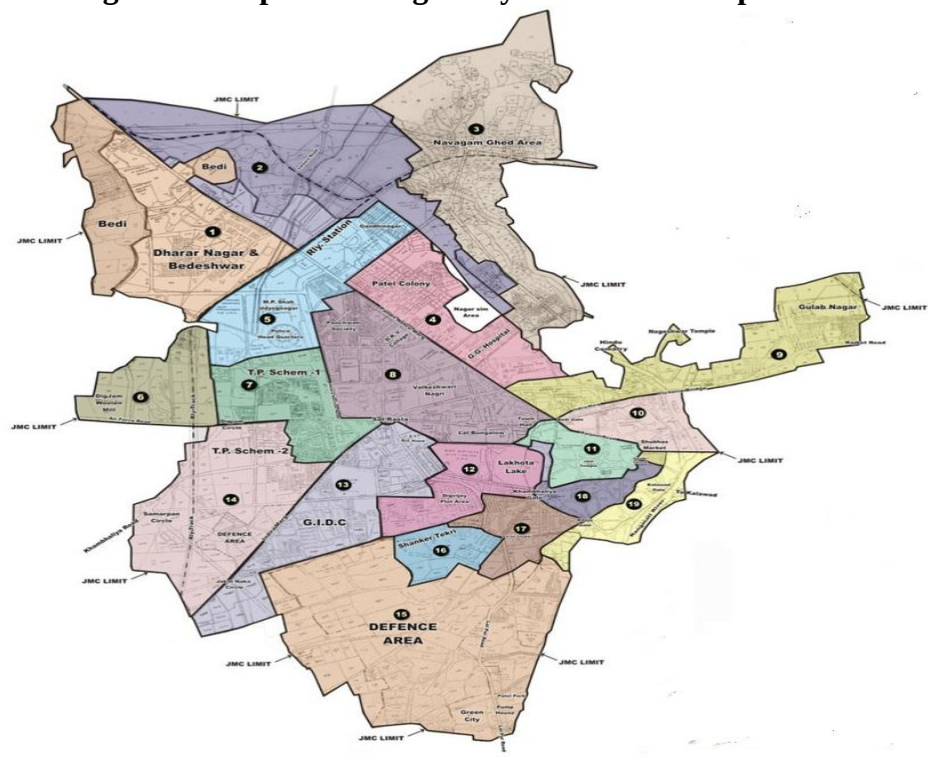
Figure 11 Jamnagar District Map with Taluka



Source: Author, Milenioscuro, 2022

Figure 11 on Jamnagar District Map with Taluka shows Jamnagar district in Gujarat divided into its administrative talukas (sub-districts), which include Jamnagar, Dhrol, Jodiya, Kalavad, Lalpur, and Jamjodhpur. Each taluka is color-coded for clear distinction. This division highlights the administrative framework and helps in understanding the geographic distribution and governance structure within the district

Figure 12 Map of Jamnagar city with the municipal wards



Source: Jamnagar Municipal Corporation JMC

Figure 12 Map of Jamnagar city with the municipal wards illustrates the municipal wards of Jamnagar city under the Jamnagar Municipal Corporation (JMC), each marked with a distinct number for administrative clarity. Key areas include Ward 1, covering Bedeshwar and Dharar Nagar; Ward 4, encompassing the Defence Area; and Ward 9, including Gokul Nagar. Other wards highlight significant zones such as Patel Colony, Lakota Lake, and GIDC. These divisions play a crucial role in urban governance, enabling efficient planning, infrastructure development, and service delivery to the residents of Jamnagar city.

3.2 Research Design

The study adopted both qualitative and quantitative methods. The descriptive research design aims at understanding and testing the variable and the hypotheses and also it aims at extending the research area as the descriptive research design aims to understand the population, situation, and social phenomena systematically.

The present study “Geriatric Care and Quality of Life among Elderly Persons Living with Diabetes in Gujarat, India” assessed and examined the relationship of geriatric care with QOL of elderly persons living with diabetes in organized settings

of Gujarat context by selecting 3 urban cities name Rajkot, Junagadh and Jamnagar across the urban agglomeration such as primary health center, urban primary health center, health and wellness centers, district civil hospitals, government medical colleges, government ayurvedic hospitals, private hospitals, private clinics, non-governmental clinics and hospitals and the old age homes.

The Quality of Life is assessed with a semi-structured 5-point Likert Scale concerning all the facets comprehensively assessed by the WHO-Bref Scale which contains 26 item scales and is categorized into four principle domains such as physical domains, psychological domains, social relationships, and environment (WHO-BREF 2010). This has explored the psychological (Emotional Well-being and Mental Health) and social (Relational) aspects of aging involves understanding the elderly navigate their emotions, mental health, and connections with others, including family, friends, and larger communities and its involvement and their quality of life and overall well-being. The researcher conceived to make use of case study method to document the human side of elders from quality of life and value of social work perspectives and practices.

3.3 Sampling

3.3.1 Sampling Methods

The elderly population in rural Gujarat represents a significant demographic, often deeply rooted in the state's rich traditions, culture, and customs, which have been passed down through generations. Their lives are shaped by a variety of socio-cultural and livelihood factors that are integral to the rural way of life. However, these aspects often remain under-explored in broader social discussions, with one of the most crucial concerns being the health and well-being of these elderly persons.

In rural Gujarat, elderly people frequently live in multi-generational households, which emphasizes family care as a key element of their support system. Traditionally, Indian culture, including that of Gujarat, values respect and care for elders, where the younger generation assumes responsibility for the well-being of their aging family members. However, this traditional care system is gradually being challenged by modern socio-economic shifts, including migration to urban areas, nuclear families, and economic pressures. This changing dynamic can leave elderly persons vulnerable to neglect or insufficient care, especially in terms of health and

emotional support. Health care is a prominent concern for the elderly in rural Gujarat.

The research study conducted in the region of Gujarat which is known as ‘*Saurashtra*’, as well as known as ‘*Kathiawar*’, is a prominent peninsular region located on the western coast of Gujarat, India, along the Arabian Sea. Covering approximately one-third of Gujarat, this region includes 11 districts, with Rajkot, Junagadh and Jamnagar districts being one of the most significant. This region is known for its unique culture, rich history, and economic significance (Gujarat Statistical Office 2011).

In this process, a multistage sampling procedure was employed to select different urban municipal wards framed by the Municipal Corporation with the Town Planning department, on geographical zones (East, West, North, and South) in the cities of Rajkot, Junagadh, and Jamnagar. Gujarat which were selected purposefully as the study area. Therefore Rajkot city has its own total 23 wards, Junagadh has 15 wards and Jamnagar has 18 wards. The sampling aimed to capture the locality-specific characteristics of elderly respondents within each city's distinct wards. This method likely involved multiple steps, such as first identifying key regions or sectors within the cities, then narrowing down the wards from each zone to ensure diverse and representative data collection.

According to the 2011 Census, Rajkot had 1,286,678 total population, of whom 52.41% were men and 47.58% were women. There were 1,06,746 elderly people living with 60, of whom 48.68% were men and 51.31% were women there were 2,86,526 senior people living with their households. There was total 3,19,462 population living in Junagadh city, of whom 51.15% are men and 48.84% are women there are 28,283 elderly, of whom 47.79% are men and 52.20% are women, and their households are total 67,698. Whereas Jamnagar city has total population of 479,920, with 51.87% of them being men and 48.12% being women. there are total households 51,605 for the elderly of whom 47.45% are men and 52.54% are women and the elderly with their households is 1,25,028 (Census of India 2011).

The population of the study consisted of elderly persons residing in urban areas within specific wards. A systematic stratified random sampling technique was used to select participants from three cities. The sampling frame was composed of

elderly person diagnosed with diabetes who lived in urban households across these cities.

The selected elderly respondents are from the three cities of Gujarat state as:-

Rajkot city: Under this category 216 elderly respondents both male and female living with diabetes were selected.

Junagadh city: Under this category, 113 elderly respondents both male and female living with diabetes were selected.

Jamnagar city: Under this category, 171 elderly respondents both among male and female living with diabetes were selected.

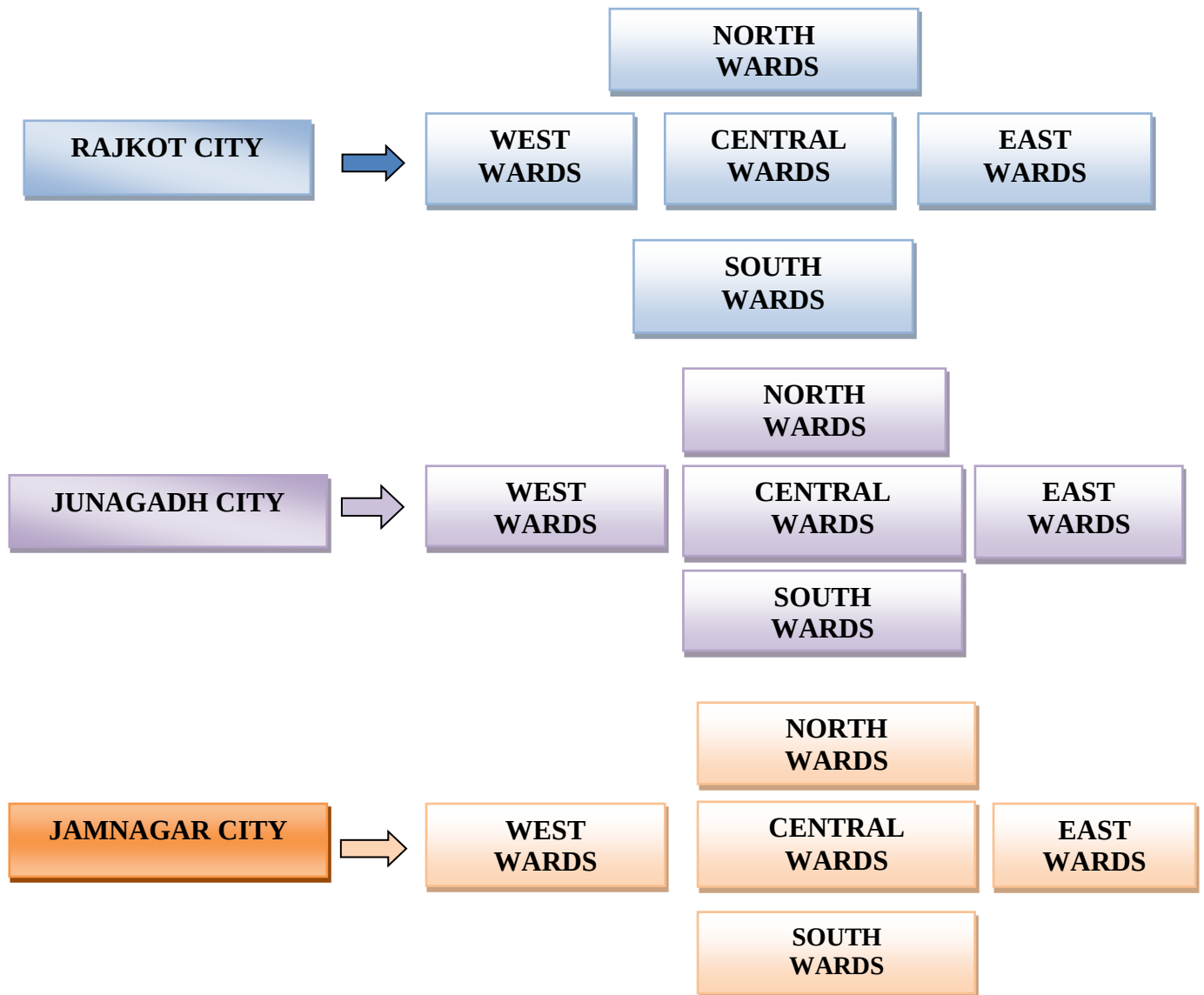
Therefore, the study has 500 elderly respondents living with diabetes.

Firstly, Rajkot, Junagadh and Jamnagar cities of the three districts were chosen out of 33 districts in Gujarat. This is the context of the study. From the urban regions - three cities were chosen for drawing samples of elders who lived with diabetes ailment. These three cities recorded higher level of diabetes among the urban population in general and elderly in particular. Given this rationale, purposefully chosen the urban clusters for this study.

Secondly, male, female and transgender were chosen based on their representation among the elders with diabetes population. This is intended to draw sample of equal proportion of men, women and transgender entities with a view to analyze the sample based on gender analysis.

Thirdly, the age of the respondents were group into three age groups as 60-70 years, 71-80 years and 80> categories were chosen. This also provides the mean age of elders with diabetes in Gujarat state.

Figure 13 Sampling Framework



Source: Computed

Figure 13 on the sampling framework illustrates that the the sampling framework includes three cities Rajkot, Junagadh, and Jamnagar each divided into five wards: North, West, Central, East, and South. This structure ensures comprehensive coverage across different regions within each city, facilitating a balanced sampling approach for the study.

3.3.2 Universe of the Study

The universe of the study is aged above 60 years living with diabetes. The total number of elderly diabetes were collected from respondents drawn from the list provided by the Primary Health Centres, Urban Primary Health Centres, District Civil Hospitals, Government Medical Colleges, District Ayurvedic Hospitals, Health

and Wellness Centres, Private Hospitals and Clinics, NGOs Hospitals and the Old Age Homes. Those with clinically diagnosed with diabetes, as per the government specification/standards alone were form part of the universe of this study. The study compiled a list of 1020 elderly living with diabetes and out of which 500 respondents were selected using a stratified random sampling technique. The list was compiled from confirmed diabetes patients from both government and private health service providers.

3.3.3 Sample Units

The unit of the study is an elderly above 60 years of age, diagnosed with diabetes residing in the three cities of Gujarat state namely Rajkot cities, Junagath city and Jamnagar city.

To capture the elderly care perspectives of different age groups, the sample respondents comprised of 60-70 years, 71-80 years and 81>. Among them, as per their representation, men, women and transgender were chosen for the study.

The other categories of sample respondents were doctors particularly diabetologists, geriatricians, Old Age Home (OAH) promoters, administrators and geriatric social workers.

Table 4 Distribution of Respondents

Sample Category Site	Rajkot City	Junagadh City	Jamnagar City
Primary Health Centres	21	12	32
Urban Primary Health Centres	30	10	30
Health and Wellness Centres	12	11	16
District Civil Hospital	24	13	12
Government Medical College	48	21	35
Government Ayurvedic Hospitals	25	11	13
Private Hospitals	10	07	10
Private Clinic	13	10	12
NGOs Running Clinics & Hospitals	15	08	05
Old Age Homes	18	10	06
Total	216	113	171
Total Respondents	500		

Source: Computed

Table 4 on the distribution of respondents presents the distribution of respondents across various health service categories in three cities: Rajkot, Junagadh, and Jamnagar. The respondents are categorized based on the type of health facility,

which includes Primary Health Centres, Urban Primary Health Centres, Health and Wellness Centres, District Civil Hospitals, Government Medical Colleges, Government Ayurvedic Hospitals, Private Hospitals, Private Clinics, NGOs running Clinics & Hospitals, and Old Age Homes. In Rajkot, the highest number of respondents were from Government Medical Colleges (48), followed by Urban Primary Health Centres (30) and Private Ayurvedic Hospitals (25). In Junagadh, the largest group was from Primary Health Centres (21), with notable numbers from Government Medical Colleges (21) and District Civil Hospitals (13). In Jamnagar, the respondents were mostly from Primary Health Centres (32), Government Medical Colleges (35), and Health and Wellness Centres (16). The total number of respondents from all three cities combined is 500, with Rajkot contributing 216, Junagadh 113, and Jamnagar 171 respondents.

3.3.4 Sources of Data

The data was drawn from the government and private sources the basis of the lists compiled by the research in partnership with the government and private health services.

Table 5 Sources of Data

Sl.No	Government Sources	Private sources
01	Primary Health Centre	Private Hospital
02	Urban Primary Health Centre	Private Clinics
03	Health and Wellness Centres	NGOs Running Clinics & Hospitals
04	District Civil Hospitals	Old Age Homes
05	Government Medical College	
06	Government Ayurvedic Hospitals	

Source: Computed

Table 5 on the sources of data outlines the sources of data categorized into government and private sources. The government sources include Primary Health Centres, Urban Primary Health Centres, Health and Wellness Centres, District Civil Hospitals, Government Medical Colleges, and Government Ayurvedic Hospitals. On the private side, the sources include Private Hospitals, Private Clinics, NGOs running Clinics & Hospitals, and Old Age Homes. Notably, there are no private sources listed for Government Medical Colleges or Government Ayurvedic Hospitals in this table. This distinction highlights the diversity in the types of health-related data collected from both government and private sectors.

3.4 Pilot Study

Pilot study is conducted among 25 elderly respondents living with diabetes from Old Age Homes (OAHs), diagnosticians and other health personnel from Urban Health Centre, Civil hospitals and Private hospitals of Rajkot, Junagadh and Jamnagar in Gujarat State

The pilot study helped the researcher to understand the local context from Rajkot, Junagadh and Jamnagar urban area and logistical point of view, while pursuing this research with elders. Based on the pilot study, the researcher improved and sharpened the sampling plan, sampling techniques and sampling methodology and validated it from the views of elders.

The researcher conducted a pilot study in Rajkot, Junagadh, and Jamnagar urban areas of Gujarat State to test the practicality, workability, and effectiveness of research on diabetes patients, doctors, senior social workers, administrators; promoters of old age homes, and diagnosticians. The pilot study involved visiting urban health centers, civil hospitals, private hospitals, and old-age homes to identify diabetics above 60 years old and administer questions and interviews. The study aimed to ensure the research plan, tools, and operational strategies were realistic, practical, and workable. This study investigates the Quality of Life (QoL) of elderly diabetic patients in Gujarat, India. Utilizing the WHOQoL-BREF tool, which consists of 26 questions, the research evaluates QoL across four domains: physical health, psychological well-being, social relationships, and environmental factors, with data gathered from 500 participants. The findings have shown that physical, psychological, and social services positively affect the quality of life (QoL), primarily due to insufficient geriatric services. It was found that the economic support and family support were crucial for the well-being of elderly living with diabetics. Further, the findings highlight gaps in existing care systems and emphasize the need for better services to improve healthy aging outcomes. The pilot study drew the perspectives of elders, geriatric social workers, doctors, and diagnosticians, ultimately leading to the creation of a perfect research plan that is practically possible and feasible (WHOQOL-BREF 1998, Choudhury, S. K., & Singh, A. P. 2014, Rajput, R., & Joshi, M. 2016, IDF 2020).

3.4.1 Pre-Testing

The researcher administered the interview schedule with different age group of elderly living with diabetes including both men and women, those aged 60-70, 71-

80, 81>, doctors, geriatricians, old age home promoters and administrators and diagnosticians.

The pre-test resulted in revision of the questions by redrafting and changing the words used to capture the right responses from the old age persons and other respondents. While testing it, the gender and their sensitivity elements were checked to see to it the respondents are comfortable and conveniently reply to the questions posed. At the end, the researcher evolved realistic and practical research tools that was suitable for conducting a research on elderly living with diabetes in Gujarat.

3.5 Tools of Data Collection

With regard to tools of the study, the researcher has clear plan of research tools to collect information from the respondents. It includes survey questionnaires and interviews schedule. Under the key informant interview, the researcher posed key questions to doctors, OAH (Old Age Home) Administrators, Social Workers and health service providers, which were documented.

To capture qualitative facets of respondents, their sensitivities, sufferings and lived experience, case study method is being used to understanding the realities and real-life situations. In addition, it provides to draw the care perspectives, practices and the values of mitigated measures with elder friendly interventions.

The quality of Life of the respondents were assessed using WHO Quality of Life-100 (QoL) tool and WHO QoL-Bref tools.

The quantitative data is collected through the administration of structured scale. The WHOQoL-BREF scores provide an overall picture of the quality of life and domain-specific scores. Some of the sentences are organized and re-constructed as applicable to the local vernacular context. Consequently, some of the scales are also converted into a 5-point Likert Scale from a 7-point Likert scale for better comprehension and analysis (WHO 1998, WHO 2004, Likert, R. 1932).

The qualitative information is elicited through Focus Group Discussions (FGDs). FGD was conducted with 8 participants each in every of the cities and participants were across the private and government healthcare settings. Key Informant Interviews (KIIs) was held with the doctors particularly diabetologists, geriatricians, old age home (OAH) promoters, administrators and geriatric social workers. In addition, interviews were conducted with the respondents to have deeper understanding on the research area.

3.5.1 Reliability and Validity of WHOQoL BREF Tool

The WHO Quality of Life Questionnaire (WHOQOL-Bref) is a commonly used instrument for assessing the quality of life in both healthy and ill populations. However, some studies have highlighted concerns regarding its reliability in the social and environmental domains, as well as issues with construct validity across different age groups. This paper evaluates the psychometric properties of the Norwegian version of the WHOQOL-Bref, testing for measurement invariance across age, gender, and education levels, while also providing updated normative data for the Norwegian population (Evaluation of the Psychometric Properties of the Norwegian WHOQOL-Bref, 2018).

A recent study demonstrated that the WHOQOL-BREF tool is both valid and reliable for evaluating quality of life (Almarabheh et al., 2023). The study specifically assessed the tool's validity and reliability in measuring the quality of life of patients with Sickle Cell Disease in Bahrain.

The World Health Organization (WHO) developed the WHOQOL, a tool designed to assess the subjective aspects of quality of life. The WHOQOL-BREF is widely used for cross-cultural comparisons and is available in over 40 languages. This tool evaluates quality of life across four domains: physical health, psychological health, social relationships, and environmental health. Each item is scored on a scale from 1 to 5, which is then linearly transformed into a 0–100 scale. The physical health domain covers mobility, daily activities, functional capacity, energy, pain, and sleep. The psychological domain assesses self-image, self-esteem, mental health, learning ability, memory, concentration, religion, and mental status. The social relationships domain addresses personal relationships, social support, and sexual life. The environmental health domain includes factors such as financial resources, safety, health and social services, living environment, opportunities for learning and recreation, overall surroundings, and transportation (Kalfoss et al., 2017).

3.5.2 Justification for the Use of WHOQOL-BREF

The WHOQoL-BREF assesses Quality of Life (QoL) based on an individual's cultural context, value systems, and personal standards, aspirations, and concerns. Its psychometric properties have been rigorously tested and validated, both for the WHOQoL-BREF and the longer WHOQoL-100 version, by the WHO and other global researchers. The tool has been used on diverse populations with various

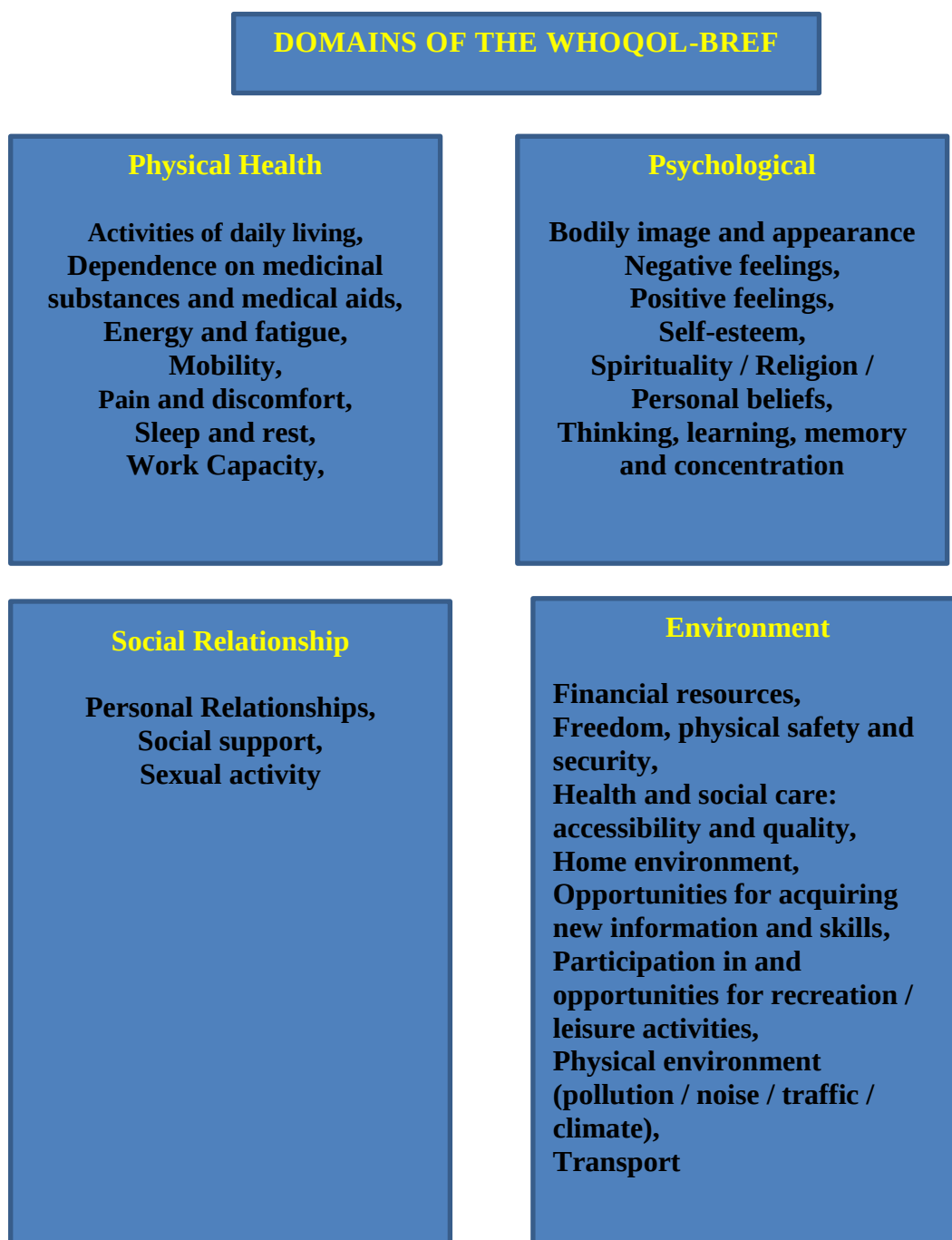
health conditions, across multiple languages and cultures. The WHOQoL-BREF has demonstrated strong validity, content validity, internal consistency, and test-retest reliability. Skevington et al. concluded that, based on testing, the WHOQoL-BREF is "a robust, cross-culturally valid tool for assessing QoL (Skevington et al. 2004).

The WHOQoL-BREF shows a strong correlation with the WHOQoL-100, indicating that it is a valid alternative to the longer version. Quality of life (QoL) is a crucial factor in determining how healthy a person is. People's QoL in the areas of physical health, psychological well-being, interpersonal relationships, and environment can all be impacted by environmental quality. QoL throughout all four areas, as well as resident's general health of elderly was taken into account (Skevington et al. 2004).

The WHOQoL-BREF is designed for use with general populations, specific groups, or individuals with particular health conditions. This self-administered questionnaire consists of 26 questions that assess a person's perceptions of their health and well-being over the past two weeks. Responses are given on a 1-5 Likert scale, where 1 indicates 'disagree' or 'not at all' and 5 indicates 'completely agree' or 'extremely.' The WHOQoL-BREF covers four domains, each containing specific facets (WHOQOL-BREF 1998).

There are also two separate questions on the person's overall perception of their health and the person's overall perception of their quality of life. The researcher further looked the tool from the point of view of its relevance to the quality of life of elderly persons living with diabetes. Though there are far and few studies linked to QoL of elderly linking diabetes, the researcher based on the informed decision decided to pursue WHO-Brief tool for quantitatively measure QoL with exclusive focus on diabetes

Figure 14 Domains of the WHOQOL-BREF



Source: Computed

Figure 14 illustrates the domains assessed by the WHOQOL-BREF, which evaluates quality of life across four key areas: Physical Health, which includes daily living activities, reliance on medical aids, energy levels, mobility, pain and discomfort, sleep, rest, and work capacity; Psychological, which encompasses body image, positive and negative emotions, self-esteem, spirituality or personal beliefs,

and cognitive functions such as thinking, learning, memory, and concentration; Social Relationships, focusing on personal relationships, social support, and sexual activity; and Environment, which covers financial resources, physical safety, accessibility and quality of healthcare, home environment, opportunities for education and recreation, physical environmental factors like pollution and noise, and transportation. This comprehensive framework offers a well-rounded perspective on an individual's quality of life.

3.6 Data Processing and Analysis

Statistical analysis is part of this study and therefore, partial focus is on quantitative techniques. The WHO-Brief version of Questionnaire, which is a quantitative measurement of quality of life. Similarly, the primary data collected is aggregated to know the quantitative values. The quantitative data were processed through MS Excel and analyzed with the help of Statistical Package of Social Sciences (SPSS) software. In addition, qualitative data were freely listed and analyzed thematically. The statistical expression of simple averages, percentages, and proportions, chi-square test Karl Parsons's correlation coefficient, and t-test were used to draw findings.

3.7 Operational Definitions

The major concepts used in the study include

3.7.1 Geriatrics

The term "geriatrics" was introduced by Dr. Ignatz Leo Nascher in 1909, defining it as a specialty focusing on aging-related diseases. In 1914, his book '*Geriatrics: The Diseases of Old Age and Their Treatment*' laid the foundation for geriatric medicine. Traditionally, 65+ years defines "geriatric," but aging varies individually. A comprehensive definition includes chronic conditions, functional decline, and vulnerability to health stressors. Geriatrics emphasizes multidisciplinary care to optimize function, quality of life, and independence. More than age, health status and functional needs determine geriatric care (Stuck & Masud, 2022, Oxford University Press).

3.7.2 Geriatric Care

Geriatrics refers to the branch of medicine concerned with the healthcare of elderly persons, particularly in addressing their medical issues. Geriatric care is a specialized field that focuses on the health problems and diseases associated with aging, along with the medical care and treatment required for older adults.

Geriatric care addresses the specific needs of older adults by promoting their physical, mental, and social well-being. The goal is to improve the quality of life for elderly persons by managing chronic conditions, preventing and treating age-related diseases, encouraging healthy aging, and providing a safe, supportive environment.

For this study, geriatric care is operationally defined as healthcare services tailored to the needs of individuals aged 65 and above. As people age, they face unique health challenges that demand specialized care and attention. Geriatric care focuses on promoting wellness, preventing diseases, managing chronic conditions, and improving the overall quality of life for the elderly (WHO's Global Strategy and Action Plan on Ageing and Health 2016).

3.7.3 Quality of life

Quality of life (QoL) is a concept that seeks to measure well-being, taking into account both positive and negative aspects of a person's or population's existence at a specific point in time. The World Health Organization (WHO) defines quality of life as a state of complete physical, mental, and social well-being, not simply the absence of disease. In contrast, Price described QoL as the effect of illness and its treatment on disability and daily living activities. According to the WHO, QoL is an individual's perception of their position in life relative to their goals, expectations, standards, and concerns. Thus, the QoL of elderly persons with diabetes can be enhanced through appropriate treatment, regular blood glucose monitoring, assessment and management of diabetic-related stress, and lifestyle changes such as exercise (WHOQOL-BREF 1996).

3.7.3 Elderly

The definition of an older person varies by country and organization, but the United Nations and the National Institute on Aging generally define an older person as someone who is 65 or older. The United Nations as a person who is over 60 years of age defines an older person. However, families and communities often rely on other socio-cultural factors to define age, such as family roles (e.g., being grandparents), physical appearance, or age-related health conditions.

In India, the term 'elderly' or 'senior citizen' refers to a person who is a citizen of India and is at least 60 years old. The National Elderly Policy defines person of 60+ age group as elderly. The elderly are often classified into groups based

on age, with the most common classifications is:

Young-old: 65–74 years old

Middle-old: 75–84 years old

Oldest-old: 85 years and older

Therefore, the study operationally defined an elderly person as a person who is 60 years and above also known as older person (India's National Elderly Policy 2011, United Nations 2011).

3.7.4 Care Giving

The Oxford English Dictionary (2010) defines caregiving as the act of attending to the needs of others, particularly those who are unable to care for themselves adequately. It also refers to professional involvement in providing health or social care, as well as the attention given to individuals such as children, the elderly, or those who are ill or disabled.

The Merriam-Webster Dictionary (2010) defines caregiving as "an individual who provides direct care, such as for children, elderly persons, or those with chronic illnesses."

Drentea (2007) defines caregiving as "the act of offering unpaid help and support to family members or acquaintances who have physical, psychological, or developmental needs."

Pearlin, Mullan, Semple, and Skaff (1990) defined caregiving as the "behavioral expression of (one's) commitment to the well-being or protection of another person" (p. 583).

The process of caregiving was originally proposed by Bowers (1987) and includes five categories of roles that provide meaning or purpose for the caregiver: anticipatory, preventive, supervisory, instrumental and protective.

Therefore, the present study conceptualized care giving to an elderly living with diabetes as family caregivers, professional caregivers, volunteer caregivers, agency caregivers and hospice and or old age home care givers.

3.7.5 Diabetes

Diabetes is a chronic condition that arises either when the pancreas fails to produce enough insulin or when the body is unable to properly use the insulin it produces. Insulin is a hormone that helps regulate blood glucose levels. When there is too much glucose in the blood, it can damage various body systems, including the eyes, kidneys, nerves, heart, and blood vessels.

There are several types of diabetes, including:

1. **Type 1 diabetes:** The body does not produce insulin.
2. **Type 2 diabetes:** The body either does not produce enough insulin or cannot use it effectively.
3. **Gestational diabetes:** A form of diabetes that can develop during pregnancy.

A deficiency of insulin or the body's inability to respond to it leads to elevated blood glucose levels, a key clinical indicator of diabetes. Diabetes can result in both acute (sudden and severe) and long-term complications, primarily due to prolonged or excessively high blood sugar levels. (WHO & IDF Diabetes Atlas 2019)

3.7.6 Elderly living with Diabetes

Person living with diabetes clinically diagnosed as Diabetic either Type 1 or Type 2 through medical and clinical intervention by performing some laboratory tests screening in health care setting. Diabetes is a group of metabolic disorders characterized by the absence of treatment and hyperglycemia. Diabetes mellitus is a metabolic disorder characterized by elevated blood sugar levels, resulting from the body's inability to produce sufficient insulin or use it effectively. Untreated high blood sugar can damage organs like nerves, eyes, and kidneys. Long-term diabetes complications include coronary artery disease, heart attack, stroke, and atherosclerosis. Diabetes management involves several strategies, including blood sugar monitoring, oral diabetes medications, injectable insulin, a healthy diet, and regular exercise. Diabetes diagnosis is a life-changing event, but managing it requires consistent care and diligence. Pre-diabetes persons should receive education on intensive lifestyle modification to delay or prevent their progression to diabetes at primordial, primary, secondary, and tertiary levels (ICMR 2018, American Diabetes Association 2023).

3.7.6 Gerontological Social Work and Gerontological Social Workers

Gerontological social work, also known as geriatric social work, is a field of social work that focuses on helping older adults meet their needs and live full lives: Gerontological social workers help older adults promote their independence, dignity, and autonomy. They also help shift negative perceptions of older adults and encourage public support for resources.

Gerontological social workers work with a variety of medical professionals, such as psychiatrists, psychologists, and nurses. They assess older adults' needs and functional capacity, and help them identify resources, services, and benefits. They also provide mental health counseling and help older adults and their families navigate changes in health and functional status (National Association of Social Workers 2021, Minkler, M., & Estes, C. L. 2016, Berkman, B. 2006).

3.7.8 Transgender

Transgender refers to persons whose gender identity a personal, deeply felt sense of being male, female, or another gender does not align with the sex assigned to them at birth. In research or clinical settings, transgender status can be identified based on explicit criteria, Transgender refers to individuals whose gender identity — their internal sense of being male, female, or another gender — differs from the sex they were assigned at birth. This identity may be expressed in various ways, such as changes in name, pronouns, clothing, physical appearance, or through medical interventions. In research or clinical settings, transgender individuals are typically identified based on their self-reported gender identity, which does not align with the sex assigned to them at birth (WHO ICD-11, American Psychological Association 2015).

3.8 Limitations of the Study

Research on elderly diabetes patients in rural areas presents unique logistical, cultural, ethical, and methodological challenges. Geographical barriers, limited healthcare access, and resource constraints can hinder the study's scope and data quality. Infrequent healthcare access can complicate disease monitoring and treatment evaluation. Additionally, rural clinics may lack advanced diagnostic tools for diabetes monitoring. Rural elderly populations face cultural challenges in research, including low health literacy, traditional beliefs, and language barriers. Informed consent is crucial for ethical standards, especially for those with cognitive impairments or low literacy. Privacy and confidentiality concerns are heightened in tight-knit communities, and elderly persons are vulnerable due to potential physical and cognitive decline. To ensure the safety and well-being of these elderly person, researchers must employ translators or culturally competent research assistants. Additionally, addressing the vulnerability of the elderly population is essential to prevent exploitation or harm during the research process. The study of elderly diabetes patients in rural areas presents several challenges, including recruitment and

retention, heterogeneity in the population, data collection challenges, comorbidities and polypharmacy, technological barriers, healthcare system constraints, and psychosocial and emotional challenges. Recruiting and retention of participants can be challenging due to the smaller population pool and the diverse nature of rural elderly populations. Data collection in rural settings can be time-consuming and costly, and elderly participants may struggle with completing questionnaires or using technology-based tools. Additionally, rural areas often lack access to high-speed internet or cellular networks, making it difficult to use digital tools for data collection or remote monitoring. Healthcare system constraints include a shortage of healthcare professionals and fragmented care, which can lead to irregular monitoring of diabetes. Psychosocial and emotional challenges include isolation and depression, caregiver burden, and the need to consider family dynamics in the study design. Rural populations often face financial constraints, such as lower income levels and lack of insurance coverage, which can impact the quality of diabetes care and study outcomes. To address these challenges, partnership with local healthcare providers, use mobile health clinics, create tailored educational programs, introduce telemedicine, and ensure ethical training and safeguards. By addressing these issues, researchers can improve the quality and success of their studies in rural populations with elderly diabetes patients.

In this chapter, the research methodology presented study areas, as research design, sampling, universe of the study, sample units, sampling method, sources of data, pilot study, pre-testing, tools of data collection, reliability and validity of tool, justification for the tool, data processing and analysis, operational definitions, limitations of the study, and summary. The next chapter deals with the structural basis of the respondents.

CHAPTER IV

STRUCTURAL BASIS OF THE RESPONDENTS

This chapter provides a comprehensive analysis of the demographic and structural characteristics of the respondents, establishing a foundational understanding of the population under study. Key demographic elements include age, gender, educational background, professional roles, and geographic distribution. Each of these factors contributes to contextualizing the data within the structural framework of the respondents. The focus of the analysis is on elderly persons living with diabetes within the study area. It examines primary study results related to their structural profiles, covering critical topics such as the history and type of diabetes, economic services, dependency status, direct and indirect family support, access to care and services, quality and safety of living environments, and engagement in spiritual and religious activities. To ensure a robust analysis, primary data were evaluated using frequency distribution and standard deviation measures for each demographic variable.

This chapter is organized into 8 headings such as Demographic Profile of the Respondents, Socio Economic Structure, and Composition of the Familial Structure, Health Profile and Diabetes Management of the Respondents, Comprehensive Care Services for Respondents, Perception on the Spiritual & Religious Activities, and Support System for Geriatric Care.

4.1 Demographic Profile of the Universe

Out of a total sample of 1,020 respondents, one-fifth of (50.68%) were male, a less than one-fifth of (47.05%) were female, and a less than (2.05%) identified as transgender. For this study, transgender respondents are defined as those whose gender identity differs from the sex assigned to them at birth. A substantial majority of the sample population, 75.09%, comprised respondents aged 60 to 70 years, including men, women, and transgender participants, proportionally represented according to their distribution in the study. Additionally, 21.96% of participants were aged 70 to 80 years, with gender representation (male, female, and transgender) consistent across this age group. The remaining a less than (2.94%) of the sample consisted of respondents aged 80 years and older, also with equal representation across all gender categories. For the pilot study, 5% of the total sample was selected, ensuring the balanced inclusion of male, female, and transgender participants.

Table 6 Age Classification of Universe Sample

Classification	Age Group	N=1020	Percentage
Young Old	61-70	766	75.09%
Middle Old	71-80	224	21.96%
Old-Old	81 and Above	30	2.94%
			Mean 75.09

Source: Computed

Figures in parentheses are percentages

Table 6 on the Age Classification of Universe Sample which shows the age distribution, classified into three elderly age groups: ‘Young-Old’ (ages 61–70), ‘Middle-Old’ (ages 71–80), and ‘Old-Old’ (ages 81 and above). Each category specifies the number of universe sample within that age range, along with the percentage they represent out of the total universe sample, providing insights into the demographic composition of the proposed selected respondents.

Regarding the age of the universe sample, more than three-fourths of the total respondents (75.09%) fall into the "young old" category, indicating that the majority of participants are in the younger age range of the elderly classification. This is followed by one-fifth (21.96%) of the respondents belonging to middle old category. There are 2.94% of the respondents are belonging to Old-Old category and they are 81 years and above. The mean age of the respondent elderly living with diabetes is 75.09

4.1.1 Demographic Profile of the Selected Respondents

The socio-demographic profile in the current study is age, gender, religion, city, marital status, place of domicile, level of education, profession, and annual income. There were 500 respondents were selected within the socio-demographic profile. The analysis of the primary data is presented below.

4.1.2 Age of the Selected Respondents

Age is one of the important factors in identifying issues related to respondents. For operational purpose, we have counted elderly with sixty years and above were brought under this study among the sample population of 500 respondents. The mean and standard deviation (SD) and age categorization were included in this section as given below:

Table 7 Age Classification of the Respondents

Classification	Age Group	N=500	Percentage
Young Old	61-70	382	76.40%
Middle Old	71-80	103	20.6%
Old-Old	81 and Above	15	3.0%
Mean 76.4			

Source: Computed

Figures in parentheses are percentages

Table 7 on the age classification of the respondents shows the age distribution of the respondents, classified into three elderly age groups: ‘Young-Old’ (ages 61–70), ‘Middle-Old’ (ages 71–80), and ‘Old-Old’ (ages 81 and above). Each category specifies the number of respondents within that age range, along with the percentage they represent out of the total respondents, providing insights into the demographic composition of the respondents.

Regarding the age of the respondents, more than three-fourths (76.4%) fall into the "young old" category, indicating that the majority of participants are in the younger age range of the elderly classification. This is followed by one-fifth (20.6%) of the respondents belonging to middle old category. There are 3.0% of the respondents are belonging to Old-Old category and they are 81 years and above. The mean age of the respondents is 76.4.

4.1.3 Gender of the Respondents

Gender is a significant factor in the socio-demographic profile of older adults, influencing the types of issues and problems they may face. In gerontological research, gender serves as a critical variable and determinant of health and well-being among the elderly. This study includes respondents based on their chosen gender identity, highlighting the importance of recognizing and respecting individual choices in understanding the diverse experiences of older adults.

Table 8 Gender Distribution of Respondents

SI.No	Gender	N-500 (%)
1	Male	49%
2	Female	48%
3	Transgender	3%
	Total	100%

Source: Computed

Figures in parentheses are percentages

Table 8 on gender distribution of the respondents illustrates that there is almost equal gender distribution between male and female respondents as one-fifth of (49%) and a less than one-fifth of (48%) respectively. While another one-tenth of (3%) of the respondents are identified as transgender, categorized as the third gender.

4.1.4 Religion of the Respondents

Indian society is characterized by its multi-religious nature, making religion a significant factor in the socio-demographic profile of respondents. Understanding an individual's belief system based on their religious identity provides valuable insights into their values and behaviors. The study found that respondents adhere to various religions, as illustrated in the accompanying figure.

Table 9 Religion of Respondents

Sl.No	Religion	N-500 (%)
1	Hindu	82%
2	Muslim	9%
3	Christian	3%
4	Jain	3%
5	Sikh	2%
6	Parsi	1%
Total		100%

Source: Computed

Figures in parentheses are percentages

Table 9 on the religion of respondents represents that more than four-fifths (82%) of the total respondents are following Hindu religion. This is followed by 9% of the respondents belonging to Muslim faith. There is an equal distribution of 3% each for respondents following Christian and Jain religion. Additionally, a little of 2% of respondents identify themselves as Sikh and 1% of the respondents belong to the Parsi community.

4.1.5 Geographical distribution of the Respondents

The geographical distribution, city-wise location of the respondents is another important factor in the socio-demographic profiling of elderly living with diabetes. This study specifically focuses on major cities in the state of Gujarat, India, providing insights into how urban living conditions may influence the health and well-being of the elderly.

Table 10 City-wise location of Respondents

SI.No	Cities	N-500 (%)
1	Rajkot	43.4%
2	Junagadh	22.4%
3	Jamnagar	34.2%
Total		100%

Source: Computed **Figures in parentheses are percentages**

Table 10 on the city-wise location of elderly person living with diabetes illustrates the geographical distribution and the location of the respondents. The results show that more than two-fifths (43.4%) of the total respondents reside in Rajkot city, followed by a little more than one-third (34.2%) of the respondents living in Jamnagar city. A minimum of more than one-fifth (22.4%) of the respondents resided in Junagadh city.

4.1.6 Marital Status of the Respondents

Marital status plays a crucial role in understanding family relationships and interaction patterns among persons. It is a key variable in the socio-demographic profile, offering insights into personal relationships. Mutual support between married couples significantly contributes to life satisfaction and the overall care of the elderly.

Table 11 Marital Status of Respondents

SI.No	Marital Status	N-500 (%)
1	Married	81.2%
2	Single	9.8%
3	Separated	2.6%
4	Widow/Widower	6.4%
Total		100%

Source: Computed **Figures in parentheses are percentages**

Table 11 on the marital status of the respondents illustrates the marital status of elderly persons living with diabetes. The respondents marital status are classified into Married, Single, Widow/Widower, and Separated/Divorced. The study found that more than four-fifths (81.2%) of the respondents are married, while less than one-tenth (9.8%) of the respondents are single. While, another 6.4% of the

respondents are widowed, and a minimum of 2.6% of the respondents are separated or divorced.

4.1.7 Domicile of the Respondents

The place of residence is another important factor and a key variable in determining the socio-demographic status of persons. Domicile refers to the place of stay where an individual resides within society, and it plays a significant role in shaping the status of elderly persons.

Table 12 Domicile of the Respondents

SI.No	Domicile of the Respondents	N-500 (%)
1	At Home	258 (51.6)
2	Joining other families (daughter/son)	42 (8.4)
3	Old age Home without medical facility	90 (18)
4	Old age Home with medical facility	11 (2.2)
5	Elderly Destitute Home	23 (4.6)
6	Geriatric Nursing Home	30 (6)
7	Particular Community Residence	32 (6.4)
8	Hospital	14 (2.8)
Total		100%

Source: computed

Figures in parentheses are percentages

Table 12 on the domiciles of respondents shows that the domiciles of respondents vary widely, reflecting a mix of independence, family support, and institutional care. Most of the respondents (51.6%) live in their own homes. A smaller portion, about 8.4%, reside with family members such as a daughter or son. Some respondents live in old age homes, with 18% residing in facilities without dedicated medical services. Only a small fraction, 2.2%, live in old-age homes with medical facilities. Other domiciles include destitute homes (4.6%), geriatric nursing homes (6%), and community residences (6.4%). Additionally, 2.8% of Respondents with diabetes reside in hospitals.

4.2 Socio Economic Structure

The socio-economic structure for elderly persons living with diabetes shows a cycle of dependency and financial insecurity, complicated by limited educational backgrounds and scarce income resources. These factors contribute to substantial

challenges in managing their diabetes and maintaining a quality of life. Effective interventions could include expanding social security benefits, increasing accessibility to affordable healthcare, and improving financial support programs specifically designed for elderly persons with chronic illnesses like diabetes. Additionally, community outreach and education programs tailored for elderly persons could enhance understanding and self-management of diabetes, ultimately contributing to better health outcomes and improved socio-economic conditions.

4.2.1 Professions of the Respondents

Profession serves as an important indicator of the employment status of respondents, shedding light on their active profiles before retirement. This information provides insights into their socio-economic status, suggesting that persons with prior employment may have better income levels and additional benefits in their later years. Consequently, prior employment status can significantly contribute to the overall well-being of elderly persons. The occupations of the respondents were classified into four categories: Employed, Retired, Housewife, and No Occupation/Unemployed.

Table 13 Profession Types of Respondents

Sr.No	Profession Types	N-500 (%)
1	Retired	13.2%
2	Housewife	12.2%
3	Employed	4.6%
4	No Occupation	67.6%
5	Ceremonial Performance	2.4%
Total		100%

Source: computed

Figures in parentheses are percentages

Table 13 on the profession types of the respondents which shows that more than two-third (67.6%) of the respondents unemployed or not engaged in any form of occupation at the time of the study. Additionally, more than one-tenth (13.2%) of the elderly were retired from employment, suggesting a level of economic independence for this segment of the population. While 12.2% of the total respondents are housewives, who are primarily dependent on their family members for support. Furthermore, a few of 4.6% of the respondents were engaged in employment in aligned with their abilities, while the remaining 2.4% of them are self-employed

whose participation engaged in ceremonial performance.

4.2.2 Annual Income of the Respondents

Annual income is a key factor in assessing the wealth and economic status of persons. It serves as an important variable in the socio-demographic profiles of respondents, indicating their social status, wealth, and ability to maintain a sustainable lifestyle within society. The economic status of the respondents plays a crucial role in determining their care needs and access to external support services. A lack of income signifies a state of total dependency, making government assistance vital for their well-being.

Table 14 Annual Income of Respondents

Sr.No	Annual Income	N-500 (%)
1	No Income	40%
2	Less than Rs.50000	31%
3	Rs.51000 to 100000	18%
4	Rs.100001 to 200000	10.4%
5	Rs.200000 and Above	0.6%
Total		100%

Source: computed

Figures in parentheses are percentages

Table 14 on the annual income of respondents shows that the nearly half (40%) of the respondents lack a regular source of income with complete dependency on other sources. Additionally, nearly one-third (31%) of them are having an annual income of less than Rs. 50000, placing them below the poverty line (BPL). This group is also dependent on family or external support, although they have some subsistence income to rely on. Furthermore, nearly two-tenth (18%) of the respondents earns below one lakh rupees annually. About one-tenth (10.4%) of the respondents had an annual income between Rs.100001 to 200000. A minimum of less than one percent (0.6%) of the total respondents had an annual income of Rs. 2 lakh and above.

4.2.3 Source of Income of the Respondents

Economic source is essential for understanding the financial challenges faced by elderly persons living with diabetes. To ensure effective treatment and livelihood security, these persons require reliable income sources to cover their basic subsistence needs as well as treatment and incidental costs. However, accessing these

economic resources poses significant challenges for many elderly persons managing diabetes.

Table 15 Sources of Income

Sr. No	Sources of Income	N: 500 (%)
1	No source at present	194 (38.8%)
2	Income from job	67 (13.4%)
3	Old age pension	107 (21.4%)
4	Rent income	14 (2.8%)
5	Social security	32 (6.4%)
6	Investment	11 (2.2%)
7	Assets	16 (3.2%)
8	Savings	17 (3.4%)
9	Post office scheme	24 (4.8%)
10	Saving scheme	18 (3.6%)
	Total	100%

Source: Computed Figures in parentheses are percentages

Table 15 on the economic sources for respondents shows that 38.8% of these respondents lack any economic resources, making them entirely dependent on others. In contrast, 21.4% of the respondents receive old age pensions, while 13.4% the respondents continue to earn income from employment, indicating an active source of personal income. Additionally, 6.4% the respondents benefit from social security, and 4.8% the respondents derive income from post office deposits. Another 3.4% the respondents rely on savings accounts, 2.8% receive rental income, and 2.2% obtain income from other investments.

