PSYCHOSOCIAL ASPECTS AND QUALITY OF LIFE OF PEOPLE LIVING WITH HIV/AIDS IN AIZAWL

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(Regd No – MZU/Ph.D/556 of 2.11.2012)

Thesis submitted for the Degree of
Doctor of Philosophy in Psychology

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2017

ACKNOWLEDGEMENT

Thank You, Heavenly Father for giving me the gift of good health, strength and endurance to complete this work.

I am grateful to the Department of Psychology, Mizoram University for giving me the opportunity to do research and for encouraging me throughout the journey.

I would like to express my special appreciation to my supervisor Dr.Zoengpari, for her continuous support, patience and guidance. My gratitude towards her is boundless.

My sincere thanks go to Dr. Zoramhmangaihzuali Khiangte for her assistance in statistics, without which it would be impossible to complete this research. I also thank my friend and fellow student, Dr. MaryAnn Lalhmingliani Halliday, for the stimulating discussions and for the fun we have while collecting our data.

Finally, but by no means least, thanks to all the staff at MSACS, Grace Home, SHALOM, VIHAAN, World Vision and particularly to ART Plus Centre Aizawl, for tolerating my annoying presence at their small busy, crowded office for a year. And much thanks to all the people participating in this study; I solely dedicate this work to the PLWHA in Aizawl, Thank You.

Aizawl: the 31st October, 2017   (C.LALREMRUATI)

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CERTIFICATE

This is to certify that the present thesis titled, 'Psychosocial Aspects and Quality of Life of People Living with HIV/AIDS in Aizawl' is the bonafide research conducted by C.Lalremruati under my supervision. She worked methodologically for her thesis which is submitted for the Doctor of Philosophy under Mizoram University.

This is to further certify that the research conducted by Ms. C. Lalremruati has not been submitted in support of an application to this or any other university or an Institution of Learning.

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DECLARATION

I, C.Lalremruati, 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 do 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/Institution.

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

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ABBREVIATIONS:

APA	-	American Psychological
ART	-	Anti Retroviral Therapy
AIDS	-	Acquired Immuno Deficiency Virus
DASS	-	Depression Stress Anxiety scale
HIV	-	Human Immunodeficiency Virus
MSACS	-	Mizoram State Aids Control Society
MPLAS	-	Mizoram People Living with HIV/AIDS
NACO	-	National AIDS Control Organization
PLHIV	-	People Living With HIV
PLWHA	-	People Living With HIV/AIDS
OST	-	Oral Substitution Therapy
PSS	-	Perceived Social Support
PSS-SO	-	Perceived Social Support-Significant other
PSS-FM	-	Perceived Social Support-Family
PSS-FR	-	Perceived Social Support-Friends
QOL	-	Quality of Life
RSES	-	Rosenberg Self Esteem Scale
SPSS	-	Statistical Package for Social Sciences
UNAIDS	-	Joint United Nations Programme on HIV/AIDS
UNAID	-	United Nations Joint Programme on HIV/AIDS
WHO	-	World Health Organization
WHOQoL-HIV BREF-		World Health Organization Quality of Life-Human Immunodeficiency Virus Bref

INTRODUCTION

Health is not just being free from physical symptoms; rather it is a state of complete physical, mental and social well-being. Contextual factors represent cross-cutting issues that must be considered in designing, implementing, and interpreting research results in order to enhance traditional biomedical research and offer new insights. Psychological, behavioral, and social factors, and their interrelationships with biomedical factors, are important to consider in understanding disease and health. Psychological and behavioral factors are important predictors of well-being, vulnerability to disease, and disease outcomes associated with social realities of ethnic status, social class, age, and gender. Social and psychological experiences that are significantly related to health outcomes are important components of a research agenda and quality of life is an important outcome measure and includes a sense of well-being, functional health, and engagement in the psychological and social world.

Research has been conducted on the psychological factors that influence health, including risk reduction, coping behavior, self-efficacy, perceptions of control, social support, and depression. The psychological and psychiatric issues associated with Human Immunodeficiency Virus (HIV) infection have received considerable attention in the last decade owing to the emotional impact of the disease and its effect on an individual's personal, sexual, occupational and social life. Apart from the more obvious impact of HIV on mental health, there are several ways in which HIV infection and psychiatric disorders are linked and numerous studies have explored the relationship between mental health and HIV and reported the complex relationship

between mental health, the psychological well-being and satisfactory adjustment to society and to the ordinary demands of life.