4.2.4 Educational Background of the Respondents

Education not only affects individual literacy but also plays a crucial role in shaping economic opportunities, social mobility, and overall quality of life. Higher levels of education are linked to improved health outcomes, greater civic participation, and stronger social cohesion. In demographic research, understanding educational attainment provides insights into patterns of income, employment, and lifestyle preferences. Furthermore, education levels can reflect broader socio-economic trends, helping to identify areas that may benefit from policy interventions.

In this way, education serves as both a personal asset and a societal benchmark, shaping the dynamics of communities and contributing to the collective progress of society.

Table 16 Education of Respondents

Sr.No	Education Levels	N-500 (%)
1	Primary	13.8%
2	High School	54.4%
3	Secondary	11.6%
4	Graduation	17.2%
5	Post-Graduation	1.8%
6	Doctoral Degree	1.2%
Total		100%

Source: computed

Figures in parentheses are percentages

Table 16 on the educational levels obtained by the respondents which shows that more than half (54.4%) of the respondents have completed high school education, followed by 17.2% of the respondents who have attained a graduation level. Furthermore 13.8% of elderly have completed primary school education, while 11.6% of elderly have completed higher secondary school education. In addition, 1.8% of the respondents were post-graduated, and a minimum of 1.2% of the respondents holds a doctoral degree.

4.3 Composition of the Familial Structure

The socio-economic structure for elderly persons, especially those managing diabetes, underscores a high level of dependency on family and external resources. Limited financial independence, varied family support, and access to healthcare and psychosocial support all play a role in shaping the daily lives and health outcomes of these persons. Addressing these dependency and support structures through more robust social welfare, healthcare access, and community support programs could improve their quality of life and help maintain their well-being and independence.

4.3.1 Level of Economic Dependency

The level of economic dependency in the elderly can be qualified by assessing the extent to which they rely on external economic resources, such as pensions, social security, family support, or government aid. This dependency varies significantly based on factors such as the adequacy of retirement savings, the

availability of employer-sponsored benefits, and access to public welfare programs. For some elderly persons, economic dependency may be high, particularly if they have limited savings, no pension plan, or are unable to work due to health issues. These persons may rely heavily on fixed incomes, family support, or government assistance for daily living expenses and healthcare needs. Understanding the level of economic dependency in the elderly is crucial for addressing their vulnerability to economic challenges, such as inflation, rising healthcare costs, or policy changes affecting social security. This helps ensure that elderly persons can maintain financial stability and well-being in their later years.

Table 17 Level of Economic Dependency

Sr.No	Level	Dependency N-500 (%)
1	Fully Dependent	38%
2	Partially Dependent	36%
3	Independent	26%
	Total	100%

Source: Computed

Figures in parentheses are percentages

Table 17 on the level of economic dependency of the respondents shows that the maximum of nearly two-fifth (38%) of the respondents are fully dependent on their families for support. This is followed by more than one-third (36%) of the respondents who were partially dependent on the family economic support, meaning they relied on family or other sources for some level of income support. In contrast, the remaining more than one-fourth (26%) of the respondents were independent in terms of income and possessing sufficient financial resources.

4.3.2 Family Support

Family support is defined as the support provided by close family members such as spouses (husband or wife), children (sons and daughters), grandchildren, and other relatives who play a supportive role. This support system may exist within both nuclear families, consisting of immediate family members, and joint families, which include extended relatives living together or maintaining close connections. This broad definition highlights the range of family relationships that contribute to the emotional, financial, or practical support available within diverse family structures.

Table 18 Family Support Received by the Respondents

Sr.No	Family support	N-500 (%)
1	Wife	4.3%
2	Husband	18.2%
3	Son	17%
4	Daughter	18.2%
5	Grandson	14.8%
6	Relatives	12%
7	No support	8.4%
Total		100%

Source: computed

Figures in parentheses are percentages

Table 18 on the family support received by the respondents shows that nearly one-fifth (18.2%) of the respondents received support from either their spouses or daughters, followed by 17% of elderly who regularly received assistance from their sons, while 14.8% of elderly were supported by their grandsons as a remittance received by them from their grandson. Additionally, 12% of respondents relied on other relatives for support. Notably, less than one-tenth (8.4%) of the respondents had reported that they did not receive any kind of support from their family.

4.3.3 Direct Family Support, Care and Services

Respondents with diabetes benefit from direct family care, which enhances their physical health, social life, and overall well-being. This support includes personal and physical care, household assistance, transportation, financial help, medical care, and technology assistance. Additionally, family members contribute to mental health by offering health education, skills for independence, counseling, self-care training, digital literacy, cognitive engagement, and stress relief for caregivers. Broader social support from family, friends, caregivers, community services, and healthcare professionals focuses on helping seniors maintain independence, improve their quality of life, and manage challenges. This comprehensive support system addresses both immediate and long-term needs, including care management, home modifications, and specialized care.

Table 19 Direct Family Support Received by the Respondents

Sl.No	Direct Family support	N-500 (%)
1	Instrumental support	37.4%
2	Supportive services	35.2%
3	Broader social support	20.2%
4	Specialized Care Services	2.6%
5	No support	4.6%
Total		100%

Source: computed**Figures in parentheses are percentages**

Table 19 on the direct family support for the respondents, has shown that more than one-third (37.4%) of the total respondents received instrumental support such as personal and physical care, household and home maintenance support, transportation and errand assistance, financial and administrative assistance, health and medical support, technology assistance, support with social and recreational activities. This is followed by more than one-third (35.2%) of the respondents those who are received of the supportive services such as emotional, social, and educational resources that are necessary to enhance their overall mental well-being focus on health education, skills building for independence, counselling, self-care training, digital literacy, cognitive and recreational engagement and stress-relief support for caregivers. In addition, more than one-fifth (20.2%) of the respondents received the broader social support system focus on creating a comprehensive care system that meets both the immediate and long-term needs of the respondents such as care management, home modifications and safety enhancements, specialized medical assistance, legal and advocacy support, community integration and health and wellness monitoring. Finally, a few of 2.6% of the respondents received specialized care services, which involves medical assistance, legal and advocacy support, community integration and health and wellness monitoring. However, 4.6% of the total respondents reported that they did not receive any support from either families, communities, or governmental and non-governmental organizations.

4.3.4 Indirect Family Support

Indirect family support for the elderly involves providing resources, services, and policies that enhance the well-being of older adults, without direct financial assistance from family members. This type of support can include healthcare

services, access to community-based programs, transportation, home care services, and social engagement initiatives. These resources help elderly persons manage daily challenges, such as mobility issues, chronic health conditions, or social isolation, improving their quality of life and reducing the caregiving burden on family members. Services such as home health care or adult daycare centers can support elderly persons. Indirect support also plays a crucial role in enhancing the social well-being of the elderly. Community engagement programs, volunteer services, and access to social networks help combat loneliness and promote mental and emotional health. For families, this type of support alleviates caregiving burdens and stress, enabling family members to focus on other aspects of their lives, including work, personal health, and leisure. By reducing the financial, emotional, and physical strain on families and elderly persons, indirect support strengthens family environments, promotes stability, and improves overall outcomes for older adults. In the long term, such systems not only benefit families but also enhance societal well-being by fostering a more inclusive, supportive, and resilient community for all ages.

Table 20 Indirect Family Support of Respondents

Sr.No	Indirect Family support	N-500 (%)
1	Health services	21%
2	Social and Community support	32%
3	Information and Resources	28%
4	Financial support	19%
Total		100%

Source: computed **Figures in parentheses are percentages**

Table 20 on the indirect family support to the respondents, shows that nearly one-third (32%) of the respondents received social and community support such as engagement and participation in society through building and maintenance. While, 28% of the respondents received support through information and resources such which access information on available services helps families make informed decisions and navigate systems. More than one-fifth (21%) of the respondents received practical support for existing health services that involves preventive and emergency healthcare, counseling services, therapy, support groups, and crisis hotlines for stress, etc. Notably, nearly one-fifth (19%) of respondents received financial support such as overall assistance for basic need.

4.3.5 Psychosocial Support

Psychological support for elderly persons, especially those with chronic conditions like diabetes, includes emotional, informational, tangible, and esteem-based assistance, each tailored to meet specific needs. Emotional support helps manage anxiety and depression, while informational support guides disease management and decision-making. Tangible support provides practical help with daily tasks, and esteem support boosts confidence and participation in health management. Such support is crucial for overcoming challenges like mobility limitations and social isolation, ultimately improving treatment adherence, reducing stress, and enhancing health outcomes, contributing to a healthier, more fulfilling life despite chronic illness.

Table 21 Psychosocial Support of Respondents

Sr.No	Psychosocial Support	N-500 (%)
1	Informational	21%
2	Emotional	28.4%
3	Esteem	26%
4	Socialization	17.2%
5	Tangible support	7.4%
Total		100%

Source: computed

Figures in parentheses are percentages

Table 21 on the psychosocial support of respondents, which shows that the a maximum of nearly one-third (28.4%) of the respondents elderly living with diabetes received emotional support such as care, compassion, to express the feelings and coping with emotions through verbal and non-verbal. Additionally, a little over a one-fourth (26%) of the respondents received for self-esteem support. Further one-fifth (21%) of the respondents received informational support, and another 17.2% of the respondents had socialization regularly. Finally, less than one-tenth (7.4%) of the respondents elderly living with diabetes received the tangible support such as concrete assistance to the material services and financial assistance, transportation and mobility.

4.3.6 Support for Daily Physical Activities

Supporting daily physical activities is essential for elderly persons as it helps maintain their routine functioning and independence throughout the day. These

activities reduce physical vulnerability and boost self-reliance, enabling older adults to perform tasks more effectively. Regular engagement in physical activities leads to better health outcomes, increased mobility, and an enhanced quality of life, fostering overall well-being in their daily lives.

Table 22. Daily Physical Activities of the Respondents

Sl.No	Physical Activities	N-500 (%)
1	Physiotherapy	21.8%
2	Occupational Therapy	21.8%
3	Holistic Therapy (Ayurveda)	18%
4	Yoga and Exercise	16.2%
5	No Activity	22.2%
Total		100%

Source: computed

Figures in parentheses are percentages

Table 22 on the daily physical activities of the respondent's shows that more than three-fourth (77.8%) of the total respondents were engaged in one or the other physical activities daily and the remaining nearly one-fourth (22.2%) of the total respondents are not engaged in none of the daily physical activity. Among the respondents engaging in the daily physical activities a maximum of an equal number of more than one-fifth (21.8%) of the respondents has taken physiotherapy and occupational therapy respectively. This is followed by nearly one-fifth (18%) of the respondents who were regularly involved in holistic therapy through Ayurveda practice and a minimum of less than one-fifth (16.2%) of the respondents were engaged in yoga and physical exercises.

4.3.7 Safety & Living conditions

Safety and secure living environment is essential for the well-being of elderly persons, especially those managing chronic conditions like diabetes. A supportive environment can help reduce the stress associated with diabetes and related co-morbidities, contributing to better health outcomes and improved quality of life. Ensuring safety and stability in their surroundings is vital for their physical and mental health.

Table 23. Safety & Living conditions of Respondents

Sl.No	Safety & Living conditions	N-500 (%)
1	All Safety Measures	17.2%
2	Unsafe-Unsecured	26.2%
3	Healthy	21.2%
4	Well-maintained	17.2%
5	Unorganized	18.4%
Total		100%

Source: computed

Figures in parentheses are percentages

The table 23 on the safety and general living environment shows that nearly three-fourth (74%) of the total respondents were under safety living conditions to certain extend. However, more than one-third of the total respondents had reported they were not safe and insecure. In addition, an equal number of 17.2 % of the respondents had followed all the safety measures and well maintained respectively and a little more than one-fifth (21.1%) of the total respondents were having healthy living. Hence, nearly one-fifth (18.4%) of the respondents reported their being unorganized in terms of safety and living conditions.

4.4. Health Profile and Diabetes Management of the Respondents

Health Profile of respondents with diabetes offers an in-depth examination of their health status, highlighting several pivotal components that shape their care needs. Each element within this profile is instrumental in crafting healthcare interventions that are responsive to the specific challenges faced by elderly persons managing diabetes. By focusing on these aspects, healthcare providers can adopt a more personalized and compassionate approach to diabetes management, which has the potential to significantly enhance quality of life while alleviating the broader societal impact of this chronic illness on aging populations. A thorough understanding of the health profiles of elderly persons with diabetes reveals key insights into the cumulative effects of this condition and underscores critical areas for targeted intervention. Core components of this profile include the duration and type of diabetes, disease progression and severity, accessibility to treatment and medications, ease of healthcare access, and the availability of support systems. Each of these factors plays a crucial role in the comprehensive management of diabetes among elderly persons, guiding both preventive and therapeutic measures.

Table 24 Average duration of Diabetes of the Respondents

Age Group	N=500 (N)	N-500 (%)	Average (In years)
61-70	382	76.40%	8.5
71-80	103	20.6%	6.3
81 and Above	15	3 %	3.5
	500	100%	

Source: Computed **Figures in parentheses are percentages**

Table 24 on the average duration of diabetes among respondents, segmented into three age groups analyzes the average duration of diabetes among respondents across three age groups. The majority (76.4%) of respondents are in the 61-70 age group, with an average diabetes duration of 8.5 years, highlighting a longer experience with the condition in this group. The 71-80 age group constitutes 20.6% of respondents, with a lower average duration of 6.3 years. The smallest group, 81 years and above, accounts for 3% of respondents and shows the shortest average duration of 3.5 years. This data indicates that while the majority of respondents are in their sixties and report a longer history with diabetes, the duration tends to decrease in older age groups, potentially reflecting differences in onset age, survival rates, or health management practices.

4.4.1 Types of Diabetes

The classification of diabetes types is essential for understanding the challenges faced by respondents living with this condition. Type 2 diabetes is the most commonly diagnosed form among the elderly population. This type of diabetes is primarily associated with a deficiency in insulin secretion or a reduced ability of the pancreas to produce sufficient insulin. Additionally, there is a condition known as pre-diabetes, in which blood sugar levels are elevated but do not meet the criteria for diabetes. Pre-diabetes shows a transitional state in which the pancreas may be secreting insufficient insulin or functioning improperly. The chronic nature of diabetes in the elderly, particularly concerning Type 2 diabetes and pre-diabetes, necessitates ongoing management and a thorough understanding of their unique health needs, as outlined in the classification of diabetes types among Respondents.

Table 25 Types of Diabetes of Respondents

Sl. No	Types of Diabetes	N-500 (%)
1	Pre-Diabetes	15%
2	Type 1	1%

3	Type 2	84%
Total		100%

Source: computed

Figures in parentheses are percentages

Table 25 on the types of diabetes among the respondents, shows that a significant majority of (84%) of the elderly were diagnosed with Type 2 diabetes. Additionally, 15% of respondents fall into the pre-diabetic category, while only 1% of the respondents was identified as Type 1 diabetes. These results underscore the prevalence of Type 2 diabetes within the respondents.

4.4.2 Treatment Source

Health services are essential for supporting the wellbeing of elderly persons living with diabetes, as regular treatment access is critical for managing this chronic condition. Timely healthcare interventions can prevent complications, stabilize physical health, and support mental wellbeing by reducing the stress associated with managing diabetes. The current study explores the variety of treatment sources available to respondents, emphasizing the role of accessible healthcare in managing diabetes and enhancing life quality for elderly patients. Findings indicate a diverse reliance on healthcare facilities, with a significant portion of respondents accessing services from NGO hospitals, urban primary health centers (UPHCs), and private hospitals. It does underline the importance of continued support and availability of healthcare services, as it directly correlates with improved health outcomes and quality of life for elderly persons managing diabetes.

Table 26 Treatment Sources of the Respondents

No	Treatment Sources	N-500 (%)
1	Primary Care (UPHC/AHWSc)	33.4%
3	Govt District Civil Hospitals	12.4%
4	Government Medical Colleges	5.4%
5	Government Ayurvedic Hospitals	5.2%
6	NGO Trust Hospitals	20.2%
8	Private Hospitals/Clinics	23.4%
	Total	100%

Source: computed

Figures in parentheses are percentages

Table 26 on treatment sources of the respondents shows that a maximum of little more than one-fifth (20.2%) of the respondents received treatment from NGO trust hospitals, while more than one-third of (33.4%) the respondents accessed services through the government primary health centers such as urban primary health centres, ayushyaman bharat health and wellness centres. Additionally, 23.4% the respondents sought treatment at private hospitals and clinics and 12.4% the respondents received care at district civil hospitals. Furthermore, 5.4% the respondents received support from government medical colleges, which provide both educational and healthcare services, and a less than (one-tenth) 5.2% the respondents utilized government ayurvedic hospitals.

4.5 Comprehensive Care Services for Respondents

This reflects the essential, multi-layered support needed for this demographic. This approach acknowledges the importance of combining medical, social, emotional, and community support to address the complex needs of elderly persons managing diabetes. By incorporating voluntary, institutional, and community-based services, the care framework offers a diverse range of options that cater to varying patient needs. Such a holistic model is crucial for managing chronic conditions like diabetes, as it extends beyond medical treatment alone. This recognizes that effective care includes elements like nutritional guidance, social engagement, emotional support, and access to structured environments all of which contribute to improved quality of life. Highlighting comprehensive care reinforces the significance of adaptable, well-rounded services to enhance health outcomes for elderly persons with diabetes.

4.5.1 Voluntary Care & Services

Private voluntary care and services provide critical support to elderly persons managing diabetes through non-profit organizations and charitable initiatives. These services enhance quality of life by offering health monitoring, nutritional guidance, and social engagement activities, addressing both physical and social needs. Such services underscore the effectiveness of community involvement in elderly care, demonstrating a meaningful contribution to the well-being of this demographic.

Table 27 Voluntary Care & Services for Respondents

Sl.No	Voluntary Services	N-500 (%)

1	Welfare Schemes	30.8%
2	NGO Support	43.2%
3	Individual Charity (Donation)	26%
Total		100%

Source: computed

Figures in parentheses are percentages

Table 27 on the voluntary care and services for respondents' shows that a maximum of more than two-fifth (43.2%) of the respondents benefited treatment services provided by the non-governmental organizations (NGOs). Additionally, nearly one-third (30.8%) of the respondents utilized various health welfare schemes aimed at supporting persons with diabetes. Meanwhile, more than one-fourth (26%) of the respondents received assistance from individual charity services and support programs.

4.5.2 Institutional Care and Services

Institutional care and services are essential components of elderly care, playing a crucial role in supporting the well-being of older adults managing diabetes. These services offer not only medical support but also a structured environment that promotes overall health and enhances the quality of life. This highlights the key services available, demonstrating how these resources are accessed to meet the unique needs of this demographic. Understanding patterns of service utilization is critical for improving care strategies and outcomes for elderly persons living with diabetes.

Table 28 Institutional Care and Services for Respondents

Sl. No	Institutional Care and Services	N-500 (%)
1	Supervision	24.8%
2	Assistance with Activities of Daily Living	18.4%
3	Skilled Nursing Care	12.6%
4	Rehabilitation	10%
5	Adaptive Aids and Equipment	8.6%
6	Psychological Services	12.4%
7	Social Activities	13.2%
Total		100%

Source: computed

Figures in parentheses are percentages

Table 28 on the institutional care and services accessed by the respondents

shows that maximum of nearly one-fourth (24%) of the respondents received supervisory support from institutions such as assisted living facilities , followed by 18.4% of the respondents accessed assistance on daily living activities such as meal preparation, bathing assistance, and personal hygiene support. While, another one-fourth (13.2%) the respondents participated in social activities designed to enhance community engagement social engagement activities designed to foster community involvement, such as group outings, creative workshops and meetings, and recreational gatherings. Additionally, one-tenth (12.6%) the respondents utilized nursing care services to address their health needs. Further, 10% of the respondents availed the rehabilitation services to aid their recovery and mobility. The study found out that less than one-tenth (8.6%) the respondents received adaptive aids and equipment to help manage age-related challenges.

4.5.3 Community Based Supportive Services

Community-based supportive services are crucial for the well-being of the respondents. These services play a vital role in assisting not only the respondents themselves but also their families, particularly those who are physically or mentally disabled. By providing essential resources and support, these services help families navigate the challenges associated with aging and managing diabetes.

Table 29 Community Based Supportive Services for Respondents

Sl. No	Supportive Services	N-500 (%)
1	Primary Level	63%
2	Secondary Level	33%
3	Tertiary Level	4%
Total		100%

Source: computed

Figures in parentheses are percentages

Table 29 on the community-based supportive services accessed by the respondents' shows that nearly two-third (63%) of the total respondents had accessed supportive services at the primary level, which include services provided directly within their local communities, such as community health programs, home visits by caregivers, and basic assistance with daily living activities from the communities. Additionally, one-third (33%) of the respondents reported receiving supportive services at the secondary level, which often involve more specialized care provided through outpatient clinics, community health centers, or local social service

organizations. These services may include medical consultations, specialized counseling, or rehabilitation services, which go beyond basic needs while a minimum of 4% of the respondents received tertiary level support, which is typically more advanced care, often involving hospital-based services, intensive rehabilitation programs, or specialized care from experts in chronic conditions.

4.6 Perception on the Spiritual & Religious Activities

Spiritual and religious activities play a crucial role in the holistic development of respondents within the society. For respondents, these activities significantly affect overall well-being, especially among those with strong spiritual beliefs and religious commitments. The study explores on how the respondent engagement in spiritual practices contributes to emotional support, community connection, and resilience in managing health challenges associated with diabetes. This has been assessed using self-developed 6-point scale as strong belief, meditative life, satisfied, trust, mistrust and unsatisfied.

Table 30 Perception on Spiritual & Religious Activities

Sl. No	Perceptions	N-500 (%)
1.	Strong Belief	13.4%
2.	Meditative Life (prayers)	13.2%
3.	Satisfied	19.4%
4.	Trust	21.4%
5.	Mistrust	25.6%
6.	Unsatisfied	7.4%
Total		100%

Source: computed

Figures in parentheses are percentages

Table 30 on the spiritual and religious activities of respondents' shows that two-third of the total respondents has strong belief, meditative belief, satisfied and trust with the spiritual and religious activities. However, another one-third of the respondents are unsatisfied and having mistrust on the activities. The data shows that little more than one fifth (21.4%) of the respondents had trust on the spiritual and religious activities which they had performed by themselves, nearly one-fifth (19.4%) were satisfied and more or less 13% of them had strong belief and meditative life with their spiritual and religious activities. Meanwhile, a little more than one-fifth (25.6%) and (7.4%) of the total respondents had mistrust and

unsatisfied with their spiritual and religious activities.

4.7 Support System for Geriatric Care

Support systems and the quality of life for respondents living with diabetes are crucial topics within our societal framework. Traditional care and support of the elderly have long been central to this discussion. A key aspect of this is the quality of life experienced by elderly persons managing diabetes. This examines the empirical relationship between the quality of life of respondents with diabetes and its various determinants, using primary data. The goal is to highlight the factors that influence well-being and identify areas to improvise the support systems for geriatric care.

4.7.1 Palliative Care and End-of-Life Support

Palliative care and end-of-life support are essential for the respondents living with diabetes, ensuring they receive compassionate treatment that upholds their dignity during their final stages of life. Many respondents with chronic diabetes require palliative care in addition to physical and mental health support as they navigate the challenges of end-of-life care.

Table 31 Palliative care and End-of-Life Care for Respondents

Sl.No	Types	N-500 (%)
1	Coordination	33.2%
2	Control symptoms	30%
3	Home based Support	24%
4	Life Limiting	9.8%
5	End of Life	3%
Total		100%

Source: computed

Figures in parentheses are percentages

Table 32 on palliative care and end-of-life care for respondents shows that a maximum of one-third (33.2%) of the total respondents received coordinated support within a structured care system, such as hospice care or integrated palliative care teams, where healthcare professionals work together to provide comprehensive care. These settings bring together healthcare professionals including doctors, nurses, social workers, and spiritual care providers to deliver holistic support focused on comfort and dignity. For elderly persons with diabetes, this includes specialized management of diabetes-related complications alongside general palliative care. This is followed by more than one-fourth (30%) of respondents reported that their care

system primarily focused on controlling symptoms and managing complications associated with diabetes, such as neuropathy pain, wound care, or breathlessness. This care is often delivered in hospitals or palliative units, where the focus is on easing distressing symptoms and enhancing quality of life in the face of progressive diabetes complications. Meanwhile, nearly one-fourth (24%) of the respondents received home-based care, largely provided by family caregivers with support from healthcare professionals. This is particularly effective for elderly living with diabetes, as family members help with day-to-day diabetes management, including medication administration, dietary monitoring, and emotional support, within a comfortable and familiar setting. In contrast, while 9.8% of the respondents had accessed specialized services designed to address severe diabetes complications, such as wound care, amputation management, advanced heart disease, or kidney failure. These services involve expert teams focused on managing the high-risk conditions associated with diabetes, recognizing the life-limiting nature of these complications in elderly patients. However, a minimum of 3% of the respondents had access to advanced palliative services available in hospices or dedicated palliative centers. These facilities provide compassionate, all-encompassing care that addresses not only physical symptoms but also the emotional, psychological, and spiritual needs of elderly patients with diabetes at the end of life.

4.7.2 Perceptions on Social Work Care, Support and Services

Professional social work services play a crucial role in promoting the well-being of the respondents across all age groups. In the context of geriatric care, social work is especially important as it addresses the unique challenges faced by respondents living with diabetes. Social work care, support, and services are vital for enhancing the quality of life of elderly living with diabetes in order to manage their health effectively. Therefore, the perceptions of the respondents on social work care, support and services were explored as:

Table 32 Perceptions on Social work Care, support and Services

No	Perceptions	N-500 (%)
1	Insufficient support and services	44%
2	Partially receiving support and services (PRSS)	34%
3	Sufficient support and services	22%
		100%

Source: computed

Figures in parentheses are percentages

Table 32 on perceptions on social work care, support and services accessed by respondents were explored and rated in three items as insufficient support and services like lack of necessary assistance, inadequate resources, minimal intervention, or poor follow-up, partially receiving support and services (PRSS) like limited help, inconsistent service, occasional support, or partial engagement and sufficient support and services like adequate help, comprehensive assistance, appropriate resources, or effective intervention. The data shows that a maximum of nearly half (44%) of the total respondents received support and services which was insufficient. In contrast, a little more than one-third (34%) of the respondents reported receiving partial support and services. However, more than two-fifth (22%) of the respondents accessed sufficient support and services to meet their needs.

This chapter provides a detailed exploration of the demographic, socio-economic, and structural profiles of elderly persons living with diabetes in Gujarat, focusing on how these aspects affect their health and quality of life. The chapter categorizes respondents by age, gender, marital status, income, and domicile, offering insights into their dependency levels, sources of income, educational backgrounds, and family structures. It highlights that the majority of respondents face significant economic and health challenges, relying heavily on family and community support for daily activities and diabetes management. Institutional care, including rehabilitation and skilled nursing, plays a crucial role, though many still lack sufficient support, especially in areas such as mental health and physical activity. The data also underscores a considerable need for end-of-life care, palliative support, and expanded access to voluntary and community-based services. Spiritual practices and religious beliefs emerge as important factors in respondents' lives, contributing to emotional resilience in managing chronic illness. Through this multifaceted examination, the chapter emphasizes the importance of comprehensive, integrative support systems that combine medical, social, and emotional care to enhance the well-being and independence of the elderly diabetic population.

The next chapter will present the geriatric care services in India, focusing on the unique challenges and opportunities for the elderly. It will explore the conceptual framework of elderly care, specifically addressing the needs of elderly and the integration of services aimed at enhancing their quality of life. The chapter

will also delve into current practices and knowledge in geriatric care, particularly concerning quality of life issues and elderly persons with diabetes.

CHAPTER V

GERIATRIC CARE IN INDIA

This chapter explores the critical landscape of geriatric care in India, focusing on the interplay of demographic, social, and healthcare challenges associated with the country's rapidly aging population. It highlights the growing prevalence of chronic diseases and mental health issues among the elderly while emphasizing the impact of evolving family structures and economic constraints on caregiving. Through a detailed examination of these aspects, this chapter aims to present an integrated approach to improving geriatric services, promoting dignity, and ensuring a high quality of life for India's elderly population.

This chapter is categorized into such parts as Geriatric Care, Diabetes and Elderly, Government of India Initiatives, NGOs and Community-Based Initiatives, Geriatric Care Service Delivery & Utilization in India and Issues & Challenges

5.1 Geriatric Care

Geriatric care is a specialized field of healthcare and social support designed to meet the unique needs of elderly persons. With advancements in medical science and improving living conditions, life expectancy across the globe has risen significantly, leading to a substantial increase in the elderly population. This demographic shift, often referred to as the 'aging wave', has profound implications for healthcare systems, economies, and societal structures (United Nations World Population Aging Report, 2020). As persons age, they experience physiological, psychological, and social changes that demand a multidisciplinary approach to care. Geriatric care encompasses preventive measures, chronic disease management, mental health support, rehabilitation, and palliative care, aiming to enhance the quality of life for elderly persons while maintaining their dignity and independence (WHO Global Report on Aging and Health, 2015).

Geriatric care is crucial for meeting the health needs of the elderly, focusing on dignity, independence, and quality of life. As people age, they are more susceptible to chronic diseases and cognitive disorders. This care involves comprehensive strategies, including prevention, management of multiple conditions, and rehabilitation, along with emotional and social support. By promoting proactive health management, geriatric care reduces hospitalizations and eases healthcare

burdens. It provides personalized care that respects individual preferences and cultural values, benefiting both elderly persons and their caregivers. In essence, it enhances life quality and well-being of the elderly. The scenario reveals that:

1. **Demographic Trends:** The global population aged 60 and above is growing at an unprecedented rate. In India alone, the elderly population has risen from 76 million in 2001 to over 140 million in 2023, and is projected to exceed 300 million by 2050 (World Population Prospects 2022). This rapid growth highlights the need for specialized healthcare services and support systems.
2. **Complex Health Needs:** Aging often brings multiple, overlapping health issues, including chronic diseases, cognitive decline, mobility impairments, and sensory deficits. These complexities require a holistic and patient-centered approach that goes beyond conventional healthcare (Lancet Public Health, 2022; Indian Journal of Gerontology, 2021).
3. **Social and Cultural Dimensions:** In many cultures, including India, elderly persons hold a respected position in families and communities. However, societal changes such as urbanization, migration, and the decline of joint family systems have disrupted traditional caregiving structures (National Family Health Survey-5, 2021). Geriatric care fills the gap, providing professional support tailored to the changing social landscape.
4. **The Impact of Urbanization on Elderly Care:** Urbanization in India has disrupted traditional caregiving, as younger generations move to cities, leaving elderly family members behind in rural areas. While cities have better healthcare, they can be isolating for the elderly, and rural areas lack adequate healthcare access. This highlights the need for new elderly care solutions, such as community-based models, improved rural healthcare, and innovations like telemedicine to address the urban-rural divide (Kumar, 2021). With rising healthcare costs and limited financial security among the elderly, especially in low- and middle-income countries, geriatric care needs to address not just health but also economic and social vulnerabilities (ILO, 2022).

The scope of geriatric care is broad and multifaceted, addressing not just physical health but also mental, emotional, and social well-being. It is essential to understand how these components work together to enhance the quality of life for elderly persons. The overview of the key components is given below as:

1. **Medical Management:** This includes the management of chronic diseases that are prevalent among the elderly, such as diabetes, hypertension, and arthritis. Medical management in geriatric care is crucial for improving overall health outcomes and preventing complications from these conditions (Indian Council of Medical Research, 2020). Regular monitoring, medication adjustments, and specialized care plans are key to addressing these health challenges.
2. **Rehabilitation:** As people age, maintaining or restoring physical function becomes a priority. Rehabilitation in geriatric care often includes physical therapy and the use of assistive devices to help elderly persons regain or maintain mobility and independence. It also focuses on enhancing overall functionality, such as improving balance, strength, and coordination, thus reducing the risk of falls and other complications (National Programme for Health Care of the Elderly 2011).
3. **Mental Health Support:** Mental well-being is integral to geriatric care, elderly persons are at risk of conditions such as depression, anxiety, and cognitive disorders, including dementia. Addressing these mental health issues is essential for improving the quality of life in later years. Support might include counseling, therapy, medication, and social interventions. Special attention is also paid to tackling loneliness and ensuring that elderly persons have access to the necessary mental health resources (Alzheimer's and Related Disorders Society of India [ARDSI], 2022).
4. **Palliative and Hospice Care:** As persons approach the end of life, geriatric care extends into palliative and hospice care. The focus here is on providing comfort, pain relief, and dignity, rather than curative treatment. Palliative care aims to improve the quality of life for those with life-limiting conditions, and hospice care supports patients and families during the final stages of life (Lancet Commission on Palliative Care, 2018).
5. **Social Integration:** Maintaining social connections and participating in community life are critical components of geriatric care. Social isolation is a significant issue for elderly persons and can lead to a range of physical and mental health problems. Encouraging active aging through social engagement, community programs, volunteering, and skill development not only helps to enhance mental well-being but also fosters a sense of purpose and belonging (HelpAge India, 2022).

Therefore, these challenges underscore the importance of improving geriatric care systems, especially in developing countries like India. Addressing the shortage of healthcare infrastructure and trained professionals, reducing stigma around institutional and mental health care, and tackling the economic barriers to accessing essential services and technologies are critical steps toward improving the lives of the elderly population.

5.1.1 Geriatric Care in India

Geriatric care encompasses the comprehensive management of health, well-being, and quality of life for elderly persons. With India experiencing a rapid demographic shift, the need for specialized geriatric services has become urgent. India's aging population is rapidly increasing, with persons aged 60 and above numbering approximately 140 million in 2021, a figure projected to nearly double to 300 million by 2050, making India home to the second-largest elderly population globally (World Population Prospects, 2022). Life expectancy has risen significantly in recent decades, surpassing 70 years by 2023, compared to just 40 years in the 1950s. However, this increase has also led to a rise in non-communicable diseases (NCDs) and disabilities among the elderly, creating a dual burden of longevity and health challenges (Indian Council of Medical Research, 2020).

The distribution of the elderly population is uneven across India, with states like Kerala, Tamil Nadu, and Himachal Pradesh experiencing higher aging indices due to better healthcare and lower fertility rates, while states like Uttar Pradesh and Bihar, with higher fertility rates, still have relatively younger populations (National Population Policy, 2000). A significant rural-urban divide exists in India, with around 70% of the elderly living in rural areas, where healthcare infrastructure and services are often inadequate compared to urban centers. This disparity creates challenges in providing equitable healthcare access and services for elderly persons across the country (Ministry of Rural Development, 2020).

India's elderly population faces significant health challenges, including chronic conditions like diabetes and hypertension (*NPHCE, 2010*), cognitive decline such as dementia (*WHO, 2021–2023*), and sensory impairments like hearing and vision loss (*World Report on Hearing, 2021*). Mobility issues and fall risks (*Indian*

Journal of Gerontology, 2021), mental health concerns like depression and anxiety (*WHO Mental Health Action Plan, 2013–2030*), and nutritional deficiencies (*Global Nutrition Report, 2021*) further impact their well-being. A multidisciplinary approach integrating medical, mental health and social care is essential, as highlighted by both the *NPHCE* and *WHO*. Nearly 60% of deaths among elderly persons are due to cardiovascular diseases such as hypertension, coronary artery disease, and stroke, while 20-25% of elderly Indians live with diabetes, often compounded by complications like neuropathy and kidney disorders (NITI Aayog Health Index, 2021). Cancer rates also rise with age, yet barriers to early diagnosis and affordable treatment remain significant (Indian Journal of Psychiatry, 2021). Cognitive decline, including Alzheimer's and other dementias, is projected to reach 11 million cases by 2050, though awareness and diagnosis are low (Lancet Public Health, 2022). The National Programme for Control of Blindness and Visual Impairment has reported that sensory impairments, such as presbycusis (Presbycusis, or age-related hearing loss) affecting over 40% of the elderly, and vision impairments due to cataracts and refractive errors, are widespread, yet affordable treatments like hearing aids and cataract surgery remain inaccessible in many rural areas.

In addition, mobility issues from osteoarthritis (degeneration of joint cartilage and the underlying bone), osteoporosis (Bone resorption disease characterized by the thinning of bone tissue and decreased mechanical strength), and sarcopenia (the loss of skeletal muscle mass and strength as a result of ageing) are common, with one in three elderly persons suffering fall-related injuries annually (Indian Journal of Orthopaedics, 2021), yet rehabilitation services remain scarce.

5.1.2 Geriatric Care in Gujarat

Geriatric care focuses on healthcare services tailored to meet the unique needs of persons. In Gujarat, the rising elderly population has highlighted the increasing demand for specialized care. With an aging demographic, there is growing recognition of the need to enhance geriatric healthcare services in the state. This includes addressing challenges in accessibility and infrastructure, especially in rural areas, while also exploring opportunities to improve services for the elderly population (Ministry of Health and Family Welfare, Annual Report 2021-22). Further, the Census of India, 2011 has documented that 8.6% of the residents in

Gujarat state are in the 60 years and or above. Advancements in healthcare and longer life expectancy have led to an increased demand for geriatric care. While urban areas like Ahmedabad, Surat, and Vadodara offer better healthcare facilities and specialized services for the elderly, rural areas struggle to provide adequate care. The centre located in urban areas have more hospitals, senior homes, and trained professionals, whereas rural elderly often lacks sufficient healthcare access (MoHFW 2021-22).

5.1.3 India Ageing Report 2023

The *India Ageing Report 2023*, jointly published by the United Nations Population Fund (UNFPA) and the International Institute for Population Sciences (IIPS), offers an in-depth examination of the growing elderly population in India and the various socio-economic and healthcare challenges they face.. It projected that by 2050, more than 20% of India's population will be elderly, with a 279% increase in the number of persons aged 80 and above. The report highlights regional disparities in life expectancy, with states like Kerala and Himachal Pradesh showing higher life expectancy for women, which increases challenges like widowhood and financial dependence. It also reveals significant socioeconomic gaps, with over 40% of the elderly living in the poorest wealth quintile, underscoring the need for better healthcare infrastructure and geriatric care. The report calls for improved government policies, better social welfare program coverage, greater digital empowerment, and community-based interventions to better address the needs of the elderly (India Ageing Report 2023).

The demographic trends in India indicate significant challenges related to the aging population. According to the World Population Prospects 2022, India's elderly population is projected to reach nearly 300 million by 2050, constituting more than 19% of the country's population. The number of persons aged 80 and above, the "oldest-old," is growing rapidly, adding complexity to healthcare needs. As the elderly population expands, India's elderly dependency ratio is expected to rise sharply, from 14.2% in 2021 to over 30% by 2050, further highlighting the growing demands on healthcare and support systems (Population Reference Bureau 2021). Consequent upon the demographic shift the working-age population will need to support a growing number of elderly dependents, which could place a strain on both

economic and social systems. Further, an access to healthcare services remains a major challenge for India's aging population, especially in rural areas where nearly 70% of the elderly live, further exacerbating the need for improved healthcare infrastructure and services (India Ageing Report 2023). In addition, the public health schemes like Ayushman Bharat aim to provide coverage, they mainly focus on acute care and do not sufficiently address the chronic illnesses and long-term care needs common among the elderly. The National Health Systems Resource Centre (2021-22) has emphasized the urgency of addressing both demographic shifts and healthcare challenges to ensure the elderly population in India receives the care and support they need in the future.

In regard to the economic condition of the elderly less than 10% of India's elderly population receives formal pensions, with most relying on family support for financial security. This dependency highlights the need for improved social welfare systems to ensure financial stability for the elderly (ILO, 2023). While government schemes like the National Social Assistance Programme (NSAP) provide minimal financial aid to elderly persons living below the poverty line, coverage remains inadequate, and many still face financial insecurity in their later years (ILO, 2023). Healthcare costs pose a significant economic burden for the elderly, especially with rising out-of-pocket expenses for chronic and long-term care. The National Health Accounts 2022, has reported that over 60% of healthcare expenditure in India is paid directly by persons, with elderly care accounting for a large share of this spending. This disproportionately impacts low-income households, where elderly persons may struggle to afford the required care, further worsening their economic vulnerabilities. Therefore, these has shown the need for improved financial support and healthcare systems to address the economic challenges faced by India's aging population.

5.2 Diabetes and the Elderly

Diabetes is a chronic disease with a growing impact on elderly populations worldwide. Aging, coupled with lifestyle changes and increasing urbanization, has made the elderly particularly vulnerable to this condition. Diabetes in the elderly presents unique challenges due to age-related physiological changes, multi morbidity, and healthcare system barriers (American Diabetes Association 2023) - Standards of Medical Care in Diabetes 2023). In recent years, there has been a

significant increase in diabetes prevalence, influenced largely by demographic transitions and evolving lifestyle patterns. According to the International Diabetes Federation (2021), approximately 537 million adults between the ages of 20 and 79 are currently living with diabetes worldwide. This figure is expected to escalate to 783 million by 2045, primarily due to population ageing and a surge in obesity rates. The condition is particularly common among individuals aged 65 and above, with prevalence rates often surpassing 25% (ADA, 2022).

The common associated health complications with diabetes in elderly persons include cardiovascular diseases, such as heart attacks and strokes, are particularly concerning for elderly diabetics, who are at double the risk of these conditions compared to non-diabetics (World Health Organization, 2019). Cardiovascular complications are the leading cause of death in older diabetics, contributing to over 30% of all diabetes-related fatalities globally. Diabetes is also the primary cause of Chronic Kidney Disease (CKD) worldwide. The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK, 2020) reports that nearly 40% of older diabetics develop CKD, often progressing to the need for dialysis or kidney transplants. Cognitive decline is another major concern, with elderly diabetics having a 60% higher risk of developing Alzheimer's disease, as found by the National Institute on Aging (2020). Chronic hyperglycemia and inflammation are believed to contribute to the increased risk of complications in elderly diabetics. Conditions like diabetic neuropathy and retinopathy lead to mobility issues, vision impairment, and a higher risk of falls, which are common causes of disability in this group (WHO, 2019; Global Burden of Disease Study, 2020).

Further, the economic burden of diabetes in the elderly is immense, driven by the costs of managing chronic complications and the need for long-term care. Healthcare costs, including medications, hospitalizations, and advanced treatments, are a significant financial strain (IDF, 2021). Global diabetes-related healthcare spending was estimated at \$966 billion in 2021, with a significant portion of these costs attributed to elderly patients who often require specialized care for complications. Many elderly diabetics depend on family or professional caregivers for daily tasks and disease management. In high-income countries, the costs of

caregiving have risen sharply, with home-based diabetes care exceeding \$30,000 annually per patient (JAMA Network, 2020).

The global atlas of diabetes among the elderly shows that India is experiencing a growing diabetes epidemic and ranks second globally in diabetes prevalence. The elderly population (aged 60 and above) is particularly affected, facing both severe health complications and a significant economic burden in managing the disease (International Diabetes Federation, 2021). As of 2021, India was home to approximately 74.2 million adults living with diabetes, a figure projected to rise sharply to 124.8 million by 2045. Within the elderly population, specifically those aged 60 years and above, the prevalence of diabetes is notably high, ranging between 20% and 25% (International Diabetes Federation, 2021). The elderly are a critical demographic in India's growing diabetes burden (Ramachandran et al. 2022). The Indian Council of Medical Research, 2021 further reports that urban elderly populations in India are disproportionately affected by diabetes, primarily due to sedentary lifestyles, high-calorie diets, and stress-related factors.

The exploration on the factors contributing to high diabetes prevalence among the elderly documented the transition from traditional diets to processed, calorie-dense foods is a major factor driving the rise in diabetes rates among the elderly (National Nutrition Survey, 2020). Urbanization has further contributed by reducing physical activity levels among elderly populations in cities (Indian Council of Medical Research, 2021). A study by Mohan et al., 2020 found that over 40% of diabetes cases among the elderly in rural India are identified only at advanced stages, primarily due to limited access to healthcare facilities. While urban healthcare systems are better equipped, they are often cost-prohibitive for low-income groups, posing significant affordability challenges (Indian Journal of Endocrinology and Metabolism, 2020).

Meanwhile, Gujarat state has mirrored the national trends in diabetes prevalence, with a rising burden among elderly populations due to urbanization, lifestyle factors, and healthcare disparities. Urban areas such as Ahmedabad, Surat, and Rajkot exhibit significantly higher prevalence rates compared to rural regions. Gujarat faces an increasing diabetes burden among the elderly, particularly in urban areas such as Ahmedabad, Surat, Rajkot, and Jamnagar, driven by urbanization,

lifestyle changes, and healthcare disparities. Recent data highlights not only the prevalence but also the demographic factors influencing diabetes trends across regions.

Table 33 Comprehensive Analysis of the Demographic Health Profile of Elderly Persons with Living with Diabetes across three cities in Gujarat

City	Respondents Category	Male	Female	Trans-gender	Total Respondents	Percentage
Rajkot	Pre-Diabetic	35	23	0	58	11.60%
	Diabetic	81	74	3	158	31.60%
	Total	116	97	3	216	43.20%
Junagadh	Pre-Diabetic	3	3	0	6	1.20%
	Diabetic	55	48	4	107	21.40%
	Total	58	51	4	113	22.60%
Jamnagar	Pre-Diabetic	6	3	0	9	1.80%
	Diabetic	67	90	5	162	32.40%
	Total	73	93	5	171	34.20%
Grand Total	Pre-Diabetic	44	29	0	73	14.60%
	Diabetic	203	212	12	427	85.40%
Overall		247	241	12	500	100.00%

Source: Computed

Figures in parentheses are percentages

Table 33 on comprehensive analysis of the demographic health profile of elderly persons living with diabetes across three cities in Gujarat focusing analysis of demographic health profile of elderly persons living with diabetes across three cities in Gujarat analyzes the demographic health profile of elderly persons living with diabetes across Rajkot, Junagadh, and Jamnagar. The data offers valuable insights into the prevalence, gender distribution, inclusivity, and healthcare challenges in these cities, underscoring the need for city-specific interventions to combat diabetes in Gujarat. The table show that:-

1.City-Wise Prevalence of Diabetes: Rajkot emerges as the city with the highest proportion of elderly diabetics, accounting for 43.20% of the total sample. Jamnagar follows with 34.20%, while Junagadh contributes only 22.60%. This variation reflects differences in urbanization, healthcare infrastructure, and population size.

2.Pre-Diabetic Detection: Rajkot has the highest percentage of pre-diabetic cases (11.60%), indicating relatively effective early screening and awareness efforts. In contrast, Junagadh (1.20%) and Jamnagar (1.80%) show significantly lower pre-diabetic detection, suggesting gaps in preventive healthcare outreach.

3.Gender Distribution: Rajkot displays a balanced gender representation among diabetics, with similar numbers of male and female cases. Junagadh has a slightly higher male representation, while Jamnagar reports more female diabetics, indicating gender-related healthcare-seeking behavior differences. Transgender representation is highest in Jamnagar (5 respondents), followed by Junagadh (4) and Rajkot (3), reflecting varied levels of healthcare inclusivity.

4.Diabetic Dominance: Across all cities, diabetics dominate the sample population (85.40%), while pre-diabetics form a smaller group (14.60%). This imbalance points to delayed diagnosis, where most individuals are identified only after diabetes has progressed.

5.Complications and Challenges: Elderly persons living with diabetes are at significant risk of complications such as retinopathy (vision problems), neuropathy (nerve damage), cardiovascular diseases (heart attacks and strokes), and nephropathy (kidney damage). The high diabetic populations in Rajkot and Jamnagar highlight the urgent need for comprehensive chronic disease management programs. In contrast, Junagadh's low pre-diabetic detection rate suggests a hidden burden of undiagnosed diabetes, which could lead to severe health complications if left untreated. Effective early detection and intervention are critical to mitigate these risks.

Comparative Insights: Rajkot stands out as the most significant contributor to elderly persons living with diabetes, reflecting its larger urban population and better healthcare access. It also leads in pre-diabetic detection, signaling early intervention efforts. Junagadh, with the smallest representation, struggles with under-diagnosis and limited healthcare infrastructure. Jamnagar presents a unique demographic pattern with a higher proportion of female diabetics and commendable inclusivity for transgender respondents. These variations highlight the need for tailored healthcare strategies in each city.

Discussions: Urbanization in cities like Jamnagar and Rajkot has led to a rise in diabetes prevalence among the elderly, driven by sedentary lifestyles, increased processed food consumption, and stress. While healthcare infrastructure is better, affordability remains a major barrier, exposing gaps in preventive care. To address these challenges, solutions include awareness campaigns on early detection and lifestyle changes, setting up specialized geriatric diabetes clinics in high-prevalence

areas, and implementing targeted programs for the 14.60% pre-diabetic population, focusing on diet and physical activity. Collaborative efforts between government and private sectors are crucial to reducing economic burdens through subsidies, low-cost medications, and mobile healthcare access (World Health Organization, 2021; Indian Council of Medical Research, 2021).

Gujarat shows significant urban-rural disparities in diabetes care for the elderly. Urban centers like Ahmedabad and Vadodara have better access to specialized services, supported by state initiatives such as diabetes clinics and awareness camps (Ministry of Health and Family Welfare, 2019; Gujarat Medical Education and Research Society, 2020). However, high out-of-pocket costs limit care for many elderly persons. In rural areas, particularly in tribal districts like Dang, Bharuch, and Narmada, challenges such as lack of resources, high transportation costs, and low health literacy exacerbate the situation. Solutions like decentralized care centers, mobile units, and subsidized transport are needed to improve access and outcomes for rural populations.

Gujarat is facing a rising diabetes crisis among its elderly, driven by urbanization, lifestyle changes, and healthcare disparities. Urban areas like Ahmedabad, Surat, Rajkot, and Jamnagar have higher diabetes rates due to sedentary lifestyles, poor diets, and stress. In Rajkot, Junagadh, and Jamnagar, 85.40% of elderly persons are affected, with many being pre-diabetic, especially in Rajkot. To address this, targeted healthcare strategies are needed, focusing on early detection, lifestyle changes, and specialized care for diabetic and pre-diabetic populations. Gender-sensitive approaches are crucial, as both men and women are equally affected, with transgender persons requiring specific care. The urban-rural divide worsens the situation, with urban areas benefiting from better healthcare access while rural and tribal areas struggle with limited resources and awareness. Decentralized care centers, mobile units, and subsidized transport are necessary to improve rural healthcare access. Tackling Gujarat's diabetes epidemic requires coordinated efforts in public awareness, preventive care, and equitable healthcare access to reduce its social and economic impact.