Also, medication adherence and treatment uptake of biomedical interventions can be addressed by behavioral interventions that enhance knowledge and build skills while incorporating attention to factors such as age, socioeconomic status, literacy, religious beliefs, chronic or acute health conditions and disability, developmental understanding, cognitive impairment, race immigration history and status, language, gender, gender identity, sexual orientation, family context, culture, stigma, mental health, substance abuse, attitudes, prior knowledge, etc. (Liebowitz et al., 2011; Underhill et al., 2011).

The HIV/AIDS epidemic remains among the most significant challenges to public healthcare systems worldwide (Catalan, Collins, Mash, & Freeman, 2005). Globally, there are 33 million ''people living with HIV/AIDS (PLHA)'' (UNAIDS/WHO, 2008), with 25 million AIDS-related deaths reported in the last 25 years (UNAIDS/WHO, 2007). The negative impact of HIV infection includes co-morbidities in individuals, such as substance abuse, depression, and posttraumatic stress disorder (PTSD; Boarts, Sledjeski, Bogart, & Delahanty, 2006) and it profoundly impacts families and communities. Social stigma, marginalization, and discrimination of PLWHA lead to further risk and vulnerability that results in poorer physical and mental health (Jenkins & Sarkar, 2007).

Co-morbidity among PLWHA has been linked to treatment outcomes and problems with medication compliance underscoring the importance of addressing psychological symptoms (Chander, Himelhoch, & Moore, 2006; UNAIDS/WHO, 2008). A glimpse at the increasing incidences of the Human Immunodeficiency Virus (HIV) positive cases the world over, makes it necessary for behavioral scientists to probe into the psyche of youth, to see what prompts them to become prey to HIV. Since its discovery, the expansion of HIV/AIDS epidemic has been considered an issue of great concern. Even along the advances in treatment and the increase in life expectancy of patients, there are still several implications involved in the infection and its evolutionary process which need deeper studies. One of these implications is the combination between the impact of the disease and the mental disorders.

The Human Immunodeficiency Virus (HIV) pandemic has posed a formidable challenge to the biomedical-research and public health communities of the world. What began as a handful of recognized cases among homosexual men in the United States has become a global pandemic of such proportions that it clearly ranks as one of the most destructive microbial scourges in history. HIV infection and/or AIDS bring additional challenges due to the rapidly changing treatment developments and outlook. In addition, this disease is unusual in the extent of stigma associated with it and the fact that HIV is both infectious and potentially fatal. Because of the risk of transmission, major and permanent changes are called for in sexual behavior and/or management of substance use, neither of which may be easily modifiable. (Remien & Rabkin, 2001).

According to Malbergier and Schoffel (2001), this syndrome is a subject of interest of the mental health professionals for two reasons: the tropism of HIV for the central nervous system, and the psychological impact of the diagnosis and the evolution of infection on individuals infected. They mention yet, the emerging of two big research areas derived from this interest. Firstly, on the limits of psychiatry and neurology that maintains as a focus the clinical consequences of the action of HIV and other associated pathologies. Secondly, on the limits of psychiatry, psychology and social sciences, which investigative interest is in the psychological reactions, psychiatric complications of the infection and its social repercussions. From this second research area, the studies that seek to understand the association between the impacts of the disease with the psychiatric disorders could be highlighted. It is observed that the psychiatric disorders are common on the HIV-infected and not necessarily due to pre-existing conditions (Basu *et al.,* 2005; Owe-Larsson *et al.,* 2009) among those disorders (Bayes, 1995; Stumpf *et al.,*2006). Behavioral determinants include individual factors, the social, emotional, and physical context, as well as the differences in relationships, settings, cultural rules and expectations, and economic conditions that can all influence or underlie behaviors directly associated with HIV transmission. These factors clearly cover an enormous range of potential variables, and can be unclear, unformulated, and changeable over time. The theoretical literature in health psychology often uses social-cognitive theories to explain HIV-risk behavior. For example, while Becker's Health Belief Model (Becker, 1974) incorporate susceptibility, perceived severity, perceived benefits, and perceived barriers into its model, the revision of the Theory of Reasoned Action, the Theory of Planned Behavior (Azjen, 1985) , considers attitude, subjective norms, perceived behavioral control, and ultimately intention. Overall, they consider behavioral,