5.3 Geriatric Diabetes Management

In fact, due to the global population ages, the prevalence of diabetes among elderly persons continues to rise. The aging process itself brings about physiological changes that affect glucose metabolism and complicate the management of diabetes. Understanding the age-related physiological changes such as Insulin Resistance and Beta-Cell Dysfunction Renal Impairment Polypharmacy and Drug Interactions are essential for providing effective and individualized diabetes care in elderly persons (*American Diabetes Association 2023, Hajjar, E. R., & Hanlon, J. T. 2015, European Diabetes Working Party for Older People: Guidelines for Diabetes Management in the Elderly 2012, Diabetologia 2021-2022*). The geriatric diabetes management includes-

1) Comprehensive Health Assessments: It is crucial for managing diabetes in elderly persons, as it provides a holistic view of the patient's overall health status and helps identify potential complications early. It comprises of Regular Screenings such as Glycemic Control, Complication Screening, Cardiovascular Risk and Holistic Care Plans.

a) Regular Screenings (Glycemic Control): Regular monitoring of blood glucose is essential. The target for HbA1c (Hemoglobin A1c) is a blood test that measures the average blood sugar levels over the past 2-3 months, used to diagnose and monitor diabetes) may be slightly higher in elderly persons (around 7-8%) compared to younger elderly, in order to avoid the risks associated with aggressive glucose-lowering strategies, such as hypoglycemia (American Geriatrics Society, 2019).

b). Complications Screening: Elderly persons with diabetes are at higher risk for complications such as diabetic retinopathy (damage to the retina due to high blood sugar, leading to vision problems), diabetic nephropathy (kidney damage that can result in kidney failure from prolonged high blood sugar), and diabetic neuropathy (nerve damage, particularly in the feet and hands, due to high blood sugar).

c). Cardiovascular Risk: Cardiovascular diseases are highly prevalent among elderly persons living with diabetes, and cardiovascular risk factors such as hypertension, hyperlipidemia (Hyperlipidemia is a condition characterized by elevated levels of lipids (fats), such as cholesterol and triglycerides, in the blood, increasing the risk of heart disease and stroke), and smoking should be actively

managed (American Heart Association, 2020).

d). **Holistic Care Plans:** The management of geriatric diabetes should not only focus on glycemic (Glycemic refers to anything related to blood sugar (glucose) levels in the body control but also on other aspects of health, including nutrition, physical activity, and mental health. Integrated care plans involve regular collaboration between various healthcare providers such as primary care physicians, dietitians, endocrinologists, and mental health specialists (Borch-Johnsen et al., 2018).

2) Age-Specific Dietary Modifications for Diabetes Control: Diet plays a pivotal role in the management of diabetes, especially in the elderly persons, whose nutritional needs may differ from those of younger adults. Age-specific dietary modifications are necessary to ensure that elderly persons living with diabetes can control their blood sugar while also maintaining overall health. This includes Carbohydrate Management and Nutritional Support.

a). **Carbohydrate Management:** Older adults can significantly benefit from dietary patterns that emphasize complex carbohydrates with a low glycemic index, such as whole grains, legumes, and a variety of vegetables, as these help in maintaining stable blood glucose levels. Foods with a low GI help control blood sugar levels and minimize postprandial glucose spikes (Foster-Powell et al., 2017). Additionally, consuming smaller, more frequent meals throughout the day can help maintain stable blood glucose levels. This dietary approach also addresses common challenges related to appetite and satiety in the elderly, particularly those with reduced mobility or cognitive impairments (Barton et al., 2017).

b). **Nutritional Support:** Elderly diabetics are more vulnerable to malnutrition due to reduced food intake, poor appetite, and challenges in meal preparation. Malnutrition can exacerbate diabetes and contribute to conditions like frailty and sarcopenia, the loss of muscle mass and strength that raises the risk of falls and disabilities. To prevent deficiencies, it's important to ensure sufficient intake of protein, vitamins such as vitamin D, calcium, and minerals (Kaiser et al., 2015). Specialized nutrition plans should focus on nutrient-dense, easy-to-prepare meals that meet both caloric and micronutrient needs while avoiding foods that could worsen diabetes complications.

3) Medication Management: Medication management in elderly persons living with diabetes requires careful attention to prevent adverse effects, such as hypoglycemia, and to minimize the risk of drug-drug interactions, which includes Polypharmacy and Risks, Personalized Medication Plans.

a). **Polypharmacy and Risks:** Polypharmacy is a significant challenge in managing diabetes in elderly persons, as many elderly persons take medications for multiple conditions. This increases the risk of drug interactions, which can lead to poor diabetes control or adverse side effects. For example, certain diabetes medications, such as sulfonylureas, may increase the risk of hypoglycemia, particularly in elderly persons with impaired renal function (Harris et al., 2019).

b). **Personalized Medication Plans:** For elderly persons living with diabetes, personalized medication plans are crucial to ensure effective and safe glycemic control. Certain pharmacological agents, including SGLT-2 inhibitors and GLP-1 receptor agonists, have shown added benefits in this age group. SGLT-2 inhibitors function by preventing the reabsorption of glucose in the kidneys, thereby enhancing its elimination through urine. On the other hand, GLP-1 receptor agonists simulate the action of the natural GLP-1 hormone, stimulating insulin secretion and aiding in the reduction of blood glucose levels.

4. Physical Activity: Physical activity is vital for managing diabetes in the elderly persons, as it helps with glycemic control, reduces the risk of cardiovascular disease, and improves overall functional status through Senior-Friendly Exercises and Rehabilitation Programs.

a). **Senior-Friendly Exercises:** Regular physical activity is crucial for persons with diabetes, as it helps improve blood sugar control, heart health, and overall well-being. Walking is an easy and effective exercise that supports cardiovascular health and glucose regulation. Strength training, including light weightlifting or resistance band exercises, helps preserve muscle mass, boosts insulin sensitivity, and enhances mobility, reducing fall risk and promoting independence (Liu et al., 2019). The balance exercises like tai chi and yoga are beneficial for improving balance and coordination, significantly lowering fall risks, which are a major concern for elderly diabetics (Lee et al., 2018).

b). **Rehabilitation Programs:** Rehabilitation programs for persons, especially those recovering from a stroke or major health events, should include diabetes management strategies. These programs typically aim to improve mobility, strength, and flexibility, with the overall goal of enhancing health and preserving independence (American Diabetes Association, **2023**; Journal of Rehabilitation Research and Development, **2022**).

5) Mental Health Care: Mental health is an often-overlooked aspect of diabetes management in the elderly. Chronic conditions like diabetes can exacerbate feelings of depression, anxiety, and loneliness, which, in turn, can affect glycemic control and overall quality of life of elderly persons including psychosocial impacts and interventions.

a). **Psychosocial Impacts:** Depression is common among elderly people with diabetes, affecting up to 30% of them. It can hinder self-management, leading to poor medication adherence, unhealthy eating, and lack of physical activity, which worsens health outcomes (Gonzalez et al., 2017). Social isolation is common among elderly persons, especially those living alone, and can negatively impact mental health. This isolation can make managing chronic conditions like diabetes more challenging (Centers for Disease Control and Prevention 2022)

b). **Psychosocial Interventions:** Psychosocial interventions, including cognitive-behavioral therapy (CBT Cognitive-behavioral therapy is a type of psychotherapy that helps persons change negative thinking and behavior patterns to improve mental health) and diabetes-focused support groups, can provide emotional support and improve self-management (Knobf et al., 2019). Social support networks, senior clubs, and volunteer programs can help combat loneliness and promote engagement, which can have positive effects on mental health and diabetes management.

6). Interdisciplinary Coordination: The complexity of managing diabetes in elderly persons necessitates a coordinated, team-based approach. An interdisciplinary team that includes healthcare providers from different specialties can improve the overall quality of care. An interdisciplinary team of healthcare professionals, including physicians, dietitians, and mental health experts, collaborates to create comprehensive care plans for elderly persons with diabetes, addressing all aspects of

their health medical, nutritional, functional, and emotional (American Diabetes Association, 2020). Therefore diabetic management in elderly persons requires a comprehensive, personalized approach that accounts for the physiological, psychological, and social changes of aging.

5.4 Government of India Initiatives

As India's elderly population continues to grow rapidly, it is becoming increasingly important to create an infrastructure that supports their healthcare, economic security, and social integration. Various government initiatives and policies have been introduced to address the multifaceted needs of the elderly. Below is a detailed discussion of the primary government initiatives aimed at improving the health and well-being of India's aging population.

5.4.1 Policies for the Elderly with Diabetes in India

India's national health policies focus on elderly care by addressing non-communicable diseases (NCDs) like diabetes and cardiovascular conditions. Key initiatives include the National Health Policy, 2017, which emphasizes universal healthcare access, and the National Policy for Senior Citizens, 2011, which promotes preventive care, lifestyle changes, and specialized geriatric services to enhance elderly well-being.

1. National Policy for Senior Citizens, 2011: The **National Policy for Senior Citizens:** Introduced in 2011 by the Ministry of Social Justice and Empowerment, the National Policy for Senior Citizens seeks to tackle the multifaceted challenges—social, economic, and health-related—encountered by the ageing population in India. The policy places particular emphasis on supporting older adults with chronic illnesses, including diabetes. The policy emphasizes preventive healthcare, promoting lifestyle changes such as a balanced diet, regular exercise, and routine health check-ups to prevent or manage chronic diseases. It also highlights the need for specialized geriatric care services to ensure that senior citizens, including elderly diabetics, receive effective care to manage their conditions and improve their quality of life.

2. National Health Policy 2017: The Ministry of Health and Family Welfare's National Health Policy launched in 2017, focuses on addressing the growing burden

of non-communicable diseases (NCDs), particularly among the elderly, including diabetes. The policy aims to provide universal access to quality healthcare services, ensuring proper care for elderly diabetics. It encourages integrating NCD management into primary healthcare, enabling early detection and continuous monitoring of conditions like diabetes. Additionally, the policy emphasizes strengthening healthcare infrastructure to ensure elderly diabetics receive the necessary care for effective diabetes management and overall health improvement.

3. Gujarat Health Policy 2019: Launched in 2019, the Gujarat Health Policy aimed to tackle key health challenges, particularly the rising prevalence of chronic diseases like diabetes. Its main goal was to improve healthcare services for chronic conditions and strengthen the state's health infrastructure. The policy prioritized elderly care, focusing on the needs of senior citizens with chronic diseases such as diabetes and hypertension. It sought to enhance rural healthcare by improving transportation to health centers, expanding primary healthcare units, and training healthcare workers. The policy also proposed strengthening district hospitals to manage chronic disease complications, easing the burden on tertiary hospitals. Additionally, it emphasized preventive and diagnostic services, including regular diabetes screenings for early detection, and promoted integrated care for chronic diseases to ensure comprehensive management, affordable treatment, and ongoing monitoring within the public health system.

1.4.1 National Programmes for the Elderly with Diabetes

India has launched several national programs to improve healthcare services for the elderly, particularly those managing diabetes. Recognizing the increased risk of diabetes and its complications in persons, these initiatives focus on prevention, early detection, effective management, and enhancing the overall quality of life for the elderly. These efforts are part of broader healthcare strategies addressing non-communicable diseases (NCDs). Below is an overview of key programs and interventions aimed at supporting elderly persons living with diabetes in India.

1. National Programme for the Health Care of the Elderly (NPHCE): The National Programme for Health Care of the Elderly (NPHCE), initiated by the Ministry of Health and Family Welfare in 2011, aims to deliver accessible and

affordable healthcare services to senior citizens, with a particular focus on underserved rural populations. For elderly diabetics, the program offers medical check-ups, diabetes management, and educational resources. It includes outreach activities like telemedicine, which helps in delivering care to remote areas. This program ensures that elderly persons have access to specialized healthcare services, making it easier for elderly persons living with diabetes to manage their condition through regular monitoring and timely interventions (NPHCE details from MOHFW & National Health Systems Resource Centre)

2. National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke (NPCDCS): Launched in 2010 by the Ministry of Health and Family Welfare, the National Programme for Prevention and Control of Non-Communicable Diseases (NPCDCS) is designed to promote prevention, facilitate early diagnosis, and ensure effective management of non-communicable diseases such as diabetes. The programme places particular emphasis on the elderly, recognizing their increased vulnerability to these chronic conditions. It includes diabetes and hypertension screenings, health education, promoting lifestyle changes such as balanced diets and physical activity, and ensuring affordable treatment. Similarly, Ayushman Bharat's PMJAY provides free healthcare insurance to economically vulnerable families, covering diabetes-related complications like retinopathy, nephropathy, and foot care. It offers annual health check-ups for those over 40, including diabetes screenings, and ensures access to affordable diabetes medicines, significantly benefiting elderly persons (Ministry of Health and Family Welfare - NPHCE).

3. Geriatric Health Services under Ayushman Bharat Health and Wellness Centres (HWCs): Launched in 2018 by the Ministry of Health and Family Welfare, the Geriatric Health Services through Health and Wellness Centres (HWCs) aim to provide comprehensive healthcare to the elderly, focusing on the prevention and management of chronic conditions like diabetes. These centres offer essential services such as diabetes screening, prevention programs, and management, including consultations with healthcare professionals, regular blood sugar monitoring, and lifestyle advice. HWCs seek to integrate diabetes management into the broader healthcare system, ensuring elderly persons receive continuous care in both urban and rural areas, making healthcare more accessible and effective for

managing diabetes and other chronic conditions in senior citizens (Ayushman Bharat – Health and Wellness Centres)

4. Integrated Disease Surveillance Programme (IDSP): Established in 2004 by the Ministry of Health and Family Welfare, the Integrated Disease Surveillance Programme (IDSP) focuses on the monitoring and control of various diseases, including diabetes, throughout India. The programme ensures prompt and effective responses to health outbreaks and related complications. Key components include surveillance of chronic conditions like diabetes and promoting data collection on non-communicable diseases (NCDs), with a focus on the elderly. IDSP supports diabetes-related surveillance at national, state, and district levels, facilitating early detection, management, and tracking of diabetes cases, particularly among the elderly. This system helps improve responses and healthcare delivery for diabetes across the country (Integrated Disease Surveillance Program 2004).

5. National Health Mission (NHM): The National Health Mission (NHM), launched in 2013 by the Ministry of Health and Family Welfare, strives to make healthcare services accessible to all populations, with a special focus on vulnerable groups such as the elderly. Key components include strengthening grassroots health systems, ensuring the availability of essential drugs and diagnostic services, and enhancing healthcare infrastructure and human resources to manage chronic diseases like diabetes. The NHM also focuses on elderly care, integrating geriatric health into broader healthcare initiatives, ensuring that elderly persons have access to necessary services, including the management of chronic diseases, thus improving their overall well-being (National Health Mission 2013).

6. Diabetes Education and Awareness Programs: Launched by the Ministry of Health and Family Welfare in collaboration with NGOs, government and NGO-led campaigns aim to educate elderly persons on managing diabetes through lifestyle changes, such as diet modification and regular blood sugar monitoring. These initiatives promote awareness about the importance of physical activity and regular check-ups. Elderly persons living with diabetes benefit from these programs by learning how to manage their condition effectively, improving their health outcomes and preventing complications (Ministry of Health and Family Welfare 2023).

7. Integrated Diabetes and Endocrine Care Program (IDEC): Launched by the Government of India in 2015, IDEC provides comprehensive care for diabetes, focusing on early detection, prevention, and management of complications. Elderly

diabetics benefit from this initiative, as it includes regular screenings for complications like neuropathy, retinopathy, and kidney disease. By offering holistic care, IDEC ensures that elderly persons living with diabetes receive timely diagnosis and treatment, improving their quality of life and reducing the risk of serious health problems associated with diabetes (IDEC, 2015).

8. Gujarat State Diabetes Control Program, Launched in 2017 by the Gujarat State Government, the program is a comprehensive healthcare initiative aimed at addressing the rising prevalence of diabetes and other non-communicable diseases (NCDs) in the state. Managed by the Gujarat State Health Department in collaboration with various health organizations and experts, the program focuses on raising awareness about the prevention, early detection, and management of diabetes. It promotes lifestyle modifications like healthy eating, regular exercise, and routine health screenings. Key features include public outreach campaigns, training healthcare providers (especially in rural areas), and setting up health camps and mobile screening units to identify at-risk elderly persons and provide timely interventions. Supported by both national and international health organizations, the program seeks to reduce the burden of diabetes and improve public health outcomes in Gujarat (Gujarat State Government, 2017).

9. Healthcare Models for Elderly Persons Living with Diabetes in Gujarat: In Gujarat, particularly in cities like Surat and Gandhinagar, healthcare providers have implemented integrated care models to support elderly persons living with diabetes. These models take a holistic approach, combining lifestyle interventions, medication management, and regular monitoring to offer comprehensive care. They emphasize preventive measures such as dietary changes, physical activity, and stress management, alongside medical treatment to effectively manage diabetes. Regular health check-ups and blood sugar monitoring are key components, enabling early detection of complications and ensuring proper management of the condition. This integrated approach helps elderly patients maintain their health, reduce complications, and improve their quality of life by addressing both medical and lifestyle factors tailored to their specific needs (Gujarat Health Policy 2019).

5.4.3. National Schemes for the Elderly with Diabetes

In India, various schemes and initiatives have been implemented by the

government and organizations to assist the elderly in managing diabetes. These initiatives aim to provide healthcare support, raise awareness, offer financial assistance, and improve access to treatment. Here are some key schemes and programs for elderly persons living with diabetes in India.

1. Ayushman Bharat – Pradhan Mantri Jan Arogya Yojana (PMJAY): Introduced in 2018 by the Ministry of Health and Family Welfare, Ayushman Bharat PMJAY offers free health insurance coverage to economically disadvantaged families across India, encompassing hospitalization, diagnostic services, and outpatient consultations. This scheme is particularly beneficial for elderly persons living with diabetes, as it offers coverage for diabetes-related complications such as kidney disease and retinopathy. Under this scheme, elderly patients can receive treatments, hospital stays, surgeries, and necessary medications without financial strain, ensuring better management of diabetes and its associated health risks. It helps alleviate the financial burden on elderly diabetics, enabling them to access essential care and treatment (PMJAY).

2. Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP): Launched in 2008 by the Department of Pharmaceuticals, Ministry of Chemicals and Fertilizers, the Pradhan Mantri Bhartiya Janaushadhi Pariyojana aims to make essential medicines more affordable by establishing Jan Aushadhi Kendras throughout India. This initiative is particularly relevant for elderly persons living with diabetes, as it offers access to low-cost generic medicines, including insulin and oral hypoglycemic agents, essential for diabetes management. By providing these medicines at significantly reduced prices, the program makes treatment more accessible, especially for underprivileged senior citizens who face financial challenges. The widespread network of Janaushadhi stores enables elderly persons to manage their diabetes effectively without the burden of high medication costs (PMBJP Official Website – Janaushadhi)

3. Senior Citizens' Health Insurance Scheme (SCHIS): The Senior Citizens' Health Insurance Scheme, launched in 2016 under the Rashtriya Swasthya Bima Yojana (RSBY) by the Ministry of Health and Family Welfare, provides health insurance coverage for senior citizens, including those with pre-existing conditions like diabetes. The scheme covers hospitalization and surgeries related to diabetes, ensuring elderly persons receive essential care. It offers financial protection against

the high costs of diabetes management, which is crucial for seniors who often require frequent medical attention. This scheme helps ease the financial burden of managing chronic conditions like diabetes, improving access to necessary healthcare services for the elderly (RSBY, MH&FW)

4. Pradhan Mantri Social Security Schemes: Launched in 2015 by the Ministry of Finance, the Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) and Pradhan Mantri Suraksha Bima Yojana (PMSBY) offer life and accident insurance coverage, with particular benefits for the elderly. These schemes help diabetics manage the financial burden in case of death or severe complications, such as those arising from diabetes-related issues. PMJJBY offers life insurance cover, while PMSBY provides protection in case of accidental death or disability. Both schemes offer financial security to elderly persons living with diabetes and their families, especially in the event of medical emergencies (Ministry of Finance 2015).

5. Subsidized Health Check-ups for Senior Citizens: Launched in 2010, the National Programme for Health Care of the Elderly (NPHCE) by the Government of India provides subsidized or free health check-ups for senior citizens at public hospitals. Through state-issued health cards, senior citizens can access screenings for conditions like diabetes, enabling early detection and management. These routine check-ups help elderly persons living with diabetes monitor their health and seek timely treatment, reducing the risk of undiagnosed complications. By ensuring regular health assessments, the program provides essential care and supports effective management of diabetes for the elderly (Ministry of Health and Family Welfare 2010).

6. Telemedicine and Digital Health Initiatives: Telemedicine and digital health initiatives are revolutionizing healthcare by leveraging technology to enhance access, improve outcomes, and streamline delivery. Under the Digital India initiative, these services are expanding across rural and urban areas, particularly benefiting elderly persons with diabetes in remote regions. Telemedicine allows them to access online consultations, remote monitoring, and digital health records, connecting them with endocrinologists and specialists for diabetes management. This approach reduces the need for travel, improving healthcare access and care continuity for vulnerable populations. As technology advances, telemedicine is

expected to play an even greater role in providing personalized, efficient, and accessible healthcare worldwide (Digital India, Telemedicine Platforms 2023).

7. Senior Citizens' Welfare Fund (SCWF): Established in 2016 by the Government of India under the Ministry of Social Justice and Empowerment, the Senior Citizens' Welfare Fund (SCWF) aims to assist and promote the welfare of economically disadvantaged senior citizens. While not specifically focused on diabetes care, the fund provides financial support that can be used for medical expenses, including diabetes treatment. This support is vital for elderly persons living with diabetes, who often face the financial burden of ongoing medical care and regular medication. By easing financial stress, the SCWF enables seniors to access essential treatments and improve their quality of life (Ministry of Social Justice and Empowerment 2016).

8. Pradhan Mantri Vaya Vandana Yojana (PMVVY): Launched in 2017 by the Ministry of Finance, the Senior Citizens' Pension Scheme aims to enhance the financial stability of elderly persons. While not specifically a health program, it indirectly supports elderly diabetics by enabling them to afford better healthcare and treatments. The scheme provides a financial safety net, helping seniors cover costs for medications, doctor visits, and other diabetes-related healthcare services. By ensuring that elderly persons have the financial resources needed, the scheme plays a vital role in facilitating effective diabetes management and improving overall health outcomes for seniors living with diabetes (Ministry of Finance, 2017)

9. Free and Subsidized Diabetes Medications: Through the National Health Mission (NHM), several states have launched programs providing free or subsidized diabetes medications. These initiatives ensure that elderly persons living with diabetes can access essential medications, including insulin, oral drugs, and testing kits, at government-run hospitals and clinics without financial strain. By reducing the cost of life-saving medications, these schemes particularly benefit low-income seniors, ensuring they can effectively manage their condition without facing economic barriers. This support plays a crucial role in improving health outcomes and quality of life for elderly diabetics (NHM 2013, Indian Public Health System 2021-2022).

5.4.4 Non-Governmental Organizations (NGOs) and Community Initiatives:

Several NGOs, often in collaboration with the government, run initiatives to support elderly persons living with diabetes. These programs include free diabetic screening camps, educational workshops, and ongoing support for diabetes management. Organizations like the Diabetes Foundation India and the Indian Diabetes Research Foundation specifically focus on the elderly, offering outreach services to promote awareness, prevention, and effective management of diabetes. These initiatives provide essential care and knowledge, ensuring elderly persons can manage their condition effectively. By addressing the unique needs of elderly diabetics, these programs significantly contribute to improving health outcomes across India (Diabetes Foundation India 2022, Indian Diabetes Research Foundation, 2021). Through tailored programs and community engagement, the non-governmental and community initiatives help fill gaps in healthcare services, provide essential support, and empower elderly persons to manage their health and overall quality of life effectively.

1. HelpAge India: HelpAge India, founded in 1978, is one of the largest and most influential organizations working for the elderly. It provides healthcare services, financial assistance, and emotional support to elderly persons across India. Their programs also include medical camps, awareness campaigns, and day-care centers for elderly persons living in rural areas (HelpAge India, 2020). They also offer elderly helplines for issues related to healthcare, financial aid, and social isolation, and have launched campaigns like "I Am Old, Not Powerless" to raise awareness about the issues facing elderly.

2. Agewell Foundation: Founded in 1999, the Agewell Foundation was established with the aim of improving the quality of life of elderly persons. The Agewell Foundation works to enhance the quality of life for elderly persons through various programs, including counseling services, senior citizen forums, and emergency services. The foundation runs programs like 'Elderly Welfare Centres' and 'Elder Helplines', offering support services like daily living assistance, medical aid, and home-based care. Agewell also runs the Agewell Foundation's Elderly Employment Program, helping elderly persons find employment opportunities and stay socially integrated.

3. Diabetes Foundation India: Established in 1991, focused on raising awareness, providing education, and improving care for elderly persons with diabetes in India. The foundation aims to prevent and manage diabetes through various initiatives, including national awareness campaigns, workshops for healthcare professionals, and patient support programs. DFI emphasizes early diagnosis and lifestyle changes to prevent complications. It also supports research in diabetes care and advocates for improved policies to address the growing diabetes burden. Through these efforts, DFI strives to reduce the impact of diabetes and enhance the quality of life for affected elderly persons (DFI, 1991)

4. Indian Diabetes Research Foundation: Established in 1995 to dedicate to diabetes research, prevention, and management in India. It focuses on conducting studies related to the causes, prevention, and treatment of diabetes, particularly in the Indian context. The foundation also runs awareness campaigns to educate the public on diabetes risk factors and the importance of early detection. IDRF organizes training programs for healthcare professionals to improve diabetes care and management. Through these initiatives, IDRF aims to reduce the prevalence of diabetes in India and enhance the quality of life for those affected (Indian Diabetes Research Foundation, 1995)

4. International Diabetes Federation: The International Diabetes Federation is a global organization founded in 1950 that advocates for the care, prevention, and treatment of diabetes. IDF works to improve the lives of people living with diabetes, including the elderly, through awareness campaigns, research, and advocacy. They focus on addressing diabetes in vulnerable populations, such as elderly persons, and support global efforts to reduce the diabetes burden. IDF also provides resources for healthcare professionals to enhance care for elderly patients with diabetes (International Diabetes Federation, 1950).

5. Community-Based Initiatives: Local initiatives, such as Senior Citizens' Associations, Elderly Support Groups, and Retirement Homes, have been instrumental in improving the lives of elderly persons. These grassroots organizations focus on creating supportive communities for elderly persons, especially in urban settings where social isolation is more common.

5.5 Geriatric Care Service Delivery & Utilization in India

The geriatric care system in India is evolving in response to the demands of a rapidly aging population, marked by increasing life expectancy and changing demographic patterns. This section provides an in-depth analysis of the current mechanisms for service delivery, the utilization patterns of geriatric care services, and the systemic barriers that hinder access and effectiveness. It also identifies key opportunities for improvement, focusing on the need for policy enhancement, infrastructure development, and integration of innovative solutions to create a more robust and inclusive geriatric care framework.

1. Service Delivery Mechanisms: Geriatric care in India relies on a multi-tiered system involving public, private, community-based, and technology-driven services. These mechanisms vary in their reach, affordability, and quality.

Utilization of Geriatric Services: The utilization of available services is influenced by a variety of factors, including awareness, cultural norms, and financial considerations.

Awareness and Accessibility: Many elderly persons and their families are unaware of the specialized geriatric services available, leading to underutilization. Moreover, accessibility issues such as the unavailability of transportation, long distances to healthcare facilities, and inadequate service coverage in rural areas create significant barriers (Bansal & Sharma, 2020).

Healthcare-Seeking Behavior: In India, traditional family structures often assume responsibility for elder care, reducing the inclination to seek institutional or professional services. Additionally, societal stigma associated with old age and declining health discourages many from actively seeking medical care (Rao et al., 2019).

Public Healthcare System: The public sector is the backbone of healthcare in India, but its ability to cater to geriatric needs remains limited. Initiatives like the National Programme for Health Care of the Elderly (NPHCE) aim to establish dedicated geriatric wards, physiotherapy units, and palliative care services at district hospitals. However, infrastructure shortages, insufficient funding, and staff constraints hinder effective service delivery. The lack of age-friendly healthcare facilities in rural areas further exacerbates inequities (Sarma et al., 2022).

Private Sector Contribution: Private healthcare institutions, though costly, are expanding their geriatric offerings. They provide specialized services such as long-

term care, palliative care, and advanced diagnostic facilities. Despite their importance, these services remain inaccessible to low- and middle-income families due to high costs, limiting their utilization by the majority of elderly persons (Nair et al., 2021).

Community-Based Care: Community-based organizations, such as non-governmental organizations (NGOs) and faith-based groups, play a critical role in addressing healthcare service gaps. They primarily focus on delivering home-based care, organizing mobile health camps, and offering emotional and social support. However, the scope of these initiatives is often constrained, and they are largely dependent on external funding sources (HelpAge India, 2020).

Technology Integration: Digital solutions such as telemedicine, wearable health devices, and mobile health applications are emerging as transformative tools in geriatric care. These technologies enable remote consultations, medication management, and chronic disease monitoring, especially in underserved areas. Despite their potential, adoption rates remain low due to digital illiteracy and affordability issues among the elderly population (Bansal et al., 2021).

Insurance Penetration: The penetration of health insurance tailored to geriatric needs is minimal. A large percentage of the elderly rely on out-of-pocket expenditures, making healthcare costs a deterrent. Even when insurance is available, it often does not cover essential services like long-term care or home nursing (Reddy & Sharma, 2022).

2. Barriers to Effective Delivery and Utilization: Several systemic and societal challenges restrict the efficacy of geriatric care delivery and utilization in India.

Workforce Shortages: The healthcare workforce in India is inadequately equipped to address geriatric-specific needs. There is a severe shortage of trained geriatricians, physiotherapists, nurses, and caregivers. Additionally, informal caregivers often lack the necessary skills to manage the complex health issues faced by the elderly (Patel & Gupta, 2022).

Infrastructure Gaps: Most healthcare facilities are not designed to accommodate the needs of elderly patients. Essential modifications, such as wheelchair accessibility, geriatric-friendly seating arrangements, and diagnostic equipment suited to age-related conditions, are frequently absent (Jain et al., 2021).

Policy Implementation Issues: While India has formulated progressive policies like NPHCE, their implementation varies widely across states. Delays in fund

allocation, poor monitoring mechanisms, and lack of accountability reduce the overall effectiveness of these programs (Singh et al., 2021).

3. **Opportunities for Improvement:** Addressing existing challenges requires targeted interventions and innovative approaches to improve both service delivery and utilization.

Strengthening Primary Care: Enhancing primary healthcare facilities to cater specifically to geriatric needs can provide accessible and affordable care. Regular health check-ups, early detection of chronic diseases, and health promotion activities can significantly improve health outcomes (Verma & Joshi, 2022).

Integrated Care Models: Integrated care approaches that combine medical, psychological, and social services are essential for addressing the holistic needs of elderly persons. These models can involve partnerships between government, private players, and community organizations to ensure seamless care delivery (Pandey et al., 2023).

Capacity Building: Investments in the training and development of geriatric specialists and caregivers are critical. This includes introducing specialized courses in geriatrics in medical and nursing curricula and providing certification programs for caregivers (Chaudhury & Rani, 2021).

Policy Advocacy: Advocating for stronger policies, increased budgetary allocation for geriatric programs, and enhanced accountability mechanisms can ensure sustained improvements. Public awareness campaigns can also play a role in reducing stigma and encouraging the elderly to utilize available services (Ministry of Health's policy Reports, 2023).

5.6 Issues & Challenges

Geriatric care in India faces significant challenges due to systemic weaknesses, socio-economic factors, and the rapid growth of the elderly population. These issues hinder care delivery and affect the health outcomes of older adults. To improve geriatric care, India needs a comprehensive approach that includes training more specialists, expanding healthcare access in rural areas, increasing government support, and raising public awareness about elderly care. A holistic strategy is essential to enhance the quality of life for India's aging population (National

Institute of Health and Family Welfare 2011, World Health Organization 2015, Ministry of Statistics and Programme Implementation 2021).

Key Challenges in Geriatric Care in Gujarat including as below:

- 1. Awareness and Training:** Gujarat faces a shortage of geriatric expertise, with untrained healthcare providers and families unaware of elderly care needs, leading to misdiagnoses, neglect, and worsening health outcomes (MOHFW, 2021-2022, ICMR 2021-2022).
- 2. Poverty and Social Support:** In Gujarat, financial insecurity, lack of pensions, and changing family dynamics isolate rural elderly, making long-term care unaffordable and increasing demand for limited formal care options (Ministry of Social Justice and Empowerment Government of India Reports 2021, NFHS-5 2019-2021, Indian Journal of Geriatrics 2022-2023).
- 3. Home-Based Care:** Home healthcare demand is rising in Gujarat as elderly persons seek independence, offering support for daily needs and medical care. However, services are limited, costly, and face a shortage of trained caregivers, especially outside urban areas (HelpAge India 2021-2022).
- 4. Chronic Diseases Treatment:** In Gujarat, the elderly face chronic conditions like diabetes and hypertension, requiring specialized, long-term care. However, the healthcare system struggles to meet these complex needs, resulting in gaps in care (National Programme for Health Care of the Elderly 2020, Indian Council of Medical Research 2021, Ministry of Health and Family Welfare 2021-2022).
- 5. Healthcare Infrastructure:** Gujarat's healthcare system still faces gaps in geriatric care, with a shortage of specialized units and overcrowded facilities. The growing elderly population, especially in rural areas, struggles with limited access to quality care due to geographic and logistical barriers (Census of India 2011, Ministry of Health and Family Welfare, Government of India).
- 6. Opportunities and Initiatives in Geriatric Care:** In Gujarat, government initiatives aim to enhance elderly care, but challenges persist, especially in rural areas regarding comprehensive coverage (Gujarat Senior Citizens Welfare Scheme 2021-2022, Government of Gujarat, MOHFW 2022). Urban areas have seen growth in senior care homes offering shelter, healthcare, and social engagement, while rural areas lack institutional care options (HelpAge

India 2023). Training programs and awareness campaigns are improving geriatric care, but palliative care remains limited despite rising demand (Indian Council of Medical Research, 2021). Thus, geriatric care in Gujarat requires government and private sector collaboration to improve infrastructure, awareness, specialized services, and financial support, especially in rural areas, ensuring dignity and quality of life for the elderly.

Therefore, the complexities of geriatric care in India, emphasizing the challenges posed by a rapidly aging population. It highlights the prevalence of chronic diseases, mental health issues, and the strain on caregiving due to evolving family structures and economic constraints. The multidimensional aspects of geriatric care, including medical management, rehabilitation, mental health, and social integration, stressing the importance of holistic, patient-centered approaches. India's elderly population is expected to reach 300 million by 2050, creating a critical demand for specialized care. Significant barriers such as inadequate infrastructure, lack of trained professionals, and rural-urban healthcare disparities are addressed, with Gujarat serving as a case study of these challenges. Government initiatives like the NPHCE and state-level programs, alongside NGO and community efforts, aim to bridge these gaps. The chapter concludes by advocating for improved policies, targeted interventions, and awareness to ensure dignity and a higher quality of life for elderly citizens.

In the next chapter will explore the quality of life among elderly persons living with diabetes, focusing on key domains that contribute to their overall well-being. These domains include physical health, psychological well-being, social relationships, and environmental factors. Each area will be examined to understand how diabetes impacts various aspects of life, thereby providing a holistic view of the respondents' quality of life.

CHAPTER VI

QUALITY OF LIFE AMONG ELDERLY PERSONS LIVING WITH DIABETES

This chapter thoroughly examines the quality of life among elderly persons living with diabetes, focusing on four essential domains that significantly shape their well-being: physical health, psychological well-being, social relationships, and environmental factors. By analyzing each domain in depth, that aim to understand the distinct challenges and multifaceted impacts that diabetes imposes on various aspects of daily life for elderly respondents. It thus provides a holistic perspective, highlighting the interplay between health, emotional resilience, social support, and environmental accessibility, ultimately offering a comprehensive view of how diabetes affects their overall quality of life and informs strategies for targeted interventions to enhance the well-being of elderly living with diabetes in India.

This chapter is structured as follows: Quality of Life of Elderly Persons Living with Diabetes, Overall Quality of Life of Elderly Persons Living with Diabetes, Patterns of Relationships in Geriatric Care and Quality of Life of Elderly Persons Living with Diabetes, Comparison, Correlation, Binary Logistic Regression Analysis, and Summary.

6.1 Quality of Life among Elderly Persons Living with Diabetes

Quality of life refers to a person's overall satisfaction and personal assessment of their well-being. It involves several core areas such as physical health, mental and emotional stability, the quality of social relationships, and the impact of environmental factors like safety and accessibility. These elements combine to give a well-rounded picture of how people perceive the positive aspects and difficulties in their lives. This framework helps in understanding both the enriching and challenging aspects that shape life satisfaction.

6.1.1 Domains of Quality of Life among Elderly Persons Living with Diabetes

Table 34 Domains of Quality of Life among Elderly Persons Living with diabetes

Domain	Minimum Score	Maximum Score	Mean Score	Standard Deviation (SD)	Quality of Life Category	Proportion (N = 500)
Physical	13	81	48.71	11.278	High Well-being	41%

					Low Well-being	59%
Psychological	19	69	44.66	11.222	High Well-being	26%
					Low Well-being	74%
Social Relationship	20	80	44.43	17.425	High Well-being	28%
					Low Well-being	72%
Environment	13	81	51.48	10.130	High Well-being	44%
					Low Well-being	56%

Source: Computed

Figures in parentheses are percentages

Table 34 presents the scores across various domains of quality of life among elderly persons living with diabetes, including the physical, psychological, social relationships, and environmental domains. Physical domain scores and quality of life of elderly living with diabetes assesses how diabetes affects the physical well-being of elderly persons, focusing on factors like mobility, pain, energy, and dependence on medications. These scores help classify quality of life into categories such as low, moderate and high, offering insight into the physical challenges diabetes introduces and guiding interventions to improve independence and overall life satisfaction among persons living with diabetes.

Initially, the scores in the physical domain varied from a minimum of 13 to a maximum of 81, with an average score of 48.71 and a standard deviation of 11.278, indicating considerable variability. The classification of scores indicates that nearly three third (59%) of the total respondents were in the poor quality of life category (scores below 50), while the remaining two-fifth (41%) of the respondents were having good quality of life (scores 50 or above). This suggests that the majority of elderly persons living with diabetes face significant challenges in physical well-being, with a higher proportion experiencing poorer physical health outcomes.

Secondly, the psychological domain scores and quality of life of elderly persons living with diabetes evaluates the mental and emotional aspects affecting the quality of life the elderly living with diabetes. These scores assess factors such as mood, self-esteem, cognitive function, anxiety, and depression, which can be significantly affected by managing a chronic condition like diabetes. By categorizing quality of life levels such as low, moderate and high, this assessment helps identify specific psychological needs, guiding tailored support and interventions to enhance emotional well-being and overall life satisfaction of elderly persons living with diabetes.

The psychological domain score reflects the quality of life in terms of psychological well-being for elderly persons living with diabetes. These scores ranged from a minimum of 19 to a maximum of 69, with an average score of 44.66 and a standard deviation of 11.222, suggesting moderate variability within the group. The categorization of scores shows that nearly three-fourth (74%) of the respondents were in the poor quality of life category (scores below 50), while little more than one-fourth (26%) were in the good quality of life category (scores of 50 or above). This reveals that a substantial majority of elderly persons with diabetes experience challenges in psychological well-being.

Thirdly, the social relationship domain score and quality of life of elderly persons living with diabetes measures the social aspects influencing quality of life, such as social support, personal relationships, and community engagement. The scores for the social relationship domain ranged from 20 to 80, with an average score of 44.43 and a standard deviation of 17.425, indicating significant variability in the quality of social relationships within the group. The findings show that nearly three-fourth (72%) of the respondents had scored below 50, falling into the poor quality of life category, while, the remaining more than one-fourth (28%) scored 50 or above, indicating a good quality of life. This indicates that a majority of elderly persons with diabetes respondents face challenges in their social relationships.

Finally, the environment domain score and quality of life among elderly persons living with diabetes provides information on the environment quality of life scores among elderly persons with diabetes. The scores ranged from a minimum of 13 to a maximum of 81, with a mean score of 51.48 and a standard deviation of 10.130, reflecting a moderate range of variability in environmental quality of life within this population. The data show that more than one-fifth (56%) of persons

scored below 50, placing them in the poor quality of life category, while less than one-fifth (44%) scored 50 or above, indicating a good quality of life. This reveals that a majority of elderly persons with diabetes encounter challenges in their environment, though a considerable portion report satisfactory environmental well-being.

6.2 Overall Quality of Life among Elderly Persons Living with Diabetes

The overall quality of life scores for elderly persons living with diabetes provide a holistic assessment of how the condition affects various aspects of their lives. This score integrates evaluations from multiple domains physical health, psychological well-being, social relationships, and environmental factors providing an overall measure of quality of life of elderly living with diabetes. It serves as a summary indicator, capturing the cumulative effects of diabetes on daily functioning, emotional state, social interaction, and living conditions. A higher score typically indicates a better quality of life, while a lower score highlights areas that may require intervention to improve well-being, autonomy, and satisfaction among elderly persons with diabetes.

Table 35 Overall Domain Scores of Quality of Life among Elderly Persons Living with Diabetes

Domain	Minimum Score	Maximum Score	Mean Score	Standard Deviation (SD)	Quality of Life Category	N-500 (%)
Overall Quality of Life	28	75	47.32	6.343	High Well-being	38%
					Low Well-being	62%

Source: Computed

Figures in parentheses are percentages

Table 35 presents the overall quality of life scores for elderly persons living with diabetes, showing a score range from 28 to 75, with a mean of 47.32 and a standard deviation of 6.343. The table categorizes the quality of life, with one-third (38%) of participants reporting a good quality of life (scores ≥ 50), while more than one-sixth (62%) experience a poor quality of life (scores < 50). These findings highlight that the majority of the respondents with diabetes face significant challenges in their overall well-being, suggesting the need for targeted interventions to improve their physical, mental, and social health.

6.3 Patterns of Relationship in Geriatric Care with Quality of Life among Elderly Persons Living with Diabetes

This section explores the relationship between geriatric care and the quality of life of elderly persons living with diabetes. The analysis includes comparative assessments, correlation analysis, and the development of a binary logistic regression model to identify how different aspects of geriatric care impact the quality of life of elderly population. Comparative Analysis compares the quality of life scores across different groups receiving varying levels of geriatric care. It looks for patterns that indicate how care type or intensity may influence the well-being of elderly persons living with diabetes. Correlation analysis examines the strength and direction of relationships between the quality of life and various factors of geriatric care such as medical, social, psychological support. It helps identify which factors are most strongly associated with improved or diminished quality of life.

Binary Logistic Regression is used to predict the likelihood of good or poor quality of life outcomes based on different geriatric care factors. It helps assess which care variables such as frequency of visits, comprehensive care programs, or social support are significant predictors of a higher quality of life among elderly persons with diabetes. This section provides insights into how geriatric care practices influence the quality of life for elderly people living with diabetes, aiming to identify key factors that can be improved to enhance their well-being.

6.3.1. Relationship between Family Support and Domains of Quality of Life of life among Elderly Persons living with Diabetes

Family support is a key determinant in the overall quality of life for elderly persons living with diabetes. It crucial for elderly persons living with diabetes, positively impacting physical health, mental well-being, and social connections. Spouses, children, and relatives provide essential assistance in managing diabetes, offering emotional, physical, and financial support. Without family support, elderly persons face challenges like neglect in care, isolation, and increased stress.

Table 36 Relationship between Family Support and Domains of Quality of Life of life among Elderly Persons Living with Diabetes

Domains of Quality of life		Wife/ Husband (%)	Son/ Daughter/ Grand Children (%)	Relatives (%)	No support (%)	X2	P-value
Physical	Low	83 (28)	133 (44.9)	43 (14.5)	37 (12.5)	22.701	.000***
	High	65 (31.9)	117 (57.4)	17 (8.3)	5 (2.5)		

Psychological	Low	96 (25.9)	187 (50.4)	46 (12.4)	42 (11.3)	21.579	.000***
	High	52 (40.3)	63 (48.8)	14 (10.9)	0 (00)		
Social Relationship	Low	96 (26.5)	186 (51.4)	45 (12.4)	35 (9.7)	7.421	.06
	High	52 (37.7)	64 (46.4)	15 (10.9)	7 (5.1)		
Environment	Low	76 (27)	146 (52)	32 (11.4)	27 (9.6)	3.221	.35
	High	72 (32.9)	104 (47.5)	28 (12.8)	15 (6.8)		
Overall	Low	77 (24.8)	154 (49.5)	41 (13.2)	39 (12.5)	24.302	.000***
	High	71 (37.6)	96 (50.8)	19 (10.1)	3 (1.6)		

Source: Computed Figures in parentheses are percentages $P < 0.001$ ***

Table 37 on the relationship between family support and domains of quality of life of elderly persons living with diabetes analyses by chi-square test was conducted. The relationship between elderly care and quality of life among elderly persons living with diabetes. This presents a comparison of quality of life domains and family support in this population. Results indicated a highly significant association between the physical domain of quality of life and family support ($\chi^2=22.701$; $p < .001$ $\chi^2 = 22.701$; $p < .001$). This suggests that elderly persons without family support tend to have poorer physical quality of life.

6.3.2 Relationship between Indirect Family support and Domains of Quality of Life among Elderly Persons living with Diabetes

Family support for elderly persons with diabetes includes instrumental assistance with daily tasks, emotional encouragement, and access to professional healthcare services. Broader social support from extended family and community reduces isolation and enhances emotional well-being. Together, these forms of support significantly improve disease management and overall quality of life.

Table 37 Relationship between Indirect Family support and Domains of Quality of Life among Elderly Persons Living with Diabetes

Domains of Quality of life		Instrumental (%)	Supportive Services (%)	Broader Social Support (%)	Specialized Care Services (%)	No support (%)	X2	P-value
Physical	Low	112 (37.8)	94 (31.8)	62 (20.9)	9 (3)	19 (6.4)	8.440	.07
	High	75	82 (40.2)	39	4 (2)	4 (2)		

		(36.8)		(19.1)				
Psychological	Low	137 (36.9)	120 (32.3)	80 (21.6)	11 (3)	23 (6.2)	13.47 3	.009**
	High	50 (38.8)	56 (43.4)	21 (16.3)	2 (1.6)	0 (00)		
Social Relationship	Low	136 (37.6)	127 (35.1)	71 (19.6)	10 (2.8)	18 (5)	.767	.94
	High	51 (37)	49 (35.5)	30 (21.7)	3 (2.2)	5 (3.6)		
Environment	Low	95 (33.8)	105 (37.4)	62 (21.1)	7 (2.5)	12 (4.3)	4.353	.36
	High	92 (42)	71 (32.4)	39 (17.8)	6 (2.7)	11 (5)		
Overall	Low	115 (37)	95 (30.5)	72 (23.2)	8 (2.6)	21 (6.8)	16.93 7	.002**
	High	72 (38.1)	81 (42.9)	29 (15.3)	5 (2.6)	2 (1.1)		

Source: Computed

Figures in parentheses are percentages

P<0.01**

Table 37 on the relationship between indirect family support, care and services and the domains of quality of life among elderly persons living with diabetes analyses by chi-square test was conducted. The psychological domain has a significant association with the lack of direct family care ($\chi^2 = 13.473$; $p = .009$), indicating that limited family involvement negatively impacts psychological well-being. Similarly, overall quality of life is significantly linked to direct family support ($\chi^2 = 16.937$; $p = .002$), suggesting that its absence results in lower quality of life for these persons. However, other domains such as physical health, social relationships, and environment show no significant association with direct family support, implying that these aspects may be influenced by other factors beyond family care. These findings underscore the importance of family involvement specifically for psychological support and overall life quality in elderly person living with diabetes.

6.3.3 Relationship between Daily Physical Activities and Domains of Quality of Life among Elderly Persons Living with Diabetes

Daily physical activity, including physiotherapy, occupational therapy, holistic therapies like Ayurveda, and yoga, significantly enhances the quality of life for elderly persons with diabetes. These activities improve physical function, control blood sugar levels, and promote mental well-being. Together, they help manage complications, reduce stress, and foster independence, improving overall health and life satisfaction.

Table 38 Relationship between Daily Physical Activities and Domains of Quality of Life among Elderly Persons Living with Diabetes

Domains of Quality of Life		Physiotherapy (%)	Occupational Therapy (%)	Holistic Therapy (%)	Yoga & Exercise (%)	No Activity (%)	X ²	P-value
Physical	Low	59 (19.6)	56 (18.9)	54 (18.2)	44 (14.9)	84 (28.4)	17.307	.002**
	High	51 (25)	52 (25.5)	37 (18.1)	37 (18.1)	27 (13.2)		
Psychological	Low	78 (21)	83 (22.4)	60 (16.2)	56 (15.1)	94 (25.3)	11.501	.02*
	High	31 (24)	25 (19.4)	31 (24)	25 (19.4)	17 (13.2)		
Social Relationship	Low	72 (19.9)	73 (20.2)	70 (19.3)	56 (15.5)	91 (25.1)	9.909	.04*
	High	37 (26.8)	35 (25.4)	21 (15.2)	25 (18.1)	20 (14.5)		
Environment	Low	63 (22.4)	60 (21.4)	48 (17.1)	43 (15.3)	67 (23.8)	1.672	.76
	High	46 (21)	48 (21.9)	43 (19.6)	48 (17.4)	44 (20.1)		
Overall	Low	67 (21.5)	56 (18)	54 (17.4)	48 (15.4)	86 (27.7)	16.577	.002**
	High	42 (22.2)	52 (27.5)	37 (19.6)	33 (17.5)	25 (13.2)		

Source: Computed Figures in parentheses are percentages P<0.05*, P<0.01**

Table 38 on the relationship between daily physical activities and domains of quality of life among elderly persons living with diabetes analyses by chi-square test was conducted. The physical domain shows a highly significant association ($\chi^2 = 17.307$, $p = 0.002$), indicating that limited physical activity may lead to poorer physical health. Similarly, the psychological domain is significantly associated with physical activity levels ($\chi^2 = 11.501$, $p = 0.02$), suggesting that a lack of regular activity could negatively impact mental well-being. The social relationship domain also shows a significant link ($\chi^2 = 9.909$, $p = 0.04$), implying that physical activity may foster better social interactions. Finally, the overall quality of life demonstrates a highly significant association with physical activity ($\chi^2 = 16.577$, $p = 0.002$), underscoring that regular physical activity is crucial for a higher overall quality of life respondents among elderly persons with diabetes. These findings highlight the broad benefits of physical activity on various aspects of life quality for this population.

6.3.4 Relationship between perceptions on Social work care, support, services and Domains of Quality of Life among Elderly Persons Living with Diabetes

Perceptions of social work care, support, and services across primary, secondary, and tertiary healthcare levels significantly impact the quality of life for elderly persons with diabetes. At the primary level, social workers provide community-based support and education, improving disease management and social well-being. At secondary and tertiary levels, specialized care coordination, long-term support, and emotional assistance enhance health outcomes and overall life satisfaction

Table 39 Relationship between perceptions on Social work care, support, services and Domains of Quality of Life among Elderly Persons Living with Diabetes

Domains of Quality of life		Insufficient support and services (%)	Partially receiving support and services (PRSS) (%)	Sufficient support and services (%)	X2	P-value
Physical	Low	145 (49)	98 (33.1)	53 (17.9)	7.905	.01**
	High	79 (38.7)	69 (33.8)	56 (27.5)		
Psychological	Low	173 (46.6)	127 (34.2)	71 (19.1)	6.050	.04*
	High	51 (39.5)	40 (31)	38 (29.5)		
Social Relationship	Low	177 (48.9)	122 (33.7)	63 (17.4)	16.576	.000***
	High	47 (34.1)	45 (32.6)	46 (33.3)		
Environment	Low	125 (44.5)	93 (33.1)	63 (22.4)	.145	.93
	High	99 (45.2)	74 (33.8)	46 (21)		
Overall	Low	183 (58.8)	88 (28.3)	40 (12.9)	72.784	.000***
	High	41 (21.7)	79 (41.8)	69 (36.5)		

Source: Computed Figures in parentheses are percentages $P < 0.05^*$, $P < 0.01^{**}$,

Table 39 on relationship between perceptions on social work care, support, services and domains of quality of life of elderly persons living with diabetes analyses by chi-square test was conducted. The physical domain shows a highly significant association ($\chi^2 = 7.905$, $p = 0.01$), indicating that social worker involvement is linked to better physical health outcomes. Similarly, the psychological domain is significantly associated with social worker support ($\chi^2 = 6.050$, $p = 0.04$), suggesting that social workers contribute positively to mental well-

being. The social relationship domain shows a highly significant link to physical activity ($\chi^2 = 16.576$, $p < 0.001$), and the overall quality of life domain is also strongly associated with physical activity ($\chi^2 = 72.784$, $p < 0.001$), further underscoring the role of physical activity in improving life quality. Despite these positive associations, the findings suggest that many respondents report inadequate support and services from social workers, underscoring a significant gap in care that, if addressed, could enhance their overall quality of life.