personal, and interpersonal factors and processes that lead to beliefs and subjective evaluations, and therefore engagement in certain behaviors. Some examples in the context of a health risk include the ability to protect oneself from it, confidence in changing behavior that could control it, perceived social norms and attitudes towards it, and the emotional and social costs, benefits and consequences related to its outcome. Although these frameworks have been successfully used in industrialized settings, care needs to be taken when employing them in developing ones. For example, in addition to personal factors (knowledge, perceived risks, costs, and benefits, self-efficacy and self-esteem) and the proximal context of one's social and living environment (negotiation skills, exposure to coercion, peer and adult influences, living conditions, and available services and resources), we need to consider real distal factors in one's cultural (traditions, norms, beliefs and values) and environmental (laws, politics, economics) setting. Still, the psychosocial factors these theories draw are both significant and important, due to their ability to explain significant amounts of variance in HIV risk in adolescents, and because they are modifiable. The social context is essential to account for the reality of street life, where individual skills, positive attitudes and good intentions for healthful practices may be undermined by a context that encourages behavioral risk. As early as 1986, the American Psychological Association (APA), recognizing that the epidemic of Acquired Immune Deficiency Syndrome (AIDS) threatens the mental health and civil liberties, as well as physical health, of many persons, adopted the AIDS Resolution, which was passed by the APA Council of Representatives, 1986. The resolution recognized that the importance of psychosocial and mental health components of AIDS should be stressed in treatment, research, and prevention programs, as well as the public health aspects of AIDS. It also passed to make available the necessary mental health services and facilities for

persons with AIDS, AIDS-related conditions, or an exaggerated fear about the threat of AIDS. The APA also condemned the use of the AIDS epidemic as a vehicle for fostering prejudice or discrimination against any group or individual. Psychologists were further urged to combat irrational public fears of AIDS through education and other professional activities including teaching of courses, lectures to the public, counseling and therapy, consultation, and research regarding the fear of AIDS. Since then, the APA has taken several measures towards the prevention, treatment and research of AIDS. For this purpose, Committee on Psychology and AIDS (COPA) was established by the APA Council of Representatives in 1990. The mission of COPA is to guide the development and implementation of the APA's organizational response to the HIV/AIDS epidemic.

Further, in February 2012, the APA passed a resolution entitled "Combination of Biomedical and Behavioral Approaches to Optimize HIV Prevention." The resolution emphasized the need for prevention research that incorporates strategies to address mental health and substance abuse issues, behavior change and adherence. Proven behavioral approaches, particularly when combined with biomedical strategies, have been found to: optimize the effectiveness of biomedical interventions; increase access to care; increase retention in care; increase treatment adherence; reduce overall cost of care; reduce the stigma associated with the disease; and address co-morbid mental health and substance abuse issues (APA's Resolution on Combination HIV/AIDS Prevention, 2012). Thus, the APA recommended that the Congress and the Executive Branch should continue to acknowledge the value of behavioral research and combination approaches to HIV prevention and treatment through continued support for a robust HIV/AIDS behavioral prevention research agenda, the integration of

biomedical, behavioral and structural approaches through interdisciplinary research and implementation teams, and dissemination of effective strategies to prevent and treat HIV; and prioritization of combination strategies in the National HIV/AIDS Strategy implementation and through U.S. commitments to global AIDS programs.

Numerous studies have explored the relationship between mental health and HIV results have indicated that there is a complex relationship between mental health, the psychological well-being and satisfactory adjustment to society and to the ordinary demands of life and the Acquired Immuno Deficiency Syndrome (AIDS) which is the most dreadful epidemic that mankind has ever witnessed. Over the past 27 years, nearly 25 million people have died from AIDS (UNAIDS, 2009). HIV/AIDS causes debilitating illness and premature death in people during their prime years of life and has adversely affected the families and communities. The impact of HIV/AIDS on children and young people is a severe and growing problem. In 2008, 430,000 children under age 15 were infected with HIV and 270,000 died of AIDS. In addition, about 15 million children have lost one or both parents due to the disease (UNAID 2008).