6.3.5 Relationship between Communities Based Supportive Services and Domains of Quality of Life among Elderly Persons Living with Diabetes

Community-based supportive services enhance the quality of life for elderly persons living with diabetes at all care levels. Primary-level services focus on health education and basic care, while secondary-level services provide targeted medical support. Tertiary-level services address complications through specialized care, improving overall well-being.

Table 40 Relationship between Communities Based Supportive Services and Domains of Quality of Life among Elderly Persons Living with Diabetes

Domains of Quality of life		Primary Level (%)	Secondary Level (%)	Tertiary Level (%)	X2	P-value
Physical	Low	188 (63.5)	97 (32.8)	11 (3.7)	.245	.88
	High	126 (61.8)	63 (33.8)	9 (4.4)		
Psychological	Low	234 (63.1)	127 (34.2)	10 (2.7)	6.592	.03*
	High	80 (62)	39 (30.2)	10 (7.8)		
Social Relationship	Low	233 (64.4)	114 (31.5)	15 (4.1)	1.732	.42
	High	81 (59.7)	52 (37.7)	5 (3.6)		
Environment	Low	175 (62.3)	93 (33.1)	13 (4.6)	.695	.71
	High	139 (62.8)	73 (33.3)	7 (3.2)		
Overall	Low	201 (64.6)	99 (31.8)	11 (3.5)	1.343	.51
	High	113 (59.8)	67 (35.4)	9 (4.8)		

Source: Figures in parentheses are percentages $P < 0.05^*$

Table 40 on the relationship between community based supportive services and domains of quality of life of elderly persons living with diabetes analyses by chi-square test was conducted. In the physical domain, no significant difference was observed across the levels of community-based support ($X^2 = 0.245$, $p = 0.88$), suggesting that the level of community

support does not strongly affect physical health outcomes. However, in the psychological domain, a significant relationship was found ($\chi^2=6.592$, $p=0.03$), indicating that higher levels of community-based support (tertiary level) are associated with better psychological QoL. No significant relationships were observed in the social relationship domain ($\chi^2=1.732$, $p=0.42$), environmental domain ($\chi^2=0.695$, $p=0.71$), or overall QoL ($\chi^2=1.343$, $p=0.51$), implying that these domains are less influenced by community support services. Overall, while community support appears to have a significant impact on the psychological well-being of elderly diabetics, its influence on other QoL domains seems minimal.

6.3.6 Relationship between Safe and General Living Environment and Domains of Quality of Life among Elderly Persons Living with Diabetes

A safe and well-maintained living environment enhances the quality of life for elderly persons with diabetes by reducing the risk of accidents and promoting independence. An environment with proper safety measures, health standards, and maintenance supports better physical health, disease management, and emotional well-being. Conversely, an unsafe and poorly maintained environment can lead to increased stress, health risks, and diminished quality of life.

Table 41 Relationship between Safe and General Living Environment and Domains of Quality of Life among Elderly Persons Living with Diabetes

Domains of Quality of life		All Safety Measures (%)	Unsafe-Unsecured (%)	Healthy (%)	Well Maintained (%)	χ^2	P-value
Physical	Low	50 (16.9)	149 (50.3)	57 (19.3)	40 (13.5)	11.700	.00**
	High	37 (18.1)	74 (36.3)	48 (23.5)	45 (22.1)		
Psychological	Low	64 (17.3)	177 (47.7)	76 (20.5)	54 (14.6)	8.372	.03*
	High	23 (17.8)	46 (35.7)	29 (22.5)	31 (24)		
Social Relationship	Low	58 (16)	173 (47.8)	69 (19.1)	62 (17.1)	6.785	.07
	High	29 (21)	50 (36.2)	36 (26.1)	23 (16.7)		

Environment	Low	46 (16.4)	141 (50.2)	56 (19.9)	38 (13.5)	9.779	.02*
	Hig h	41 (18.7)	82 (37.4)	49 (22.4)	47 (21.5)		
Overall	Low	35 (11.3)	194 (62.4)	43 (13.8)	39 (12.5)	105.96 2	.000** *
	Hig h	52 (27.5)	29 (15.3)	62 (32.8)	46 (24.3)		

Source: Computed *Figures in parentheses are percentages* $P<0.05^*$, $P<0.01^{**}$, $P<0.001^{***}$

Table 41 on relationship between safe and general living environment and domains of quality of life among elderly persons living with diabetes analyses by chi-square test was conducted. The physical domain shows a highly significant association ($\chi^2 = 11.700$, $p < 0.001$), indicating that feelings of insecurity or unsafe living conditions are linked to poorer physical quality of life. The psychological domain also shows a significant association ($\chi^2 = 8.372$, $p = 0.03$), suggesting that a lack of safety in the living environment negatively impacts mental health. Furthermore, the environment domain is significantly associated with the safety of the living environment ($\chi^2 = 9.779$, $p = 0.02$), highlighting the importance of a secure living space for overall well-being. These findings emphasize that a safe and secure environment is crucial for maintaining physical and mental health, as well as improving the overall quality of life for the respondents.

6.3.7 Relationship between perception on the Spiritual & Religious Activities and Domains of Quality of Life among Elderly Persons Living with Diabetes

Spiritual and religious activities positively influence the quality of life for elderly persons living with diabetes by promoting emotional well-being and stress reduction through meditative practices. Satisfaction with these activities fosters a sense of purpose and trust, enhancing coping abilities and overall health management. Conversely, mistrust in spiritual practices may increase stress, reduce emotional stability, and negatively impact disease management and quality of life.

Table 42 Relationship between perception on the Spiritual & Religious Activities and Domains of Quality of Life among Elderly Persons Living with Diabetes

Domains of Quality of life		Meditative Life (%)	Satisfied (%)	Trust (%)	Mistrust (%)	X2	P-value
Physical	Low	39 (13.2)	57 (19.3)	105 (35.3)	95 (32.1)	.159	.98

	High	27 (13.2)	40 (19.6)	69 (33.8)	68 (33.3)		
Psychological	Low	44 (11.9)	78 (21)	139 (37.5)	110 (29.6)	10.689	.01**
	High	22 (17.1)	19 (14.7)	35 (27.1)	53 (41.1)		
Social Relationship	Low	49 (13.5)	67 (18.5)	122 (33.7)	124 (34.3)	2.205	.53
	High	17 (12.3)	30 (21.7)	52 (37.7)	39 (28.3)		
Environment	Low	37 (13.2)	64 (22.8)	100 (35.6)	80 (28.5)	7.241	.06
	High	29 (13.2)	33 (15.1)	74 (33.8)	83 (37.9)		
Overall	Low	38 (12.2)	62 (19.9)	105 (33.8)	106 (34.1)	1.532	.67
	High	28 (14.8)	35 (18.5)	69 (36.5)	57 (30.2)		

Source: Computed Figures in parentheses are percentages $P < 0.01^{**}$

Table 42 on the relationship between perception on the spiritual & religious activities and domains of quality of life of elderly persons living with diabetes analyses by chi-square test was conducted. The results show a statistically significant association between these perceptions and the psychological domain (p-value = 0.01), indicating that spiritual and religious views influence psychological well-being. Additionally, there is a marginally significant relationship with the environment domain (p-value = 0.06), suggesting a potential trend. However, no significant associations were found between these perceptions and the physical, social relationships, or overall quality of life domains, as indicated by high p-values (0.98, 0.53, and 0.67, respectively).

6.3.8 Relationship between Government Services and Domains of Quality of Life among elderly Persons living with Diabetes

Government services such as medical insurance, pensions, and free healthcare improve the quality of life for elderly persons living with diabetes by ensuring financial support and access to care. Without such support, access to healthcare is limited, reducing overall well-being.

Table 43 Relationship between Government Services and Domains of Quality of Life among Elderly Persons Living with Diabetes

Domains of Quality of life	Medical Insurance (%)	Pension (%)	Free Health Care	NSAP (%)	None (%)	Other (%)	X2	P-value

				Service (%)					
Physical	Low	40 (13.5)	82 (27.7)	50 (16.9)	43 (14.5)	49 (16.6)	32 (10.8)	.732	.98
	High	27 (3.2)	52 (25.5)	40 (19.6)	29 (14.2)	34 (16.7)	22 (10.8)		
Psychological	Low	52 (14)	109 (29.4)	53 (14.3)	54 (14.6)	62 (16.7)	41 (11.1)	15.119	.01**
	High	15 (11.6)	25 (19.4)	37 (28.7)	18 (14)	21 (16.3)	13 (10.1)		
Social Relationship	Low	45 (12.4)	100 (27.6)	68 (18.8)	44 (12.2)	63 (17.4)	42 (11.6)	7.583	.18
	High	22 (15.9)	34 (24.6)	22 (15.9)	28 (20.3)	20 (14.5)	12 (8.7)		
Environment	Low	34(12.1)	83 (29.5)	53 (18.9)	38 (13.5)	46 (16.4)	27 (9.6)	4.074	.53
	High	33 (15.1)	51 (23.3)	37 (16.9)	34 (15.5)	37 (16.9)	27 (12.3)		
Overall	Low	48 (15.4)	92 (29.6)	58 (18.6)	34 (10.9)	46 (14.8)	33 (10.6)	13.628	.01**
	High	19 (10.1)	42 (22.2)	32 (16.9)	38 (20.1)	37 (19.6)	21 (11.1)		

Source: Computed Figures in parentheses are percentages $P<0.01^{**}$

Table 43 on the relationship between government services and domains of quality of life of elderly persons living with diabetes analyses by chi-square test was conducted. A significant association was found in the psychological domain ($X^2=15.119$, $p=0.01$) and overall QoL ($X^2=13.628$, $p=0.01$), suggesting that government services, particularly free health care and pensions, have a positive impact on these aspects. However, no significant relationship was observed in the physical ($X^2=0.732$, $p=0.98$), social relationship ($X^2=7.583$, $p=0.18$), and environmental domains ($X^2=4.074$, $p=0.53$), indicating that these dimensions may be influenced by other factors beyond government service provisions. These findings underscore the importance of targeted policies to enhance psychological well-being and overall QoL through improved access to specific government services.

6.4 Correlation

The correlations among various quality of life (QoL) domains for elderly persons living with diabetes, highlighting the relationships between Physical Health, Psychological Well-being, Social Relationships, and Environment, the relationship of

quality of life and its domains will indicate in the following table.

Table 44 Correlation between Domains of Quality of Life among Elderly Persons Living with Diabetes

Quality of Life Domains	Physical Health	Psychological Well-being	Social Relationships	Environment
Physical Health	1.00	0.65	0.53	0.50
Psychological Well-being	0.65	1.00	0.68	0.60
Social Relationships	0.53	0.68	1.00	0.57
Environment	0.50	0.60	0.57	1.00

Source: Computed Figures in parentheses are percentages

Table 44 on the correlation between domains of quality of life among elderly persons living with diabetes presents the correlations among quality of life (QoL) domains physical health, psychological well-being, social relationships, and environment for elderly persons living with diabetes analyses by chi-square test was conducted. The results show a strong positive correlation between Psychological Well-being and Social Relationships ($r = 0.68$), indicating that persons with better social connections tend to experience enhanced psychological health. Moderate correlations are observed between Physical Health and Psychological Well-being ($r = 0.65$), as well as between Psychological Well-being and Environment ($r = 0.60$), suggesting that improvements in physical health and supportive environments are associated with better psychological outcomes. The weakest correlation is found between Physical Health and Environment ($r = 0.50$), indicating a more limited connection between these two domains. Overall, these relationships highlight the importance of social and psychological support in enhancing quality of life for elderly persons living diabetes.

Table 45 Spearman's rank correlation between Domains of Quality of Life among Elderly Persons Living with Diabetes

Domains of Quality of Life	1	2	3	4	5
Physical	1	.152**	.116**	.046	.276**
Psychological		1	-.057	.106*	.181**
Social Relationship			1	-.076	.331**
Environment				1	.135**
Overall					1

Source: Computed $P < 0.05^*$, $P < 0.01^{**}$, $P < 0.001^{***}$

Table 45 on the Spearman's rank correlation between domains of quality of life among elderly persons living with diabetes presents the results of Spearman's rank correlation between the domains of quality of life of elderly persons living with diabetes, highlighting the relationships between physical, psychological, social relationships, environment, and overall quality of life. The physical domain exhibits significant positive correlations with the psychological domain ($r = 0.001$), social relationships ($r = 0.010$), and overall quality of life ($r = 0.000$). This suggests that better physical health is closely linked to improved psychological well-being, stronger social relationships, and higher overall life quality. However, no significant correlation was found between the physical domain and the environment domain ($r = 0.301$). The psychological domain also shows a significant positive correlation with the environment domain ($r = 0.018$), suggesting that how persons perceive their environment can influence their mental health. Additionally, the psychological domain has a highly significant correlation with the overall quality of life ($r = 0.000$), indicating the strong impact of mental health on life quality. The social relationships domain has a highly significant positive correlation with the overall quality of life ($r = 0.003$), emphasizing the importance of social connections in enhancing life quality. Finally, the overall quality of life was found to be highly significantly correlated with all domains (physical, psychological, social relationships, and environment), indicating that each domain contributes significantly to the overall well-being of elderly persons with diabetes. These findings highlight the interconnectedness of quality of life domains and the importance of each in improving the well-being of elderly persons living with diabetes.

6.5 Binary Logistic Regression Analysis

Geriatric care and quality of life are the major variables indicated in the binary logistic analysis; Binary logistic regression analysis explores the relationship between geriatric care and quality of life to predict a binary outcome, such as whether persons have high or low quality of life. Key factors in geriatric care such as access to specialized services, frequency of visits, or facility quality serve as predictors, while quality of life encompasses physical, mental, and social well-being. The model estimates the probability of a higher quality of life, generating odds ratios to quantify how each factor influences the outcome. For instance, an odds ratio greater than 1 for geriatric care access indicates a positive association with a better

quality of life. This analysis helps identify critical factors that influence outcomes, providing evidence to guide policies and interventions aimed at enhancing the health and well-being of elderly persons living with diabetes.

Table 46 Binary Logistic Model of Physical Domain of Quality of Life

Independent Variables	P-value	Exp(B)	95.0% CI (Lower, Upper)	Model Statistics
Family Support (0 = No, 1 = Yes)	.00**	.19	(.07, .51)	Chi-square (χ^2): 42.62
Daily Physical Activities (0 = No, 1 = Yes)	.00**	.43	(.26, .70)	Degrees of Freedom (df): 4
Social Work Support & Services (0 = No, 1 = Yes)	.05*	.64	(.41, 1.00)	P-value: .000***
Safe & General Living Environment (0 = No, 1 = Yes)	.04*	.67	(.45, .98)	Cox & Snell R ² : 0.082
Constant	.05*	1.51	-	Nagelkerke R ² : .110
				Overall Accuracy: 62.4%

Source: Computed CI: Confidential Interval; P<0.05*, P<0.01, P<0.001*****

Table 46 on the binary logistic model of physical domain of quality of life presents the results of a binary logistic regression analysis used to evaluate factors influencing the physical domain of quality of life among elderly persons living with diabetes. The analysis included variables such as family support, daily physical activities, social worker support and services, and the safety and general living environment. The logistic regression model was found to be statistically significant ($\chi^2 = 42.62$, $p < 0.001$), indicating that the model effectively identified the factors influencing the physical domain of quality of life. The model explained 11.0% of the variance in the physical domain (Nagelkerke R²) and correctly classified 62.4% of the cases, suggesting a moderate level of predictive accuracy. These findings indicate that inadequate geriatric care including factors such as insufficient family support, limited physical activity, lack of social worker services, and unsafe living environments contributes significantly to a poor physical quality of life for elderly persons with diabetes. This highlights the need for comprehensive care that addresses these key factors to improve physical well-being in elderly population.

Table 47 Binary Logistic Model of Psychological Domain of Quality of Life

Independent Variables	P-value	Exp(B)	95.0% CI (Lower, Upper)	Model Statistics
Family Support (0 = No, 1 = Yes)	.99	.00	(.00, -)	Chi-square (χ^2): 40.48
Daily Physical Activities (0 = No, 1 = Yes)	.02*	.50	(.28, .90)	Degrees of Freedom (df):=1
Social Work Support & Services (0 = No, 1 = Yes)	.05*	.62	(.38, 1.00)	P-value: .000***
Safe & General Living Environment (0 = No, 1 = Yes)	.15	.73	(.47, 1.12)	Cox & Snell R ² : 0.078
Constant	.13	.72	-	Nagelkerke R ² : 0.114
				Overall Accuracy: 74.2%

Source: Computed CI: Confidential Interval

Table 47 on the binary logistic model of psychological domain of quality of life highlights important findings from a binary logistic regression analysis on factors affecting the psychological domain of quality of life in elderly persons with diabetes. The model's significant χ^2 statistic ($\chi^2 = 40.48$, $p < 0.001$) suggests a strong relationship between the predictor variables—daily physical activities and social worker support, services and the likelihood of high risk for poor psychological quality of life. The Nagelkerke R²=0.114 shows that the model accounts for 11.4% of the variance in psychological quality of life, and the model's classification accuracy of 74.2% further validates its predictive utility. The analysis underscores that elderly persons with diabetes are likely to experience diminished psychological quality of life if they lack adequate physical activity and social support. These insights could inform healthcare and social service strategies, aiming to improve the psychological health of this elderly persons living with diabetes by fostering supportive environments and encouraging daily activity.

Table 48 Binary Logistic Model of Social Relationship Domain of Quality of Life

Independent Variables	P-value	Exp(B)	95.0% CI (Lower, Upper)	Model Statistics
Family Support (0 = No, 1 = Yes)	.99	.00	(.00, -)	Chi-square (χ^2): 40.48
Daily Physical Activities (0 = No, 1 = Yes)	.02*	.50	(.28, .90)	Degrees of Freedom (df): 1
Social Work Support & Services (0 = No, 1 = Yes)	.05*	.62	(.38, 1.00)	P-value: .000***
Safe & General Living Environment (0 = No, 1 = Yes)	.15	.73	(.47, 1.12)	Cox & Snell R ² : .078
Constant	.13	.72	-	Nagelkerke R ² : .114
				Overall Accuracy: 74.2%

Source: Computed CI: Confidential Interval

Table 49 on the binary logistic model of social relationship domain of quality of life reveals the significant factors affecting the social relationship domain of quality of life in elderly persons with diabetes, analyzed through binary logistic regression. This model, with a significant χ^2 statistic ($\chi^2 = 24.23$, $p < 0.001$), indicates a strong association between the predictors daily physical activities and social worker support/services and the likelihood of being at high risk in the social relationship domain of quality of life. The Nagelkerke R² value of 0.069 shows that 6.9% of the variance in this domain is explained by the model, which also achieves a classification accuracy of 72.4%. The analysis highlights that elderly persons living with diabetes are more likely to experience lower quality of life in social relationships when they lack regular physical activity and access to social worker services. These findings suggest a potential benefit from targeted interventions that promote physical activity and enhance social support services, potentially improving the social quality of life for elderly persons living diabetes.

Table 49 Binary Logistic Model of Environment Domain of Quality of Life

Independent Variables	P-value	Exp(B)	95.0% CI (Lower, Upper)	Model Statistics
Family Support (0 = No, 1 = Yes)	.37	.74	(.38, 1.44)	Chi-square (χ^2): 9.93

Daily Physical Activities (0 = No, 1 = Yes)	.58	.85	(.57, 1.37)	Degrees of Freedom (df): 1
Social Work Support & Services (0 = No, 1 = Yes)	.40	1.20	(.77, 1.87)	P-value: .006**
Safe & General Living Environment (0 = No, 1 = Yes)	.006**	.59	(.41, .86)	Cox & Snell R ² : .020
Constant	.56	.88	-	Nagelkerke R ² : .026
				Overall Accuracy: 56.2%

Source: Computed CI: Confidential Interval; P<0.01**

Table 49 on the binary logistic model of environment domain of quality of life focuses on factors affecting the environmental domain of quality of life in elderly persons with diabetes, evaluated through binary logistic regression. The model's statistically significant χ^2 value ($\chi^2 = 9.93$, $p < 0.01$) suggests a notable association between the presence of a safe and supportive living environment and the risk of poor quality of life of elderly persons in the environmental domain. The model accounts for 2.6% of the variance in this domain (Nagelkerke $R^2 = 0.026$) and achieves a classification accuracy of 56.2%. The analysis highlights the influence of environmental safety and general living conditions on the quality of life for elderly persons living with diabetes. These findings suggest that interventions to enhance living environment safety and support may improve quality of life of elderly in this domain, underscoring the need for housing improvements and community safety measures for this vulnerable population.

Table 50 Binary Logistic Model of Overall of Quality of Life

Independent Variables	P-value	Exp(B)	95.0% CI (Lower, Upper)	Model Statistics
Family Support (0 = No, 1 = Yes)	.001***	.12	(.03, .43)	Chi-square (χ^2): 164.008
Daily Physical Activities (0 = No, 1 = Yes)	.01**	.50	(.28, .89)	Degrees of Freedom (df): 1
Social Work Support & Services (0 = No, 1 = Yes)	.000***	.27	(.16, .46)	P-value: .000***

Safe & General Living Environment (0 = No, 1 = Yes)	.000***	.11	(.07, .19)	Cox & Snell R ² : .280
Constant	.000***	4.57	-	Nagelkerke R ² : .381
				Overall Accuracy: 62.2%

Source: Computed CI: Confidential Interval; P<0.05*, P<0.01, P<0.001*****

Table 50 on the binary logistic model of overall of quality of life examines the factors affecting the overall quality of life in elderly persons living with diabetes, using binary logistic regression analysis. This model shows a highly significant χ^2 value ($\chi^2 = 164.008$, $p < 0.001$), suggesting a strong relationship between various factors family support, daily physical activity, social worker support and services, and a safe living environment and the risk of poor overall quality of life of elderly. The model accounts for a notable 38.1% of the variance in overall quality of life of elderly (Nagelkerke $R^2 = 0.381$) and correctly classifies 62.2% of cases.

This chapter presented the quality of life (QoL) of elderly persons living with diabetes in India across physical, psychological, social, and environmental domains. Statistical analysis reveals significant challenges, with 59% reporting poor physical QoL, 74% poor psychological QoL, 72% poor social relationships, and 56% struggling with environmental factors. Overall, 62% of participants experience poor QoL, with a mean score of 47.32. Binary logistic regression indicates that family support, daily physical activities, and a safe environment significantly predict better QoL. Correlation analysis shows strong links between social relationships, psychological well-being, and overall QoL. Findings highlight the critical need for targeted interventions to address these domains and improve care and support systems in elderly persons living with diabetes.

The next chapter will focus on early detection and prevention strategies for Type 2 diabetes in elderly populations, using case studies to highlight screening methods, risk factor identification, and lifestyle interventions. It will examine the medical, social, cultural, and psychological factors affecting diabetes care in older adults. The chapter will provide actionable insights on effective prevention strategies, emphasizing the role of healthcare providers, community programs, and

public health policies.

CHAPTER VII

CASE STUDY ANALYSIS

This chapter presents an in-depth analysis of the challenges and strategies associated with managing Type 2 diabetes (T2D) in elderly persons in Gujarat, India. Key topics discussed include the impact of aging on diabetes management, such as cognitive decline, comorbidities, and medication non-adherence. The chapter delves into the socio-cultural factors, like joint family systems and dietary preferences, that influence diabetes care. It highlights the importance of tailored interventions that incorporate medical treatment, psychological support, and community-based initiatives. This comprehensive exploration aims to provide actionable insights into geriatric diabetes management, emphasizing the need for holistic and patient-centered approaches. Using real-world case studies, it explores the multifaceted nature of diabetes care among the elderly persons, considering medical, social, cultural, and psychological dimensions.

The chapter is structured as follows Introduction, Methodology, Case Studies Analysis, Discussion, Recommendations and Conclusion.

7.1 Introduction

Diabetes, particularly Type 2 diabetes (T2D), has emerged as a significant health issue globally, with a notably rising incidence among the elderly population. Gujarat has a high prevalence of diabetes among elderly persons, with approximately 25-30% of people aged 60 and above affected (Source: Kumar et al., 2020). Urban areas like Ahmedabad report slightly higher prevalence due to sedentary lifestyles and dietary patterns compared to rural regions, where awareness and diagnostic rates are lower. The International Diabetes Federation (IDF) projects a 60% increase in diabetes prevalence in India by 2045, which disproportionately impacts the elderly due to population aging (Source: IDF Atlas, 2021, Kumar, A., et al. 2020). The prevalence of T2D in elderly persons is increasing across various regions, including in India, where the situation is becoming particularly concerning in states like Gujarat. According to Kumar et al. (2020), T2D affects approximately 25% of persons aged 60 and above in India, and this rate is expected to rise as the population ages. The increasing burden of diabetes in Gujarat, a state characterized by rapid

urbanization and a high prevalence of sedentary lifestyles, exacerbates the health challenges faced by elderly persons.

Table 51 Diabetes Prevalence in Elderly Populations across Gujarat

Sr No	City	Prevalence (% among elderly)	Key Factors
1	Rajkot	28%	Rural healthcare gaps, high-fat diets
2	Junagadh	26%	Joint family systems, sedentary lifestyle
3	Jamnagar	34%	Urbanization, pollution, sedentary behaviors

(Source: Government of Gujarat Health Reports, 2021, Patel & Mehta 2021, IDF 2021)

Table 51 on the Diabetes Prevalence in Elderly Populations across Gujarat indicates significant diabetes prevalence among the elderly in Gujarat, with Jamnagar leading at 34%, followed by Rajkot at 28%, and Junagadh at 26%. In Jamnagar, urbanization, pollution, and sedentary behaviors are key contributors, reflecting the impact of rapid lifestyle changes. Rajkot's prevalence is linked to rural healthcare gaps and high-fat dietary habits, highlighting the need for better rural health infrastructure and nutritional education. In Junagadh, the influence of joint family systems and sedentary lifestyles suggests cultural and lifestyle factors play a role.

The aging process itself compounds the difficulties of managing chronic diseases such as diabetes. As persons age, they often experience a gradual decline in physical and cognitive functions. This may lead to a decreased ability to engage in regular physical activity, poor dietary choices, and a higher likelihood of developing comorbid conditions like hypertension, cardiovascular disease, and arthritis, which are common in diabetic patients (Source: Jha et al., 2019). Additionally, elderly persons often struggle with medication non-adherence, which can stem from factors like forgetfulness, complex medication regimens, or financial constraints. These multifactorial challenges can significantly impact the effective management of T2D, leading to poor glycemic control and a higher risk of complications such as neuropathy, retinopathy, and renal failure (Source: Gupta et al., 2020).

This chapter delves into the lived experiences of elderly persons aged between 61–70 years across the cities Rajkot, Junagadh, and Jamnagar in Gujarat who are managing diabetes. By examining detailed case studies, the chapter highlights the specific barriers and opportunities for diabetes care in geriatric

populations. Each city presents unique challenges: in Rajkot, for instance, limited access to specialized healthcare services in rural areas exacerbates the difficulty of obtaining consistent care, while in urban centers like Jamnagar, issues such as lifestyle-related risk factors and environmental pollution are prominent contributors to poor health outcomes (Source: Mehta & Patel, 2021).

These case studies illustrate the complex interplay of social, economic, and environmental factors that affect diabetes management in the elderly. For example, in Junagadh, a significant proportion of elderly persons living with diabetes live in joint family structures, which can both help and hinder diabetes management, depending on familial support and awareness of the disease. The presence of comorbid conditions, like obesity and hypertension, complicates treatment regimens, making individualized care essential (Source: Sharma & Bhattacharya, 2022). Tailored interventions are critical in improving outcomes for elderly persons with T2D. These interventions should address not only the medical aspects of diabetes care but also the psychological and social dimensions. Healthcare providers must consider factors such as the patient's cognitive function, social support networks, and access to resources like diabetic education and regular monitoring. Moreover, community-based initiatives that promote awareness, offer regular screening, and provide tailored exercise programs can help improve diabetes management at the local level (Source: Rai et al., 2021).

Understanding the specific challenges faced by the elderly population in managing T2D is crucial for developing effective and sustainable healthcare interventions. This highlights the importance of a multidimensional approach to geriatric diabetes care that incorporates medical, social, and lifestyle modifications to enhance the quality of life and reduce the burden of diabetes-related complications in elderly persons. The elderly persons in Gujarat are influenced by the cultural practice of consuming carbohydrate-rich vegetarian diets, with a preference for high glycemic foods like rice and sweets. Urbanization has led to lifestyle shifts, such as reduced physical activity among the elderly. However, joint family systems, common in rural Gujarat, provide both support (shared caregiving responsibilities) and barriers (limited emphasis on person health) to managing chronic illnesses like diabetes (Source: Patel, D., & Mehta, R. 2021,WHO 2020).

7.2 Methodology

The case studies presented in this chapter are drawn from real-world data collected from patients diagnosed with Type 2 diabetes (T2D) across the cities of Rajkot, Junagadh, and Jamnagar in Gujarat. The data collection process involved a comprehensive and multifaceted approach, including in-depth interviews with patients, review of medical records, and regular follow-up assessments to track the progression of the disease and the effectiveness of treatment strategies. This longitudinal design allowed for a thorough examination of both short-term and long-term outcomes, providing a deeper understanding of the challenges faced by elderly persons managing T2D.

The study cohort consists of persons from diverse demographic backgrounds, including variation in age, gender, socioeconomic status, and educational level. It also includes a wide range of clinical histories, such as patients with varying durations of diabetes, those with comorbid conditions (e.g., hypertension, cardiovascular disease, obesity), and persons at different stages of diabetes progression (from well-managed cases to those with complications such as neuropathy or retinopathy). Furthermore, the study captures a variety of lifestyle patterns, including dietary habits, physical activity levels, and adherence to prescribed medication regimens. This diversity in the sample helps ensure that the findings are broadly applicable to the elderly diabetic population in the region, providing a holistic perspective on diabetes care.

The primary aim of this research was to identify common challenges faced by elderly persons in managing their diabetes. These challenges include, but are not limited to, difficulties with medication adherence, limited physical activity, and a lack of tailored educational resources. Moreover, many patients experience a lack of social support or face difficulties navigating the healthcare system, particularly in rural areas where healthcare infrastructure may be limited. Several cases also highlight the impact of mental health factors, such as depression and anxiety, on the ability to manage diabetes effectively, as these psychological issues are often overlooked in conventional diabetes care (*Source: Rai et al., 2021*).

To assess the interventions provided, the study evaluated both medical and

non-medical approaches. Medical interventions included pharmacological treatment (e.g., oral hypoglycemics and insulin), while non-medical interventions focused on lifestyle modifications, including dietary counseling, exercise programs, and psychological support. The effectiveness of these interventions was measured through both clinical indicators, such as blood glucose levels and HbA1c scores, as well as patient-reported outcomes, including quality of life assessments and reports of symptom management.

The methodology used in this study aligns with established practices in diabetes care research within geriatrics, as outlined by Dandu et al. (2018). Their framework for diabetes research emphasizes the importance of a patient-centered approach, where treatment decisions are individualized, taking into account the patient's unique medical history, social environment, and personal preferences. In addition to these qualitative and quantitative methods, the research incorporated principles from geriatric care, recognizing the complexities of managing diabetes in elderly persons, who often have multiple chronic conditions and may be more susceptible to adverse effects from medications.

The case studies were analyzed using both thematic analysis and statistical evaluation, allowing the research team to identify patterns in diabetes management strategies and their outcomes. This analysis provides a nuanced understanding of how various factors such as socio-economic status, access to healthcare, and social support systems affect the management of T2D in elderly persons. By comparing these findings across different cities, the research also highlights regional differences in healthcare access and community resources, offering insights into potential strategies for improving care at the local level.

This is in-depth, evidence-based analysis of the complexities of diabetes management in elderly persons, using real-world case studies to illustrate both the challenges and successes in the care process. The study's findings underscore the importance of individualized, multi-dimensional care strategies that encompass medical treatment, lifestyle modifications, and psychological support to optimize diabetes outcomes for elderly persons.

7.3 Case Studies Analysis

This study focuses on the analysis of elderly persons living with diabetes in the cities of Rajkot, Junagadh, and Jamnagar, located in Gujarat, India. These regions represent a diverse cross-section of urban and semi-urban populations, making them ideal for understanding the interplay between aging, chronic disease management, and socio-cultural factors. The case studies explore the prevalence of diabetes among the elderly persons, the challenges they face in managing their condition, and the impact of family support, healthcare accessibility, and lifestyle practices on their overall well-being. This analysis aims to provide insights into regional variations and inform strategies for improving geriatric diabetic care.

Table 52 Gender-Based Comparison of HbA1c Levels across Cities

Sr No	City	Average in HbA1c (%) Men	Challenges for Men	Average HbA1c (%) in Women	Challenges for Women
1	Rajkot	8.5%	Sedentary lifestyle, underreporting symptoms	8.8%	Post-menopausal weight gain, caregiving responsibilities
2	Junagadh	8.2%	Delayed diagnoses, reliance on traditional remedies	8.7%	Poor awareness of dietary impacts, limited self-care time
3	Jamnagar	9.0%	Urban stressors, reluctance to seek regular check-ups	9.2%	High glycemic impact of festival diets, lack of exercise

(Source: Haffner et al 2018, Patel & Mehta 2021, IDF 2021)

Table 52 on the gender-based comparison of HbA1c levels across cities highlights variations in average HbA1c levels and challenges faced by men and women across Rajkot, Junagadh, and Jamnagar. Among men, Jamnagar records the highest average HbA1c (9.0%), influenced by urban stress and reluctance to seek regular check-ups, followed by Rajkot (8.5%), where a sedentary lifestyle and underreporting symptoms prevail, and Junagadh (8.2%), where reliance on traditional remedies and delayed diagnoses are key concerns. For women, HbA1c levels are highest in Jamnagar (9.2%) due to high-glycemic festival diets and inactivity, while Rajkot (8.8%) faces challenges like post-menopausal weight gain and caregiving roles. In Junagadh (8.7%), limited self-care time and poor dietary

awareness contribute.

Rajkot city

1. Patient A (Male, 62 years)

- **Clinical History:** Diagnosed with Type 2 Diabetes (T2D) 8 years ago, with concurrent hypertension and mild neuropathy. His HbA1c consistently remained above 8.5%, indicating poor long-term glycemic control. The patient's medical history highlights the common challenge of comorbidities in elderly diabetes patients, which often complicates disease management and increases the risk of complications (Source: Bennett et al., 2017).
- **Challenges:** The patient led a predominantly sedentary lifestyle, which is a significant risk factor for poor glycemic control (Kumar et al., 2018). His diet, high in fats and sweets (typical of many vegetarian diets in India), further exacerbated his diabetes (Source: Chawla et al., 2017). Additionally, poor medication adherence, often a problem in elderly persons, was noted, which likely contributed to suboptimal diabetes management.
- **Intervention & Outcome:** A structured dietary plan focusing on low glycemic index (GI) foods, alongside a regular exercise regimen, was implemented. The low-GI diet was shown to be effective in controlling blood sugar levels, as it slows glucose absorption and helps in better postprandial glucose control (Source: Jha et al., 2021). Regular physical activity, such as walking, has been demonstrated to improve insulin sensitivity and lower HbA1c (Source: Colberg et al., 2016). As a result, the patient's HbA1c improved to 7.8%, and his neuropathy symptoms also showed notable improvement following better medication adherence.

2. Patient B (Female, 64 years)

- **Clinical History:** Diagnosed with diabetes 5 years ago, and developed diabetic retinopathy in her left eye. Despite fluctuating HbA1c levels, she struggled to maintain optimal blood sugar control. Diabetic retinopathy, a common complication of long-standing T2D, affects nearly 30% of diabetic patients and can lead to severe vision impairment (Source: Yau et al., 2012).

- **Challenges:** A misconception regarding the effects of "natural sugars" in fruits was a major barrier. Many patients mistakenly believe that natural sugars, like those found in fruits, do not affect blood glucose levels as much as refined sugars. However, even natural sugars can contribute significantly to hyperglycemia if consumed in large amounts (Source: Bertoli et al., 2020).
- **Intervention & Outcome:** The intervention focused on educating the patient about the glycemic impact of all forms of sugar, including fructose. Diabetes education programs emphasizing carbohydrate counting and glycemic control have been shown to be effective in improving diet and glycemic control (Source: Chandrashekhar & Shah, 2020). With this knowledge, the patient adjusted her diet, reducing fruit intake and focusing on lower-carb options. This led to an improvement in her HbA1c, which decreased to 6.9%. Regular eye check-ups helped prevent further progression of retinopathy, a key aspect of managing diabetes-related complications (Source: Jampol et al., 2017).

3. Patient C (Male, 70 years)

- **Clinical History:** Diagnosed with diabetes 10 years ago, and suffered a mild ischemic stroke. His HbA1c was high at 9.2%, indicating poorly controlled diabetes and an increased risk for cardiovascular events, which is common in elderly diabetic patients. (Source: O'Neal et al., 2018).
- **Challenges:** Depression, living alone, and a lack of prioritization for self-care were significant obstacles to managing his diabetes. Depression is prevalent among elderly persons with T2D, affecting both the motivation for lifestyle changes and adherence to medication (Source: Lin et al., 2020).
- **Intervention & Outcome:** The intervention included mental health counseling and participation in community support programs, which have been shown to improve emotional well-being and support behavior change (Source: Chaudhary & Kumar, 2019). The combination of emotional support, diabetes education, and social interaction led to improved self-care behaviors, and his HbA1c reduced to 8.1%. The intervention highlights the importance of addressing mental health in diabetes care, particularly in the elderly population.

4. Patient D (Female, 68 years)

- **Clinical History:** Initially diagnosed as pre-diabetic, her condition worsened following gallbladder surgery, and her HbA1c reached 7.4%. The patient's medical history underscores the role of metabolic changes following surgical procedures, which can disrupt glucose metabolism and accelerate the progression of diabetes (Source: Wang et al., 2017).
- **Challenges:** Fear of insulin therapy and misconceptions about diabetes progression led her to avoid necessary treatment. This is a common issue in elderly persons, who may have apprehensions about insulin, often due to myths about its long-term use and perceived risks (Source: Patel et al., 2020).
- **Intervention & Outcome:** Diabetes education focused on the importance and safety of insulin therapy was provided, helping alleviate her fears. Additionally, oral medication was prescribed, which helped stabilize her HbA1c at 6.8%. Education on insulin therapy and its role in managing blood sugar has been shown to improve patient acceptance and adherence, leading to better outcomes (Source: Gupta et al., 2018). This case illustrates the importance of addressing patient fears and misconceptions to enhance compliance with treatment regimens.

5. Patient E (Male, 67 years)

- **Clinical History:** Recently diagnosed with diabetes, with an HbA1c of 8.1%. A family history of T2D (both parents were diabetic) heightened his risk of developing the condition. Family history is a significant risk factor for Type 2 diabetes, as genetic predispositions can influence insulin sensitivity and glucose metabolism (Source: Fujimura et al., 2018).
- **Challenges:** Tobacco use, irregular meal timings, and skipping breakfast were contributing to poor blood sugar control. Smoking is a known risk factor for worsening diabetes complications, as it can impair insulin sensitivity and increase inflammation (Source: Breen et al., 2015).
- **Intervention & Outcome:** A smoking cessation program was introduced, which has been shown to significantly improve diabetes control (Source: Rathi et al., 2019). Personalized meal planning, emphasizing regular meals and balanced nutrition, helped him maintain better glycemic control. As a result, his HbA1c decreased to 7.3%. The intervention also highlights the

importance of addressing lifestyle factors such as smoking and irregular eating patterns in the management of T2D.

These case studies emphasize the multifaceted nature of diabetes management in elderly persons. The challenges faced by elderly diabetic patients are diverse, ranging from lifestyle factors and comorbidities to psychological barriers and misconceptions about treatment. Tailored interventions that address these unique needs such as dietary modifications, medication adherence strategies, mental health support, and education about diabetes can lead to meaningful improvements in glycemic control and overall quality of life. These real-world examples underscore the importance of a personalized, patient-centered approach to diabetes care, which is crucial for managing this chronic condition in the aging population.

Junagadh city

6. Patient F (Female, 61 years)

- **Clinical History:** Diagnosed with Type 2 diabetes 12 years ago, the patient has been experiencing peripheral neuropathy, a common complication in diabetes that affects the nerves in the feet and hands, causing pain, tingling, and numbness. Her HbA1c was consistently elevated at 8.6%, indicating suboptimal long-term glucose control.
- **Challenges:** A sedentary lifestyle and low motivation for physical activity were identified as key barriers to managing her diabetes. Physical inactivity is a significant risk factor for poor glycemic control, especially in elderly persons (Source: Dunkley et al., 2014). Furthermore, neuropathy can limit mobility, creating a cycle of reduced physical activity and worsening diabetic complications (Source: Alvarado et al., 2017).
- **Intervention & Outcome:** The intervention included physiotherapy, which helped improve mobility and alleviate neuropathy symptoms. Additionally, incorporating light walking routines, which have been shown to improve blood sugar control and increase insulin sensitivity (Source: Colberg et al., 2016), was implemented. As a result, her HbA1c decreased to 7.5%, and she reported reduced symptoms of neuropathy. This highlights the importance of integrating physical activity and rehabilitation therapies in the management of elderly diabetes patients.

7. Patient G (Male, 65 years)

- **Clinical History:** Diagnosed with Type 2 diabetes 6 years ago, this patient recently developed chronic kidney disease (CKD) Stage 2, which is a common complication of poorly controlled diabetes. His HbA1c was 8.1%. CKD is a significant concern in diabetes management, as it can lead to end-stage renal disease if not carefully managed (Source: Kerr et al., 2019).
- **Challenges:** One of the main challenges was the patient's difficulty in transitioning to a low-protein diet, which is often recommended for CKD patients to reduce the burden on the kidneys. His preference for a vegetarian diet made it difficult to adhere to dietary modifications needed to manage both diabetes and CKD.
- **Intervention & Outcome:** A renal dietitian provided a customized low-protein diet plan, emphasizing plant-based proteins and ensuring the patient received sufficient nutrients without overloading the kidneys. Studies have shown that dietary modifications can significantly improve kidney function and slow the progression of CKD in diabetic patients (Source: Singh et al., 2020). Following the dietary changes, the patient's kidney function improved, and his HbA1c stabilized at 7.4%. This case highlights the importance of multidisciplinary care involving dietitians and nephrologists in managing comorbid diabetes and CKD.

8. Patient H (Female, 66 years)

- **Clinical History:** Diagnosed with borderline diabetes, her HbA1c was recorded at 7.3%. She also had a history of significant weight gain post-menopause, which is a well-known risk factor for developing Type 2 diabetes in women (Source: Haffner et al., 2018).
- **Challenges:** The patient's excessive consumption of oil and sugar in cooking, coupled with her sedentary lifestyle, led to uncontrolled blood glucose levels. These dietary habits are common contributors to poor diabetes management, particularly in regions where traditional cooking involves high-calorie, high-fat foods (Source: Mohan et al., 2017).
- **Intervention & Outcome:** The intervention involved participation in community-based awareness programs that focused on healthier cooking

habits, such as reducing the use of oil and sugar in food preparation. Community programs have been shown to be effective in promoting healthy behaviors and improving diabetes outcomes in the general population (Source: Patel & Desai, 2022). After adopting these changes, her HbA1c reduced to 6.7%. This case highlights the role of community interventions in diabetes management, particularly for persons with borderline diabetes.

9. Patient I (Male, 69 years)

- **Clinical History:** Diagnosed with diabetes 15 years ago, the patient also had ischemic heart disease (IHD), a common cardiovascular complication of diabetes. His HbA1c was high at 9.0%, indicating poor glycemic control. Patients with both diabetes and IHD face complex management challenges, as both conditions require careful balancing of diet, medications, and lifestyle (Source: Khan et al., 2020).
- **Challenges:** Balancing dietary requirements for both diabetes and heart disease was a significant challenge. Diabetic patients with heart disease need to follow a diet that controls blood sugar levels while also being heart-healthy, such as a low-fat, low-sodium, and high-fiber diet.
- **Intervention & Outcome:** A multidisciplinary approach involving cardiologists, dietitians, and diabetes specialists was implemented. This team-based approach is effective in managing patients with multiple chronic conditions, ensuring that both heart disease and diabetes are addressed simultaneously (Source: Sarkar et al., 2018). The patient's diet was modified to include heart-healthy foods like omega-3 fatty acids, whole grains, and vegetables, while also focusing on low glycemic foods to control blood sugar. This approach led to a reduction in his HbA1c to 7.8% and improved cardiovascular health, as evidenced by better blood pressure and lipid levels.

10. Patient J (Female, 63 years)

- **Clinical History:** Newly diagnosed with Type 2 diabetes, this patient had an HbA1c of 6.4%. While her blood sugar levels were relatively well-controlled initially, she experienced frequent hypoglycemic episodes, a common issue for newly diagnosed patients, particularly if they are on aggressive

medication regimens. Hypoglycemia is a significant concern in diabetes management, especially in elderly persons, due to the risk of falls and other complications (Source: Kaiser et al., 2018).

- **Challenges:** Lack of awareness regarding hypoglycemia prevention was a key barrier. Many diabetic patients, particularly those who are newly diagnosed, are not fully educated about how to manage or prevent low blood sugar.
- **Intervention & Outcome:** The intervention focused on educating the patient about self-monitoring blood glucose levels and maintaining balanced meals to prevent hypoglycemic episodes. Education on the timing of meals, carbohydrate counting, and recognizing the symptoms of hypoglycemia has been shown to reduce the occurrence of low blood sugar and improve overall diabetes control (Source: Gupta et al., 2021). As a result, the patient's HbA1c remained stable at 6.2%, with no further hypoglycemic episodes. This case underscores the importance of patient education in preventing complications, particularly for those newly diagnosed with diabetes.

These case studies further highlight the complexity of diabetes management in elderly persons, particularly when multiple comorbidities and lifestyle factors are involved. Tailored interventions, such as dietary modifications, physical activity, multidisciplinary care, and patient education, are essential for managing Type 2 diabetes effectively in this population. Each case demonstrates the positive impact of personalized care, which addresses both the medical and psychosocial aspects of diabetes management, leading to improved clinical outcomes and a better quality of life for the patients.

Jamnagar city

1. Patient K (Male, 70 years)

- **Clinical History:** This patient has had long-standing diabetes and was diagnosed with gangrene in his left foot, a severe complication of diabetes, typically caused by poor circulation and nerve damage. His HbA1c was critically high at 10.1%, indicating very poor long-term glycemic control.
- **Challenges:** Poor foot hygiene and delayed medical intervention worsened his condition, ultimately leading to the development of gangrene, a life-

threatening complication. Diabetic foot infections, if not treated promptly, can lead to amputations and other severe consequences (Source: Zhao et al., 2019).

- **Intervention & Outcome:** Timely surgical intervention was performed to remove the gangrenous tissue, preventing the need for amputation. Additionally, education on proper foot care was provided, including daily inspection of the feet, proper footwear, and maintaining good blood sugar control to prevent further complications. Diabetic foot care education has been shown to significantly reduce the risk of amputations in diabetic patients (Source: Sharma et al., 2020). After the intervention, his HbA1c decreased to 8.7%. This case underscores the importance of early intervention in preventing severe complications and improving patient outcomes.

12. Patient L (Female, 62 years)

- **Clinical History:** This patient developed diabetes after undergoing a hysterectomy, a significant surgery that can affect hormonal balance and metabolic health, potentially leading to the development of Type 2 diabetes (Source: Bano et al., 2019). Her HbA1c was elevated at 8.2%, and she had significant weight gain and fatigue.
- **Challenges:** Low physical activity and emotional eating were identified as primary factors worsening her condition. The hormonal changes post-hysterectomy can contribute to weight gain and emotional instability, both of which can make managing diabetes more difficult (Source: Pienaar et al., 2018).
- **Intervention & Outcome:** Psychological counseling was provided to address emotional eating and stress, which has been shown to improve self-control and eating behaviors (Source: Desai et al., 2019). Additionally, improvements in dietary habits, focusing on balanced meals and portion control, were encouraged. These interventions helped the patient lose weight and stabilize her HbA1c at 7.5%. This case highlights the importance of addressing psychological factors and lifestyle changes in managing diabetes in post-hysterectomy women.

13. Patient M (Male, 66 years)

- **Clinical History:** Diagnosed with diabetes, this patient developed early nephropathy, a condition characterized by kidney damage due to high blood glucose levels. His HbA1c was 8.5%, indicating poor long-term glycemic control.
- **Challenges:** The patient's high-protein, non-vegetarian diet, typically unsuitable for kidney function, posed a challenge in managing both diabetes and nephropathy. High-protein diets can increase the kidneys' workload and worsen nephropathy in diabetic patients (Source: Tuttle et al., 2014).
- **Intervention & Outcome:** A kidney-friendly, low-protein diet was implemented, with a focus on plant-based proteins and reduced animal products to prevent further kidney damage. Research has shown that dietary modification can help manage kidney function and slow the progression of diabetic nephropathy (Source: Shah et al., 2020). After following the prescribed diet, the patient's kidney function stabilized, and his HbA1c decreased to 7.9%. This case highlights the critical role of dietary changes in managing both diabetes and kidney disease.

14. Patient N (Female, 68 years)

- **Clinical History:** This patient has diabetes and mild dementia, with an HbA1c of 8.3%. Dementia in elderly persons with diabetes poses a unique challenge, as cognitive decline can impair the ability to manage diabetes effectively (Source: Mick & Kuo, 2014).
- **Challenges:** Inconsistent medication administration by caregivers was a key issue. Patients with cognitive impairments, such as dementia, often have difficulty remembering to take their medication as prescribed, which can lead to poor glycemic control (Source: Griffith et al., 2018).
- **Intervention & Outcome:** Caregiver training programs were implemented to ensure better medication adherence and to educate caregivers on the importance of consistent medication administration. Studies have shown that caregiver education and support can improve medication adherence and health outcomes for patients with cognitive decline (Source: Kumar & Mehta, 2020). As a result, the patient's HbA1c was reduced to 7.5%, demonstrating

the effectiveness of caregiver involvement in managing diabetes in elderly persons with dementia.

15. Patient O (Male, 64 years)

- **Clinical History:** Diagnosed with diabetes, this patient also suffered from severe neuropathy, a common complication of diabetes that can cause significant pain and disability. His HbA1c was 9.0%, indicating poor glycemic control and ongoing complications.
- **Challenges:** Long-standing complications, including neuropathy, made effective diabetes management challenging. Neuropathy not only causes discomfort but also increases the risk of foot ulcers and infections, leading to further health deterioration (Source: Boulton et al., 2018).
- **Intervention & Outcome:** Yoga and improved dietary adherence were integrated into his care plan. Yoga has been shown to improve blood glucose control, reduce stress, and alleviate symptoms of neuropathy in diabetic patients (Source: Kaur et al., 2021). Additionally, dietary modifications focusing on low glycemic index foods helped improve glycemic control. The combined effect of yoga and diet resulted in a reduction of HbA1c to 8.0% and alleviated the symptoms of neuropathy. This case emphasizes the role of integrative therapies, such as yoga, in managing diabetes complications.

Table 53 Comparative Impact of Community Interventions

Sr. No	City	Intervention	HbA1c Reduction (%)	Additional Outcomes
1	Rajkot	Mobile Health Units	0.9%	Increased awareness of dietary practices
2	Junagadh	Cooking Classes, Walking clubs	1.2%	Adoption of healthier cooking and exercise habits
3	Jamnagar	Yoga and Wellness camps	0.8%	Improved mobility, reduced stress

(Source: Mehta & Sharma 2020, Kaur et al 2021, Patel & Desai 2022)

The table 53 on the Comparative Impact of Community Interventions presents the impact of community interventions on HbA1c levels across three cities in Gujarat. Junagadh shows the highest reduction in HbA1c (1.2%) through cooking classes and walking clubs, with additional benefits of adopting healthier cooking and exercise habits. Rajkot follows with a 0.9% reduction through mobile health units,

which not only lowered HbA1c but also increased awareness about dietary practices. Jamnagar, with a 0.8% reduction from yoga and wellness camps, saw improvements in mobility and reduced stress. These results suggest that multifaceted community interventions can effectively reduce HbA1c levels and promote healthier lifestyles.

These additional case studies emphasize the complexity of managing Type 2 diabetes in elderly persons with multiple comorbidities and complications. Each patient presented with unique challenges that were addressed through tailored interventions, including surgical interventions, dietary changes, psychological counseling, caregiver education, and integrative therapies like yoga. These cases reinforce the need for a holistic approach to diabetes management in elderly persons, focusing not only on glycemic control but also on managing complications, improving quality of life, and empowering both patients and caregivers through education and support.

7.4 Discussion

The case studies presented underscore the complex and multifaceted nature of diabetes management in elderly persons. Across the patients, common challenges such as inadequate dietary habits, physical inactivity, emotional distress, and multiple comorbidities were observed, which complicate treatment plans and make diabetes management especially challenging in the elderly population (Source: Sharma et al., 2018). These challenges are consistent with broader findings in geriatric diabetes care, where managing multiple health conditions, including hypertension, neuropathy, and cardiovascular diseases, often requires a delicate balance of treatments and interventions (Source: Jha et al., 2019).

1. **Inadequate Dietary Habits:** A major obstacle identified in these case studies is the dietary habits of elderly persons. Patients often struggle with adhering to recommended dietary plans due to cultural preferences, lack of knowledge about nutrition, and emotional eating. For example, Patient K's preference for a high-protein diet and Patient L's excessive use of oil and sugar in cooking both exemplify how dietary choices can exacerbate diabetes and its complications. Research has consistently shown that dietary modification is one of the most effective ways to control blood sugar levels and reduce the

risk of diabetic complications (Source: Patel et al., 2020). Tailored dietary interventions, such as the low-protein renal diet in Patient G or personalized meal planning in Patient E, were critical in achieving better glycemic control and mitigating complications.

2. **Physical Inactivity:** Physical inactivity was another recurring theme across the case studies, which is a common issue in the elderly population. Sedentary behavior contributes to insulin resistance, poor cardiovascular health, and increased risk of falls and fractures. In the cases of Patient A and Patient F, a structured exercise program, including walking routines and physiotherapy, was key to improving glycemic control and alleviating complications like neuropathy (Source: Jha et al., 2021; Bhatt & Patel, 2021). Regular physical activity has been proven to improve insulin sensitivity, reduce blood glucose levels, and promote overall health in diabetic patients, particularly in the elderly (Source: Boulton et al., 2018).
3. **Psychosocial Challenges:** Emotional distress, including depression and anxiety, was another significant barrier to diabetes management, as seen in the cases of Patient C and Patient N. Elderly persons may face emotional challenges related to health, isolation, and the psychological impact of chronic illness, which can lead to poor adherence to treatment regimens (Source: Kumar & Mehta, 2020). The incorporation of psychological counseling and support programs, as done for Patient C, helped improve both emotional well-being and diabetes management. Evidence supports that addressing mental health in chronic disease management significantly improves health outcomes and reduces the psychological burden of living with diabetes (Source: Chaudhary & Kumar, 2019). Women in Gujarat face unique challenges post-menopause, with hormonal changes leading to increased central obesity and higher diabetes risk (Source: Haffner et al., 2018). Men, on the other hand, often underreport symptoms and delay treatment, exacerbating complications like neuropathy and retinopathy. Traditional gender roles also influence care, with women prioritizing family responsibilities over their health (Source: Haffner, S. M., et al 2018, Rai, A., et al 2021). Elderly diabetics often face isolation, depression, and anxiety, which directly impact adherence to treatment and diet. Studies show that 40% of elderly diabetics in India experience depressive symptoms (Source:

Chaudhary et al., 2019). Integrating counseling and peer support groups into diabetes care can improve emotional resilience and glycemic outcomes (Source: Lin, E. H. B., et al. (2020).

4. **Comorbidities and Polypharmacy:** Many elderly persons with diabetes also have multiple comorbidities such as hypertension, ischemic heart disease, chronic kidney disease, and dementia. Managing these conditions alongside diabetes can be particularly challenging, especially when medications for one condition may interfere with those for another. For instance, the case of Patient I, who had both diabetes and ischemic heart disease, highlights the complexities of managing dual diagnoses and the need for a multidisciplinary approach involving cardiologists, dietitians, and diabetes specialists (Source: Sarkar et al., 2018). The involvement of multiple healthcare professionals is essential for optimizing treatment regimens and preventing adverse interactions between medications.
5. **Holistic, Patient-Centered Approach:** These case studies clearly demonstrate that a holistic, patient-centered approach is essential for effectively managing diabetes in elderly persons. This approach goes beyond just controlling blood glucose levels and encompasses the overall well-being of the patient. As shown in the successful interventions for Patients K and O, combining medical treatment with lifestyle modifications (such as foot care education, smoking cessation programs, and exercise) and psychosocial support is integral to improving health outcomes. Research highlights that elderly persons with diabetes often benefit from personalized care that takes into account their unique social, emotional, and medical needs (Source: Sharma & Gupta, 2022).

The case studies illustrate that managing Type 2 diabetes in elderly persons is a complex task that requires addressing not only medical aspects but also lifestyle and psychosocial factors. The findings emphasize the need for individualized treatment plans that incorporate dietary changes, physical activity, mental health support, and education on self-care. Future diabetes care models should prioritize integrated, patient-centered care approaches that consider the full spectrum of an elderly patient's health and well-being, ensuring better glycemic control and a higher quality of life. This holistic approach aligns with best practices in geriatric diabetes care and

has been shown to lead to improved long-term health outcomes for elderly persons.

The case studies analyzed in this chapter underscore the significance of tailored interventions in the management of diabetes among elderly persons. This population is particularly vulnerable to the challenges posed by Type 2 diabetes due to aging-related factors such as comorbidities, cognitive decline, and changing social dynamics. The findings highlight that, by addressing the unique challenges faced by elderly diabetics such as medication non-adherence, dietary habits, and emotional well-being healthcare providers can significantly improve both health outcomes and the quality of life for elderly persons, not only in Gujarat but also across similar regions globally.

1. **Medication Non-Adherence:** One of the most pressing issues observed across these case studies is medication non-adherence. Elderly persons often struggle with polypharmacy, cognitive decline, and a lack of awareness regarding the importance of consistent medication use. For example, in the case of Patient N, inconsistent medication administration by caregivers significantly impacted the patient's blood sugar control. Similarly, emotional distress and depression in patients like Patient C led to reduced focus on medication adherence. Research consistently shows that patient education and caregiver involvement are critical for improving adherence. Caregiver training and self-monitoring programs (as seen in the intervention for Patient N) have been shown to improve medication compliance, ultimately leading to better glycemic control and reduced complications (Source: Kumar & Mehta, 2020). By providing personalized education and involving family members or caregivers, healthcare providers can mitigate these issues.
2. **Dietary Habits and Lifestyle Modifications:** The role of dietary habits in managing diabetes cannot be overstated, as seen in several patient cases. Elderly persons often have longstanding dietary preferences or beliefs that can hinder their ability to follow recommended dietary guidelines. In the cases of Patients A, L, and M, dietary habits like high consumption of fats, sugars, or proteins were identified as key barriers to managing diabetes. Tailored interventions focusing on nutritional education and personalized meal plans are crucial to help elderly persons better understand the impact of

their food choices on their health. Studies show that integrating dietary counseling with the use of community-based awareness programs can lead to substantial improvements in dietary adherence, as evidenced by Patient H's HbA1c reduction after participating in a community-based intervention focused on healthier cooking habits (Source: Patel & Desai, 2022). For elderly persons with complex conditions, such as chronic kidney disease or cardiovascular diseases, integrating specialized renal diets or heart-healthy eating plans is crucial for managing both diabetes and comorbid conditions (Source: Shah et al., 2020).

3. **Emotional and Psychological Well-being:** Another critical aspect of diabetes management in the elderly is emotional well-being, which directly influences adherence to both treatment regimens and lifestyle changes. Elderly persons often face challenges such as social isolation, depression, and anxiety, which can negatively affect their ability to manage their diabetes effectively. This was particularly evident in Patient C, who suffered from depression and lacked self-care priorities. Interventions focusing on mental health support, including psychological counseling and community support programs, have shown positive outcomes in improving diabetes management. For example, mental health counseling combined with community support improved both Patient C's emotional state and diabetes control (Source: Chaudhary & Kumar, 2019). Research further supports that addressing mental health and emotional factors in diabetes care for the elderly can improve treatment adherence, reduce diabetes-related distress, and enhance the quality of life (Source: Mehta & Patel, 2021).
4. **Holistic, Patient-Centered Care:** The case studies emphasize that holistic, patient-centered care is essential for effective diabetes management in elderly persons. Tailoring interventions to the specific needs and challenges of the patient not just their diabetes status but also their overall health, psychosocial environment, and lifestyle is crucial. For example, in the case of Patient K, timely medical interventions for diabetic foot care combined with education on foot hygiene significantly improved outcomes. Similarly, the multidisciplinary approach to managing comorbidities like ischemic heart disease in Patient I led to an improvement in both cardiovascular health and diabetes control (Source: Sarkar et al., 2018). These findings point to the

importance of integrating healthcare teams, including doctors, dietitians, psychologists, and community health workers, to provide comprehensive and tailored care that addresses the full spectrum of a patient's needs. In comparison to developed countries like the USA, where technology (e.g., continuous glucose monitoring) is widely used, Gujarat's elderly diabetic patients rely heavily on periodic clinic visits. Scandinavian countries implement robust community healthcare for elderly diabetes management, emphasizing preventive care and education, while India struggles with gaps in rural healthcare infrastructure (Source: O'Keefe, J., et al 2020, WHO 2019).

7.5 Recommendations

Based on the findings from the case studies and analysis in this chapter, the following recommendations are proposed to improve the management of diabetes among elderly persons:

1. **Personalized Care Plans:** Diabetes care plans should be customized to meet the specific needs of each individual, taking into account their medical history, lifestyle, social factors, and comorbidities. Elderly persons often have complex health profiles that require a more individualized approach. For example, as seen in the cases of patients with multiple comorbid conditions such as hypertension, cardiovascular disease, or kidney issues, care plans should address not only diabetes but also other health conditions. Personalizing treatment plans can ensure that interventions, such as diet modifications, exercise routines, and medication regimens, are aligned with the patient's capabilities and preferences. Additionally, family involvement in care planning can help ensure that patients adhere to their prescribed treatments, especially in the case of elderly persons with cognitive decline or those who live alone.
2. **Community-based Interventions:** Local health programs focused on diabetes education, nutrition, and physical activity should be expanded to reach a wider audience, particularly in areas with a high prevalence of diabetes among the elderly. Community-based interventions can be especially effective in rural or under-resourced areas like many parts of Gujarat, where

healthcare access may be limited. Programs could include public health campaigns, workshops on healthy cooking and eating habits, and exercise classes tailored to elderly persons. Additionally, peer support networks within communities could provide emotional and practical support, improving adherence to lifestyle changes. Research shows that community-based interventions not only increase awareness but also foster a sense of solidarity and encouragement, which is crucial for elderly persons managing chronic conditions like diabetes (Source: Patel & Desai, 2022).

3. **Psychosocial Support:** Mental health care must be integrated into diabetes management to address the emotional challenges that elderly persons often face. Many elderly persons with diabetes struggle with feelings of isolation, anxiety, and depression, which can negatively affect their ability to adhere to treatment plans. For example, as seen in the case of Patient C, depression significantly impacted both emotional well-being and diabetes management. The integration of psychosocial support, including psychological counseling, stress management programs, and community support groups, can help address these challenges. Research consistently shows that patients with chronic conditions like diabetes who receive psychological support experience better overall health outcomes and higher quality of life (Source: Sharma & Gupta, 2022). Healthcare systems should train providers to screen for mental health issues and make appropriate referrals as part of the holistic care model.
4. **Improved Medication Adherence:** Strategies to enhance medication adherence are essential in managing diabetes in the elderly. Non-adherence to prescribed medications is a significant barrier to effective diabetes management. Elderly persons often struggle with complex medication regimens due to factors such as forgetfulness, side effects, and difficulty in self-management. To address this, healthcare providers should implement strategies such as simplifying medication regimens, using pill organizers, and incorporating reminder systems such as text messages or phone calls to encourage adherence. Family support is also critical in ensuring that elderly persons take their medications as prescribed. Educational programs for both patients and caregivers on the importance of consistent medication use and the potential risks of non-adherence should be prioritized. Studies have

shown that when family members are involved in diabetes care, adherence rates improve significantly, leading to better clinical outcomes (Source: Kumar & Mehta, 2020).

5. **Subsidizing diabetes medications and diagnostic tools:** To address the growing burden of diabetes among the elderly in Gujarat, targeted policy interventions are essential. Subsidizing diabetes medications through government programs like Pradhan Mantri Jan Aushadhi Kendras can alleviate financial barriers and improve adherence, particularly for economically disadvantaged seniors. Expanding telemedicine platforms such as eSanjeevani would bridge gaps in rural healthcare access, enabling timely consultations and follow-ups without the need for travel. Additionally, establishing geriatric diabetes management units in primary healthcare centers can provide comprehensive care, including screenings, dietary counseling, and mental health support. Together, these measures can enhance affordability, accessibility, and the quality of diabetes care, leading to better outcomes and healthier aging for Gujarat's elderly population (Source: Government of India 2020, IDF Atlas 2021). Future research in Gujarat should focus on evaluating the long-term impact of integrating mental health support into diabetes care, examining its effects on glycemic control and quality of life among the elderly. Additionally, studies on the efficacy of community-led initiatives in rural areas, such as awareness campaigns and lifestyle interventions, can provide insights into their role in diabetes prevention and management. Finally, analyzing the adoption and effectiveness of telemedicine for elderly diabetics will help identify barriers and optimize remote healthcare delivery, improving access and outcomes in underserved regions (Source: Patel et al., 2022).

Implementing these recommendations will help improve the management of diabetes in elderly persons, particularly those facing complex challenges like those seen in the case studies from Gujarat. By adopting a personalized, holistic approach that includes tailored care plans, community support, mental health integration, and strategies for improving medication adherence, healthcare providers can significantly enhance the overall well-being and quality of life for elderly persons living with diabetes. This approach not only addresses the clinical aspects of diabetes but also

focuses on the emotional, social, and practical challenges that elderly persons face, leading to more effective long-term management and improved health outcomes.

7.6 Conclusion

The complex management of diabetes among elderly persons, using detailed case studies from Rajkot, Junagadh, and Jamnagar. These cases reveal common challenges, including medication non-adherence, poor dietary habits, sedentary lifestyles, and psychosocial barriers like depression and isolation. The chapter demonstrates the significance of tailored interventions, such as dietary counseling, physical rehabilitation, mental health support, and community-based programs, in improving diabetes outcomes. For example, mobile health units and wellness camps in different cities contributed to notable reductions in HbA1c levels while addressing broader health and social factors. The analysis emphasizes a holistic approach to diabetes care, integrating medical, psychological, and social support systems. It underscores the necessity of personalized care plans, caregiver involvement, and multidisciplinary healthcare strategies to address comorbidities and optimize treatment. The chapter concludes with recommendations to enhance diabetes management, including subsidizing healthcare costs, expanding telemedicine, and establishing geriatric-focused diabetes units. These insights are vital for designing effective interventions to improve the quality of life for elderly diabetics in Gujarat and similar regions.

Next concluding chapter will provide a comprehensive the research findings, emphasizing the bidirectional relationship between geriatric care and the quality of life of elderly persons with diabetes. High-quality care improves well-being, while a positive quality of life enhances health outcomes. Case studies illustrate how integrated care models combining medical, social, and psychological support contribute to better health outcomes and patient satisfaction. The discussion highlights the effectiveness of person-centered approaches with personalized care plans and regular assessments. This research demonstrates the significant role of holistic, integrated care in improving the quality of life for elderly persons, particularly those managing chronic conditions like diabetes.

CHAPTER VIII

KEY FINDINGS, RECOMMENDATIONS, AND CONCLUSIONS

A comprehensive study on the quality of life (QoL) among elderly persons living with diabetes, exploring the key factors that influence their physical, psychological, social, and environmental well-being. This examines the impact of demographic determinants such as age, family support, economic dependency, and living arrangements, highlighting the challenges faced by elderly diabetics, particularly in rural areas. It emphasizes the need for integrated care models that address not only medical but also emotional, social, and community needs. The study advocates for policy recommendations, including the establishment of specialized care centers, improved healthcare infrastructure, and tailored financial support. The document calls for further research into personalized care and the role of technology in improving care outcomes for this vulnerable population.

In this concluding chapter, the entire focus was to document the key conclusions of this research based on empirical evidences in terms of the direct two-way connections between the geriatric care and quality of life which serves as the answer to the research question. Added to it, recommendations, as solutions to improve the geriatric care services and quality of life from social work perspectives and practices are stated here.

8.1 Answering the Research Questions: Key Findings

Reflecting the key question framed the key findings of this study as answers based on the primary data, analysis of the data, interpretation and conclusions are given below.

8.1.1 Demographic Determinants of Quality of Life among Elderly Persons Living with Diabetes

The demographic variables and evidences as determining factors of geriatric services among elderly persons living with diabetes are presented below.

1. Though the average age was 66.7, it is evident that the more they are aged, more family and social support is required than elders who have

crossed 60 years of age. Therefore, age is a key determinant in deciding geriatric care. This finding is matching with various studies reviewed and evidences of this study. Therefore, it is proved that age variable is one of the determining variables of geriatric services.

2. The study found that little more than half of the elderly persons living with diabetes were males (49%), 48% were females and the rest were transgender (3%). Therefore, an element of gender parity is evident. The conclusion is all sexes-male, female and transgender are equally affected by aging and diabetes. Here, it is evident that there are no serious differences in terms of sex and geriatric services. Agism is a common denomination for all sexes and is therefore affected almost equally.
3. 82% living with diabetes were from Hindu religion, 9% belonged to Muslims, 3% were Christians, 3% were Jain, 2% were Sikhs, and the rest were Parsis (1%). This practically means elderly persons from all religious suffered by age and diabetes. The conclusion is that aging never discriminates any one based on religion. All religions are equally hit by diabetes among aged. Therefore, religion is not a key determining factor in determining in deciding geriatric services.
4. Samples drawn based on the population units, it is evident from the results that the elderly respondents are belonged to Rajkot City (43.4%), 34.2% of them are from Jamnagar City and the rest are from Junagadh City (22.4%). From this, it is concluded that all the three cities were hit by aging problems and diabetes. Here, it is proved that diabetes added additional health burden to the respondents. Therefore, combination of both created a chronic health condition, wherein, the respondents have to manage both age and diabetes issues together.
5. The study found that the majority of the elderly persons living with diabetes were married (81.2%), 9.8% were single, 2.6% were separated, and the rest were widows or widowers (3%). It is concluded that single, separated, widows and widowers suffered more than those who have a family to fall back. The conclusion is that presence of family members is a big boon for the elderly persons living with diabetes. The absence of family support and living along by elders is a

big curse. Therefore, the demographic variable-marital status is a key determining variable in deciding geriatric illness, health services and quality of life of elderly persons living with diabetes.

6. The results found that 51.6% of them stayed at home. 8.4% stayed with other family. 18% were at an old age home. 2.2% of the elders stayed at senior living care. 4.6% lived in destitute homes. 6% were in nursing home. 3.8% lived in community residence. 2.8%% were in hospital facilities. The conclusion is that, domicile or place of stay matters are lot in deciding geriatric illness, services and quality of life of elders. In this study, multiple variables based on differential places of stay have been the determining factors of geriatric illness and services. From this it is evident, that elderly persons living with diabetes requires multiple modes of geriatric interventions and services. One size approach may not serve as right solutions to the ills of elderly persons living with diabetes.
7. The study results revealed that more than half of them have passed high school (54.4%). 17.2% have completed graduation. 13.8% have studied up to primary school. 11.6% of them completed higher secondary school and 1.8% studied up to post-graduation and 1.2% achieved doctoral degrees. The conclusion is that the respondents have differential education though majority of them are under matriculate. From this, it is evident that we need differential approaches to geriatric illness, care and quality of life of elderly.
8. The employment/livelihood status results found that 67.6% of them were not employed. 13.2% of them were retired from their job. 12.2% were housewives, 4.6% of them were doing their employment according to their ability and 2.4% engaged in cultural and religious activities as past time. The conclusion is that almost 2/3 of the respondents are dependents remained unemployed and therefore there were no sources of income for them. From the conclusion, it is further evident that the elderly living with diabetes requires multiple modes of services for those economically fully dependent on family members/others, partially dependent and independent categories of elderly respondents.

9. The results further found that the majority of the elderly persons living with diabetes do not have a regular income source (40%). This is indicating the complete dependency status of the elders. Substantial percentage of elders are (40%) are depending on the family support and care. 31% of them have an income less than fifty thousand per annum. 18% of the respondents have an annual income below one lakh. 10.4% have an annual income between one lakh and two lakhs; and the rest (0.6%) have high income sources. From these evidences, it is concluded that we need differential and multiple approaches to deal with different categories of elders based on this income levels.
10. The study confirmed that age, marital status, place of residence, education level, and employment status significantly impacts the quality of life of elderly persons living with diabetes. Findings indicate that older age correlates with increased dependency on family support, healthcare services, and financial stability. Case studies from Rajkot, Junagadh, and Jamnagar cities confirm these demographic patterns, highlighting the impact of urbanization, lifestyle changes, and socio-economic factors on diabetes management. For example, patients with strong family support showed better health outcomes, while those in rural areas faced challenges in accessing specialized diabetes care.

8.1.2 Health Determinants of Quality of Life among Elderly Persons Living with Diabetes

The key health variables which acted as health determinants based on primary data-driven evidences are outlined below.

1. The mean history of diabetes was 5.67 years among 60 to 80 plus year-old elderly persons living with diabetes. The standard deviation was 5.58. This indicates that the majority of the elderly persons living with diabetes had a 5-year history of diabetes. The results showed the respondents have been suffering from diabetes for quite a period of time. It is inferred that more they suffered in diabetes; more health burden is possible and feasible. Shorter period of morbidity attributed to diabetes, the impact on the elderly possibility low. On the other hand, long period of morbidity due to diabetes may cause adverse

disease burden on the elders. The point is that elders with diabetes morbidity, depending on the duration of diabetes burden, the geriatric services will be determined.

2. The results found that majority of the elderly persons living with diabetes having type 2 diabetes (84%), 15% were in pre-diabetics and 1% of them having type 1 diabetes. From this, it is evident that 84% of the respondents were affected by type 2 diabetes. The conclusion is that majority of the respondents are from the type 2 diabetes. This category requires different mode of services. About 15% of the respondents were in pre-diabetes state. They are in the onset of the disease and therefore, they may require different category of diabetes services. Again, the study brought to light that there are differential modes of geriatric and diabetes intervention services required based on the specificity of diabetes morbidity stated above.
3. The results revealed that 20.2% of them got treatment from NGO hospitals. 13.8% from underwent treatment in Upgraded Urban Public Health Centres (UPHC's). 13.2% went to private hospitals and 12.4% got treatment from district civil hospitals. One tenth of them took treatment from Primary Health Centres - PHC's (10.2%) and 10.2% from private clinics. Less than one tenth of them utilised health and welfare centre services (9.6%). 5.4% used government medical college and 5.2% accessed government ayurvedic hospital services (5.2%). It is evident that the respondents used health services from multiple sources. Therefore, the conclusion is that multiple mode of geriatric services are required based on their need, financial capacity and family support for elders.
4. Majority of them got palliative care support (33.2%). 30% of them addressed only symptoms, and 24% got family and care support. Less than one tenth of them responded to life limiting services (9.8%) and dying (3%) services. From this it is evident that palliative care services are equally a value added services in urban areas to those in terminal stage of illness and have limited support from family members.
5. The study revealed that more than half of them got Rastriya Swasthya Bima Yojana (RSBY), a government run health benefits (62%) for

labouring poor, and the rest benefitted from primary care medication services (38%). The point is that linking RSBY equally proved useful to the elders with free services from the hospitals.

6. Health-related factors such as disease duration, comorbidities, and healthcare accessibility played a crucial role in determining QoL. Case studies illustrated that long-standing diabetes often leads to complications like neuropathy, retinopathy, and cardiovascular issues. In Jamnagar, a male patient with diabetes-related gangrene experienced severe complications due to delayed medical intervention. In contrast, timely lifestyle modifications and structured interventions in Rajkot led to significant improvements in glycemic control for another patient. These cases validate the broader finding that personalized healthcare interventions are essential for better health outcomes.

8.1.3 Economic and Financial Determinants of Quality of Life among Elderly Persons Living with Diabetes

The results found that 38.8% of them have no financial sources to support their core costs. This practically means that they are fully dependents. 21.4% are getting old age pensions, which gives of regular income for the respondents. Therefore, they are less dependent on the family members and others for meeting their day to day medical and other expenses. 13.4% are still earning from jobs, which means that they have a source of income. 6.4% have social security to fall back in the form of provident fund and gratuity, which they got as their retirement benefit. 4.8% respondents invested their money in post office deposits. The interest from investment has been used for medical care. 3.4% had saving incomes. 2.8% had rental income and 2.2% had other investment incomes. This indicates that the elderly persons living with diabetes had poor economic resources and services. It is further evident that they derive income from multiple sources to manage their day today costs. The conclusion is that the urban respondents have different mode of income and therefore, in accordance with their income status, the geriatric care and support services should be designed to tailor to their practical need.

The study found that financial dependency significantly impacts elderly

persons living with diabetes. More than 38% of the respondents had no financial resources, while others relied on pensions or family support. The case studies highlight the financial strain diabetes places on elderly persons, particularly those requiring specialized care for complications such as chronic kidney disease (CKD) and ischemic heart disease. A patient from Junagadh struggled to adhere to a recommended low-protein diet due to economic constraints, demonstrating the real-world challenges associated with financial dependency and health management.

8.1.4 Psycho-Social Determinants of Quality of Life among Elderly Persons Living with Diabetes

1. The results found that 38% of elderly persons living with diabetes are fully dependent on their family members or others. 36% of them are partially dependent. It further showed that about $\frac{3}{4}$ respondents required support from families/external sources for subsistence and for meeting the health and other costs. 26% are independent in terms of income. They have their monetary back up to bear the costs of living and the costs of medical and social care. This indicates that the majority of elderly persons living with diabetes are dependents on family members. This practically means that the family is their primary care givers. This inevitably proved that $\frac{3}{4}$ of the elderly persons requires direct support either from their families, kith and kin, community support, government and NGO support for subsistence and survival. This showed again that multiple mode of support has been evident. Given this diversity, the geriatric care services reflected diverse needs of the elderly and therefore, the service regime should be of multiple types to customise their personalised needs.
2. The results found that 37.4% of the elderly persons living with diabetes are getting physical support directly from the family members. It is further evident that 37.4% of the elderly respondents get full support from the family members in terms of care and support. 35% of them got income support of different types from them and their family members. 20.2% got social/community support, which includes support from the kith and kin, neighbors and the local community.

These further shows that despite the respondents are from the urban area, 1/5 of the respondents got some form of support from the local communities. 2.6% got other support which comprises of the government and elderly care agencies. Only negligible percentage gets other forms of support, mostly from external sources. 4.6% got other form of support services from families, communities, government and non-government support services. This indicates that less than five percentages of the elderly persons living with diabetes had no direct support from families and other sources. This group, therefore, requires desperate help and support from the government and non-government sources. This evidently proved that the elderly require support from government and other sources. Given this finding, it is evident that due to the erosion of joint family system, elders are greatly in need of institutional, day care and non-institutional care and support system to take care of the elderly needs.

3. The results found that 32% of them got emotional support from their families or from their close relatives. 28% got proper information from family members about the medical care and other services of the government. 21% got practical support in times of need and health emergencies from their families and other sources. 19% secured proper advice from family members about the health, psychological and social arenas, as part of the measures to get them linked up with various government and non-government support sources. It was further found that being an urban context, the respondents used multiple support sources available.
4. The results found that majority of them (44%) did not get social worker support for their wellbeing/quality of life improvement. 34% partially received support from social workers, and the rest (22%) accessed support from social workers. This patently clear that geriatric social work support is still not available to majority. It is proved that there is need for trained social worker services to the elders, which, at present is lacking.
5. The study revealed that more than half of the respondents got primary support (63%) from communities, 33% received secondary support and

the rest (4%) are in the category of tertiary support in term of utilization of the services. From this, it is proved that family support is still available to more than half of the respondents. This further showed that there are large percentage of respondents who are desperately in need of secondary and tertiary geriatric care and support services.

6. Social support emerged as a critical factor influencing diabetes management and quality of life. The study showed that family and community support significantly improve the psychological well-being of elderly persons living with diabetes. Case studies illustrate this relationship, such as a male patient in Rajkot who experienced depression and poor self-care due to social isolation but improved after joining a community diabetes support program. In contrast, a female patient in Jamnagar, living in a joint family, benefitted from strong social support, leading to better adherence to medication and lifestyle modifications.

8.1.5 Institutional Determinants (Government, Non-Government, and Private) of Quality of Life among Elderly Persons Living with Diabetes

1. A little less than a quarter of the respondents got supervisory support from institutions. 18.4% of them accessed assistance for daily living. 13.2% involved in social activities and 12.6% used nursing care. One tenth of them used rehabilitation services and the rest (8.6%) received adaptive aids and equipment to cope up with elderly issues. This further confirmed that multiple forms of help were sought and used by respondents.
2. The results found that the majority of them got old age pensions (26.8%). 18% of them benefitted from free elderly health care services. 16.6% of them were not able to get any benefit. A little more than one tenth of them got National Social Assistance Programme -NSAP, which included family assistance services. 14.4% got medical insurance. 13.4% utilized medical insurance and other benefits (10.8%). This evidences showed that the respondents used multiple government services, which are mostly from the low income segment of elders.

3. The study revealed that the majority of the respondents got benefit from NGOs (43.2%). 30.8% of them utilized health and welfare schemes, and the rest 26% used benefits from individual charity services and support. This finding showed that support from NGOs is considerable and therefore, non-government service providers played a key role in geriatric care services.
4. The results found that the majority of them benefitted from instrumental support in the form of tools/equipment (33%). 31.6% got free medication and less than one fifth received social welfare scheme benefits (19%) and health related information support (16.4%). This again proved that instrumental and technology support as aid to elders served as a boon for the elders. Free medical service to elders proved useful to the respondents.
5. The study demonstrated that access to government, NGO, and private institutional support influences elderly care. More than 60% of respondents benefitted from public health schemes, but gaps in service availability persisted. Case studies reinforced these findings, showing that government interventions like Rastriya Swasthya Bima Yojana (RSBY) improved access to medical care, while NGO-led wellness camps in Junagadh helped lower HbA1c levels through structured exercise programs.

8.1.6 Environmental and Physical Determinants of Quality of Life among Elderly Persons Living with Diabetes

1. The safe and general living environment of elderly persons living with diabetes is essential features of elderly living. The results found that the majority of the elderly persons living with diabetes are unsafe and unsecured (26.2%) in their environment. This practically means that more than $\frac{1}{4}$ of the respondents are in an unsafe and insecure state. This reflected the sense of insecurity and lack of safe life opportunities for the elderly. 21.2% of them had a healthy environment, which practically means that their environment is congenial for living. 18.4% of them stated that their living environment is unorganized and informal with no systematic care and support available. 17.2%

mentioned that they have all safety measures, which they felt that it is to their full satisfaction. The rest (17%) of the elders opted for a well-maintained environment which may be their home or elderly care homes. This further reflected their sense of satisfaction in terms of their living environment around them.

2. The results on spiritual and religious belief and influence revealed that 25.6% of them had mistrust on others including their family members. This is a sign of trust deficit on the family and other service providers. 21.4% had trust on the family members and others. 19.4% were satisfied of the care and support provided to the elders indicating the positive features of care and support. 13.4% had strong belief on them, their family and almighty showing their influence in belief and system linked to their religion and spiritual life. 13.2% were meditative life, in which, elders sought solace by way of meditative practices to cool and calm down their inner self. 7% were unhappy in spiritual and religious activities. They are in a state of disturbed and distressed state.
3. The study found that a safe and organized living environment significantly impacts the quality of life of elderly persons living with diabetes. Case studies illustrate that urban elderly persons faced challenges like pollution and lack of green spaces, while rural respondents struggled with limited healthcare infrastructure. In Rajkot, a patient suffering from diabetic neuropathy benefited from yoga-based interventions, emphasizing the importance of a supportive physical environment in diabetes management.

8.2 Geriatric Care and Quality of Life: An Empirical Analysis by the objectives

The first analysis explored the demographic factors affecting elderly persons living with diabetes, focusing on their challenges, access to geriatric services, and overall quality of life. Key findings highlight the influence of age, gender, marital status, education, and living arrangements on diabetes management. Elderly persons, widowed or single elders, and those without family support faced greater hardships. The study underscores the need for tailored care strategies to enhance the well-being of elderly diabetes persons across different demographic groups.

The second analysis explored the challenges faced by elderly persons living with diabetes, emphasizing chronic disease burden, financial insecurity, and dependency. Findings reveal that most elderly persons living with diabetes from the long-term morbidity, with 84% affected by type 2 diabetes. Economic instability and reliance on family support exacerbate their difficulties. Limited healthcare access further complicates diabetes management. Case studies highlight real-life struggles, underscoring the need for improved medical care, financial assistance, and social support systems for elderly persons living with diabetes.

The third analysis explored the family support, institutional care, and available geriatric services for elderly persons living with diabetes. Findings reveal that while 37.4% receive full family support, many rely on external sources such as community aid and government programs. Emotional and informational support remains vital, though gaps exist in trained caregiver availability. Case studies highlight disparities in care, emphasizing the need for stronger institutional support systems to complement family-based care for elderly diabetics.

The fourth analysis explored the quality of life of elderly persons living with diabetes using the WHOQOL-BREF questionnaire. Findings indicate poor scores across physical (59%), psychological (74%), social relationship (72%), and environmental (56%) domains, with an overall low quality of life (62%). The results highlight significant challenges, particularly in psychological and social well-being, emphasizing the need for targeted interventions to improve healthcare, emotional support, and social engagement for elderly persons living with diabetes.

8.2.1 Understanding the Demographic Status of Elderly Persons Living with Diabetes

1. The study mapped the demographic variables linking geriatric problems, geriatric services and its relationship with quality of life of the elderly living in diabetes. The key findings are given below.
2. Age is a key demographic variable, which is proved beyond doubt as per the empirical evidence of this study. The early aged elders and those with diabetes with limited period suffered less than those with

more age of more than eighty years. Further, there is a clear correlation of age and years of diabetes with the quality of life. Qualitative and quantitative evidences proved that this is a key variable that is determining the quality of life of elders.

3. Another demographic variable is gender. The study evidently proved that though all the genders experienced similar sufferings in terms of age and morbidity arising out of diabetes, though male suffered a bit more than female.
4. With regard to religion, it is evident from the study that among the elders, all the religions were on the same plane in terms of aging related problems among those down with diabetes.
5. The data showed that with regard to the urban segments of respondents, almost all the three urban districts had similar nature of problems among the elderly living with diabetes.
6. The study empirically proved that those who lived with the families and married were better cared than those who were single, widows or widowers. It is concluded that single, separated, widows and widowers suffered more than those who have a family to fall back.
7. The study results showed that there was differential mode of elderly care by families, cared by other family, cared through old age home, cared in senior living care, lived in destitute homes, stayed in nursing home, community residence and in hospital facilities. Close to half of the study units alone had the privilege of living with family members. Elderly used multiple options due to the lack of family care.
8. The results revealed that education is a demographic determinant. More than half of them have passed high school, less than 1/5 have completed graduation. 1/6th have studied up to primary school. More than one tenth respondents completed higher secondary school and very less percentage had post-graduation and doctoral degrees.
9. The employment and livelihood status results found that 2/3 of them were not employed, more than 1/10th of them were retired from their job, only a small percentage of them were doing their employment according to their ability and few of them engaged in cultural and religious activities.

10. The results found that the majority of the elderly persons living with diabetes do not have a regular income source. This is indicating the complete dependency status of the elders. Substantial percentages of elders are depending on the family support and care.
11. The study validated that factors such as age, gender, marital status, and education influence diabetes care and outcomes. The case studies illustrated that male patients, particularly those with poor dietary habits, had higher HbA1c levels, while post-menopausal women faced challenges related to weight gain and metabolism.

It is concluded and proved with authentic evidence that demographic variables directly connected with the problems, geriatric service and quality of the life of the respondents. In line with the objective, this study through more light to understanding the demographic variables on the problems of elderly persons living with diabetes.

8.2.2 Challenges Faced by Elderly Persons Living with Diabetes

The focus of the study is to map the challenges faced by the elderly persons living with diabetes, which is the second objective of this study. The empirical evidences of challenges are detailed below.

1. Chronic nature of diabetes, in which, the elderly respondents have to live with the reality of chronic morbidity condition. This is a big challenge for the elders. This is evident from the study that the mean history of diabetes was 5.67 among 60 to 80 plus year-old elderly persons living with diabetes. The standard deviation was 5.58. This indicates that the majority of the elderly persons living with diabetes had a 5-year history of diabetes. The results show that the history of diabetes among the elderly persons living with diabetes ranges from one year to forty-eight years. Yet the mean average period of diabetes among all the respondents is 5.67, which indicates average years that they have been suffering from diabetes.
2. Majority of the elderly persons living with diabetes having type 2 diabetes (84%). 15% were in pre-diabetics and 1% of them having type 1 diabetes. From this, it is evident that 84% of the respondents were

affected by type 2 diabetes. This calls for right management of diabetes, which includes both clinical and non-clinical interventions to control diabetes. Due to the long period of treatment required, the morbidity arising out of diabetes and the after effects of diabetes on other vital organs may have serious repercussions. Since these are non-curable, the elderly have to suffer silently for long term and therefore, it is a big challenge to the elders to cope up with the fall outs of diabetes.

3. Economic insecurity is a key challenge for the elderly persons living with diabetes. The study found that 38.8% of them have no economic sources at present. This practically means that they are fully dependents. 21.4% are getting old age pensions, which gives a sense of regular income for the respondents. Therefore, they are less dependent on the family members and others for meeting their day to day medical and other expenses. 13.4% are still earning from jobs, which means that they have a source of income. 6.4% have social security in the form of provident fund and gratuity, which they got from their retirement, which are mostly of those engaged in private sector. 4.8% respondents invested their money in post office deposits. The interest from investment is used for medical care. 3.4% have saving incomes. 2.8% have rental income and 2.2% have other investment incomes. This indicates that the elderly persons living with diabetes had poor economic resources and services. It is further evident that they derive income from multiple sources to manage their day today costs. Given their age with co-morbidity from diabetes and economic fragility has caused adverse impacts arising from three sources.
4. The study results found that majority of the 38% of elderly persons living with diabetes are fully dependent on their family or others. 36% of them are partially dependent, which practically mean that they are depending partly for their income support from the family or other sources. They too require support from the family members. It further showed that about $\frac{3}{4}$ respondents requires support from families and the external sources for subsistence and for meeting the health and other costs. 26% are independent in terms of income. They have their

monetary back up to bear the costs of living and the costs of medical and social care. This indicates that the majority of elderly persons living with diabetes are dependent, and it shows a major challenge for their life. This inevitably proved that ¾ of the elderly persons requires direct support either from their families, kith and kin, community support, government and NGO support for subsistence and survival. The dependency status is a big setback and a challenge to live a dignified and free life.

5. Based on the evidences cited above, it is clear that the elderly faced humongous challenges attributed to age, chronic morbidity, lack of income sources and fully dependency status and lack of freedom to live a healthy and free life. From the above evidences, it is undoubtedly clear that the objective of mapping the challenges were done through primary data.
6. The study identified several challenges, including chronic disease burden, financial insecurity, and limited access to quality healthcare. Case studies revealed specific instances where these challenges manifested, such as a patient in Jamnagar whose diabetes progressed due to misconceptions about insulin therapy, delaying appropriate treatment. Another patient in Junagadh struggled with limited access to nephrology care for CKD, highlighting the disparity in healthcare resources.

8.2.3 Mapping Family Support, Institutional Care, and Available Services

The third objective is to map the family support system, institutional care and availability of geriatric care services for the elderly persons down with diabetes. Here are evidences reflecting the existence or non-existence of family support and other service system availed by the elderly respondents are presented below.

1. The results found that 37.4% of the elderly persons living with diabetes are getting physical support directly from the family members. It is further evident that 37.4% of the elderly respondents got full support from the family with care and support. 35% of them got income support of different types from them and their family members. This is

also an indication of the positive features of the families, wherein, the family came to the economic rescue in times of need and emergency exigencies. 20.2% got social and community support, which includes support from the kith and kin, neighbors and the local community. These further shows, despite the respondents are from the urban area, 1/5 of the respondents got some form of support from the local communities. 2.6% secured other support, which comprises of the government and elderly care agencies. This only negligible percentage got other forms of support mostly from external sources. 4.6% got any other form of support services from families, communities, government and non-government support services. This indicates that less than five percentages of the elderly persons living with diabetes had poor direct family support from families and other sources of support. This group requires desperate help and support from the government and non-government sources. This evidently proved that the elderly require support from government and other sources.

2. The results of the study found that 32% of them received emotional support from their families or from their close relatives. 28% got proper information from family members about the medical care and other services of the government. 21% used practical support in times of need and health emergencies from their families and other sources. 19% secured proper advice from family members about the health, psychological and social arenas as part of the measures to get them linked with various government and non-government support sources. From this, it is inferred that the elderly respondents get different forms of support from families indicating family support is still being available to majority to cope up from the trauma of being in aged and chronic diabetes. This is a positive feature of the context of the respondents, despite they all stay in urban space.
3. Closer review of these primary evidences, it is concluded that the study mapped the family support and service system available and utilized by elders living in diabetes. From this, it is evident that though there are primary care giving system existed for more than 50% of the elders, still the remaining percentage of respondents utilized other modes of

services to cope up from aging and diabetes morbidity. Therefore, it is evidently concluded that the third objective was achieved based on the above first-hand data.

4. The study confirmed that family support remains the primary mode of geriatric care, but institutional support is also crucial. Case studies reinforced this finding, with some patients benefiting from caregiver support, while others suffered due to lack of trained caregivers, particularly in cases involving dementia and diabetes.

8.2.4 Geriatric Care, Quality of Life, and the Relevance of the WHOQOL-BREF Questionnaire

The fourth objective of this research study is to ascertain the empirical connections of geriatric illness, geriatric care services and quality of life of elderly living in diabetes. For the purpose of this study, this research used World Health Organization's (WHO)-Quality of Life Questionnaire (QoL)-BREF format was used to collect data on QoL. The conclusions of the study are outlined below.

1. The mean score of the physical domain, which denotes the health arena of elders living in diabetes, was 48.71. The standard deviation (SD) was 11.278. The results also found that the minimum score was 13 and the maximum score was 81. The score was categorized as good or poor in two-point scale. Individuals with a total score of 50 and above have good quality of life, whereas those with less than 50% are considered to have poor quality of life. The results revealed that more than half of elderly persons living with diabetes had poor (59%) quality of life, and the rest (41%) had good quality of life. From the evidences it is clear that in the physical domain of WHO, the score was poor indicating the low quality of life of the elderly. This is a matter of great concern and there is urgent need to boost up the quality of life of the physical domain of elderly living in diabetes.
2. The mean score of the psychological domain was 44.66 and the standard deviation (SD) was 11.222. The results also found that the minimum score was 19 and the maximum score was 69. The score was classified as good or poor. Individuals with a total score of 50 and

above was rated as good quality of life, whereas those with less than 50% are rated as poor quality of life. The findings found that more than half of elderly persons living with diabetes had poor (74%) quality of life, and the rest (26%) had good quality of life. The study showed that overwhelming majority of the respondents score was rated as poor, which indicates the sad state of psychological affairs. This further calls for improving the quality of life of elderly in the psychological domains. More attentions and actions are required to boost up the psychological domains of quality of life of the elderly with diabetes.

3. The mean score for social relationship domain was 44.43, and the standard deviation (SD) was 17.425. The results also found that the minimum score was 0 and the maximum score was 100. The score was categorized as good or poor. Individuals with a total score of 50 and above were rated as good quality of life, whereas those with less than 50% were rated as poor quality of life. The results revealed that more than half of elderly persons living with diabetes had poor (72%) quality of life in the social relationship domain, and the rest (28%) had good quality of life. This showed that about $\frac{3}{4}$ had lower quality of social relationships and about one in four had good social relationship, as is evident from the data. This again calls for the urgent need to increase the ratings and performance of the social relationship domains.
4. The mean score of the environmental domain was 51.48, and the standard deviation (SD) was 10.130. The results found that the minimum score was 13 and the maximum score was 81. The score was categorized as good or poor. Individuals with a total score of 50 and above were rated as good quality of life, whereas those with less than 50% are rated as poor quality of life. The results revealed that more than half of elderly persons living with diabetes had poor (56%) quality of life, and the rest (44%) had good quality of life. This illustrates that majority of the respondents in the environmental domain; the rating was poor though considerable percentage had good quality of life. In this domain as well, the rating was not in good state of affairs and therefore, there is need for improving the environment

scenarios of the respondents to make sure that they get better quality of services in the environmental domains.

5. The overall score of quality of life includes the physical, psychological, social relationship, and environment domains. The current study highlights that the mean score was 47.32, and the standard deviation (SD) was 6.343. The results also found that the minimum overall score was 28 and the maximum score was 75. The score was categorized as good or poor. Elderly persons with a total score of 50 and above were rated as good quality of life, whereas those with less than 50% were rated as poor quality of life. The results revealed that more than half of elderly persons living with diabetes had poor (62%) quality of life scoring, and the rest (38%) had good quality of life scoring. From this, it is evident that majority of the respondent's overall quality of life was rated as poor for elderly living in diabetes. From this, it is understood that the quality-of-life overall performance score of the elderly persons living with diabetes are poor. This scenario requires through change through affirmative actions to make differences in the life of the elderly persons living with diabetes.

8.2.5 Relevance of WHOQOL-BREF in the Context of Gujarat

Based on the administration of WHO-brief quality of life (QoL) questionnaire, its relevance and its appropriateness in the context of Gujarat are outlined below.

1. The study proved that the WHO-Brief QoL questionnaire is proved relevant, useful and appropriate to measure the quality of life of elderly persons living with diabetes morbidity.
2. It is relevant for the reason that the key domains-Physical, psychological, social relationship and environment domains are reflecting the realities of the elderly persons living with diabetes in Gujarat.
3. The main categorizations into four key domains of quality of life of elders stated above are proved relevant in view of its appropriateness and utility.

4. The sub-domains variables for four main domains are equally constructed on right lines, which is practically appropriate and realistic in nature in the urban context of Gujarat.
5. The scoring of WHO-Brief from on a 0-100 was proved useful for the reason that “0” is the lowest and 100 is the highest. Those with low scores less than 50 is regarded as low and those above 50 score is regarded as high. The reason for choosing two categories as “good” and “poor” were intended to administer is easily and practically doable in the context of Gujarat.
6. The overall scoring of four core domains is the combination all and is the cumulative scoring. Weighing of individual domain scoring and cumulative scoring reflected the overall rating of quality of life.
7. The WHOQOL-BREF questionnaire effectively captured the physical, psychological, social, and environmental dimensions of quality of life. Case study findings confirmed these domains, as patients who received holistic care (dietary modifications, social support, mental health counseling) reported improved QoL scores.

8.3 Statistical Relationships between Geriatric Services and Quality of Life

The empirical relationship between geriatric care and the quality of life of elderly persons living with diabetes based on the primary data are analyzed here. Here, an analysis of the inter-relationship of geriatric and gerontological social work variables with the quality of life of persons living with diabetes is analyzed using appropriate statistical tools.

Statistical analysis confirmed significant relationships between geriatric services and QoL outcomes. Case studies validated these findings, as patients who received multidisciplinary care demonstrated better health outcomes. Logistic regression analysis showed that factors such as daily physical activity, social worker support, and safe living environments had significant impacts on diabetes management and overall well-being.

In this study, comparison, correlation and binary logistic regression model of geriatric care and quality of life of elderly persons living with diabetes are analyzed. Here, the statistical tool comparison was used for the reason that this study compares two variables-the geriatric services and the quality of life.

Correlation was applied in this study to measure the extend of which two variables, in this study geriatric services and the QoL are related. The binary logistic regression model of statistic tool was used for the reason that in this study, a set of independent variables linked with geriatric services with the depended variable QoL are assessed to understand the relationship. While doing so, the focus was on binary-whether relationship exists or not. Therefore, these three statistical tools were the most relevant and is justified based on the evidences.

8.3.1 Comparison of Independent Variables (Geriatric Services) and Dependent Variables (Quality of Life)

1. The physical domain of quality of life had a highly significant comparison with family support ($\chi^2=22.701$; $P=.000***$). This indicates that the elderly persons who has no family support had poor physical quality of life.
2. The psychological domain of quality of life had a highly significant comparison with family support ($\chi^2=22.579$; $P=.000***$). Poor psychological support leads to no family support.
3. The overall quality of life had a highly significant comparison with family support ($\chi^2=24.302$; $P=.000***$). Quality of life is decreased among elderly persons living with diabetes due to the lack of family support.
4. The rest of the quality-of-life domains such as social relationship and environment have no significant comparison with family support. This means that physical and psychological support from the family is most important for elderly persons living with diabetes.
5. The psychological domain of quality of life had a highly significant comparison with lack of direct family care and support services ($\chi^2=13.473$; $P=.009**$). Poor psychological factor shows the lack of direct family support.
6. The overall quality of life had a highly significant comparison with direct family support care and services ($\chi^2=16.937$; $P=.002**$). Quality of life is decreased among elderly persons living with diabetes due to the lack of direct family support.

7. The rest of the quality-of-life domains such as physical, social relationship and environment have no significant comparison with direct family support. This means that direct family support care and services lead to a positive psychological well-being of elderly persons living with diabetes.
8. The social relationship domain of quality of life had a highly significant comparison with lack of indirect family support ($\chi^2=10.836$; $P=.01^{**}$). The rest of the quality-of-life domains such as physical, psychological, environment and overall have no significant comparison with indirect family support.
9. The physical domain of quality of life had a highly significant comparison with physical activities ($\chi^2=17.307$; $P=.002^{**}$). This indicates that the quality of life is decreased because of poor daily physical activity.
10. The psychological domain of quality of life had a significant comparison with physical activities ($\chi^2=11.501$; $P=.02^{*}$). Lack of daily physical activities may affect the mental health of elderly persons living with diabetes.
11. The social relationship domain of quality of life had a significant comparison with physical activities ($\chi^2=9.909$; $P=.04^{*}$).
12. The overall domain of quality of life had a highly significant comparison with physical activities ($\chi^2=16.577$; $P=.002^{**}$). This indicates that the daily physical activity of elderly persons living with diabetes leads to a good quality of life.
13. The physical domain of quality of life had a highly significant comparison with social worker support and services ($\chi^2=7.905$; $P=.01^{**}$).
14. The psychological domain of quality of life had a significant comparison with social worker support and services ($\chi^2=6.050$; $P=.04^{*}$).
15. The social relationship domain of quality of life had a significant comparison with physical activities ($\chi^2=16.576$; $P=.000^{***}$).
16. The overall domain of quality of life had a highly significant comparison with physical activities ($\chi^2=72.784$; $P=.000^{***}$). This

indicates that the majority of elderly persons living with diabetes have not gotten social worker support and services.