HIV/AIDS causes debilitating illness and premature death in people during their prime years of life and has adversely affected the families and communities. The impact of HIV/AIDS on children and young people is a severe and a growing problem (UNAIDS, 2008). Since its discovery, the expansion of HIV/AIDS epidemic has been considered an issue of great concern. Even along the advances in treatment and the increase in life expectancy of patients, there are still several implications involved in the infection and its evolutionary process which need deeper studies. One of these implications is the combination between the impact of the disease and the

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mental disorders. Gender Majority of studies done in India have reported higher rates of depression among women compared to men which is implicated to higher caregiver burden, more social stigma and poor healthcare (Chandra et al., 2005; Penedo et al.,2003) evaluated relationship between personality traits and quality of life among 116 men and women living with HIV/AIDS.

Most patients with serious, progressive illness confront a range of psychological challenges, including the prospect of real and anticipated losses, worsening quality of life, the fear of physical decline and death, and coping with uncertainty. A considerable amount of research has been conducted in many countries on the variables related to the psychological well-being of different populations of PLWH (Catz, Gore-Felton, McClure, 2002). Numerous studies have explored the relationship between mental health and HIV. There is a complex relationship between mental health and HIV/AIDS. Mental health is defined as psychological well-being and satisfactory adjustment to society and to the ordinary demands of life (Guaralnik, ,1984). Mental health has been linked to HIV infection in studies of developed as well as developing countries. People living with HIV/AIDS (PLHA) are generally subject to higher prevalence of mental illness. (Logie & Gadalla, 2009). A considerable amount of research have been conducted in many countries on the variables related to the psychological well-being of different populations of PLHA (Catz et al,2002). People diagnosed with HIV experience many of the emotional responses identified in people facing a terminal illness (Ross et al, 1989). A number of studies of patients who seek HIV/AIDS treatment or preventive health services have indicated that there is fairly high prevalence of psychosocial problems including depression, anxiety, and hostility (Kalichman, 2000; Cohen et al., 2002). The psychological attributes

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associated with HIV infection therefore have important implications in health outcomes, quality of life, and further transmission of HIV (Whetten, Reif, Whetten, & Murphy-McMillan, 2008).

People diagnosed with HIV experience many of the emotional responses identified in people facing a terminal illness. (Ross, Tebble,Viliunas, 1989), and is a major source of emotional and physiological stress for those who are infected (Faulstich, 1987). HIV infection and/or AIDS bring additional challenges due to the rapidly changing treatment developments and outlook. In addition, this disease is unusual in the extent of stigma associated with it and the fact that HIV is both infectious and potentially fatal. Because of the risk of transmission, major and permanent changes are called for in sexual behavior and/or management of substance use, neither of which may be easily modifiable. The prevalence of mental illnesses in HIV-infected individuals is substantially higher than in the general population.

Furthermore, HIV tends to be concentrated in highly vulnerable, marginalized and stigmatized populations; in particular, sex workers, men who have sex with men, drug users and prisoners have higher levels of mental health disorders than the general population. Increased psychological distress among people with HIV infection is common. Studies in both low- and high income countries have reported higher rates of depression in HIV-positive people compared with HIV negative control groups. The level of distress often seems to be related to the severity of symptoms of HIV infection. Coping styles and learnt resourcefulness may shape the experience of depressive symptoms and the ability to care for oneself. Family relationships and the support of a partner can also influence mental health consequences.

As defined by Mann (1987), HIV epidemic exists in three phases. In the first phase, the epidemic enters a community silently, unnoticed and often develops over many years without being widely perceived or understood. The second phase is the epidemic itself, the syndrome of infectious diseases that can occur because of HIV infection but typically after a delay of number of years. The third phase is a response to AIDS and that revolves around the social, cultural and political issues, this phase has been described as the most explosive phase resulting from the reactions that are characterized by exceptionally high levels of stigma, discrimination and at times collective denial. These social and behavioral issues are central to the global AIDS (Mann, 1987). Thirty years after the initial discovery of the virus that causes AIDS, the epidemic continues to spread, both nationally and globally, and it continues to affect millions of individuals across the developmental spectrum (UNAIDS, 2010).