17. The psychological domain of quality of life had a significant comparison with community-based supportive services ($\chi^2=6.592$; $P=.03^*$). This indicates that poor community-based supportive services may lead to negative mental health.
18. The physical domain of quality of life had a highly significant compared with the safe and general living environment ($\chi^2=11.700$; $P=.00^{**}$). The majority of them felt unsafe and it connects with the physical domain of quality of life.
19. The psychological domain of quality of life had a significant comparison with a safe and general living environment ($\chi^2=8.372$; $P=.03^*$). This indicates that a poor safe environment leads to negative mental health.
20. The environment domain of quality of life had a significant comparison with the safe and general living environment ($\chi^2=9.779$; $P=.02^*$).
21. The overall domain of quality of life had a highly significant comparison with the safe and general living environment ($\chi^2=105.962$; $P=.000^{***}$). This indicates that an unsafe environment may lead to poor quality of life among elderly persons living with diabetes.
22. The psychological domain of quality of life had a highly significant comparison with spiritual and religious activities ($\chi^2=10.689$; $P=.01^{**}$). This indicates that majority of elderly living with diabetes mistrust that spiritual and religious activities may lead to negative mental health.
23. The overall domain of quality of life had a highly significant comparison with government services ($\chi^2=13.628$; $P=.01^{**}$). Those getting service from the government had a better quality of life.

8.3.2 Correlation Results of Measurement of Geriatric Services and Quality of Life

1. The physical domain had a significant positive correlation with the psychological ($r=.001$), social relationship ($r=.010$) and overall score

of quality of life ($r=.000$) and no relationship with the environment ($r=.301$). This indicates that the physical domain has a close connection and correlation with psychological and social relationships.

2. The psychological domain has a significant positive correlation with the environment ($r=.018$) and a highly significant correlation with the overall quality of life ($r=.000$). This shows that elderly persons living with diabetes had an unsafe environment.
3. The social relationship had a highly significant positive correlation with the overall quality of life ($r=.003$). The overall quality of life had a highly significant relationship with all domains. This shows that all domains have a vital role in a better quality of life for elderly persons living with diabetes.

8.3.3 Binary Logistic Regression Model Results of Geriatric Services and Quality of Life

1. The results from the binary logistic regression analysis were conducted to determine the impact of factors such as family support, daily physical activities, social worker support and services, and a safe, general living environment on the likelihood of participants being at high risk in the physical domain of quality of life for elderly persons living with diabetes. The binary logistic regression model was found to be statistically significant, $\chi^2 = 42.62$, $P < 0.001$. The model accounted for 11.0% of the variance in the physical domain of quality of life (Nagelkerke R^2) and correctly classified 62.4% of the cases. The results indicate that elderly persons living with diabetes have a poor quality of life in physical domains due to the lack of geriatric care.
2. The binary logistic regression analysis was conducted to evaluate the effects of daily physical activities and social worker support and services on the likelihood of participants being at high risk in the psychological domain of quality of life for elderly persons living with diabetes. The model was statistically significant, $\chi^2 = 40.48$, $P < 0.001$. It explained 11.4% of the variance in the psychological domain of quality of life (Nagelkerke R^2) and correctly classified 74.2% of the cases. The results indicate that elderly persons living with diabetes have a poor quality of

life in psychological domains due to the lack of daily activities and social worker services.

3. The binary logistic regression analysis was conducted to examine the effects of daily physical activities and social worker support and services on the likelihood of participants being at high risk in the social relationship domain of quality of life for elderly persons living with diabetes. The model was statistically significant, $\chi^2 = 24.23$, $P < 0.001$. It explained 6.9% of the variance in the social relationship domain of quality of life (Nagelkerke R^2) and correctly classified 72.4% of the cases. The results suggest that elderly persons living with diabetes experience a poor quality of life in the social relationship domain, primarily due to the lack of daily physical activities and social worker services.
4. The results on binary logistic regression analysis showed that the effects of a safe and general living environment are linked with the environment of quality of life of elderly persons living with diabetes. The binary logistic regression model was statistically significant, $\chi^2=9.93$, $P<0.01$. The model explained 2.6% (Nagelkerke R^2) of the variances in the environment domain of quality of life and correctly classified 56.2% of cases. The results indicate that elderly persons living with diabetes have poor quality of life in environment domains due to the lack of a safe and general living environment.
5. The binary logistic regression analysis was performed to ascertain the effects of family support, daily physical activity, social worker support and services, and safe and general living environment on the overall quality of life of elderly persons living with diabetes. The binary logistic regression model was statistically significant, $\chi^2 = 164.008$, $P < 0.001$. The model accounted for 38.1% of the variance in overall quality of life (Nagelkerke R^2) and correctly classified 62.2% of the cases. The results indicate that elderly persons living with diabetes have a poor quality of life due to the lack of family support, daily physical activity, limited social worker support and services, and lack of safe and general living environment.

8.4 Hypothesis Testing and Conclusions

For the purpose of analysis, the research methodology is planned to statistically examine and verify the following hypotheses.

8.4.1 Hypothesis 1: Relationship between Geriatric Care and Quality of Life

The first hypothesis on the assumption that there is direct relationship between geriatric care and quality of life of the elderly persons living with diabetes. The evidences are cited below.

1. Based on the statistical analysis of comparison, correlation and binary logistical and regression analysis clearly established that there is a direct connection between the geriatric care services and quality of life. However, the physical, psychological and social domain of services has greater connections and relevance than the environmental domains.
2. It was proved that the overall result was poor quality of life and therefore, in the context of three urban districts in Gujarat, the quality of life remains a matter of concerns for the elderly suffering from diabetes. The poor quality of life was attributed to the deficient and devoid of right mix of geriatric services. Therefore, there is urgent need to boost up the QoL rating in Gujarat.
3. The identified problems is possible to handle by way of an integrated and convergent mode of geriatric services linking physical, psychological, social, economic and environmental/spiritual domains of services.

Added to it, the co-morbidity arising out of diabetes needs to be taken on board to address the problems of elders. In other words, there is need for two-pronged strategy. One is targeting them as elders and the other is focusing them as diabetes patients. This holistic approach is the best intervention strategy to achieve healthy aging.

8.4.2 Hypothesis 2: Impact of Socio-Economic Conditions on Quality of Life

The study tested the relationship between socio-economic conditions of elderly persons living with diabetes and the quality of life. The empirical evidences are outlined below.

1. As per the study data only 35% of them got income support of different types from them and their family members. This showed that majority of the respondents had no regular income sources. From this it is proved that there is direct relationship between the economic variables of the elders and the quality of life of the elderly persons living with diabetes.
2. Self-sufficient income for elders will add economic wellbeing of the elders and is a key element in determining the quality of life of the elders. This is more so among elders with chronic diabetes.
3. It was further evident that the respondents had multiple sources of support from government, NGOs, private hospitals and community sources. This practically means that multiple income, cash support, and grant are required for the elders to cope up with the economic distress. This calls for multiple strategies to address the elderly problems mapped. Single mode or approach is not the right mix of services to handle the challenges of elders.
4. Existence of economic safety net is a big boon for the elderly respondents. Therefore, support from the government in the form of old age pension and other forms of non-income support served as positive variables that contributed for economic cushioning.

Therefore, the conclusion is that the second hypothesis-the economic status determine the quality of life of elders is proved correct, which is authentically established based on the available primary data.

8.4.3 Hypothesis 3: Relationship between Family Engagement and Quality of Life

The third hypothesis is on the direct connection between family and community engagement of elderly and quality of life of the elderly persons living with diabetes. The empirical connections on the variable family/community support and the quality of life of the elderly persons are presented below.

1. The study proved beyond doubt that there is direct connection of family and community engagement with quality of life of elders, which

was well established.

2. The evidences drawn that the relationship between family/community support was positive. The overall quality of life had a highly significant with family support ($\chi^2=24.302$; $P=.000^{***}$).
3. Quality of life is decreased among elderly persons living with diabetes due to the lack of family support. The point is that family and community support play a pivotal role in adding social care values. Absence of which has contributed to the negative values.
4. Family being the prime service providers, government services should encourage family and community-based system and services to boost up the quality of life of elders.
5. Being a study conducted in urban settings, it is well established that the system of family care is still in existence. Strengthening this system as part of the social intervention strategy will augment social care values.

It is concluded that family care variable is well connected with the QoL elders. The two-way relationship was well established in this study.

8.4.4 Hypothesis 4: Impact of Elderly-Friendly Institutional Care on Quality of Life

Here, the variable elder friendly institutional care and QoL was tested in this study. It is evident that the test result in term of quality of care was negative. The details are under.

1. It was found that the age friendly practices of institutional care are not evident based on the poor quality of life index.
2. The elder inclusiveness and elder friendly approach to elderly care was not evident in many governments institutional care facilities and services.
3. Positively speaking, there is need for codification of elder friendly approach and practices as part of the QoL of elders.

From the above analysis and evidences, it is clear the four hypotheses postulated as key assumptions in this study are empirically proved. All the key independent variables-geriatric care, family and social care, economic care and elder friendly services are connected with the dependent variable quality of life

of the elders. Therefore, there is a direct and positive connection between the above-mentioned variables. It is concluded empirically that there is direct relationship between the variables tested in this study.

8.5 Recommendations for Improving Quality of Life

Based on the findings, the following recommendations are offered as solutions to the challenges for elderly persons living in diabetes.

8.5.1 Measures to Improve Physical and Health Domains

1. In view of the evidences of increased longevity and life span for elderly persons, it is suggested to evolve long term strategic plan targeting elders at the national and state levels and micro level plans at the panchayat, block and district level plans to suit to the practical needs of elderly living in urban areas to suit their strategic and practical needs of elders living with diabetes.
2. Though diabetes is included as part of the Non-Communicable Disease (NCD), still in view of the chronic nature of diabetes, the existing services are not comprehensive to deal with the entire spectrum of diabetes. Suggested to develop a digital tracking system for elders as well as for diabetes patients to handle their problem holistically.
3. At the moment, though preventive education has been given, right targeting has not been done by identifying persons with diabetes family history. Similarly, at present, the pre-diabetics were not effectively targeted as priority groups to adopt preventive and control measures to avert the progression of diabetes among the elders. As part of the digital health, like the successful CoWin registration system, evolve digital health system for elders living with diabetes.
4. Suggested to develop personal health/elderly tracking system through smart phone, GPS, appropriate emergency alert button system by connecting the family members/close relatives using geo-fencing system. This will serve as emergency health warning system to help those in urgent health services.
5. Suggested to evolve tele-health services customized to the needs of the elderly persons in general and those living in diabetes.

6. Develop elderly digital health plan and platform as part of the digital health eco-system to suit it to the practical needs of elderly persons living with in diabetes. Provide clear slot focusing on elderly in general and diabetes in particular under Aushman Bharat-Pradhan Mandri Jana Arogya Yojana (AB-PMJAY) by harnessing the power of information technology to suit the practical needs of elderly suffered in Diabetes.
7. As part of the elderly health care, it is suggested to develop family and community centric holistic care and support plan for the elders as part of the participatory elderly health care plan by drawing the perspectives and practical necessities of elders with chronic diabetes conditions.
8. At the moment, the health insurance for the elders is costly and private insurance service providers are unwilling to provide a health insurance suitable to different income groups. Recommended to evolve suitable insurance for the aged in general and those with diabetes.
9. Home and community health care services and system can be developed with the support of government and non-government entities to make sure that the elders get home based health services. Insurance Regulatory and Development Authority (IRDA) of India based on special needs of elders is suggested to intervene by raising caps in premium amount as well as lifting the ceiling of 65 years of age. Any rejection of insurance to elderly persons or denial of renewal by insurance providers should be penalized through administrative and legal way.
10. Evolve holistic and integrated geriatric health care combining primary, secondary and tertiary geriatric care services targeting elders by individualizing them at the family and community levels.
11. Recommended to improve the physical wellbeing through recreational services to the elders for strengthening their physical vitality.
12. Create palliative care facilities and services for the elders in general and those living in diabetes as part of end-of-life care.
13. Healthy aging is a new idea commonly in vogue. Suggested to unpack the idea of healthy aging and to translate the idea into concrete actions for the health wellbeing of elders.

14. Suggested to set up Geriatric Health and Social Care facility at the district level to promote and provide comprehensive elderly care.
15. Elder friendly approach to health care and elder inclusive services is recommended to increase the quality of life of elderly persons.
16. Suggested to make the elderly health care facilities elder friendly and elder inclusive as part of the effort to improve the physical access to government and private health care services to elder.

8.5.2 Psychological Care Domain Services

Here, the recommendations for improving the psychological wellbeing are stated below.

1. Increase the connectivity and interactions of elderly persons with family members, friends and likeminded seniors to boost up psychological wellbeing.
2. Build up physical and digital solidarity of elders into self-help and mutual help groups for the psychological wellbeing of elderly persons.
3. Create day care and community care facilities for elders to improve the psychological wellbeing.
4. Engage in leisure time works and play that makes elders happy and preoccupied, instead of living in excluded life.
5. Break the psychological breakdown of elders through counseling and psychological support services.
6. Boost up emotional wellbeing of elderly persons through creating opportunities for emotional outbursts through ventilation sessions.
7. Identify the elders' problems such as isolation, depression, affective and anxiety disorders, dementia and other psychological illness and to render psychological and psychiatric services to suit their problems.
8. Arrange or provide cognitive support to those elders, who have problems of cognitive disorder.
9. Raise awareness on the need for psychological care of elders and provide family and community based psychological care services to customize to the practical requirements.

10. Codification of best psychological care services to make sure the government and private psycho-care services with the required standards.

8.5.3 Enhancing Social Wellbeing and Wellness of Elderly Persons

1. At the moment the geriatric social work services are far and few. Even in Geriatric health facilities, trained geriatric social work services are hardly available. Suggested to evolve geriatric social care policy on the appointment of Geriatric Social Workers based on the number of elderly persons in Geriatric care facilities including hospitals. Evolve standard operating procedure for social care services through trained social Workers.
2. At the moment, the focus of elderly care is more on bio-medical model of care and support, wherein, the priority is always on health side or clinical services to elders than social care and support. Balanced care with equal emphasis on social care services through geriatric social workers is suggested.
3. Elders who have their own family and yet the family members are not paying due attention to elders, it is recommended to intervene through family support services as part of Social Work services. Family integration and family centric support is advocated to make sure the onus of elderly care lies with the families.
4. Evolve system for community/social care models to suit it to elders through geriatric social care services and interventions, as per their immediate need. Strengthen the traditional system of caring elders in joint families as part of the family and social heritage.
5. Recommended for elderly living and caring facilities in cities through private and public housing facility with the support of government, as part of urban care services.
6. Evolve social-care models of services in rural, tribal and urban settings to suit the context of elders and to support for locally led and sustainable elderly social care services.
7. Raise awareness and social compassion model of elder centric models of social care as part of the life cycle management.

8. Strengthen the social care through forging social solidarities and building social capitals linking elders, as part of the mutual help system of care.
9. Promote the ideas of volunteerism for the elders at the family and community level to serve the neediest volunteers.
10. Strengthen the training infrastructure and training system to volunteers to make sure the volunteers get the required knowledge and skills to serve elders to break isolation and loneliness.
11. Identify and arrange different forms of social support existing within the community system as per the needs of the elders to address social strain arising out of the aging.
12. Detect the problems of elderly abuse and mistreatment and to handle these problems through right mix of community and social interventions.
13. Foster an enabling social environment through elder friendly community system for caring the elderly persons based on the cultural and social heritage of humanity.
14. Invest on appropriate technology to create ease of life and living particularly on mobility and care of elderly persons.
15. As part of the school system, it is suggested to celebrate elderly day by engaging senior citizens of the area to recognize their contributions to humanity. This will serve as an education as well as raise awareness on the need for valuing elders at the family and community levels.
16. Strengthen the networks of elderly forums at the district, state and national levels to articulate their problems and to advocate for elder friendly policies and practices.
17. Identify the best social care practices pursued by the elderly care and residential care homes and to share it across various stakeholders to improve the social care practices in elderly homes.
18. As part of the licensing system for setting up elderly care facilities and homes, it is recommended to appoint one trained social worker for 50-100 elders to provide quality social care services.
19. Suggested to promote community and family based social protection system and services to elderly humanity as part of the village and

urban panchayat system to help the elders.

20. Addressing abandoning elderly persons by family members in unknown places or in age care settings has been happening. Though there is a law- Maintenance and Welfare of Parents and Senior Citizen's Act 2007 has been in operation, practically many elders are not awareness of their rights and entitlements. Sensitize the elder's community leaders on the existence of this law and to support elderly persons to make full use of the law to protect the rights of elder persons.
21. Organize periodic socialization events for elders for exchange of issues during important festivals, celebrations and elder day event.
22. The rights of elderly are still not talked about much. Suggested to codify elderly rights and to evolve concrete schemes through the support of government to recognize and to claim the rights and entitlements of elder persons.
23. Standardization of social care is suggested by codifying the best social care practices to elderly persons to improve the quality of social care.

8.5.4 Promoting Economic Wellbeing and Wellness of Elderly Persons

1. Suggested to evolve age and skill appropriate elderly livelihood or enterprises scheme at the national and state levels to engage and to utilize the knowledge and technical skills for national development.
2. Recommended to develop elderly volunteer-based schemes and services for local development and services to humanity.
3. Proposed to work out an economic protection scheme and system at the village/ward level in urban areas to make sure that no elder is starving and denied of the basis subsistence for survival.
4. At the moment there is little authentic data on the economic life, poverty among elders and quality of life of elderly persons. It is suggested to develop statistical systems to capture the economic plight/poverty levels and real status periodically to enable the government to intervene with suitable financial, cash support to elders to serve the best interests of elderly persons This data will serve as benchmark on elderly life and is possible to track up the elderly

poverty as part of the poverty reduction strategy.

5. Create right sponsorship system for elders similar to the child sponsorship system to take holistic care of the elders particularly for single persons.
6. Campaign for sharing small part for the elderly economic care as part of the Corporate Social Responsibility (CSR) interventions.
7. For the better off elderly, it is suggested to provide support for financial planning to make right use of their assets and money.

8.5.5 Measures for Environmental and Spiritual Wellbeing and Wellness of Elderly Persons

1. Improve the living environment of elderly persons with measures to ensure better living environment by way of boosting up the safety and security for elders. System for improving the safety and security of the elders particularly those above the age of 80 is urgent necessity in view of weak bones. Raise awareness on safety and physical security of the elderly persons among families, communities and service providers to make sure elders get better safety and security.
2. In times of disasters, measures to take care of the elderly persons are urgently called for. Special disaster prevention, rescue and care services are to be improved within the disaster management system.
3. Recommended to improve the elder friendly housing and public infrastructure to make sure to make it elder centric to improve their mobility and transportability.
4. Those elders with spiritual interest, it is suggested to evolve spiritual care and support services to serve the spiritual and religious interests of the elderly persons.
5. More studies are needed to know the spiritual care needs and services from different religious contexts of elders to boost up the spiritual wellbeing of elders.
6. Study the cultural contexts of the elders and to suggest measures to customize the elderly services to suit to the interests and needs of the elderly persons.

8.6 Research Contributions, Limitations, and Future Directions

8.6.1 Key Contributions of the Study

Integrated Care and QoL: This study contributes significantly to understanding the impact of integrated geriatric care on the quality of life (QoL) of elderly persons living with diabetes. By examining the intersection of physical, psychological, social, and environmental factors, the study highlights the multifaceted nature of diabetes management among elderly persons. It underscores the importance of a holistic care model that addresses not only the medical aspects of diabetes but also the broader emotional, social, and environmental influences that significantly shape an elderly person's health outcomes. This integrated approach proves to be essential in improving both physical and psychological well-being, ultimately enhancing the overall QoL of elderly persons.

Support System Gaps: The study also identifies critical gaps in existing support systems, particularly regarding financial assistance and community-based care. The findings emphasize the urgent need for policies that provide more robust financial support, including subsidies and pensions, to elderly persons living with diabetes, as well as the expansion of community-based programs aimed at enhancing social engagement and providing emotional support. The lack of adequate caregiver education and the limited accessibility of specialized healthcare services are also key areas where interventions are needed to reduce vulnerabilities and improve outcomes for this population.

Gender-Specific Challenges: While the study provides valuable insights into the experiences of elderly diabetics, it offers limited exploration of the gender-specific challenges faced by elderly men, women, and transgender persons. This gap in the research highlights the need for future studies that examine the unique healthcare needs, caregiving dynamics, and emotional challenges experienced by these different gender groups. Gender-sensitive approaches to healthcare and caregiving could provide more personalized and effective interventions that cater to the distinct needs of each group.

Cultural Attitudes: Another area where the study has room for expansion is in understanding how cultural perceptions of aging, illness, and caregiving influence diabetes management practices. Cultural beliefs may significantly shape how elderly persons approach their health, including how they manage chronic conditions like diabetes, seek medical care, and rely on family or community support. Further research should investigate these cultural influences to inform the design of more culturally appropriate interventions that resonate with local beliefs and practices, ensuring better engagement with health programs and improving adherence to care protocols

8.6.2 Challenges Encountered and Mitigation Strategies

Here the challenges met and the strategies to overcome the operational issues are outlined below.

1. In the beginning of the study period from 2020 to till the beginning of 2022, the researcher was not able to meet and visit to hospitals to know the realities. This constrained the researcher to go ahead as per the plan made. Reworked the plan with the support of the research guide to make up the loss of time.
2. The limited availability of trained social workers available in geriatric service settings to offer social work is constrained the researcher. However, the research was able to find out the availability of such services and included social work services within the ambit of this study. This was made possible through the network of connections established by the researcher.
3. Since the researcher used mostly the official data of diabetes, in the beginning convincing the hospital authorities was a challenge. Yet, the researcher used all the possible contacts to get the work done.
4. As the study is about elders, the researcher had faced problem from the families to meet the elders and to collect the data. Many elderly persons found it difficult to talk and share the data, which required co-operation and support. As the researcher used the known networks, it was made possible to elicit the study data from the elders.

5. Among the sample population, death of few forced the researcher to replace the chosen sample. The researcher had to spend more time to find the consent of the respondents to include them in this study.

8.6.3 Gaps Identified for Further Research

Based on this research, the following gaps identified which may serve as opportunities for new research.

1. The key focus of this study is the relationship between the geriatric care services and quality of life of elderly living with diabetes. Since diabetes is a chronic state of ill-health and morbidity, it is desirable to study the adverse impact in terms of years of life human days or life lost due to diabetes.
2. Though this study is intended to ascertain the value of geriatric social work services, it is a small part of the social domain of geriatric care. New study to exclusively focus on social care of elders with the contribution of geriatric social work services in adding social care values can be tried out.
3. Suggested to conceive new study to establish the relationship between geriatric social work services as independent variable and quality of life, social wellbeing of elders as dependent variables can be pursued.
4. The value of mutual help/support through elderly forum, as part of the elder friendly and elder centric approach can be thought through, as part of the effort to ascertain the value of elderly mutual support group. Alternatively, the existing self-help group system can be amplified by way of integrating mutual aid concepts and practices, as part of the hybrid approach can be studied to deepen the practice of geriatric social work practice in new of increasing need.
5. Now elderly living communities through gated communities are part of the new concept of elderly care. Yet, little studies available on the value of elderly living communities in urban settings. New study on this theme will shed more light on the habitat-based approach to elder care.

6. Geriatric Social Work approach to pre-diabetes using non-clinical mode can be tested through a new study as part of the preventive and promotional measures.
7. Suggested to conduct an experimental study on the value of therapeutic elder groups similar to the Alcoholic and Drug anonymous or victim support groups. This study in all likelihood may throw more light on the value of therapeutic approach to elderly care.
8. There are very limited studies on palliative or end of life care for elders available. Keeping in view of the large need, an exclusive study focusing on the role of Social Work in palliative care among diabetics can be explored.
9. Proposed to conduct an exclusive study with focus on gender issues of diabetes elders to know the differential needs, approaches and services. This will be helpful for gender inclusive and women or transgender friendly social and health care interventions.
10. Study the value of digital tracking of elderly care and its value can be tried out to work out doable interventions from the point of view of impending need.

8.6.4 Future Research Directions

1. **Longitudinal Studies:** Future research should include longitudinal studies to assess the long-term impact of targeted interventions, such as personalized care programs, community-based initiatives, and technological innovations like telemedicine and mobile health tools, on the quality of life of elderly diabetics. These studies could provide valuable data on the sustainability of improvements in health outcomes and QoL over time and identify which interventions yield the most lasting benefits for elderly populations with diabetes.
2. **Gender-Sensitive Strategies:** Future studies should also explore gender-sensitive strategies for addressing the unique healthcare challenges faced by elderly men, women, and transgender living with diabetes. Gendered experiences of aging, caregiving roles, and healthcare access vary, and these differences should be acknowledged when designing care interventions. By developing gender-specific

programs and policies, healthcare providers can more effectively meet the diverse needs of elderly diabetics and ensure equitable care for all persons, regardless of gender identity.

3. **Cultural Influences:** Investigating the impact of cultural beliefs and practices on diabetes management, caregiving patterns, and elder care is an essential future direction. Understanding how cultural perceptions of aging and chronic illness influence healthcare-seeking behaviors, treatment adherence, and caregiving roles will allow for the creation of culturally sensitive care models. By integrating local traditions and values into diabetes care, interventions can be made more relevant and acceptable to the target population, increasing the likelihood of positive health outcomes.

The research contributions and proposed future directions outlined above aim to advance the understanding of the complex factors that influence the quality of life of elderly persons living with diabetes. By addressing the identified gaps and focusing on inclusive, culturally relevant, and gender-sensitive strategies, future research can lead to the development of more effective interventions and policies. These strategies will not only improve healthcare access and outcomes for elderly persons living with diabetes but also help build more sustainable, compassionate, and inclusive care systems for this vulnerable population.

This study provides a thorough and nuanced understanding of the various challenges faced by elderly persons living with diabetes in Gujarat, India. The analysis underscores the complex and interconnected nature of the factors that impact their quality of life (QoL), including physical health, mental well-being, social interactions, economic stability, and environmental conditions. These multidimensional factors work together to either enhance or hinder the ability of elderly diabetics to live fulfilling, independent lives.

One of the key findings of this study is the essential role that family support plays in improving the QoL of elderly persons living with diabetes. However, it also highlights significant gaps, particularly in caregiving knowledge and access to specialized healthcare services. Inadequate community-based programs and financial insecurity further exacerbate the

vulnerability of elderly persons living with diabetes, making them more susceptible to poor health outcomes.

The study advocates for a holistic care model that integrates multiple levels of support: family, community, and institutional care. It calls for policy-level interventions aimed at addressing these gaps, particularly in healthcare access, financial assistance, and the promotion of social inclusion. By strengthening these areas, stakeholders can create a more sustainable and comprehensive framework that not only improves health outcomes but also restores dignity, independence, and well-being for elderly persons living with diabetes.

Building such a framework requires a collaborative approach involving policymakers, healthcare providers, family members, and community organizations. Efforts should focus on creating an inclusive and age-friendly environment that empowers elderly persons living with diabetes to lead healthier, more fulfilling lives. This approach ensures that the elderly persons are not only supported in managing their chronic conditions but are also able to enjoy a higher quality of life, with respect and care from all sectors of society.

Ultimately, the goal of this study is to catalyse action that brings together various stakeholders to address the challenges of elderly persons living with diabetes in Gujarat. By fostering collaboration and prioritizing comprehensive, tailored interventions, the quality of life for elderly persons living with diabetes can be meaningfully enhanced, paving the way for a future where this population is more empowered and supported in all aspects of their lives.

8.7 Final Conclusion: Synthesis and Implications

This study offers a comprehensive and in-depth analysis of the multifaceted challenges encountered by elderly persons living with diabetes in Gujarat, India. The findings emphasize the intricate interplay between physical health, mental well-being, social connectivity, economic stability, and environmental conditions, all of which collectively shape their quality of life (QoL). Understanding these interdependent factors is essential to designing effective interventions that promote independence, dignity, and well-being for elderly diabetics.

Key Findings and Challenges

Family Support as a Pillar of Care: Family support is a crucial determinant of QoL for elderly persons living with diabetes. However, the study identifies substantial gaps in caregiving knowledge, preparedness, and access to specialized healthcare services. These deficiencies impede effective disease management and exacerbate the burden on both patients and caregivers.

Healthcare Accessibility and Economic Constraints: Limited availability of community-based healthcare programs, coupled with financial insecurities, restricts access to essential medical care and diabetes management resources. The financial burden of diabetes care further heightens vulnerability, increasing dependence on external support mechanisms.

The Need for a Holistic, Multilevel Care Framework: Addressing these challenges requires a paradigm shift from fragmented healthcare delivery to an integrated model that aligns family, community, and institutional support. Strengthening healthcare accessibility, financial assistance, and social inclusion is critical to improving health outcomes for elderly persons living with diabetes.

Recommendations for a Sustainable Framework

To foster a more inclusive, age-friendly, and sustainable healthcare system, a multi-stakeholder approach is imperative. The following strategic interventions emerge from this research

1. Personalized and Comprehensive Diabetes Care: Case studies and empirical evidence underscore the effectiveness of individualized interventions that incorporate medical, psychological, and social dimensions. A patient-centered approach ensures better disease management and improved health outcomes.

2. Strengthening Family and Community Support Networks: A robust support system, involving well-informed caregivers and community-driven initiatives, significantly enhances diabetes self-management among elderly persons. This necessitates structured training programs for family caregivers and the expansion of community-based healthcare services.

3. Expanding Institutional Support and Awareness Programs: Government initiatives must be expanded to reach a broader population, particularly in rural and marginalized communities. Targeted policies should enhance accessibility to affordable healthcare services and ensure timely interventions for elderly persons living with diabetes.

4. Addressing Psychological and Social Well-being: Mental health interventions, such as counseling services and peer support groups, should be integrated into diabetes care frameworks. Addressing emotional resilience is crucial for improving the overall well-being of elderly persons coping with chronic illness.

5. Enhancing Preventive Care and Early Intervention: A shift toward preventive healthcare is essential. Public health policies should prioritize early detection through systematic screening programs, lifestyle modification initiatives, and community-driven health awareness campaigns.

Implications for Policy and Practice

By synthesizing empirical research findings with real-world case studies as discussed in Chapter VII, this study reinforces the necessity of adopting a patient-centred, community-driven approach to geriatric diabetes management. A transition from reactive healthcare to proactive, preventive, and holistic intervention strategies is crucial.

Furthermore, this research highlights the broader necessity of a coordinated, multi-stakeholder response that integrates policy, healthcare delivery, and social support systems. A structured and evidence-based intervention model can significantly enhance the quality of life for elderly persons living with diabetes, fostering greater autonomy and sustained well-being.

This study serves as a foundation for actionable change, urging policymakers, healthcare professionals, and community organizations to prioritize comprehensive, sustainable, and evidence-based interventions for elderly persons living with diabetes. By implementing these recommendations, we can pave the way for a more inclusive and resilient healthcare framework—one that extends beyond Gujarat and serves as a model for similar contexts globally.

Geriatric Care and Quality of Life among Elderly Persons Living with Diabetes in Gujarat, India

Research Scholar

Gautam Makwana
Research Scholar Ph.D Social Work
Department of Social Work
Mizoram University
Tanhri-796 004

Research Supervisor

Prof. H. Elizabeth
Professor
Department of Social Work
Mizoram University
Tanhri- 796 004

Questionnaire

(Confidential & PhD Research purpose only)

Schedule No:

SECTION A: Demographic structure of the Respondent

1.	Name (Surname/First Name/Middle Name)	:	
2.	Gender	:	Male ☐ , Female ☐ , Transgender ☐
3.	Age	:	61 -64 years ☐ , 65-68 years ☐ , 69-72 years ☐ , 73-76years ☐ , 77 -80 years ☐ , 81 years & above
4.	Marital status	:	Single ☐ , Married ☐ , Widowed ☐ , Separated ☐ , Divorced ☐
5.	Educational level	:	Illiterate ☐ , Elementary education ☐ , High School level ☐ , HSLC ☐ , HSSLC ☐ , Undergraduate ☐ , Graduate & above ☐
6.	Occupation	:	
7.	Spouse	:	Alive Death
8.	Educational level	:	61 -64 years ☐ , 65-68 years ☐ , 69-72 years ☐ , 73-76years ☐ , 77 -80 years ☐ , 81 years & above

9.	Occupation	:	
10.	Family type	:	Nuclear ☐ , Joint ☐ , Extended ☐
11.	No. of children	:	One ☐ , Two ☐ , Three ☐ , Four & Above ☐
12.	Family history of Diabetes & who?	:	Father ☐ , Mother ☐
13.	Present Illness	:	
14.	Diabetes type	:	Type I ☐ , Type II ☐
15.	Treatment	:	Medication ☐ , Insulin injection ☐
16.	Treatment Place	:	UHC ☐ , Ayushman Bharat ☐ , Health and Wellness Centre ☐ , Civil Hospital ☐ , Private clinic ☐
17.	Address	:	

SECTION B: Personal Structure of Respondent

Sr No	Questions	Options
1	Annual Income	1.No income 2.Less than Rs.50000 3.Rs.51000-100000 4.Rs.100001 to 200000 5.Rs. Rs.200000 and Above
2	Family support	1.Wife 2.Husband 3.Son 4.Daughter 5.Grandsons
3	Economic Dependency	1.Fully Dependent 2.Partially Dependent 3. Independent
4	Direct Family Support, Care and Services	1.Instrumental support 2.Supportive services 3.Broader social Support 4.Specialized care support
5	Indirect Family Support	1. Health services 2. Social and Community support 3. Information and Resources 4. Financial support
6	Daily Physical Activity	1.Physiotherapy 2. Occupational Therapy 3. Holistic Therapy (Ayurveda) 4. Yoga and Exercise
7	Institutional Care and Services	1.Supervision 2.Assistance with Activities of Daily Living 3.Skilled Nursing Care 4.Rehabilitation 5.Adaptive Aids and Equipment 6.Psychological Services 7.Social Activities
8	Community Based & Support Services	1.Primary Level 2.Secondary Level 3.Tertiary Level
9	Sources of Income	1.No source at present 2.Income from job 3.Old age pension 4.Rent income 5.Social security 6.Investment 7.Assets 8.Savings

		9. Post office scheme 10. Saving scheme
10	Support Resources for Elderly Diabetics	1. Instrumental Support 2. Free Medication 3. Govt Schemes 4. Health Information
11	Social Work Care, Support and Services	1. Insufficient support and services 2. Partially receiving support and services 3. Sufficient support and services
12	Psychological Social Support	1. Informational 2. Emotional 3. Esteem 4. Socialization 5. Tangible support
13	Safe & General Living Environment	1. All Safety Measures 2. Unsafe-Unsecured 3. Healthy 4. Well-Maintained 5. Unorganized
14	Spiritual & Religion Activities	1. Strong Belief 2. Meditative Life (prayers) 3. Satisfied 4. Trust 5. Mistrust 6. Unsatisfied
15	Palliative and End of Life Support	1. Coordination 2. Control symptoms 3. Home based Support 4. Life Limiting 5. End of Life

SECTION C

WORLD HEALTH ORGANISATION QUALITY OF LIFE WHOQOL-BREF

I.D. number

Before you begin we would like to ask you to answer a few general questions about yourself: by circling the correct answer or by filling in the space provided.

- What is your gender? Male Female
- What is your date of birth? Day Month Year
- What is the highest education you received? None at all Primary school Secondary school Tertiary
- What is your marital status? Single Married Separated
 Living as married Divorced
 Widowed
- Are you currently ill? Yes No

If something is wrong with your health what do you think it is?

Instructions

This assessment asks how you feel about your quality of life, health, or other areas of your life. Please answer all the questions. If you are unsure about which response to give to a question, please choose the one that appears most appropriate. This can often be your first response.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life in the last two weeks. For example, thinking about the last two weeks, a question might ask:

		Not at all 1	Not much 2	Moderately 3	A great deal 4	Completely 5
	Do you get the kind of support from others that you need?					

You should circle the number that best fits how much support you got from others over the last two weeks. So you would circle the number 4 if you got a great deal of support from others as follows.

		Not at all 1	Not much 2	Moderately 3	A great deal 4	Completely 5
	Do you get the kind of support from others that you need?					

You would circle number 1 if you did not get any of the support that you needed from others in the last two weeks. Please read each question, assess your feelings, and circle the number on the scale for each question that gives the best answer for you.

		Very poor	Poor	Neither poor nor good	Good	Very good
1 (G1)	How would you rate your quality of life?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2 (G4)	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about how much you have experienced certain things in the last two weeks.

		Not at all	A little	A moderate amount	Very much	An extreme amount
3 (F1.4)	To what extent do you feel that (physical) pain prevents you from doing what you need to do?	1	2	3	4	5
4 (F11.3)	How much do you need any medical treatment to function in your daily life?	1	2	3	4	5
5 (F4.1)	How much do you enjoy life?	1	2	3	4	5
6 (F24.2)	To what extent do you feel your life to be meaningful?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	Extremely
7 (F5.3)	How well are you able to concentrate?	1	2	3	4	5
8 (F16.1)	How safe do you feel in your daily life?	1	2	3	4	5
9 (F22.1)	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about how completely you experience or were able to do certain things in the last two weeks.

		Not at all	A little	Moderately	Mostly	Completely
10 (F2.1)	Do you have enough energy for everyday life?	1	2	3	4	5
11 (F7.1)	Are you able to accept your bodily appearance?	1	2	3	4	5
12	Have you enough money to meet your	1	2	3	4	5

(F18.1)	needs?					
13 (F20.1)	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14 (F21.1)	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

		Very poor	Poor	Neither poor nor good	Good	Very good
15 (F9.1)	How well are you able to get around?	1	2	3	4	5

The following questions ask you to say how good or satisfied you have felt about various aspects of your life over the last two weeks.

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16 (F3.3)	How satisfied are you with your sleep?	1	2	3	4	5
17 (F10.3)	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18 (F12.4)	How satisfied are you with your capacity for work?	1	2	3	4	5
19 (F6.3)	How satisfied are you with yourself?	1	2	3	4	5
20 (F13.3)	How satisfied are you with your personal Relationships?	1	2	3	4	5
21 (F15.3)	How satisfied are you with your sex life?	1	2	3	4	5
22 (F14.4)	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23 (F17.3)	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24 (F19.3)	How satisfied are you with your access to	1	2	3	4	5

	health services?					
25 (F23.3)	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to how often you have felt or experienced certain things in the last two weeks.

		Never	Seldom	Quite often	Very often	Always
26 (F8.1)	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	1	2	3	4	5

Did someone help you to fill out this form?

How long did it take to fill this form out

Focus Group Discussion (FGD) Questions

Section 1: General Perception of Quality of Life

1. How would you describe your overall quality of life while living with diabetes?
2. What does "a good quality of life" mean to you as an elderly person managing diabetes?

Section 2: Physical Health and Well-being

3. How has diabetes affected your physical health and ability to carry out daily activities?
4. Do you face challenges in managing diabetes-related complications (e.g., vision issues, neuropathy)? How do these impact your daily life?
5. Are you able to maintain a healthy diet and exercise routine? If not, what are the barriers?

Section 3: Psychological and Emotional Well-being

6. Does living with diabetes cause stress, anxiety, or depression? If yes, how do you cope with these feelings?
7. How has diabetes impacted your self-esteem or sense of independence?
8. Do you feel supported emotionally by your family, friends, or healthcare providers?

Section 4: Social Relationships and Support

9. Has living with diabetes changed your relationships with family, friends, or community members? If yes, in what ways?
10. How important is family or community support in improving your quality of life?
11. Do you feel isolated or excluded from social activities because of your condition?

Section 5: Environmental and Regional Factors

12. How accessible are healthcare services for managing diabetes in your locality?
13. Do you face challenges due to the cost of medications, regular check-ups, or treatments?
14. Are there any cultural or traditional practices in Gujarat that help or hinder your diabetes management?

Section 6: Suggestions for Improving Quality of Life

15. What changes or improvements would you like to see in healthcare services or community support to enhance your quality of life?
16. If you could receive any additional support, what would it be, and why?

Key Informant Interview (KII) Questions

(For diabetologists, geriatricians, old age home (OAH) promoters, administrators and geriatric social workers)

Section 1: Understanding Quality of Life in Elderly Diabetics

1. From your perspective, how does diabetes affect the quality of life of elderly persons in Gujarat?
2. What are the most common challenges elderly diabetic patients face that lower their quality of life?

Section 2: Healthcare and Quality of Life

3. How well do healthcare facilities address the specific needs of elderly diabetic patients?
4. Are there any specialized programs or interventions in Gujarat designed to improve the quality of life for elderly diabetics?
5. How accessible and affordable are diabetes-related healthcare services for elderly persons?

Section 3: Social and Psychological Aspects

6. How do social support systems (family, community, etc.) impact the quality of life of elderly persons with diabetes?
7. What role do psychological factors, such as mental health and emotional well-being, play in their overall quality of life?
8. Do you observe cases of stigma or neglect affecting the lives of elderly diabetic patients?

Section 4: Environmental and Policy-Related Factors

9. How does the socioeconomic status of elderly persons influence their ability to manage diabetes and maintain quality of life?
10. Are there any regional or cultural factors unique to Gujarat that impact diabetes management and QoL?

Section 5: Recommendations for Improvement

11. What strategies or initiatives would you suggest to enhance the quality of life for elderly diabetic patients in Gujarat?
12. How can policymakers and healthcare providers collaborate to improve care and support systems for this population?
13. What resources (financial, educational, or technological) do you think are necessary to support elderly diabetic patients?

Section 6: Best Practices and Innovations

14. Can you share any examples of successful interventions or programs that have improved the QoL for elderly diabetic patients?
15. How can innovations, such as telemedicine or community health programs, be utilized to enhance their quality of life?

Consent Form for the Respondent/Participant

Title of the Ph.D Thesis : Geriatric Care and Quality of Life among Elderly Persons
Living with Diabetes in Gujarat, India

Name of Researcher:

Gautam Makwana

Research Scholar Ph.D (Social Work)

Mizoram University (A Central University)

Aizawl 796004 Mizoram

E Mail: mzu1234567@mzu.edu.in

Mobile +91 98243 44403 / +91 92658 69002

Name of Supervisor:

Prof.H Elizabeth, Professor (Social Work)

School of Social Sciences,

Department of Social Work,

Mizoram University (A Central University)

Aizawl 796004 Mizoram

If you have read the information sheet and consent to be interviewed, please show your agreement by ticking the following

1.	I confirm that I have read the information sheet and understand what I will be asked to do	
2.	I understand that my participation is voluntary and that I am free to withdraw at any time without my legal rights being affected, and without having to give a reason	
3.	I understand that all my information will be strictly confidential.	
4.	I agree to take part in the Interview	

.....
Name of the Respondent

.....
Date

.....
Signature & Phone / Mobile No

I have explained the nature, demands and foreseeable risks of the above research to
the participant

Gautam Makwana
Name of Researcher

.....
Date

.....
Signature

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BIO-DATA

Surname & Name : Makwana Gautam Sureshbhai
Father's Surname & Name : Makwana Sureshbhai Rudabhai
Mother's Surname & Name : Makwana Jayaben Sureshbhai
Present Address in India : Madhuram Residency II Wing B Flat 302,
Saru Section Road, Jamnagar 361006, Gujarat,
India
Address in Abroad : OED6D S 17-16 Hernan Gmoiner y Avenida
Mariscal Sucre, Quito 170626
Ecuador (South America)
Mobile Number : +91 98243 44403 / +91 92658 69002
Email ID : mzu1234567@mzu.edu.in gautam_makwana@hotmail.com

PERSONAL DETAILS

Date of Birth : 04th September 1982
Nationality : Ecuadorian (South America)
OCI Visa Holder for India
Sex : Male
Marital Status : Married

EDUCATIONAL QUALIFICATION

Degree	University/Board	Year of Passing	Division/Grade
MSW	IGNOU	2019	First
Nursing Diploma	Central Board	2006/2012	Distinction
BA English	Gujarat University	2003	Second
HSC	GSHSEB	2000	Distinction
SSC	GSHSEB	1998	First

PAPERS PUBLISHED

Sr.No	Title of the Article & Name of Author	Journal/Publication
1	Implication of social work research on working with elderly with Diabetes (Gautam Makwana & Dr.H Elizabeth)	Journal Category: UGC Approved Journal No:63975 (19) Journal of Emerging Technologies and Innovative Research, India (ISSN-2349-5162) Volume 8, Issue 10, Pages 296-308 October 2021,
2	Hope for Healthy Aging and Geriatric Care: India's National Program of Health-Care For the Elderly in India (Gautam Makwana & Dr.H Elizabeth)	Journal Category : (UGC CARE Group I) India Dogo Rangsang Research Journal (ISSN:2347-7180) Vol-12 Issue-05 No. 02, Pages 11-20 May 2022
3	Demographic, Socio-economic and Cultural Determinant to Family size: A study of sub-urban area of Rajkot, Gujarat (Gautam Makwana & Dr.H Elizabeth)	Journal Category: UGC CARE Group II GIS Science Journal (Die Zeitschrift fur Geoinformatik Germany) (ISSN: 1869-9391) Volume 9, Issue 11, 2022. Pages 798-816 November 2022
4	Social Worker's Collaborative Approach, Practice and Intervention at the <i>Plenitud Old Age Care Home</i> in Quito in Ecuador (Gautam Makwana & Dr.H Elizabeth)	Journal Category : (UGC CARE Group I) India Naman Patrika Reference Journal (ISSN:2229-5585) Issue: 29 Pages 112-119 January 2024
5	A Critical Phenomenology and Ethics of Aging and Dementia: Understanding Lived Experience and Advocating for Justice (Gautam Makwana & Dr.H Elizabeth)	International Journal of Psychological Studies (ISSN 1918-7211 E-ISSN 1918-722X) Vol. 16, No. 4; 2024, Pages 38-46 November 2024

PAPERS PRESENTED

Sr.No	Title of Paper presented	Conference	Organizer	Attended Date
1	Dementia Care in Family and Community – Building Resilience and Hope	ARDSICON 2021	ARDSI Hyderabad Deccan Chapter	Nov 21-22, 2021
2	Understanding Psychosocial Dimensions of Geriatric Patients: Effective and Efficient Approaches	57th National & 26th International Conference of Indian Academy of Applied Psychology (IAAP)	Mizoram University & Indian Academy of Applied Psychology	Jan 27-29, 2022
3	Research on Geriatric Health Care in BRICS Countries: A Scientometric Investigation	International Conference of Academia Based Tourism Revival (ABTR)	Universitas Jenderal Soedirman, Indonesia	Sep 27-29, 2022
4	Addressing Importance of Family Caregiving, Social Support, and Life Satisfaction Among Elderly in India	One-Day National Seminar on Constitution and Constitutionalism in India: Emerging Perspectives	MD University Centre for Professional and Allied Studies, Gurugram, India	Nov 26, 2022
5	Healthy Aging, Health Awareness, and Elderly Care in India	International Conference on Role of Counselling in Dealing with Mental Health Issues	Aligarh Muslim University	Sep 23-24, 2022
6	The Growing Need for Geropsychological Intervention in Older Adults	Two-Day National Level Conference on COVID-19 Crisis and Sustainable Development Goals in India	Government Arts College for Men, Bangalore	Oct 19-20, 2022
7	An Overview of India's Concept of Geriatric Care and Health	National Conference on Social Work Practice in Different Field	Shree Narayana Guru College, Coimbatore, Tamil Nadu	Mar 03, 2023

		Settings		
8	The Impacts of COVID-19 on Suicidal Vulnerability in Older Adults	Two-Day National Seminar on Psychology and Society Today: Issues, Challenges, and Interventions	Mahatma Gandhi Kashi Vidyapith, Varanasi, India	Mar 17-18, 2023
9	Mental Health as an Essential Component of General Health	Two-Day National Seminar on Sustainable Development in India: Issues and Challenges	Mizoram University	May 25-26, 2023
10	Social Worker Intervention in the Social and Emotional Wellbeing of the Elderly in Ecuador	National Study Conference on Transformative Innovations in Social Work Practice	Madras Christian College, Chennai, India	Oct 09-10, 2023
11	Social Worker Intervention in Elderly Well-being During COVID-19: A Study on Miguel Leon Old Age Home	Two-Day National Conference on Social Work and Diversity: A Catalyst for Change	Central University of Karnataka, Kalaburagi, India	Jan 11-12, 2024
12	The Dependency and Aging of Older Adults in Ecuador	Two-Day National Seminar on Evolving Gig Economy in India	Guru Nanak College, Chennai, India (ICSSR, New Delhi)	Aug 13-14, 2024
13	The Importance of Gerontology Pedagogy, Active Aging, and Socio-educational Practices	Faculty Research Day 2024 Programme: Transdisciplinary Approaches to Mitigating and Navigating Industry 5.0	Namibia University of Science and Technology, Namibia	Sep 12, 2024
14	A Genealogical Approach to Disability and Education	Two-Day National Seminar On Gender Issues: Challenges, Strategies And Solutions	Department of Sociology, Dr. BGR Campus Pauri, HNB Garhwal University (A Central University) Srinagar Garhwal,	October 15,16, 2024

			Uttarakhand	
15	Navigating Dual Challenges: Social Work Innovations for Elderly Individuals Living with Diabetes and Disabilities	Two day National Seminar on “Towards Inclusion: Empowering Persons with Disabilities for a Developed India by 2047” PROGRAMME	Centre For Study of Social Inclusion Visakhapatnam Andhra University,	Dec 03,04, 2024
16	Silver Economy 2047: Leveraging Technology, Entrepreneurship, and Traditional Knowledge for Sustainable Elderly Care in India	National Seminar on Sustainable Development for Viksit Bharat@2047: A Multidisciplinary Approach	Faculty of Arts & Social Sciences Swami Vivekanand Subharti University, Meerut, Uttar Pradesh & Social Development Federation Agra, Uttar Pradesh	September 06, 2025

CANDIDATE’S SIGNATURE:

DATE: 14/10/2025

PARTICULARS OF THE CANDIDATE

NAME OF CANDIDATE	: Makwana Gautam Sureshbhai
DEGREE	: Doctor of Philosophy
DEPARTMENT	: Social Work, Mizoram University
TITLE OF THESIS	: Geriatric Care and Quality of Life among Elderly Persons Living with Diabetes in Gujarat, India
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APPROVAL OF RESEARCH PROPOSAL

1. DRC 1st & DRC 2nd	: 07.04.2021 / 21.04.2021
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MZU REGISTRATION NO	: 2006582

Ph.D REGISTRATION NO & DATE	: MZU/Ph.D/ 1505 of 27.10.2020

EXTENSION (IF ANY)	: NA

(PROF.KANAGARAJ EASWARAN)

Head

Department of Social Work

Mizoram University

Aizawl 796 004 Mizoram

ABSTRACT

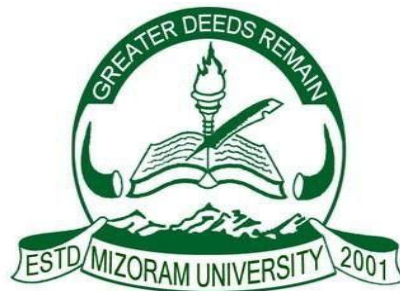
**GERIATRIC CARE AND QUALITY OF LIFE AMONG
ELDERLY PERSONS LIVING WITH DIABETES IN GUJARAT,
INDIA**

**AN ABSTRACT SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF
PHILOSOPHY**

MAKWANA GAUTAM SURESHBHAI

MZU REGISTRATION NUMBER: 2006582

Ph.D. REGISTRATION NUMBER: MZU/Ph.D./ 1505 of 27.10.2020



DEPARTMENT OF SOCIAL WORK

SCHOOL OF SOCIAL SCIENCES

OCTOBER, 2025

**GERIATRIC CARE AND QUALITY OF LIFE AMONG ELDERLY
PERSONS LIVING WITH DIABETES IN GUJARAT, INDIA**

BY

MAKWANA GAUTAM SURESHBHAI

Department of Social Work

Prof. H. ELIZABETH

Supervisor

Submitted

In partial fulfillment of the requirement of the Degree of Doctor of Philosophy in
Social Work of Mizoram University, Aizawl.