Psychosocial aspects of HIV/ AIDS:

Each HIV/AIDS situation is as unique as the people involved. There are individuals who might face catastrophic changes not only in their personal and job relationships, but in their physical bodies and in their self-images and self-esteem." (Watstein & Chandler,1998). A considerable amount of research has been conducted in many countries on the variables related to the psychological well-being of different populations of PLHA. (Catz et al,2002). People diagnosed with HIV experience many of the emotional responses identified in people facing a terminal illness. (Ross et al,1989). Psychological variables may include thoughts, feelings, emotions that affect the neutral state and well being of the infected person. "The psychological or internal challenges a person with HIV/AIDS faces vary from individual to individual and not everyone will experience all of the emotional responses or stages of emotional

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responses (Watstein and Chandler, 1998). Psychological and psychiatric issues associated with HIV infection have received considerable attention in the last decade owing to the emotional impact of the disease and its effect on an individual's personal, sexual, occupational and social life. Mental health has been linked to HIV infection in studies of developed as well as developing countries, Mental health defined as psychological well-being and satisfactory adjustment to society and to the ordinary demands of life, (Guaralnik,1984) has been explored by numerous studies and they reported that there is a complex relationship between mental health and HIV/AIDS. Studies have consistently reported a higher prevalence of mental health problems among HIV-infected people compared to the general population or hospital samples (Cournos & Forstein, 2000; Green & Smith, 2004; Hartzell, Janke, & Weintrob, 2008). A significant number of research findings also suggest that social stigma, discrimination, and social isolation of PLWHA cause greater psychological and emotional turmoil, which may ultimately lead to mental health problems (e.g., Simbayi et al., 2007; Wingood et al., 2008; Wu et al., 2008) and affect the quality of hospital care (Mahendra et al., 2006).

People living with HIV/AIDS (PLHA) are generally subject to higher prevalence of mental illness. (Logie & Gadalla, 2009). A considerable amount of research have been conducted in many countries on the variables related to the psychological well-being of different populations of PLHA (Catz et al,2002).Apart from the more obvious impact of HIV on mental health, there are several ways in which HIV infection and psychiatric disorders are linked. A number of studies of patients who seek HIV/AIDS treatment or preventive health services have indicated that there is fairly high prevalence of psychosocial problems including depression, anxiety, and hostility

(Kalichman, 2000; Cohen et al., 2002; Faulstich, 1987; Bayés, 1995; Stumpf et al., 2006) and the relationship between low Self-Esteem and HIV-related risk behaviors, and the factors that predict self-esteem levels of "at risk" women, was also explored by Sterk, Klein, and Elifson (2004). Additionally, considerable amount of research has also been conducted in many countries on the variables related to the psychological well-being of different populations of PLHA (Catz et al, 2002). Also according to Cunningham et al., (1998), HIV infection is accompanied by several physical symptoms that have the potential to adversely affect quality of life, a study by Adinolfi, (2001); Groopman, (1998), reported physical fatigue is a common symptom of HIV-infected individuals and is associated with anxiety and depression. In a systematic review of studies of the quality of life of people living with HIV/AIDS on various anti-retroviral drugs combination that evaluated the clinical benefits as weighted against the toxicity effect of the drugs, Burgoyne & Tan (2008) employed regression analysis and found out that lipodystropy, anemia and peripheral neuropathy associated with use of antiretroviral drugs are linked with decrease in quality of life. For frequent symptoms, some studies have mentioned guilt, irritability, imminent death feeling, fatigue, loss of control feeling, isolation, weight loss, abdominal discomfort, impulsiveness, heat sensation, fear of the situation getting worse, inability to relax and sleep changes (Cockram et al., 1999; Junqueira *et al.,* 2008; Kagee and Martin, 2010; Malbergier & Schoffel, 2001; Schiavona & Pupulin, 2008). Interestingly, some data suggest that HIV-infected individuals who participate in stress management activities improve in physical health, as well as mental health and quality of life (Gielen et al., 2001). Also according to Crosby et al., (2001); Hudson et al., (2001); Solomon, & Temoshok, (2002), social support which is a primary mediator of

perceived stress and can lessen feelings of emotional distress and enhance health outcomes in those infected with HIV.

Whatever their causes, psychological problems complicate the care and clinical management of people with HIV by decreasing rates of adherence to antiretroviral therapy (ART), increasing loss to follow-up, reducing quality of life and leading to poorer health outcomes including clinical decline and mortality.

Depression in PLWHA:

Depression is a mood state of sadness, gloom and pessimistic ideation, with loss of interest or pleasure in normally enjoyable activities, accompanied by severe cases of anorexia and consequent weight loss, insomnia or hypersomania, asthenia, feelings of worthlessness or guilt, diminished ability to think or concentrate, or recurrent thoughts of death or suicide. Depression is the most common psychiatric disorder observed among HIV positive patients. Whereas early report based on clinical observation or medical record reviews indicated high rates of distress and depressive symptoms among those infected with HIV or who had AIDS (Dilley, Ochitill ,Pearl, Volberding, 1985). Bing & colleagues (2001) assessed a national probability sample of nearly 3,000 adults receiving care for HIV infection and found that more than a third screened positive for clinical depression, the most common disorder identified. Prevalence of depression among HIV infected population is shown to be varying from 0 - 47% in different studies. Despite this, a meta-analysis of ten studies comparing HIV-positive and at risk HIV - negative patients demonstrated a twofold increase in the prevalence of major depression in patients infected with HIV (Ciesla & Roberts,2001). Despite the prevalence of psychosocial distress experienced by

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PLWHA, the available body of evidence indicates that depression is frequently under diagnosed and goes untreated on a large scale. For example, in the USA, a large cohort study of patients undergoing care for HIV/AIDS found out that nearly half of those who met the criteria for major depression had no mention of such a diagnosis in their medical records (Asch et al., 2003) and one-third of the PLWHA who needed psychosocial health information services were not receiving them (Taylor et al., 2004). Majority of studies done in India have reported higher rates of depression among women compared to men which is implicated to higher caregiver burden, more social stigma and poor healthcare (Chandra et.al., 2005; Penedo et.al.,2003) evaluated relationship between personality traits and quality of life among 116 men and women living with HIV/AIDS. Whatever their causes, psychological problems complicate the care and clinical management of people with HIV by decreasing rates of adherence to antiretroviral therapy (ART), increasing loss to follow-up, reducing quality of life and leading to poorer health outcomes including clinical decline and mortality.

Anxiety in PLWHA:

Anxiety is a state of uneasiness, accompanied by dysphoria and somatic signs and symptoms of tension, focused on apprehension of possible failure, misfortune or danger.The study of anxiety among those with serious chronic medical conditions has emerged as an important area of research and public health interest. Anxiety is one of the most common reactions of many individuals upon receiving a diagnosis that they are infected with HIV. The relationship between stress and anxiety has been demonstrated through reports of decreased anxiety in HIV-infected individuals following stress management therapy (Lutgendorf, et al.,1997;Taylor, 1995).

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Anxiety is a major health hazard in HIV seropositive individuals. This is so because it is probably one of the factors responsible for the quick progression of their HIV seropositive status to AIDS. (Imasiku, 2002). Studies on psychiatric aspects of AIDS revealed that over 20 per cent of seropositive individuals have been reported to experience anxiety symptoms at least once in a month, compared with negligible rates in the community among low-risk controls individuals.

Stress in PLWHA:

Stress is the psychological state which arises when there is a significant imbalance or mismatch between the person's perception of the demands on them, and their capability to cope with those demands. Individuals differ with regard to rate of progression through the successive phases of HIV infection. Some remain asymptomatic for extended periods and respond well to medical treatment, whereas others progress rapidly to AIDS onset and develop numerous complications and opportunistic infections. Stress may account for some of this variability in HIV progression. Evidence published before 2000 regarding the influence of stress on HIV progression was largely inconsistent. However, studies published since 2000 has generally supported a link between stress and HIV progression. (Vedhara , & Irwin ,2005). Illness appraisal research and stress and coping theory provide complementary approaches to the study of adjustment to chronic illnesses such as HIV/AIDS.

Moreover, stress has been found to influence the course of virally initiated illnesses to which persons with HIV are especially susceptible. (Pereira, Antoni, Danielson., et al.,2003). Disease status is a major source of stress for HIVinfected individuals (Faulstich, 1987; Morin, Charles, & Malyon,1984). Stress process model conceptualizes the stress process as consisting of three elements: sources of stress,

moderators of stress, and the outcomes or manifestations of stress. The life of an HIV infected person is one that is full of stressful events, both from the stress of the illness itself and the stigma that it brings with it (Pearlin, Lieberman, Menaghan & Mullan's 1981).