INTRODUCTION

This study explores the topic of “Geriatric Care and Quality of Life among Elderly Persons Living with Diabetes in Gujarat, India.” The introductory chapter lays the groundwork for the research by outlining the core aspects of the study. It offers essential background information, clarifies the purpose and significance of the investigation, and describes the structure of the thesis. Additionally, this section highlights the study’s relevance and showcases its original contributions to the existing literature. By situating the research within a broader academic framework, the chapter emphasizes the distinct value it brings to the field.

Global Scenario of Elderly

According to the 2011 Census of India, the national old-age dependency ratio indicates that there are more than 14 elderly persons for every 100 people of working age, though this figure varies considerably across different states. With ongoing demographic changes, it is anticipated that the demand for elderly care services will increase, potentially exceeding the current ratio of 14 elderly persons per 100 working-age individuals. Data from the Sample Registration System (SRS) reveals a rise in life expectancy at age 60, from 14 years during 1970–1975 to 18 years in 2010–2014, with women typically living around two years longer than men. This trend reflects notable improvements in life expectancy across most Indian states. At present, all states report higher life expectancy among elderly women compared to their male counterparts (Sample Registration System – Registrar General of India, 2010–2014).

The sex ratio among the elderly population in India has risen from 938 women per 1,000 men in 1971 to 1,033 in 2011, and it is projected to reach 1,060 by 2026. This shift is primarily attributed to the relatively slower decline in male mortality rates during the later stages of life, although variations exist across different states. According to the Aging India Report (2017), between 2000 and 2050, India's total population is expected to grow by 56 per cent, whereas the population aged 60 and above is projected to increase by a remarkable 326 per cent. Even more striking is the projected growth of the 80-plus age group, estimated to rise by 700 per cent during the same period. This segment will predominantly consist of widowed and highly dependent elderly women. The disparity in numbers between older women and men becomes more pronounced with advancing age, particularly from 60 to 80 years and beyond. This demographic trend highlights the urgent need

to address the specific challenges faced by the "oldest-old," especially women. The growing elderly population presents both significant challenges and opportunities. Addressing these requires innovative approaches, fresh perspectives, and renewed commitment. There is a pressing need for robust empirical research to inform practical strategies, aligning with global frameworks such as the World Population Ageing Report (2015) and the United Nations Decade of Healthy Ageing (2021–2030).

Elderly in India

In India, the terms ‘elders’, ‘aged’ and ‘senior citizens’ are commonly used to refer to older adults. From a medical perspective, the term "geriatric" is often employed to describe this population. Legally and chronologically, individuals aged 60 years and above are classified as elderly in India. According to the 2011 Census of India, there were approximately 104 million elderly persons, comprising 51 million men and 53 million women. Projections from the United Nations Population Fund (UNFPA) Report (2017) estimate that this number will rise to 173 million by 2026 and is expected to triple by 2050. The proportion of the elderly in the total population has steadily increased—from 5.6% in 1961 to 8.6% in 2011. Notably, the proportion is slightly higher among females (9%) compared to males (8.2%). The elderly population is projected to reach 10.1% in 2021, 13.1% by 2031, and approximately 19% by 2050 (Census of India 2011; UNFPA, 2017).

According to the Technical Group Report on Population Projections for India and States (2011–2036), the elderly population in India was projected to reach approximately 138 million in 2021, comprising 61 million males and 71 million females. By 2031, this number is expected to rise by around 56 million. Notably, the growth rate of the elderly population surpasses that of the general population.

The geographical distribution reveals that a significant majority—71%—of older adults reside in rural areas, while only 29% live in urban regions. Among the rural elderly, 66% of men and 28% of women were reported to be engaged in work, whereas in urban areas, the figures decline to 46% for men and approximately 11% for women. The sex ratio among the elderly was recorded at 1,028 females per 1,000 males in 1951, experienced a decline, and then rose again to 1,033 by 2011.

Life expectancy at birth between 2009 and 2013 stood at 69.3 years for females and 65.8 years for males. In 2018, the age-specific death rate per 1,000 populations for those aged 60–64 was 20.4 in rural areas and 17.7 in urban areas,

with a national average of 19.5. For individuals aged 65–70 years, the mortality rate was 22.2 for males and 16.7 for females. The crude death rate for the general population during 2011–2015 was 7.2 and is projected to rise slightly to 7.3 during 2031–2035 (Population Projection Report 2011–2036).

India's old-age dependency ratio rose from 10.9% in 1961 to 14.2% in 2011 and is expected to further increase to 15.7% in 2021 and 20.1% by 2031. Literacy among the elderly has also improved, from 27% in 1991 to 44% in 2011. However, a gender gap persists, with only 28% of elderly women being literate compared to 59% of elderly men (Sample Registration System, 2021).

In terms of health, heart disease is more prevalent among the urban elderly compared to their rural counterparts. The most common disabilities affecting aged individuals are related to mobility (locomotor) and vision (Census 2011). Additionally, the National Crime Records Bureau (2019) reports that the highest crime rates against senior citizens (aged 60 and above) were recorded in Delhi (93.8 per lakh population), followed by Gujarat (85.4), underscoring the increased vulnerability of the elderly to crime.

From these statistics, it is evident that there is a growing trend in the number of, which highlights the scale and seriousness of the issue. With increasing longevity, more elders are living longer lives, thereby placing greater responsibility on families, communities, and the state to provide adequate care. In light of this, it becomes crucial to prioritize the thematic focus on elder care, as it represents both a pressing and emerging concern in India and globally. Considering the expanding scope of this issue, conducting region-specific studies on the elderly will help identify localized challenges and enable the development of context-specific interventions tailored to the needs of various social groups.

Traditionally, in India, the care of individuals aged 60 years and above has been considered a family responsibility and social obligation. Aging is a natural part of the human development process—an inevitable phase in the life cycle. No one is exempt from growing old, which is regarded as the final stage of human life. Aging is inherently linked to nature and the human life course and is often associated with declining physical health (National Council on Ageing, 2022).

As people advance in age, they increasingly require a range of services and support systems to address age-related challenges. Historically, these needs were met entirely by families and communities, as elder care was an integral aspect of cultural

and social traditions. However, with the disintegration of self-reliant family and community structures, these support systems have weakened. Consequently, there is a growing reliance on external assistance, which has become a vital component of the health and social care ecosystem.

In this evolving context, the involvement of government institutions, private sector actors, and professional service providers has become essential. These entities play a critical role in supplementing and complementing family-based care by offering both clinical and non-clinical support—particularly in cases where the needs of the elderly surpass the caregiving capacities of families and communities.

Caring for individuals in the sunset and twilight stages of life is an essential responsibility embedded within the welfare framework of modern states. Geriatric care, as a specialized field, encompasses a multidisciplinary approach to support the elderly through medical, social, psychological, mental, and economic interventions—each forming a vital component of a comprehensive service continuum. With increasing life expectancy, there is a growing emphasis on making such services more inclusive, humane, and accessible. These efforts aim to reach marginalized elderly populations and address both their immediate and evolving needs, in alignment with the goal of last-mile service delivery.

Geriatric care has also been incorporated into global and national health agendas through initiatives such as 'Health for All' and 'Universal Health Coverage (UHC),' reflecting its importance within policy frameworks. Furthermore, elder care aligns with fundamental rights under Article 21 of the Indian Constitution, which guarantees the right to life and is intrinsically linked to the dignity of human existence. Protecting this dignity, especially in later stages of life, is a moral and legal obligation to be upheld by families, communities, and the state (National Council on Ageing, 2022; National Institute of Ageing, USA, 2019).

Assisting vulnerable is deeply rooted in the ethical, social, and cultural values of Indian society. As aging is typically associated with declining physical strength and increased dependence, elders often require external support for mobility, healthcare, and daily living needs. Geriatric care must therefore be responsive to the diverse and multifaceted requirements of older adults. Addressing these needs demands sensitivity and empathy, encouraging service providers to adopt a perspective grounded in the lived experiences of the elderly.

Given the uniqueness of each individual, a "one-size-fits-all" approach is unlikely to be effective. Personalized and context-sensitive interventions are essential to accommodate the varied aspirations, health conditions, and social circumstances of older adults. This necessitates the development of a diverse range of service options tailored to individual preferences. Meeting this challenge requires rigorous research, critical analysis, and continuous innovation in both policy and practice (National Institute on Ageing, 2019).

Over time, the delivery of high-quality geriatric services has evolved into a multi- and cross-disciplinary domain of human intervention. Traditionally, elder care in India revolved around community-based and home-centred models, with families playing a central role in supporting aging individuals. However, rapid urbanization, the breakdown of the joint family system, and a shift away from agrarian livelihoods has significantly strained these traditional care structures. These socio-economic changes have led to increasing stress on families and communities, resulting in a weakening of the once robust, informal eldercare systems.

Consequently, the transition from familial and community-based care to more formal models—including hospital, institutional, and hospice care—has necessitated the development of new professional care mechanisms. The growing diversity in the needs, expectations, and preferences of the elderly further reinforces the demand for innovative, person-centred care models. In this evolving landscape, the design and delivery of elderly care services have become a timely and critical concern.

Advancements in medical science, coupled with progress in social, mental, and psychological care, have contributed to the emergence of geriatric medicine as a distinct and essential field. This multidisciplinary specialty aims not only to prolong life but also to enhance the quality of life of older adults through compassionate and comprehensive care. Geriatric medicine addresses the unique clinical conditions associated with aging, recognizing that age-related physical decline is a natural yet complex phenomenon. As such, the provision of clinical services tailored to the elderly population has become a specialized area of healthcare.

Given the rising demand and complexity of elderly care, geriatric medicine now operates with a holistic and interdisciplinary perspective. This shift calls for a reimagining of eldercare services to address both immediate and long-term needs. It also requires collaborative integration with other sectors of human services to provide seamless and effective support. The present study is conceptualized against

this dynamic backdrop, reflecting the growing necessity for innovative and inclusive models of geriatric care.

National Perspective on Elderly in India

India's elderly population, which reached approximately 138 million in 2021 (MoSPI, Elderly in India 2021), is expanding at a faster rate than any other demographic group. This growth is driven by advances in healthcare and living conditions, leading to an average life expectancy of around 70 years. Despite these improvements, the elderly population encounters numerous challenges.

Health Challenges: Non-communicable diseases like hypertension, diabetes, arthritis, and cognitive decline are prevalent among the elderly and represent significant health concerns. Access to geriatric care is especially constrained in rural areas, where healthcare infrastructure is still insufficient (LASI Report 2020).

Economic Dependence: Only 10-15% of the elderly receive formal pensions, leaving the majority financially reliant on their families. This issue is particularly severe for informal workers and women, who often do not have retirement savings (NSSO Aging Reports 2020).

Social Dynamics: Urbanization and the rise of nuclear families have diminished traditional caregiving roles, leaving many elderly persons vulnerable to neglect and isolation (NSSO Aging Reports, 2020).

To address these challenges, the Indian government has launched several initiatives, including:

1. The National Policy on Senior Citizens (2011), which focuses on financial security, healthcare, and social inclusion (Government of India, Ministry of Social Justice and Empowerment, MoSJE).
2. The Rashtriya Vayoshri Yojana, which provides assistive devices to from economically disadvantaged backgrounds (MoSJE Scheme Reports, 2019).
3. The Maintenance and Welfare of Parents and Senior Citizens Act (2007), which ensures legal support for elder care (GoI, 2007). In addition, programs like the Pradhan Mantri Vaya Vandana Yojana and the Indira Gandhi National Old Age Pension Scheme (IGNOAPS) aim to strengthen the economic security of senior citizens. Private-sector initiatives and NGOs, such as HelpAge India, are also playing a crucial role by providing elder care services and promoting community engagement (GoI, 2020).

Elderly in Gujarat

According to the 2021 Survey by the Registrar General and Census Commissioner, India (SRS), 8% of the state's population falls within the 60-85 age group, and only 0.3% are aged 85 and above. The UNFPA's 2011 Census data indicates that 4.7% of the population is in the 60-69 age range, 2.6% are in the 70-79 range, and 0.8% belong to the 80+ category. By 2026, the UNFPA forecasts an increase of 8% in the 60-69 age group, 4.2% in the 70-79 group, and 1.5% in the 80+ age group (United Nations Population Fund, UNFPA 2023). The life expectancy at age 60 is 17.5 years for males and 20.3 years for females, reflecting gender-based longevity differences (IJFMR 2021, UNFPA 2023). Common health issues among the elderly include arthritis, respiratory conditions, and cardiovascular diseases. To address these challenges, the state has introduced several initiatives:

1. The Gujarat State Policy for Senior Citizens, which focuses on financial security, healthcare, and overall well-being (Government of Gujarat, Department of Social Justice and Empowerment).
2. The Senior Citizen Health Insurance Scheme, which provides health coverage, particularly for from low-income backgrounds (Government of Gujarat, Department of Health and Family Welfare).
3. Additionally, various NGOs and private healthcare providers offer geriatric services such as home care, day care centers, and residential facilities to meet the diverse needs of the elderly population

REVIEW OF LITERATURE

This literature review consolidates existing studies to pinpoint gaps in geriatric care and the quality of life among elderly persons living with diabetes, with a specific focus on Gujarat, India. The insights gained from these studies help shape the methodology of the current research, ensuring both its rigor and relevance, while also emphasizing the distinct contributions of this work.

Demographic profiles of the Elderly Persons living with Diabetes

Older adults with diabetes, especially those over 70, face multiple challenges, with men often more affected. Though more common in urban areas, rural communities are increasingly impacted. Risk factors include low socioeconomic status and ethnic backgrounds such as South Asian, African American, and Hispanic. Common comorbidities—like hypertension, obesity, and heart disease—are worsened by poor diet and inactivity. Additional issues include limited screening access, polypharmacy, social isolation, and lack of support.

Global context

Dr.Sharjeel Babar et al (2022) '*Nutritional status and dietary habits of elderly population and their association with socio-demographic factors in a village of Punjab*', the study assessed the nutritional status and dietary patterns of in rural Jia Bagga, Pakistan, with 100 participants aged 60 and above. It found that 22% were malnourished, and 50% were at risk of malnutrition. Poor nutrition was linked to factors such as age, financial dependency, physical activity, and dietary habits. The study emphasizes the need for targeted interventions to improve nutrition in low-income elderly populations in rural areas.

Pushpamala Ramaiah Ponaiah et al (2020) '*Self-Management Experiences and Challenges of Elderly Women with Type 2 Diabetes*', the study explores the challenges of managing diabetes in , particularly due to co-morbidities and declines in functional and cognitive abilities. It highlights the increased risk of mental health issues among older adults with diabetes in India. Emphasizing the importance of self-care for better glycemic control and quality of life, the study aims to investigate the self-management experiences and challenges faced by older women with diabetes through online group discussions.

International Diabetes Federation (2013) '*Global Guidelines on Managing Older People with Type 2 Diabetes*', this study highlights the rising global elderly population and increasing diabetes rates, emphasizing the growing burden on

healthcare systems. The International Diabetes Federation calls for age-specific, evidence-based, and personalized care that accounts for functional status and comorbidities to enhance treatment safety and reduce complications. The World Health Organization stresses prevention, public health efforts, and the role of informal caregivers. However, research on cost-effective care for older adults remains limited.

National context

Lalchhuansangi Khiangte (2023) studied based on the title *"Coping, Social Support and Quality of Life among Persons with Diabetes in Mizoram"*, this study examines the challenges faced by diabetes patients in Mizoram, focusing on coping strategies, social support, and quality of life. Using mixed methods, it finds higher diabetes prevalence among middle-aged urban dwellers due to lifestyle factors. Common coping mechanisms include optimism, self-control, and social support—more evident in rural areas and among men. Social support declines with age, particularly affecting elderly patients. The study underscores the connection between coping, support, and well-being, urging targeted interventions, community engagement, and supportive policies. It also calls for further research on gestational and geriatric diabetes and their effects on families.

Priyanka Patel et al (2022) *'Impact of Economic Dependency on Perceived State of Health Among Elderly in India'*, this study investigates how economic dependency affects the perceived health of in India, using data from the 71st and 75th National Sample Survey rounds. It finds that only 30.1% of the elderly are economically independent, while 22.9% are partially and 47% fully dependent. Those who are economically dependent report significantly poorer health. The study highlights the socio-economic challenges of aging in India and calls for targeted policies to improve elderly well-being.

Shailedra Kumar et al (2021) *'Socio-economic and Demographic Correlates of the Health Status of Older Adults in India: An Analysis of NSS 71st Round'*, this study examines the health status of older adults in India, using data from the 71st National Sample Survey', it finds that 30% of suffer from chronic or acute conditions, 22% report poor health, and 8% are physically immobile. Poor health outcomes are linked to factors such as age, religion, and economic status. The study emphasizes the need to strengthen healthcare services and enhance economic and social support systems to address the high prevalence of poor health among the

elderly population.

Regional context

Angel Christian et al (2021) '*Understanding Patients Experiences Living with Diabetes Mellitus: A Qualitative Study, Gujarat, India*', this study explores diabetes mellitus as a major public health concern in India, affecting 72.9 million adults, with a focus on Kheda district, Gujarat. It highlights the disease's impact on quality of life, including emotional distress—fear, depression, and anxiety—especially after diagnosis, and challenges with dietary adjustments. Physical symptoms like weakness and headaches limited daily functioning. While some managed economically with family help, others faced hardships. Work performance initially declined but improved with treatment. Emotional support came mainly from family and friends, and many turned to prayer, though few held strong religious beliefs. The study emphasizes the need for holistic diabetes care.

Ruchita T. Lunagariya et al (2020) '*An epidemiological study on diabetes and its determinants among urban slum women of Rajkot city, Gujarat*', this study highlights the high prevalence of diabetes among women in slums in Rajkot, India, stressing the need for targeted healthcare. Of 405 women aged 35 and older, 64 were diagnosed with diabetes, but only 56.25% were aware of it. A significant 64% had a family history of diabetes, indicating genetic risk. Diabetes risk was associated with age, education, socioeconomic status, and marital status. The study calls for improved awareness, early detection, and regular screenings for this vulnerable population.

Challenges and Coping Strategies of Elderly Persons Living with Diabetes

Older adults with diabetes face health, psychological, and socioeconomic challenges that hinder disease management. Age-related declines, such as reduced kidney function and cognition, impact treatment. They often experience complications like heart disease, neuropathy, and vision problems. Depression, anxiety, and limited access to care further complicate management. Successful coping involves lifestyle changes, medication adherence, glucose monitoring, and support from family and healthcare providers.

Global context

Katharine Treadway et al (2023) studied on the title '*A Qualitative Study of the Challenges and Facilitators to Diabetes Self-Management Among Older Adults Living in Subsidized Housing*', this study explores the challenges older adults in

subsidized housing face in managing diabetes, including poverty, isolation, and physical decline. Major barriers are food insecurity, limited healthcare access, and complex medication regimens. However, support from social connections, education, and affordable healthy food helps. The findings highlight the need for targeted interventions addressing social determinants of health.

Luz Myriam Suarez-Rangel et al (2022) '*Coping Strategies Used by the Elderly with Type 2 Diabetes Mellitus: An Integrative Review*', this study reviewed coping strategies among older adults with type 2 diabetes from 2010 to 2020, identifying three key approaches: problem-focused (e.g., following treatment plans), emotion-focused (e.g., seeking support), and meaning-focused (e.g., finding purpose in their condition). It underscores the need for holistic care that supports both medical and emotional well-being.

Saeideh Atabaki et al (2021) '*Challenges and barriers to self-management of diabetes among older adults: A qualitative study*', this qualitative study in Iran explored the barriers older adults face in managing diabetes. Interviews with patients and healthcare providers identified key challenges, such as limited knowledge, difficulties with diet and medication adherence, restricted healthcare access, and social isolation. The study highlights the need for culturally sensitive interventions that consider the unique social and contextual factors of older adults to improve diabetes self-management.

National context

Dr. Richa Tripathi et al (2023) '*A Study on Assessment of Psychological Problems and Coping Strategies among Geriatric Population in Selected Old Age Homes of Lucknow City*', this study examines the psychological well-being of elderly residents in old age homes in Lucknow, involving 100 participants. It found high levels of depression, anxiety, and loneliness. Common coping strategies included seeking social support, participating in recreational activities, and using relaxation techniques. The study emphasizes the need for psychological support and promoting adaptive coping strategies to enhance the mental health of the elderly in institutional care.

Sathiyabama, T.S et al (2022) '*A study to assess the effectiveness of Diabetic Diet among elderly people with Type II diabetes mellitus in selected Community at Chennai*', this study assessed the impact of a diabetic diet on with type II diabetes in a Chennai community. The results showed that adhering to a diabetic diet resulted in

better glycemic control, lower blood glucose levels, and improved overall well-being. The study emphasizes the importance of promoting dietary adherence and providing nutritional education to support effective diabetes management in the elderly.

Niraj Kumar et al (2021) '*Problems and Coping Strategies among Old Age People in Rural Setting*', this study examines the challenges faced by in rural areas, focusing on issues such as economic insecurity, health problems, social isolation, and limited access to basic amenities. Many cope by relying on social support, income-generating activities, and religious faith. The study highlights the need for targeted interventions to address these challenges and improve the well-being of the rural elderly population.

Regional context

Dr. Mahendra Kumar Prajapati et al (2023) '*A Study to Assess the Effectiveness of Self Instructional Module on Knowledge Regarding Prevention of Diabetes Mellitus among Adults in Selected Areas of Ahmedabad, Gujarat*', this study, conducted in Ahmedabad, Gujarat, assessed the effectiveness of a self-instructional module on diabetes prevention among adults. The findings indicated that the module significantly enhanced participants' knowledge about preventing diabetes. The study emphasizes the importance of educational interventions in raising awareness, promoting prevention, and facilitating early detection of diabetes within the community.

Rupal P. Thakkar et al (2019) '*A Study to Assess the Knowledge Regarding Self Care Management of Diabetes Mellitus among Patients Attending Medicine OPD at Civil Hospital, Ahmedabad*', this study, conducted in Ahmedabad, aimed to assess the knowledge of self-care management of diabetes mellitus among patients attending the medicine OPD at Civil Hospital. The results showed that patients had limited understanding of diabetes self-care management. The study emphasizes the need for comprehensive diabetes education to enhance self-care practices and improve outcomes for diabetes patients.

Assessing Family Support, Institutional Care, and Services for Elderly Persons Living with Diabetes

To ensure holistic care for elderly diabetics, assessing family support (emotional, financial, practical), institutional care (nursing homes, assisted living), and available services (home healthcare, education, support groups) is essential. This

helps tailor interventions, promote self-management, and enhance overall well-being.

Global context

Yan-Ying, Chen et al (2023) studied based on *'the impact of social support on glycemic control in older adults with type 2 diabetes: A systematic review and meta-analysis'*, this systematic review and meta-analysis found that social support significantly enhances glycemic control in older adults with type 2 diabetes. Increased social support was associated with lower HbA1c levels and improved self-management behaviors, such as medication adherence, diet, and physical activity. The study underscores the importance of integrating social support strategies into diabetes care programs for the elderly to improve health outcomes.

Susan N, Walker et al (2022) *'Systematic review of family-based interventions for adults with type 2 diabetes: Updated effects on health outcomes and methodological considerations'*, this systematic review assessed the impact of family-based interventions on health outcomes for adults with type 2 diabetes. It found that involving family members in diabetes care improves glycemic control, medication adherence, and self-management. The findings highlight the importance of considering family dynamics and cultural context when designing and implementing diabetes interventions.

Tullia, Rostgaard et al (2020) studied based on the title *'What characterizes good quality in home care services for older people? A systematic review of the literature'*, this systematic review highlights the importance of high-quality home care in supporting the well-being and independence of older adults. It identifies key features of effective services, such as person-centered care, skilled caregivers, reliable delivery, and strong communication. The study calls for continuous quality improvement to ensure dignified and effective home care for older individuals.

National context

Dr. Rajesh Kumar Gautam et al (2023) studied based on *'A Study to Assess the Effectiveness of Planned Teaching Programme on Knowledge Regarding Home Care Management among Caregivers of Elderly People at Selected Community Areas, Greater Noida'*, this study evaluated the impact of a planned teaching program on caregivers' knowledge of home care management for the elderly in Greater Noida. The findings indicated that the program significantly improved caregivers' knowledge. The study highlights the importance of educational interventions in empowering caregivers and enhancing the quality of home-based

care for .

Rajeshwari G, Gayathri R (2022) studied based on *'Effectiveness of a Structured Teaching Programme on Knowledge regarding Prevention of Selected Health Problems among Caregivers of Elderly in Selected Rural Areas at Kancheepuram'*, this study, conducted in rural Kancheepuram District, assessed the effectiveness of a structured teaching program aimed at improving caregivers' knowledge of preventing selected health issues in the elderly. The results indicated a significant improvement in caregivers' knowledge following the intervention. The study emphasizes the importance of providing educational support to caregivers to enhance their skills and promote the health and well-being of in rural communities.

Ruchi Agrawal, Dr. Poonam Elhance (2021) conducted a study based on *'Assessment of Quality of Life and Existing Family Support Systems among Elderly People Living in Old Age Homes and Residing with Families'*, this study highlights that living with their families have a higher quality of life compared to those in old age homes, thanks to stronger family support systems. Emotional, social, and practical assistance from family members leads to better physical and mental health outcomes. The study emphasizes the need to strengthen family support and implement community-based interventions that encourage family involvement, while also providing resources for caregivers to improve the well-being of the elderly.

Regional context

Jigna S. Patel et al (2023) *'A Study to Evaluate the Effectiveness of Structured Teaching Programme on Knowledge Regarding Prevention of Common Health Problems among Care Givers of Elderly People in Selected Rural Areas of Anand District'*, this study in Anand district assessed the effectiveness of a structured teaching program to improve caregivers' knowledge on preventing common health problems among the elderly in rural areas. The results showed a significant increase in caregivers' understanding after the intervention. The study highlights the importance of educational programs in empowering caregivers and improving the health and well-being of in rural communities with limited healthcare access.

Drashti H. Patel et al (2022) *'A Study to Assess the Effectiveness of Planned Teaching Programme on Knowledge Regarding Prevention of Falls among Caregivers of Elderly at Selected Rural Area of Karjan Taluka, Vadodara'*, this study, conducted in the rural area of Karjan Taluka, Vadodara, evaluated the effectiveness of a planned teaching program on fall prevention for caregivers of the

elderly. The results indicated a significant improvement in caregivers' knowledge about fall prevention. The study highlights the essential role of educational interventions in empowering caregivers and reducing the risk of falls, ultimately enhancing the safety and quality of life for in rural communities.

Evaluating the Quality of Life among Elderly Persons Living with Diabetes

Assessing the quality of life (QOL) of with diabetes is essential because the disease affects physical, psychological, and social well-being. QOL assessments help understand how diabetes influences daily activities, emotional health, and social interactions, guiding the development of tailored interventions and comprehensive care plans. These plans aim to address both medical and psychosocial needs, ultimately enhancing treatment adherence and improving overall well-being for elderly diabetics.

Global context

Ting-Wei Chang et al (2023) studies on '*Quality of life in older adults with type 2 diabetes: A systematic review and meta-analysis*', this systematic review and meta-analysis highlighted the significance of assessing and improving the quality of life (QOL) in older adults with type 2 diabetes. It identified factors associated with lower QOL, such as advanced age, female gender, high HbA1c levels, comorbidities, and limited social support. The study suggests that interventions like diabetes self-management education, exercise programs, and social support initiatives can effectively enhance QOL in this group.

Joakim Östlundh et al (2022) examined on '*Trajectories of health-related quality of life among people with type 2 diabetes in primary care: A prospective, longitudinal study*', this longitudinal study examined health-related quality of life (HRQOL) trajectories in individuals with type 2 diabetes in primary care. It found that while some participants maintained stable HRQOL, others experienced a decline. Factors linked to HRQOL decline included older age, comorbidities, and low physical activity. The study emphasizes the need for targeted interventions, such as promoting physical activity and managing comorbidities, to improve HRQOL in primary care for individuals with type 2 diabetes.

Sarah A. Toseland et al (2021) studied based on '*The impact of diabetes self-management education and support interventions on health-related quality of life among older adults: A systematic review*', this systematic review highlights the importance of Diabetes Self-Management Education and Support (DSMES)

interventions in improving health-related quality of life (HRQOL) for older adults with diabetes. It found that interventions incorporating behavioral strategies, social support, and culturally tailored content were especially effective. The study emphasizes the need for comprehensive DSMES programs to enhance the well-being of older adults living with diabetes.

National context

Kaur, Davinder et al (2023) studied based on '*Impact of Diabetes on the Quality of Life of Geriatric Population*', this study highlights that aging increases susceptibility to diseases such as diabetes, significantly impacting the quality of life for. The findings reveal that diabetes negatively affects physical, psychological, and social well-being, with complications like neuropathy, retinopathy, and cardiovascular diseases exacerbating these issues. The study underscores the importance of comprehensive care and support systems to improve the overall well-being and quality of life for living with diabetes.

Mishra, Raj Kumar et al (2022) studied based on '*Quality of Life and its Determinants among Elderly in India: Evidence from Longitudinal Ageing Study in India (LASI), Wave-1*', Improving the quality of life (QOL) for is a central objective of public health and social policy in India. This study examines the determinants of QOL among using data from the Longitudinal Ageing Study in India (LASI), Wave-1. The findings indicate that factors such as higher education, better economic status, improved health status, and stronger social support are linked to higher QOL. Interventions focusing on these factors—such as educational programs, economic empowerment, and social support initiatives—could enhance the QOL of in India.

Anitha Sukumar et al (2021) studied based on '*Association of depression and quality of life among elderly with diabetes mellitus*', the geriatric population with diabetes mellitus is at an increased risk of depression, which can severely affect their quality of life. This study explores the relationship between depression and quality of life in with diabetes mellitus. The results show that depression is significantly linked to a lower quality of life among these individuals. Screening for and managing depression should be an integral part of comprehensive diabetes care for the elderly to enhance their overall well-being.

Regional context

Priyanka Patel et al (2023) studied based on '*Predictors of Quality of Life among Geriatric Population of Anand District, Gujarat*', Improving the quality of

life (QOL) for the geriatric population is a crucial priority for healthcare and social services in Anand District, Gujarat. This study aims to identify the predictors of QOL among in the region. The findings suggest that higher QOL is associated with better physical health, mental health, stronger social support, and greater life satisfaction. Targeted interventions, such as enhanced healthcare services, mental health support, social support programs, and initiatives promoting life satisfaction, could significantly improve the QOL of the geriatric population in Anand District.

Vaishali Vasani et al (2022) '*A Study to Assess the Quality of Life among Elderly People Living in Old Age Home at Rajkot City*', this study aims to assess the quality of life (QOL) among residing in old age homes in Rajkot City. The findings indicate that in old age homes report lower levels of QOL compared to those living in the community. Contributing factors to this lower QOL include social isolation, a lack of meaningful activities, and various health problems. The study highlights the need for comprehensive care and support to improve the well-being of in old age homes, with a focus on enhancing social engagement and addressing their health needs.

The Relationship between Geriatric Care and Quality of Life of Elderly Persons Living with Diabetes

Comprehensive geriatric care, encompassing medical, psychological, and social support, plays a crucial role in managing diabetes and improving the quality of life (QOL) for . Effective care includes regular assessments, personalized treatment plans, self-management education, psychological support to address emotional challenges, and social support to reduce isolation. By addressing the holistic needs of , geriatric care enhances physical functioning, mental well-being, and social connections, which are key components for improving their overall QOL.

Geriatric Care: Global, National, and Regional Contexts

Geriatric care models vary globally due to differences in healthcare systems, cultural norms, and socioeconomic conditions. Developed countries typically offer integrated services supported by policies and adequate funding, while developing nations often face fragmented care with limited resources, relying more on family and community support. Regional differences reflect varying priorities, with emerging community-based and telemedicine models offering innovative solutions. Understanding these contextual differences is crucial for developing effective, culturally tailored interventions to improve the health and well-being of older adults.

Quality of Life of the Elderly: Global, National, and Regional Contexts

The quality of life (QOL) for the elderly is influenced by health, social support, economic status, and environment, with disparities driven by healthcare, policies, and societal norms. Developed countries focus on healthy aging and social inclusion, while developing nations face challenges like poverty and limited support, relying on family and community. Regional differences highlight varied socio-economic conditions, with some areas adopting innovative programs to improve QOL. Understanding these factors is key to creating targeted interventions for older adults' well-being.

Social Work Practice with the Elderly

Social work with the elderly focuses on enhancing well-being, independence, and social inclusion through services like needs assessments, care planning, and connecting older adults to community resources. Interventions include healthcare, long-term care, mental health, and social support. Social workers help navigate healthcare systems, support long-term care, address mental health, combat isolation, and advocate for policies promoting well-being. The growing elderly population in India, particularly in Gujarat, highlights the need for these services, especially amid challenges like limited healthcare access, economic dependence, and social isolation. Government and NGO efforts are crucial in improving elderly lives.

Exploring the Perspectives of Elderly in India

Understanding the experiences of in India, especially with their population reaching 138 million in 2021, is crucial due to the unique socio-economic challenges they face, such as changing family structures, financial insecurity, health issues, social isolation, and potential elder abuse. Despite these, they find strength in traditional values and close-knit social networks. Qualitative research can provide valuable insights to develop culturally sensitive interventions. With the growing elderly population in Gujarat, it is essential to create effective, inclusive geriatric care strategies.

Population Ageing Dynamics

Population aging is a global trend, driven by lower fertility rates, higher life expectancy, and improved healthcare. This demographic shift impacts society, particularly in healthcare, social security, and the workforce. Healthcare systems must expand geriatric care, while social security programs may struggle to support more retirees. Labor markets could face skilled worker shortages as older adults

retire. Addressing these challenges requires comprehensive policies, including promoting healthy aging, strengthening social security systems, and fostering intergenerational cooperation.

Research Gap

Despite the growing elderly population in India and the increasing prevalence of diabetes among them, there remains a significant lack of studies addressing the intersection of geriatric care and diabetes from a social work perspective. The following gaps have been identified:

1. There is no study conducted on geriatric diabetes and quality of life in Gujarat and there is a rare study in the context of India.
2. Since India is a developing country, the quality of life of the geriatric diabetes may differ from those developed countries. Therefore, the study attempt to explore the quality of life of the geriatric diabetes in Gujarat.
3. There is a lack of special geriatric clinics where they could be comprehensively assessed and rehabilitated. The aids such as physiotherapy, psychological support, and constant medical help are not available in general.
4. There is no availability of home health care programs specifically for geriatric diabetes patients.

Statement of Problem

India's growing elderly population faces significant challenges, especially with chronic diseases like diabetes, which leads to increased morbidity and a reduced quality of life. In Gujarat, limited geriatric care and support systems worsen these issues. Despite the need, the role of gerontological social work in improving life for elderly diabetics is underexplored.

Care approaches for the elderly often overlook their diverse experiences, relying on one-size-fits-all solutions, which are exacerbated by poor attitudes, short-sighted planning, and inadequate policies. Addressing these gaps requires incorporating elders' voices into care strategies to combat stigma and empower them.

Sustainable elder care calls for a shift from institutionalization to community- and family-based models, particularly in rural areas. In urban areas, where family systems are weakening, localized and tailored care strategies are essential. This study aims to explore the psycho-social, economic, cultural, and spiritual dimensions of elderly diabetics in Gujarat, proposing evidence-based recommendations and contributing to improved geriatric care policies.

Objectives of the Study

This research aims to explore the challenges faced by elderly populations with diabetes in urban cities of Rajkot, Junagadh, and Jamnagar in Gujarat. The study seeks to identify their unique needs, barriers, and health outcomes, and propose targeted solutions to enhance their quality of life and healthcare support.

The following study objectives constitute the core of this research which are as follow

1. The purpose of this study is to study and understand the demographic profiles and dependency status of elderly persons living with diabetes in the Rajkot, Junagadh, and Jamnagar cities of Gujarat in India.
2. To explore the family support, institutional care, and services available for elderly persons living with diabetes, as well as the significance of social work services for the elderly.
3. To assess and understand the quality of life of elderly persons living with diabetes and to investigate the relationship between geriatric care, geriatric social work care, and quality of life.
4. To identify the challenges and co-evolve solutions from gerontological perspectives to mitigate the challenges experienced by the elderly persons living with diabetes and to improve the quality of care for elders.

Hypotheses

1. There is a relationship between geriatric care and quality of life of the elderly persons living with diabetes (BMC Geriatrics or *The Gerontologist*)
2. The better the socio-economic conditions, the better it resulted in the quality of life of the persons living with diabetes (Borhaninejad et al.,2016 Sharifirad et al.,2016)
3. Relationship between Family Engagement and Quality of Life of Elderly (Better Socio-Economic Conditions Result in Better Quality of Life (Evandrou M et al .,2004, Glaser K et al., 2004)
4. Elderly Friendly Institutional Care Services and QOL (*Rautavuori et al. 2016, Rijnaard et al. 2016*)

Conceptual Framework

This study's conceptual framework combines the Health Belief Model, Social Cognitive Theory, and Life Course Perspective to explore geriatric care and quality of life among Elderly Persons Living with diabetes.

Health Belief Model: This model helps explain how beliefs about health risks and benefits affect health behaviors. It examines how perceptions of diabetes complications and care barriers influence ' management of diabetes and use of geriatric services.

Social Cognitive Theory: Focuses on the role of self-efficacy, observational learning, and social support in shaping health behaviors. It highlights how confidence in managing diabetes, observing others' success, and social support influence engagement in self-care and overall quality of life.

Life Course Perspective: Emphasizes the impact of past life experiences, chronic stress, and cumulative advantages or disadvantages on ' vulnerability to diabetes complications and access to resources.

Operational Definitions:

Geriatric Care: A range of medical and social services tailored to the unique healthcare needs of older adults, including assessments, chronic disease management, and psychosocial support.

Quality of Life: An individual's perception of well-being across physical, psychological, social, and environmental factors, measured using instruments like WHOQOL-BREF and the Diabetes Quality of Life scale.

Elderly Persons Living with Diabetes: Individuals aged 60 and older diagnosed with diabetes (type 1 or type 2).

Social Support: Emotional, informational, and practical help from family, friends, and communities, assessed using scales like the Social Support Appraisals Scale.

Socio-Economic Status: An individual's social standing, determined by factors such as income, education, and occupation, assessed using tools like the Kuppuswamy Socioeconomic Status Scale.

These definitions guide the research by ensuring consistency and clarity in data collection, ultimately aiding the analysis of factors affecting geriatric care utilization, diabetes management, and quality of life.

METHODOLOGY

The structured research approach used to study the quality of life among living with diabetes. It emphasizes the importance of adopting a systematic and objective methodology to ensure valid and reliable findings. Key components include the study area, research design, sampling methods, data sources, tools for data collection, and procedures for ensuring reliability and validity. The chapter also covers pre-testing, pilot study, data analysis techniques, operational definitions, and study limitations. Overall, it establishes the methodological foundation necessary to achieve the research objectives effectively.

The setting: Profile of the study area

This section describes the setting and profile of the present study. It elaborates on the profiles of the state of Gujarat and its urban cities such Rajkot, Junagadh and Jamnagar that were chosen purposively for the study.

The state of Gujarat

Gujarat is located on the country's western coast of the Arabian Sea. It comprised of Kathiawar Peninsula (Saurashtra) as well as the surrounding area on the mainland. It occupies 6% of the land area and constitutes about 4.99% of the total population of India. The literacy rate in Gujarat has seen upward trend and is 79.31% as per 2011 population census (Government of India, Census 2011). The state is bounded primarily by Pakistan to the northwest and by the Indian states of Rajasthan to the north, Madhya Pradesh to the east, and Maharashtra to the southeast. Gujarat also shares a small segment of its southeastern border with the Indian union territory of Dadra and Nagar Haveli, and, together with the Arabian Sea, it surrounds the territory of Daman and Diu. The coastline of Gujarat is 992 miles (1,596 km) long, and no part of the state is more than 100 miles (160 km) from the sea (Government of India, 2011). The capital of Gujarat is Gandhinagar, on the outskirts of the north-central city of Ahmadabad, the former capital, the largest city in the state, and one of the most-important textile and business centres in India. It is also popular for diamond polishing and trading.

The state of Gujarat has a population of 60,439, 692 with 31,491,260 males and 28,948,432 females. Gujarat is positioned 6th in India with a geographical spread of 196,024 KM. The density of population is 308 persons per square miles, which is

lower than other Indian states. The sex ratio was 918 females for every 1000 males. The sex ratio is one of the lowest ranked (24) among the 29 states of India. In terms of religion, the Hindus constituted 88.57%, Muslims accounted for 9.67% and the remaining 1.76% are Christians, Sikhs and other religious groups. As per 2011 census, 26% of the total population belongs to general category, 6.44% scheduled caste (SC) population, and 14.75% Scheduled tribe (ST) population and another 40% of the population belongs to Other Backward Castes (OBC) (Registrar General & Census Commissioner, Ministry of Home Affairs, Government of India 2011).

The economic position of Gujarat shows that it is the third largest state with a stated Domestic Products of 23.03 lakh Crores (USD 288,73 billion) in 2021-22. People living below the poverty line (BPL) recorded for 16.6%, which is less than the all-India average (20%) in 2020 (Ministry of Statistics and Programme Implementation 2021, NITI Aayog 2020). In addition, 13% were female-headed household as given in NFHS-5 (2020-21)....

Landscape of Gujarat cities

Gujarat, a state capital in India, is home to a rich cultural heritage reflected in its arts, music, literature, religious traditions, cuisine, fairs, and festivals. Gujarat's major cities include Ahmedabad, Surat, Baroda, and Rajkot, each offering a blend of tradition, history, architecture, culture, and philosophy. Gujarat's principal language is Gujarati, but it encompasses many languages and dialects across its regions, castes, and traditions. The social life in Gujarat is diverse, with various languages, customs, festivals, celebrations, costumes, food habits, and dwellings. The Gujarati are hardworking and humble, have expanded their economy and business ventures globally. Gujarat's lifestyles vary across the region, with fairs and festivals showcasing enthusiasm, entertainment, and spirituality. The Navratri celebration is a global event, with dance forms influenced by unique styles in different cities (India Tourism Board, Ministry of Tourism 2021-2022).

Gujarat, known as 'The Urbanized State of India' is set to see more people living in cities than villages for the first time in history. With a per capita GDP almost twice the national average, Gujarat has the fastest-growing economy in the country. However, rapid urbanization and industrialization have negatively impacted the quality of life and the environment. Inconsistent regulatory measures have led to poor air and water quality, inadequate wastewater management, intermittent energy supplies, and degradation of ecosystems and habitats. The rapid expansion of

electricity generation, mainly using coal, has increased greenhouse gas emissions, contributing to localized pollution and climate change. The state government is proactive in promoting renewable energy projects and has announced a comprehensive solar energy policy in 2009. A holistic approach to sustainability is essential, integrating person's solutions into master planning to improve urban life quality and reduce ecological footprint (NITI Aayog 2020, Ministry of Environment and Forests 2021).

The Study area

The study was conducted in three urban cities of Gujarat from Rajkot, Junagadh and Jamnagar with their urban wards only.

Rajkot city

Rajkot district, located in the Saurashtra region of Gujarat, is one of the state's 33 districts, with Rajkot city as its administrative headquarters. Bordered by several districts including Morbi, Junagadh, and Jamnagar, it spans 11,203 square kilometers and features a hot semi-arid climate with an average annual rainfall of 592 mm. Major rivers include the Bhadar, Aji, Machhu, and Demai. As per the 2011 census, the population is around 3.8 million, with a literacy rate of 82.2% and a sex ratio of 924 females per 1,000 males. Gujarati is the predominant language. The district comprises 11 to 14 talukas, 23 towns, and 835 villages. Economically, Rajkot is known for its textile industry, especially cotton and woolen fabrics, along with handicrafts and bandhni. Culturally, it is significant for the Gandhian Non-Violence movement and the Tarnetar fair. The district has robust educational and transport infrastructure, with several institutions and connectivity by air, rail, and road.

Junagadh city

Junagadh is a major city and district headquarters in Gujarat, located at the base of the Girnar hills, about 355 km southwest of Ahmedabad and Gandhinagar. It became part of Gujarat in 1960 following the Maha Gujarat Movement. As per the 2011 Census, Junagadh municipality had a population of 319,462 with a sex ratio of 955 females per 1,000 males. The literacy rate was 92.46% for males and 83.38% for females. Urban slums made up 7.87% of the population, covering 14.5% of the municipal area. The broader district had a population of over 2.7 million, with 326,789 living in urban areas. Elderly citizens (60+) numbered 28,283, with more females than males. Children aged 0–6 totaled 40,950. The overall literacy rate was high, with lower rates among the elderly. Maps of the district and city highlight

Junagadh's location, administrative talukas, and division into 19 municipal wards.

Jamnagar city

Jamnagar, formerly known as Nawanagar, is a historic city located on the western coast of Gujarat, India, near the Gulf of Kutch. Established in 1540 AD by Jam Rawal, it serves as the administrative headquarters of Jamnagar district. The city is an industrial hub, known for its oil refineries, brass parts manufacturing, and traditional bandhani textiles. It also hosts a major Indian Navy base. As per the 2011 Census, Jamnagar city had a population of 479,920, with a sex ratio of 914 females per 1,000 males and a literacy rate of 83.95%. The city spans an area of 138.15 sq km and is divided into 15 municipal wards. Including outgrowths, the urban population totals around 600,943. Demographic data shows a total population of 2,160,404, with 52.4% males and 47.59% females. The elderly population (60+) is 115,027, while the child population (0–6) is 67,909. Literacy is high, with 91.52% for those under 60 and 86.07% for those over 60. The average literacy rate is 81.13% for males and 67.07% for females. The overall sex ratio is 937, and the child sex ratio is 885.

Research Design

A research design is the framework of research methods and techniques chosen by a researcher to conduct a study. It is a blueprint that allows the researcher to have control over different factors that can affect the outcome of the research (William, 2007). The design essentially addresses the research question: what evidence is needed to answer the question adequately and to provide a credible and valid answer (De Vaus, 2001). The current research is designed to assess geriatric care and quality of life among elderly persons living with diabetes in selected cities of Gujarat. The study adopted a cross-sectional research design using both qualitative and quantitative methods. The Cross sectional study design is one type of observational study design. In a cross-sectional study, the investigator measures the outcome and the exposures in the study participants at the same time. A cross-sectional study is like taking a snapshot of a population at a single point in time. Researchers collect data on a population of interest at one specific time. The goal is to describe the characteristics of the population or to investigate associations between variables (Sedgwick, 2014). As such, the researcher takes interest on geriatric care and its effect on quality of life of elderly population.

The major advantage of a cross-sectional study is that it is relatively quick

and inexpensive to conduct. It is also useful for generating hypotheses for future research. However, cross-sectional studies cannot be used to determine cause-and-effect relationships. This is because the exposure and outcome are measured at the same time, so it is not possible to determine which came first. In this study, the researcher has collected the data on socio-demographic status, geriatric care and quality of life among elderly population living with diabetes.

Research approach

Research approach is a plan and procedure that consists of steps of broad assumptions to detailed methods of data collection, analysis and interpretation (Creswell, 2003). The selection of a research approach is based on the nature of the research problem or issue being addressed, the researchers' personal experiences and the audiences for the study (Creswell, 2003). This study used mixed research approach.

A mixed method research is a procedure for collecting, analyzing and mixing both quantitative and qualitative research methods in a single study to understand a research problem. In this study both qualitative and quantitative data collection method were adopted. The quantitative data were used to understand and correlate the geriatric care and quality of life among elderly population, while the qualitative data were used to get insight in to experiences of elderly population in geriatric care and its impact on their quality of life. In addition, the concurrent design was used in the present study.

In a concurrent design, the qualitative and quantitative data are collected at the same time. Then the data are analyzed separately, and the results are integrated during the interpretation phase of the study.

Population of the study

In research, a population is a group of individuals, objects, or events that share one or more common characteristics and are of interest to the researcher. It is the entire pool from which a sample will be drawn. The characteristics that define the population depend on the specific research question or objective (Ravid, 2005). The study population for this research will comprise of elderly population living with diabetes in Rajkot, Junagadh and Jamnagar of Gujarat state.

Sample Size and Sampling Technique

In statistics, a sample is a subset of a population that is selected for study. It is used to represent the entire population in research. Sample size is the number of

individuals, objects, or events included in a sample. It is an important factor that influences the statistical power of a study and the precision of its estimates (Bernard, 2002). The larger the sample size, the more likely the sample is to be representative of the population and the more precise the estimates will be. The sample size for this study was estimated to be 360 elderly people living with diabetes. The sample was drawn from three cities that are 120 samples from each city. The qualitative data was collected from 10 participants from each city; the data were collected until saturation was reached.

A sampling technique is a method used to select a sample from a population. There are many different sampling techniques, each with its own advantages and disadvantages (Patton, 2002). The choice of sampling technique depends on the research question, the characteristics of the population, and the resources available. The samples were selected using purposive sampling and Snow Ball sampling method.

Sources of Data

The sources of data include both primary data and secondary data to assess geriatric care and quality of life among elderly persons living with diabetes.

Primary Data: Data gathered directly from living with diabetes through interviews and questionnaires. This includes information on socio-demographic characteristics, geriatric care services received, challenges faced, coping strategies, and quality of life assessments.

Secondary Data: Information obtained from existing records, reports, and publications. Sources include: Medical records from hospitals and clinics, Reports from government health agencies, Published research articles and literature reviews Statistical data from census and other surveys Both primary and secondary data sources will be used to provide a comprehensive and in-depth understanding of geriatric care and quality of life among elderly persons living with diabetes, ensuring the validity and reliability of research findings.

Pilot Study

A pilot study is a small-scale preliminary study conducted to evaluate the feasibility, reliability, and validity of a research design, data collection methods, and study instruments before launching a larger-scale study. It helps researchers identify potential problems and refine their research approach to ensure a successful and efficient study (Polit & Beck, 2017).

For the current study, a pilot study will be conducted with a small sample of elderly persons living with diabetes in Rajkot, Junagadh and Jamnagar of Gujarat state. The objectives of the pilot study are:

1. To assess the feasibility of recruiting elderly persons living with diabetes in the study.
2. To evaluate the clarity, comprehensibility, and acceptability of the study instruments.
3. To test the reliability and validity of the study instruments.
4. To identify any potential problems or challenges in data collection and analysis.
5. To estimate the time required to complete the study instruments.

The pilot study will involve administering the study instruments to a small sample of elderly persons living with diabetes and collecting feedback on their experiences. The data collected during the pilot study will be analyzed to assess the reliability and validity of the study instruments and to identify any potential problems or challenges in data collection and analysis. Based on the findings of the pilot study, the research design, data collection methods, and study instruments will be revised and refined as necessary before launching the larger-scale study.

Pre-Testing

Pre-testing involves administering a questionnaire to a small group of individuals to identify any problems with the questionnaire's wording, format, or content (De Vaus, 2014). It helps researchers refine their questionnaires to ensure that they are clear, concise, and easy to understand.

Pre-testing will be conducted with a small sample of elderly persons living with diabetes in Rajkot, Junagadh and Jamnagar of Gujarat state. The objectives of pre-testing are:

1. To assess the clarity and comprehensibility of the questionnaire items.
2. To identify any ambiguous, confusing, or biased questions.
3. To evaluate the format and layout of the questionnaire.
4. To estimate the time required to complete the questionnaire.

During pre-testing, participants will be asked to complete the questionnaire and provide feedback on their experiences. The researcher will observe participants as they complete the questionnaire and ask them questions about any difficulties they encounter. Based on the feedback received, the questionnaire will be revised and

refined as necessary.

Tools of Data Collection

In order to collect data from the respondents, a structured questionnaire will be used in order to get the views of elderly people living with diabetes. The tool consists of four sections, which as follows.

Socio-demographic Schedule This section includes questions that elicit information on the socio-demographic characteristics of the elderly people living with diabetes, such as age, gender, marital status, education, occupation, income, type of family, religion, and caste.

Geriatric care Scale This section is designed to assess the geriatric care services received by the elderly people living with diabetes. It includes questions on access to healthcare services, utilization of geriatric care services, satisfaction with geriatric care services, and barriers to accessing geriatric care services.

Quality of Life Scale This section aims to measure the quality of life of the elderly people living with diabetes. It includes questions on physical health, psychological well-being, social relationships, and environmental factors.

Interview Schedule This section is designed to collect qualitative data on the experiences of elderly people living with diabetes in accessing and utilizing geriatric care services. It includes open-ended questions on their perceptions of geriatric care, their challenges in accessing geriatric care services, their coping strategies, and their suggestions for improving geriatric care services.

Reliability and Validity of Tool

Reliability refers to the consistency and stability of measurement, while validity refers to the accuracy and truthfulness of measurement (Bryman, 2012). To ensure the reliability and validity of the study instruments, the following measures will be taken:

The study instruments will be developed based on a thorough review of the literature and validated by experts in the field of geriatric care and diabetes.

The study instruments will be pre-tested with a small sample of elderly people living with diabetes to assess their clarity, comprehensibility, and acceptability.

The reliability of the study instruments will be assessed using test-retest reliability, internal consistency reliability, and inter-rater reliability.

The validity of the study instruments will be assessed using content validity, criterion validity, and construct validity.

Justification for the Tool

The choice of tools for data collection is guided by the study's objectives and research questions. The selected instruments provide a comprehensive assessment of geriatric care and quality of life among elderly persons living with diabetes. A structured questionnaire ensures standardization and comparability of data across participants, while a geriatric care scale assesses the specific services received by the elderly. The quality of life scale measures overall well-being, and an interview schedule provides qualitative insights into their experiences and perceptions. Using both quantitative and qualitative methods allows for a more nuanced understanding of the study's complex issues. The instruments are designed to capture relevant data efficiently and effectively, ensuring the validity and reliability of the findings, and were developed based on literature and expert validation.

Data Processing and Analysis

The collected data will be processed and analyzed using both quantitative and qualitative methods.

Quantitative Data Analysis:

Data will be coded and entered into a statistical software package (e.g., SPSS).

Descriptive statistics (e.g., means, standard deviations, frequencies, percentages) will be used to summarize the characteristics of the sample and the study variables.

Inferential statistics (e.g., t-tests, ANOVA, correlation, regression) will be used to examine the relationships between the study variables and to test the study hypotheses.

Qualitative Data Analysis:

Interview transcripts will be transcribed verbatim.

Thematic analysis will be used to identify recurring themes and patterns in the qualitative data.

The qualitative data will be analyzed in conjunction with the quantitative data to provide a more comprehensive understanding of the study findings.

Ethical Considerations

Ethical considerations are paramount in research involving human subjects to protect their rights and well-being. This study will adhere to the following ethical principles. Before data collection, informed consent will be obtained from each participant, ensuring they understand the purpose, procedures, and potential risks and benefits of the study. Participants will be informed that their participation is

voluntary and that they have the right to withdraw at any time without penalty. Confidentiality will be maintained by using anonymous coding systems and storing data securely. The study protocol will be reviewed and approved by an Institutional Ethics Committee (IEC) to ensure compliance with ethical standards and guidelines. Throughout the research process, respect, beneficence, and justice will guide all interactions with participants.

Operational Definition

Geriatric Care: In this study, geriatric care is defined as a specialized healthcare approach focused on the unique needs of with diabetes. It includes comprehensive assessment, medical management, lifestyle counseling, and psychosocial support provided by healthcare professionals.

Quality of Life: Quality of life is defined as the subjective perception of well-being, encompassing physical, psychological, social, and environmental dimensions. It is measured using validated instruments such as the WHOQOL-BREF questionnaire.

Elderly Persons Living with Diabetes: This refers to individuals aged 60 years or older who have been diagnosed with diabetes mellitus, as confirmed by medical records or self-report.

Socio-Demographic Factors: These include age, gender, education, marital status, occupation, income, and family structure, which are collected through structured questionnaires to characterize the study population.

Purposive Sampling: This is a non-probability sampling technique where participants are selected based on specific criteria, such as being elderly, living with diabetes, and residing in the selected cities of Gujarat.

Snowball Sampling: This method involves initial participants referring other potential participants who meet the study criteria, expanding the sample through referrals.

Limitations of the Study

The study acknowledges key limitations, including its cross-sectional design, which restricts causal inferences, and a geographically limited sample from Gujarat that may affect generalizability. Self-reported data may be influenced by recall or social desirability bias, and some relevant factors like personal or cultural influences may not be fully captured.

Additionally, the study uses a comprehensive framework to assess quality of life, encompassing multiple domains:

1. Physical Health (e.g., sleep, rest, work capacity)

2. Psychological Well-being (e.g., self-esteem, cognitive function, emotions, spirituality)

3. Social Relationships (e.g., social support, personal relationships)

4. Environmental Factors (e.g., financial resources, healthcare access, safety, transport, and living conditions)

This multidimensional approach provides a holistic understanding of the quality of life in living with diabetes.

Data Processing and Analysis

Statistical analysis is part of this study and therefore, partial focus is on quantitative techniques. The WHO-Bref version of Questionnaire, which is a quantitative measurement of quality of life. Similarly, the primary data collected is aggregated to know the quantitative values. The quantitative data were processed through MS Excel and analyzed with the help of Statistical Package of Social Sciences (SPSS) software. In addition, qualitative data were freely listed and analyzed thematically. The statistical expression of simple averages, percentages, and proportions, chi-square test Karl Pearsons's correlation coefficient, and t-test were used to draw findings.

Operational Definitions

The major concepts used in the study include

Geriatrics

The term "geriatrics" was introduced by Dr. Ignatz Leo Nascher in 1909, defining it as a specialty focusing on aging-related diseases. In 1914, his book 'Geriatrics: The Diseases of Old Age and Their Treatment' laid the foundation for geriatric medicine. Traditionally, 65+ years defines "geriatric," but aging varies individually. A comprehensive definition includes chronic conditions, functional decline, and vulnerability to health stressors. Geriatrics emphasizes multidisciplinary care to optimize function, quality of life, and independence. More than age, health status and functional needs determine geriatric care (Stuck & Masud, 2022, Oxford University Press).

Geriatric Care

Geriatric is relating to old people, especially with regard to their healthcare. Geriatric Care is a branch of medicine that deals with the problems and diseases of old age and the medical care and treatment of aging people. Geriatric care is a

specialized healthcare field that focuses on the unique needs of older adults, addressing their physical, mental, and social well-being with a goal is to enhance the quality of life for older adults by managing chronic conditions, preventing and treating age-related diseases, promoting healthy aging, and providing a safe and supportive environment.

Thus, the study operationally defines geriatric care as a specialized healthcare tailored to the needs of elderly persons 65 years and above. As people age, they often encounter unique health challenges that require specific attention and support. Geriatric care focuses on promoting wellness, preventing disease, and managing chronic conditions in older adults and to enhance quality of life of elderly (WHO's Global Strategy and Action Plan on Ageing and Health 2016).

Quality of life

Quality of life (QoL) is a concept, which aims to capture the well-being, whether of a population or persons, regarding both positive and negative elements within the entirety of their existence at a specific point in time.

Quality of life as defined by the World Health Organization is a state of complete physical, mental, and social well-being, and not merely the absence of disease. However, Price described quality of life as the impact of an illness and its treatment on disability and daily living. The World Health Organization (WHO) defines quality of life (QOL) as an persons's perception of their position in life in relation to their goals, expectations, standards, and concerns. Therefore, the QOL of elderly people with diabetes can be improved through proper treatment and regular blood glucose monitoring, diabetic-related stress evaluation and discussion, and lifestyle interventions such as exercise (WHOQOL-BREF 1996).
Elderly

The definition of an older person varies by country and organization, but the United Nations and the National Institute on Aging generally define an older person as someone who is 65 or older. The United Nations as a person who is over 60 years of age defines an older person. However, families and communities often use other socio-cultural referents to define age, including family status (grandparents), physical appearance, or age-related health conditions.

In India, the term 'elderly' or 'senior citizen' refers to a person who is a citizen of India and is at least 60 years old. The National Elderly Policy defines person of 60+ age group as elderly. The elderly are often classified into groups based

on age, with the most common classifications is:

Young-old: 65–74 years old

Middle-old: 75–84 years old

Oldest-old: 85 years and older

Therefore, the study operationally defined an elderly person as a person who is 60 years and above also known as older person (India's National Elderly Policy 2011, United Nations 2011).

Care Giving

The etymology of caregiving defined by the Oxford English Dictionary (2010) is as characterized by attention to the needs of others, especially those unable to look after themselves adequately; professionally involved in the provision of health or social care; attention to the needs of a child, elderly person, invalid, etc. The Merriam Webster dictionary (2010) defines caregiving as “a person who provides direct care, as for children, elderly people, or the chronically ill”. Drentea (2007) refers to caregiving as “the act of providing unpaid assistance and support to family members or acquaintances who have physical, psychological or developmental needs”. Pearlin, Mullan, Semple, and Skaff (1990) defined caregiving as the “behavioral expression of (one’s) commitment to the well-being or protection of another person” (p. 583). The process of caregiving was originally proposed by Bowers (1987) and includes five categories of roles that provide meaning or purpose for the caregiver: anticipatory, preventive, supervisory, instrumental and protective. Therefore, the present study conceptualized care giving to an elderly living with diabetes as family caregivers, professional caregivers, volunteer caregivers, agency caregivers and hospice and or old age home care givers.

Diabetes

Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Insulin is a hormone that regulates blood glucose when there is too much glucose in the blood, it can damage the body's systems, including the eyes, kidneys, nerves, heart, and blood vessels.

There are several types of diabetes, including:

1.Type 1 diabetes: The body doesn't produce insulin,

2.Type 2 diabetes: The body doesn't produce or use insulin well,

3. Gestational diabetes: A type of diabetes that can occur during pregnancy, A lack

of insulin or cell inability to respond results in high blood glucose levels, a clinical indicator of diabetes. Diabetes can lead to acute (sudden and severe) and long-term complications — mainly due to extreme or prolonged high blood sugar levels. (WHO & IDF Diabetes Atlas 2019)

Elderly living with Diabetes

Person living with diabetes clinically diagnosed as Diabetic either Type 1 or Type 2 through medical and clinical intervention by performing some laboratory tests screening in health care setting. Diabetes is a group of metabolic disorders characterized by the absence of treatment and hyperglycemia. Diabetes mellitus is a metabolic disease causing high blood sugar levels due to the body's inability to produce enough insulin or effectively use it. Untreated high blood sugar can damage organs like nerves, eyes, and kidneys. Long-term diabetes complications include coronary artery disease, heart attack, stroke, and atherosclerosis. Diabetes management involves several strategies, including blood sugar monitoring, oral diabetes medications, injectable insulin, a healthy diet, and regular exercise.. Diabetes diagnosis is a life-changing event, but managing it requires consistent care and diligence. Pre-diabetes persons should receive education on intensive lifestyle modification to delay or prevent their progression to diabetes at primordial, primary, secondary, and tertiary levels (ICMR 2018, American Diabetes Association 2023).

Gerontological Social Work and Gerontological Social Workers

Gerontological social work, also known as geriatric social work, is a field of social work that focuses on helping older adults meet their needs and live full lives: Gerontological social workers help older adults promote their independence, dignity, and autonomy. They also help shift negative perceptions of older adults and encourage public support for resources. Gerontological social workers work with a variety of medical professionals, such as psychiatrists, psychologists, and nurses. They assess older adults' needs and functional capacity, and help them identify resources, services, and benefits. They also provide mental health counseling and help older adults and their families navigate changes in health and functional status (National Association of Social Workers 2021, Minkler, M., & Estes, C. L. 2016, Berkman, B. 2006).

Transgender

Transgender refers to persons whose gender identity a personal, deeply felt sense of being male, female, or another gender does not align with the sex assigned

to them at birth. In research or clinical settings, transgender status can be identified based on explicit criteria, Transgender refers to persons whose gender identity their internal sense of being male, female, or another gender differs from the sex they were assigned at birth. This identity can manifest in various ways, including changes in name, pronouns, clothing, physical appearance, or medical interventions. In a research or clinical context, transgender persons are typically identified based on self-reported gender identity that does not align with their birth-assigned sex (WHO ICD-11, American Psychological Association 2015).

Limitations of the Study

Research involving elderly diabetes patients in rural areas poses significant logistical, cultural, ethical, and methodological challenges. Geographic isolation and limited healthcare access hinder disease monitoring and reduce data quality. Many rural clinics lack diagnostic tools, and irregular access to care complicates treatment evaluation. Cultural barriers such as low health literacy, traditional beliefs, and language differences further obstruct communication and informed consent, especially among those with cognitive impairments or limited literacy.

Privacy concerns are amplified in close-knit rural communities, and the elderly are particularly vulnerable due to age-related decline. Ethical safeguards are essential to protect participants and ensure informed participation. Recruiting and retaining participants is difficult due to small, diverse population pools. Technological limitations, including poor internet connectivity, make digital data collection and remote monitoring challenging.

Additionally, the rural healthcare system often suffers from staff shortages and fragmented services, impacting diabetes care. Psychosocial issues like isolation, depression, and caregiver burden must also be considered. Financial constraints, including lower income and lack of insurance, affect participation and outcomes. To address these challenges, researchers should collaborate with local healthcare providers, use mobile clinics and telemedicine, and employ culturally competent staff. Tailored educational efforts and strong ethical protocols are essential to conducting effective and respectful research in these settings.

FINDINGS AND DISCUSSIONS

The comprehensive study on the quality of life (QoL) among living with diabetes. It highlights how demographic factors such as age, family support, economic dependency, and living arrangements affect their physical, psychological, social, and environmental well-being, particularly in rural settings. The study underscores the importance of integrated care models that go beyond medical needs to address emotional, social, and community support. Based on empirical evidence, it establishes a direct two-way link between geriatric care and QoL, offering policy recommendations such as specialized care centers, enhanced healthcare infrastructure, and financial support. The chapter also emphasizes the need for further research on personalized care and technological interventions, framed through the lens of social work practice.

Answering the Research Questions: Key Findings

1. Demographic Determinants of Quality of Life

This study reveals that demographic factors significantly shape the quality of life of elderly persons living with diabetes. The average age of participants was 66.7 years, with findings indicating that the need for family and social support increases with age. The gender composition included 49% males, 48% females, and 3% transgender, reflecting a relatively balanced and inclusive sample. The distribution across religious affiliations—82% Hindus, 9% Muslims, and others in smaller percentages—suggested that diabetes impacts regardless of religious background.

Geographically, 43.4% of respondents were from Rajkot, 34.2% from Jamnagar, and 22.4% from Junagadh, confirming that the burden of aging and diabetes cuts across urban centers in Gujarat. Marital status emerged as a crucial determinant: 81.2% were married and fared better in health outcomes compared to the 9.8% single, 3% widowed, and 2.6% separated individuals who lacked familial support.

Regarding living arrangements, 51.6% stayed in their own homes, while others resided in old age homes (18%), nursing homes (6%), or other communal and institutional settings, indicating diverse living patterns. Educationally, 54.4% had passed high school, and only a small percentage (1.2%) held doctoral degrees, suggesting a varied literacy level that affects health awareness and care-seeking behavior. Employment data showed that 67.6% were unemployed and dependent on others, with 13.2% retired and only 4.6% engaged in active income generation.

Financial status was fragile—40% had no regular income, while most others earned below ₹1,00,000 annually. Collectively, these demographic findings underscore the multidimensional vulnerabilities faced by elderly diabetic individuals.

2. Health Determinants of Quality of Life

Health-related factors strongly influence the quality of life among elderly persons with diabetes. The average duration of diabetes among participants was 5.67 years, with a standard deviation of 5.58, indicating a considerable period of chronic illness for many. The majority (84%) were living with Type 2 diabetes, while 15% were in a pre-diabetic state, and 1% had Type 1 diabetes. This distribution implies a need for disease-specific care strategies.

Elders accessed healthcare from varied sources—20.2% used NGO hospitals, 13.8% went to Urban Public Health Centres (UPHCs), and others visited private hospitals, district civil hospitals, PHCs, and clinics. This highlights a reliance on a mixed healthcare system driven by availability, affordability, and proximity.

In terms of care received, 33.2% benefitted from palliative care, 30% focused on symptom management, and 24% relied on family support. A smaller group received life-limiting (9.8%) or end-of-life care (3%). Significantly, 62% were covered under the Rashtriya Swasthya Bima Yojana (RSBY), while 38% accessed basic medication support. Case studies revealed that early intervention and structured care improved glycemic control, while delays—especially in rural settings—led to severe complications like gangrene or heart disease. These findings reinforce the importance of accessible and long-term health planning for diabetic elders.

3. Economic and Financial Determinants of Quality of Life

Economic dependency was a critical concern for the elderly diabetic population. A striking 38.8% had no personal income, relying fully on others. An additional 21.4% received old age pensions, which offered some financial relief. Only 13.4% were still engaged in income-generating activities, and 6.4% benefitted from retirement funds like provident fund or gratuity. Some elders managed through interest from post office deposits (4.8%), savings (3.4%), or rental income (2.8%), though these were rare.

This financial landscape reflects the precarious economic status of the elderly, especially when dealing with a chronic illness. Case studies highlighted the direct effects of limited resources for instance, patients could not afford prescribed diets or specialized treatments for conditions like chronic kidney disease. These

findings call for need-based financial planning and targeted support schemes for elderly diabetic individuals to ensure continuity of care and dignity in old age.

4. Psycho-Social Determinants of Quality of Life

Psychosocial support emerged as a foundational component of elderly well-being. The study found that 38% of respondents were fully dependent on others, 36% partially dependent, and only 26% were financially independent. In terms of physical and emotional assistance, 37.4% received direct care from family members, and another 35% benefitted from financial help. Community support (e.g., from neighbors and local groups) was accessible to 20.2%, while 2.6% had minimal or no support and needed urgent attention.

Emotional wellbeing was reinforced by 32% receiving emotional care, 28% getting helpful information, and 21% gaining practical help in times of need. Alarming, 44% of the elderly had no access to professional social work support, while only 22% were regularly supported by trained personnel. The erosion of the joint family system and increased urbanization were identified as reasons behind the growing dependency on formal and institutional support systems.

Support categorization showed 63% relied on primary family support, 33% on secondary (community/government) support, and only 4% received tertiary (specialized or institutional) care. These figures emphasize the urgent need for strengthening family-oriented programs and expanding geriatric social work interventions in urban India.

5. Institutional Determinants of Quality of Life

The role of institutions—governmental, non-governmental, and private—was instrumental in supporting elderly persons with diabetes. However, service utilization varied. Only 24% of respondents received supervisory care, 18.4% daily living assistance, 13.2% social activity engagement, and 12.6% nursing care. Fewer accessed rehabilitation services (10%) or adaptive aids (8.6%).

Governmental benefits were accessed by many: 26.8% received pensions, 18% used free elderly healthcare services, and 14.4% held medical insurance. Still, 16.6% could not access any institutional benefit. NGO involvement was significant, with 43.2% of respondents benefitting from such organizations. 30.8% utilized structured welfare schemes, and 26% relied on personal charity.

In terms of instrumental support, 33% received devices or tools, 31.6% free medication, and 16.4% health-related information. These services, though helpful,

reached only a portion of those in need. The data suggests that institutional resources are valuable but must be scaled up, better coordinated, and more inclusive to truly impact elderly diabetic care.

6. Environmental and Physical Determinants of Quality of Life

A safe and conducive environment significantly enhances the life quality of elderly diabetic individuals. Yet, 26.2% of participants felt unsafe or insecure in their surroundings. Only 21.2% described their environment as healthy, while 18.4% reported unstructured or disorganized living conditions. A modest 17.2% had full safety measures, and 17% lived in well-maintained spaces such as their own homes or elder care facilities.

Spiritual and emotional security varied: 25.6% had mistrust, even towards family members; 21.4% expressed trust and faith in others. Only 19.4% were satisfied with the support they received. Meanwhile, 13.4% held strong spiritual beliefs, 13.2% engaged in meditative practices, and 7% were spiritually disengaged or distressed.

Environmental factors—pollution, lack of green spaces, poor infrastructure—especially in urban settings, were commonly cited issues. A case in Rajkot illustrated how yoga-based interventions and peaceful surroundings helped a diabetic elder manage neuropathy more effectively. These findings stress the need for secure, elder-friendly physical environments and spiritual well-being as complementary dimensions of diabetic care.

2 Geriatric Care and Quality of Life: An Empirical Analysis by the objectives

1. Understanding the Demographic Status of Elderly Persons Living with Diabetes

This study confirms that demographic variables significantly influence the quality of life among living with diabetes. Age emerged as a critical determinant, with respondents over the age of 80 reporting more health complications and a lower quality of life than those in their early 60s. A clear relationship was observed between ages, years of living with diabetes, and well-being. Gender-wise, both males and females experienced similar challenges, though males reportedly suffered more due to poor dietary habits and less health awareness.

Religion was found to have no major influence on the prevalence or experience of diabetes, with all religious groups equally affected. Urban respondents

across Rajkot, Jamnagar, and Junagadh cities similar patterns of aging-related difficulties. Marital status and living arrangements were also key. Married elders or those living with family were better cared for, while widowed, separated, and single individuals faced greater challenges. Only about half of the respondents were living with their families, while others resided in old age homes, nursing homes, senior care facilities, or hospital setups due to lack of family support. Educational levels showed a wide variation more than half had completed high school, fewer than one-fifth were graduates, and a very small percentage held postgraduate or doctoral degrees. Employment status further revealed that two-thirds of the respondents were unemployed and dependent, while others were retired or engaged in limited livelihood activities. These demographic factors age, marital status, gender, education, and place of living—had a direct and profound impact on the kind of care received and the overall quality of life of elderly persons with diabetes.

2. Challenges Faced by Elderly Persons Living with Diabetes

The study clearly identified that elderly persons living with diabetes face numerous interlinked challenges related to health, economy, and social dependency. Most respondents had lived with diabetes for an average of 5.67 years (standard deviation 5.58), with some suffering for as long as 48 years. Type 2 diabetes was the most common, affecting 84% of the respondents, while 15% were in a pre-diabetic stage, and only 1% had Type 1 diabetes. One of the most prominent challenges was economic insecurity. Approximately 38.8% of respondents had no personal income, rendering them fully dependent on family. Only 21.4% received old-age pensions, while 13.4% still earned from jobs. A minority had retirement benefits (6.4%), investments in post office schemes (4.8%), savings (3.4%), rental income (2.8%), or other minor income sources (2.2%). Social dependency was high—38% were fully dependent on others, and 36% were partially dependent. Only 26% of the respondents were financially independent. This means that nearly three-fourths of the elderly population studied relied on family, community, or government support to manage daily expenses, healthcare, and social needs. These challenges were intensified by the chronic and incurable nature of diabetes, making long-term care and consistent medical follow-up essential. Case studies highlighted how a lack of knowledge, delayed treatment, and limited access to specialists—such as in nephrology—compounded their suffering.

3. Mapping Family Support, Institutional Care, and Available Services

The third objective focused on the role of family and institutions in supporting elderly diabetic individuals. The findings indicated that 37.4% of elderly persons received full physical and care support from family members. Additionally, 35% received financial aid from family, showcasing the vital role of familial networks in geriatric care. Despite being urban residents, 20.2% also benefitted from community support, including help from neighbors and local social groups. However, support from formal institutions was minimal. Only 2.6% of the respondents received care from government or elderly welfare agencies. A mere 4.6% had access to any kind of coordinated services from families, communities, or public/private organizations, indicating that less than 5% had access to adequate, organized external support systems. Emotional and informational support was another key element. About 32% received emotional support from close relatives, while 28% were informed about healthcare options and government services by family. 21% of elders were helped practically during medical emergencies, and 19% received health-related advice or guidance for accessing external assistance. These findings show that while primary family support was present for more than half of the elderly population, a significant number still lacked structured care. Institutional care services—such as caregiver support, day-care centers, or professional geriatric help—remain largely unavailable or underutilized, despite the increasing burden of chronic diseases like diabetes.

4. Geriatric Care, Quality of Life, and the Relevance of the WHOQOL-BREF Questionnaire

The final objective evaluated the overall quality of life among elderly diabetic individuals using the WHOQOL-BREF tool. The analysis revealed alarmingly low scores across all domains, signifying significant challenges in health, emotional well-being, social connections, and environment.

Physical Domain: The analysis revealed a mean score of 48.71 with a standard deviation (SD) of 11.28, indicating considerable variation in responses within this domain. Notably, 59% of the respondents were found to have a poor quality of life (QoL) in this area. This domain primarily reflected issues related to pain, discomfort, and reduced mobility, underscoring the physical challenges faced by living with diabetes. These findings highlight the need for targeted interventions to address pain management and improve physical functionality in this population.

Psychological Domain: The findings in this domain show a mean score of 44.66 with a standard deviation (SD) of 11.22, indicating a substantial spread in psychological well-being among the respondents. Alarming, 74% reported poor psychological well-being, pointing to prevalent issues such as anxiety, stress, and depression among living with diabetes. These results emphasize the urgent need for integrating mental health support and counseling services into geriatric diabetes care to improve overall quality of life.

Social Relationship Domain: This domain recorded a mean score of 44.43 with a standard deviation (SD) of 17.42, reflecting notable variability in the social experiences of . A significant 72% were found to have poor social interaction quality, characterized by a lack of emotional intimacy, companionship, and an active social life. These findings underscore the critical need for community engagement programs, social support systems, and interventions that foster meaningful relationships to enhance the quality of life among the elderly living with diabetes.

Environmental Domain: This domain revealed a mean score of 51.48 with a standard deviation (SD) of 10.13, indicating moderate levels of variation in environmental satisfaction among respondents. Notably, 56% reported poor satisfaction with their environment, pointing to inadequate access to safe and secure housing, quality healthcare, and essential community resources. These findings highlight the urgent need to improve infrastructure and accessibility to enhance the living conditions and overall well-being of managing diabetes.

Overall Quality of Life Score: The overall quality of life (QoL) among living with diabetes showed a mean score of 47.32 with a standard deviation (SD) of 6.34, and a range between 28 and 75. This suggests a moderately wide variation in the quality of life experiences within the population studied. Alarming, 62% of the respondents were found to have poor overall QoL, underscoring the pressing need for comprehensive interventions targeting physical health, psychological well-being, social support, and environmental conditions to enhance their living standards and overall wellness.

These results clearly indicate that a majority of elderly persons with diabetes are experiencing a poor quality of life. The low scores across all domains call for immediate, multi-pronged interventions—ranging from physical healthcare to social work, psychological counseling, and environmental support. Improvements in healthcare infrastructure, community engagement programs, financial assistance, and

personalized care services are urgently needed to uplift the lives of elderly diabetics.

Relevance of WHOQOL-BREF in the Context of Gujarat

The WHOQOL-BREF questionnaire has proven to be a relevant and effective tool for assessing the quality of life among elderly persons living with diabetes in Gujarat. Its four core domains—physical, psychological, social relationships, and environment—accurately reflect the multi-dimensional aspects of elder well-being in the urban context of the state. The structure and categorization of the sub-domains within each of these areas are both practical and realistic, offering insights into the lived experiences of diabetic elders.

The scoring system, which ranges from 0 to 100, enables a clear interpretation of results, where scores below 50 indicate poor quality of life and scores above 50 represent good quality. This binary classification into “good” and “poor” makes the tool easily applicable and interpretable in the field. The cumulative score drawn from the four domains gives a comprehensive understanding of the individual's overall well-being.

Moreover, case studies from the research supported the effectiveness of WHOQOL-BREF. Elders who received well-rounded care—including dietary support, social engagement, and psychological counseling—demonstrated noticeably higher quality of life scores. These findings reinforce the utility of WHOQOL-BREF in guiding care policies and interventions for elderly persons living with diabetes in Gujarat.

Statistical Relationships between Geriatric Services and Quality of Life

The study investigated the empirical relationship between geriatric care services and the quality of life of elderly persons with diabetes. Using a combination of comparison, correlation, and binary logistic regression models, the study explored how different variables—such as family support, physical activity, and institutional services—influence overall well-being.

The findings established that geriatric services have a statistically significant impact on the quality of life across various domains. Individuals who had access to structured support, daily physical activity, safe living environments, and social worker services demonstrated significantly better outcomes in physical, psychological, social, and environmental aspects of life. These results emphasize the importance of holistic and multi-layered care models that extend beyond medical treatment to include emotional, environmental, and community-based support

systems.

Comparison of Geriatric Services and Quality of Life

Statistical comparisons highlighted meaningful relationships between key geriatric support systems and quality of life domains. Family support was found to be a critical factor influencing the physical ($\chi^2=22.701$; $P=.000$), psychological ($\chi^2=22.579$; $P=.000$), and overall quality of life ($\chi^2=24.302$; $P=.000$) of the elderly. A lack of direct family support corresponded with poor psychological well-being ($\chi^2=13.473$; $P=.009$), while indirect family support showed a significant impact on social relationships ($\chi^2=10.836$; $P=.01$).

Daily physical activities also had a strong association with multiple domains—physical ($\chi^2=17.307$; $P=.002$), psychological ($\chi^2=11.501$; $P=.02$), social ($\chi^2=9.909$; $P=.04$), and overall quality of life ($\chi^2=16.577$; $P=.002$). This demonstrates that regular movement and activity are fundamental to maintaining overall health.

Additionally, social worker support was significantly linked to the physical ($\chi^2=7.905$; $P=.01$), psychological ($\chi^2=6.050$; $P=.04$), and overall quality of life ($\chi^2=72.784$; $P=.000$). Community-based services were shown to enhance psychological health ($\chi^2=6.592$; $P=.03$), while a safe living environment significantly improved outcomes across physical ($\chi^2=11.700$; $P=.00$), psychological ($\chi^2=8.372$; $P=.03$), environmental ($\chi^2=9.779$; $P=.02$), and overall domains ($\chi^2=105.962$; $P=.000$).

Interestingly, spiritual and religious activities were also significantly related to psychological well-being ($\chi^2=10.689$; $P=.01$), while government services improved overall quality of life ($\chi^2=13.628$; $P=.01$). These findings affirm that a broad spectrum of physical, familial, social, and institutional supports are essential for improving the quality of life among elderly persons living with diabetes.

Correlation Results of Geriatric Services and Quality of Life

Correlation analysis further supported the interconnectedness of quality of life domains. The physical domain was significantly correlated with the psychological domain ($r = .001$), social relationships ($r = .010$), and overall quality of life ($r = .000$), indicating that physical well-being is closely tied to emotional and social health.

The psychological domain showed a strong positive correlation with both the environment domain ($r = .018$) and overall quality of life ($r = .000$), suggesting that mental health is strongly influenced by living conditions. Similarly, social relationships were positively correlated with overall quality of life ($r = .003$).

These findings confirm that improvements in one domain often result in better scores across others. The correlations validate that a comprehensive and integrated approach to geriatric care is essential for improving the well-being of with diabetes.

Binary Logistic Regression Results of Geriatric Services and Quality of Life

Binary logistic regression models were employed to determine which geriatric services most significantly influence each domain of quality of life. The analysis found the following:

Physical Domain: The logistic regression model used to predict poor quality of life (QoL) among elderly persons living with diabetes was found to be statistically significant ($\chi^2 = 42.62$, $p < 0.001$), indicating that the model reliably distinguishes between those with good and poor QoL. The model explained 11.0% of the variance in QoL outcomes (Nagelkerke R^2) and demonstrated a prediction accuracy of 62.4%. Key predictors of poor QoL identified in the analysis included lack of family support, poor physical activity, and an unsafe environment, emphasizing the importance of both psychosocial and environmental factors in geriatric diabetes care.

Psychological Domain: The logistic regression model assessing factors influencing poor quality of life (QoL) among living with diabetes showed statistical significance ($\chi^2 = 40.48$, $p < 0.001$), confirming the model's reliability. It explained 11.4% of the variance in QoL and achieved a prediction accuracy of 74.2%. The key predictors contributing to poor QoL were the absence of daily physical activities and a lack of social worker support, underscoring the vital role of regular physical engagement and professional social support in enhancing the well-being of elderly diabetic individuals.

Social Relationship Domain: The logistic regression model analyzing predictors of poor quality of life among with diabetes demonstrated statistical significance ($\chi^2 = 24.23$, $p < 0.001$), indicating a valid model. It explained 6.9% of the variance in quality of life and had a prediction accuracy of 72.4%. The key predictors identified were insufficient physical activity and limited support from social workers, emphasizing the importance of promoting active lifestyles and enhancing professional social support services to improve the quality of life in this population.

Environmental Domain: The logistic regression model focused on environmental factors affecting quality of life among with diabetes was statistically significant ($\chi^2 =$

9.93, $p < 0.01$). It explained 2.6% of the variance and had a prediction accuracy of 56.2%. The key predictor identified was an unsafe or unclean living environment, underscoring the critical role of basic living conditions in shaping the well-being and quality of life of . Improving environmental safety and cleanliness can serve as a foundational step in enhancing geriatric care outcomes

Overall Quality of Life: The final logistic regression model revealed significant insights into the factors influencing the quality of life among living with diabetes. With a chi-square value of 164.008 and a p-value of less than 0.001, the model was statistically significant, explaining 38.1% of the variance in quality of life. It demonstrated an overall prediction accuracy of 62.2%. The key predictors identified in the model included strong family support, regular daily physical activity, availability of social worker services, and safe, clean living environments. These findings underscore the multifaceted nature of quality of life and highlight the importance of holistic care approaches. Interventions that focus on strengthening family involvement, promoting physical activity, ensuring access to community-based support services, and improving living conditions can play a crucial role in enhancing the well-being of managing diabetes.

These results clearly illustrate that multiple forms of support—not just healthcare but also emotional, environmental, and social services—play a critical role in improving or diminishing the overall quality of life among the elderly diabetic population. Tailored, holistic interventions that include social work, community engagement, family reinforcement, and infrastructure improvement are essential for meaningful geriatric care.

Hypothesis 1: Relationship between Geriatric Care and Quality of Life

The first hypothesis proposed a direct relationship between geriatric care and the quality of life (QoL) among living with diabetes. Based on the findings from statistical tools including comparison analysis, correlation, and binary logistic regression, the study confirmed a strong connection between the availability of geriatric services and QoL outcomes. Specifically, the physical, psychological, and social domains of care showed a stronger association with QoL than the environmental domain.

The overall results indicated a poor quality of life among respondents across the three urban districts of Gujarat, which was largely attributed to a lack of comprehensive geriatric services. The study calls for an integrated care model that

combines physical, emotional, social, economic, and spiritual services to address the multifaceted needs of with diabetes.

Moreover, the presence of co-morbidities alongside diabetes further complicates the elderly's health conditions. Hence, a dual-focus strategy is necessary—targeting the population both as older adults and as individuals living with chronic illness. A holistic intervention model is recommended as the most effective means of achieving healthy aging in this vulnerable demographic.

Hypothesis 2: Impact of Socio-Economic Conditions on Quality of Life

The second hypothesis investigated the role of socio-economic status in determining the quality of life among elderly diabetic individuals. The data clearly revealed that only 35% of respondents had access to regular income support, highlighting the economic fragility of the remaining majority.

The study confirmed a direct relationship between economic conditions and quality of life— without income sources experienced a significantly lower QoL. Those with pensions or financial support from government, NGOs, or family enjoyed relatively more stability and well-being. This finding emphasizes the need for a multi-source economic support system, as a singular approach cannot address the wide range of financial challenges faced by this population.

The existence of economic safety nets, such as old-age pensions, gratuity, and non-monetary support, proved to be essential for economic cushioning. Thus, the hypothesis was validated: economic well-being plays a crucial role in determining the QoL of elderly persons living with diabetes.

Hypothesis 3: Relationship between Family Engagement and Quality of Life

The third hypothesis examined the link between family and community engagement and the quality of life of elderly diabetic individuals. Empirical evidence from the study affirmed this connection. A highly significant relationship was found between family support and overall quality of life ($\chi^2=24.302$; $P=.000^*$), proving that lack of family involvement leads to a decline in QoL.

Family and community structures serve as critical sources of emotional, physical, and practical care. Their absence often results in increased dependency and deteriorating mental health. While the study was conducted in urban areas, it interestingly showed that family-based care systems are still active and relevant. Strengthening these systems through community-based social interventions and policy support can substantially improve the QoL of elderly persons.

The findings confirm a two-way relationship—not only does family support improve QoL, but the presence of a healthy QoL reinforces stronger family bonds. Thus, the third hypothesis was conclusively validated.

Hypothesis 4: Impact of Elderly-Friendly Institutional Care on Quality of Life

The final hypothesis tested whether elderly-friendly institutional care affects the quality of life among elderly persons living with diabetes. The results were negative, revealing that many institutional care facilities failed to demonstrate age-appropriate, inclusive practices.

The poor quality of life among institutionalized elderly respondents highlighted the absence of elder-sensitive environments, especially within government-run facilities. This suggests a critical gap in policy and practice where elderly inclusiveness and care personalization are still lacking.

The study recommends a codified approach to age-friendly care that integrates comfort, dignity, and emotional support as standard practices within institutions. Such reforms are necessary to improve institutional care outcomes and align them with the broader goal of enhancing quality of life for .

All four hypotheses tested in the study were supported by empirical data. The variables—geriatric care, economic security, family/community support, and institutional care—are all positively and directly connected to the quality of life of living with diabetes. The findings strongly advocate for integrated, multidimensional strategies that target both health and social factors to improve aging outcomes in Gujarat’s urban elderly population.

Recommendations for Enhancing Quality of Life for Elderly Persons with Diabetes

Improving Physical and Health Domains

1. Develop long-term strategic plans at national, state, and local levels to address the needs of with diabetes, considering the increased longevity and lifespan.
2. Though diabetes is included as part of the Non-Communicable Disease (NCD) program, the existing services are not comprehensive enough to deal with the entire spectrum of diabetes.
3. Create a digital tracking system for elders as well as for diabetes patients to handle their problem holistically.
4. Improve targeted preventive education by identifying individuals with a

family history of diabetes and pre-diabetics.

5. As part of digital health, evolve a digital health system for elders living with diabetes, similar to the successful CoWin registration system.
6. Develop a personal health/elderly tracking system through smartphones, GPS, and an emergency alert button system, connecting family members/close relatives using a geo-fencing system.
7. Evolve telehealth services customized to the needs of elderly persons in general and those living with diabetes.
8. Develop an elderly digital health plan and platform as part of the digital health ecosystem to suit the practical needs of elderly persons living with diabetes. Provide a clear slot focusing on the elderly in general and diabetes in particular under Ayushman Bharat-Pradhan Mantri Jana Arogya Yojana (AB-PMJAY) by harnessing the power of information technology.
9. Develop family and community-centric holistic care and support plans for the elders as part of a participatory elderly healthcare plan, drawing the perspectives and practical necessities of elders with chronic diabetes conditions.
10. Evolve suitable insurance for the aged in general and those with diabetes.
11. Develop home and community healthcare services and systems with the support of government and non-government entities to make sure that the elders get home-based health services.
12. Insurance Regulatory and Development Authority (IRDA) of India, based on special needs of elders, is suggested to intervene by raising caps on premium amounts as well as lifting the ceiling of 65 years of age. Any rejection of insurance to elderly persons or denial of renewal by insurance providers should be penalized through administrative and legal ways.
13. Evolve holistic and integrated geriatric healthcare combining primary, secondary, and tertiary geriatric care services targeting elders by individualizing them at the family and community levels.
14. Improve physical well-being through recreational services for elders to strengthen their physical vitality.
15. Create palliative care facilities and services for elders in general and those living with diabetes as part of end-of-life care.
16. Translate the idea of healthy aging into concrete actions for the health and

well-being of elders.

17. Set up Geriatric Health and Social Care facilities at the district level to promote and provide comprehensive elderly care.
18. Make healthcare facilities elder-friendly and elder-inclusive as part of the effort to improve physical access to government and private healthcare services for elders.

Psychological Care Domain Services

1. Increase connectivity and interactions of elderly persons with family members, friends, and like-minded seniors to boost psychological well-being.
2. Build up physical and digital solidarity of elders into self-help and mutual help groups for psychological well-being.
3. Create day care and community care facilities for elders to improve psychological well-being.
4. Engage in leisure-time works and play that make elders happy and preoccupied, instead of living in an excluded life.
5. Break the psychological breakdown of elders through counseling and psychological support services.
6. Boost emotional well-being of elderly persons through creating opportunities for emotional expression through ventilation sessions.
7. Identify the elders' problems such as isolation, depression, affective and anxiety disorders, dementia, and other psychological illnesses and render psychological and psychiatric services to suit their problems.
8. Arrange or provide cognitive support to those elders who have problems with cognitive disorder.
9. Raise awareness on the need for psychological care of elders and provide family and community-based psychological care services to customize practical requirements.
10. Codify the best psychological care services to ensure government and private psycho-care services meet required standards.

Enhancing Social Wellbeing and Wellness of Elderly Persons

1. Evolve a geriatric social care policy on the appointment of Geriatric Social Workers based on the number of elderly persons in Geriatric care facilities including hospitals. Evolve standard operating procedures for social care services through trained social workers.

2. Balanced care with equal emphasis on social care services through geriatric social workers is suggested.
3. Intervene through family support services as part of Social Work services. Family integration and family-centric support is advocated to make sure the onus of elderly care lies with the families.
4. Evolve a system for community/social care models to suit elders through geriatric social care services and interventions, as per their immediate need.
5. Strengthen the traditional system of caring for elders in joint families as part of the family and social heritage.
6. Recommend elderly living and caring facilities in cities through private and public housing facilities with the support of the government, as part of urban care services.
7. Evolve social-care models of services in rural, tribal, and urban settings to suit the context of elders and to support locally led and sustainable elderly social care services.
8. Raise awareness and a social compassion model of elder-centric models of social care as part of the life cycle management.
9. Strengthen social care through forging social solidarities and building social capitals linking elders, as part of the mutual help system of care.
10. Promote the ideas of volunteerism for the elders at the family and community level to serve the neediest volunteers.
11. Strengthen the training infrastructure and training system for volunteers to make sure the volunteers get the required knowledge and skills to serve elders to break isolation and loneliness.
12. Identify and arrange different forms of social support existing within the community system as per the needs of the elders to address social strain arising out of aging.
13. Detect the problems of elderly abuse and mistreatment and handle these problems through a right mix of community and social interventions.
14. Foster an enabling social environment through an elder-friendly community system for caring for the elderly persons based on the cultural and social heritage of humanity.
15. Invest in appropriate technology to create ease of life and living, particularly on mobility and care of elderly persons.

16. Celebrate elderly day by engaging senior citizens of the area to recognize their contributions to humanity.
17. Strengthen the networks of elderly forums at the district, state, and national levels to articulate their problems and to advocate for elder-friendly policies and practices.
18. Identify the best social care practices pursued by elderly care and residential care homes and share them across various stakeholders to improve social care practices in elderly homes.
19. Appoint one trained social worker for 50-100 elders to provide quality social care services as part of the licensing system for setting up elderly care facilities and homes.
20. Promote community and family-based social protection systems and services to elderly humanity as part of the village and urban panchayat system to help the elders.
21. Sensitize the elder's community leaders on the existence of the Maintenance and Welfare of Parents and Senior Citizen's Act 2007 and support elderly persons to make full use of the law to protect the rights of elders persons.
22. Organize periodic socialization events for elders for the exchange of issues during important festivals, celebrations, and elder day events.
23. Codify elderly rights and evolve concrete schemes through the support of the government to recognize and claim the rights and entitlements of elders persons.
24. Standardize social care by codifying the best social care practices to elderly persons to improve the quality of social care.

Promoting Economic Wellbeing and Wellness of Elderly Persons

1. Evolve age and skill-appropriate elderly livelihood or enterprises schemes at the national and state levels to engage and utilize the knowledge and technical skills for national development.
2. Develop elderly volunteer-based schemes and services for local development and services to humanity.
3. Work out an economic protection scheme and system at the village/ward level in urban areas to make sure that no elder is starving and denied the basic subsistence for survival.
4. Develop statistical systems to capture the economic plight/poverty levels and

real status periodically to enable the government to intervene with suitable financial, cash support to elders to serve the best interests of elderly persons.

5. Create a right sponsorship system for elders similar to the child sponsorship system to take holistic care of the elders, particularly for single persons.
6. Campaign for sharing a small part for the elderly economic care as part of the Corporate Social Responsibility (CSR) interventions.
7. Provide support for financial planning to make the right use of their assets and money for the better-off elderly.

Measures for Environmental and Spiritual Wellbeing and Wellness of Elderly Persons

1. Improve the living environment of elderly persons with measures to ensure a better living environment by way of boosting safety and security for elders.
2. Improve the safety and security of the elders, particularly those above the age of 80, which is an urgent necessity in view of weak bones.
3. Raise awareness on the safety and physical security of the elderly persons among families, communities, and service providers to make sure elders get better safety and security.
4. Improve special disaster prevention, rescue, and care services within the disaster management system.
5. Improve elder-friendly housing and public infrastructure to make sure to make it elder-centric to improve their mobility and transportability.
6. Evolve spiritual care and support services for those elders with spiritual interests to serve the spiritual and religious interests of the elderly persons.
7. More studies are needed to know the spiritual care needs and services from different religious contexts of elders to boost the spiritual well-being of elders.
8. Study the cultural contexts of the elders and suggest measures to customize the elderly services to suit the interests and needs of the elderly persons.

Research Contributions, Limitations, and Future Directions

The impact of integrated geriatric care on the quality of life (QoL) of with diabetes, highlighting the importance of addressing physical, psychological, social, and environmental factors. It underscores the multifaceted nature of diabetes management among elderly persons and how a holistic care model improves physical and psychological well-being, enhancing overall QoL. The research identifies gaps in

financial assistance, community-based care, and caregiver education and it advocates for policy interventions to enhance healthcare access and social inclusion. The study calls for more robust financial support, including subsidies and pensions, and the expansion of community-based programs. It emphasizes the urgent need to address these gaps through policy-level interventions, such as enhanced healthcare access and financial aid.

Future research should include longitudinal studies to assess the long-term impact of interventions, gender-sensitive strategies to address the unique healthcare challenges faced by elderly men, women, and transgender persons, and cultural influences on diabetes management and caregiving patterns to create culturally sensitive care models. These strategies will lead to more effective interventions and policies, improving healthcare access and building compassionate, inclusive care systems. Future studies should also investigate the impact of cultural beliefs and practices on diabetes management, caregiving patterns, and elder care. By integrating local traditions and values into diabetes care, interventions can be more relevant and acceptable to the target population.

Challenges encountered during the study included access to hospitals, limited availability of trained social workers, convincing authorities to share official data, difficulty in collecting data from elders, and participant mortality. To mitigate these issues, the researcher reworked the plan with the support of the research guide, leveraged personal connections, and spent more time finding respondent consent. Future research should study adverse impacts in terms of years of life lost due to diabetes and focus on the social domain of geriatric care, particularly geriatric social work services. Additional areas for further research include the value of mutual support through elderly forums, the value of elderly living communities in urban settings, geriatric social work approaches to pre-diabetes, therapeutic elder groups, palliative care, and the value of digital tracking of elderly care. Ultimately, the study aims for a collaborative, inclusive environment that empowers elderly diabetics to lead healthier, more fulfilling lives.

Final Conclusion: Synthesis and Implications

The multifaceted challenges encountered by living with diabetes in Gujarat, India. The findings emphasize the intricate interplay between physical health, mental well-being, social connectivity, economic stability, and environmental conditions, all of which collectively shape their quality of life (QoL). Understanding these

interdependent factors is essential to designing effective interventions that promote independence, dignity, and well-being for elderly diabetics.

Key Findings and Challenges

Family Support as a Pillar of Care: Family support is a crucial determinant of QoL for elderly persons living with diabetes. However, the study identifies substantial gaps in caregiving knowledge, preparedness, and access to specialized healthcare services. These deficiencies impede effective disease management and exacerbate the burden on both patients and caregivers.

Healthcare Accessibility and Economic Constraints: Limited availability of community-based healthcare programs, coupled with financial insecurities, restricts access to essential medical care and diabetes management resources. The financial burden of diabetes care further heightens vulnerability, increasing dependence on external support mechanisms.

The Need for a Holistic, Multilevel Care Framework: Addressing these challenges requires a paradigm shift from fragmented healthcare delivery to an integrated model that aligns family, community, and institutional support. Strengthening healthcare accessibility, financial assistance, and social inclusion is critical to improving health outcomes for elderly persons living with diabetes.

Recommendations for a Sustainable Framework

Personalized and Comprehensive Diabetes Care: Case studies and empirical evidence underscore the effectiveness of individualized interventions that incorporate medical, psychological, and social dimensions. A patient-centered approach ensures better disease management and improved health outcomes.

Strengthening Family and Community Support Networks: A robust support system, involving well-informed caregivers and community-driven initiatives, significantly enhances diabetes self-management among . This necessitates structured training programs for family caregivers and the expansion of community-based healthcare services.

Expanding Institutional Support and Awareness Programs: Government initiatives must be expanded to reach a broader population, particularly in rural and marginalized communities. Targeted policies should enhance accessibility to affordable healthcare services and ensure timely interventions for elderly persons living with diabetes.

Addressing Psychological and Social Well-being: Mental health interventions,

such as counseling services and peer support groups, should be integrated into diabetes care frameworks. Addressing emotional resilience is crucial for improving the overall well-being of elderly persons coping with chronic illness.

Enhancing Preventive Care and Early Intervention: A shift toward preventive healthcare is essential. Public health policies should prioritize early detection through systematic screening programs, lifestyle modification initiatives, and community-driven health awareness campaigns.

Implications for Policy and Practice

By synthesizing empirical research findings with real-world case studies, this study reinforces the necessity of adopting a patient-centered, community-driven approach to geriatric diabetes management. A transition from reactive healthcare to proactive, preventive, and holistic intervention strategies is crucial.

Furthermore, this research highlights the broader necessity of a coordinated, multi-stakeholder response that integrates policy, healthcare delivery, and social support systems. A structured and evidence-based intervention model can significantly enhance the quality of life for elderly persons living with diabetes, fostering greater autonomy and sustained well-being.

The foundation for actionable change, urging policymakers, healthcare professionals, and community organizations to prioritize comprehensive, sustainable, and evidence-based interventions for living with diabetes. By implementing these recommendations, we can pave the way for a more inclusive and resilient healthcare framework—one that extends beyond Gujarat and serves as a model for similar contexts globally.

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