Self – Esteem in PLWHA:

Self-esteem is one's attitude towards oneself or one's opinion or evaluation of oneself, which may be positive-favorable or high, neutral, or negative-unfavorable or low. In regard to HIV, low self-esteem may be a factor in not protecting themselves or others from HIV. No one has been able to measure a drop in self-esteem as a result of becoming infected because self-esteem may have been low to start with. However, with stigmatization, guilt, loss of a positive body image, loss of roles, loss of work, and loss of social network, it seems intuitive that self-esteem would be threatened (Hoffman,1996). The relationship between low Self-Esteem and HIV-related risk behaviors, and the factors that predict self-esteem levels of "at risk" women, was explored by Sterk, Klein, and Elifson (2004).

Social Support in PLWHA:

Social support is the physical and psychological comfort provided by the other people. A considerable amount of research have been conducted in many countries on the variables related to the psychological well-being of different populations of PLHA. Greater amounts of social support have been shown to be associated with less negative and more positive affect in people living with HIV and AIDS. Moreover, people living with HIV and AIDS who are satisfied with the amount of support available to them tend to experience less psychological distress, a higher quality of life, and more self-

esteem whereas those who perceive low levels of social support experience increased distress. Social support is a primary mediator of perceived stress and can lessen feelings of emotional distress and enhance health outcomes in those infected with HIV (Crosby et al., 2001; Hudson et al., 2001; Solomon, & Temoshok, 2002). A significant body of research suggests that social support plays a key role in managing stress associated with having HIV, resulting in better psychological outcomes among persons with HIV disease. Several studies have demonstrated that social support is associated with improved outcomes and improved survival in several chronic illnesses, including cancer and end-stage renal disease (Bisschop, Kriegsman, Beekman, Deeg, 2004; Patel, Petersen, & Kimmel, 2005).

Studies have found that perceived social support is associated with adjustment to and coping with HIV diagnosis (Friedland et al., 1996; Leserman et al., 1999). It is also an important resource that can enable people living with HIV/AIDS to live with their illness (Goldsmith, Brashers, Kosenko, & O'Keefe, 2008). Researchers have also examined the role of perceived social support in improving the lives of HIV- positive individuals and suggest that social support buffers stress-related or stress-inducing crises, such as depression (Hays, Chauncey & Tobey, 1990; Hays, Turner & Coates, 1992; Johnson et al., 2001) and psychological well-being (Hays, Chauncey & Tobey, 1990; Serovich, Kimberly, Mosack & Lewis, 2001). In one study of women with HIV, it was found that perceived social support was more significant than perceived availability of support in predicting mental health outcomes (Serovich, Kimberly, Mosack & Lewis, 2001).

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Quality of Life (QOL) of PLWHA:

Quality of Life (QOL) relates both to the adequacy of material circumstances and to personal feelings about these circumstances with overall subjective feelings of well-being that is closely related to morale, happiness, and satisfaction. Quality of life has recently been scientifically-defined and it has been considered synonymous with health status, functional status, psychological well-being, happiness with life, satisfaction of needs, and assessment of one's own life. (Elisabete, Santos, Ivan, Fernanda,2007). Quality of life (QOL) is a term that is popularly used to convey an overall sense of well-being and includes aspects such as happiness and satisfaction with life as a whole. World Health Organization has defined QOL as "individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, standards, expectations and concerns (Ruiz et al,2005).HIV infection is accompanied by several physical symptoms that have the potential to adversely affect quality of life (Cunningham *et al.,*1998). Quality of life has recently been scientifically-defined and it has been considered synonymous with health status, functional status, psychological well-being, happiness with life, satisfaction of needs, and assessment of one's own life. (Elisabete , Morandi Dos Santos, Ivan , Fernanda ,2007).HIV infection is accompanied by several physical symptoms that have the potential to adversely affect quality of life (Cunningham *et al.,*1998).

Operational definition of quality of life is diverse and such diversity does not only stem from societal or individual perspectives but also by the range of theoretical models and academic orientations. Liu in 1976, (cited in Fleche & Perry,1996)

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commented on this diversity, and the associated problems of non-agreement that ensured were highlighted by Baker and Intagliata (1982). Mental health and well-being are important components of overall quality of life in the context of infection with Human Immunodeficiency Virus (HIV). PLWHA face tremendous challenges in life, including their mental health (Kalichman, 1995).

In light of the various models and approaches pertaining to the measurement, plausible hypothesis about the psychological and socio-cultural determinants of psychosocial factors of PLWHA in Aizawl, Mizoram, the objectives of the present study are outlined in the following chapter.

STATEMENT OF THE PROBLEM

The Human Immunodeficiency Virus (HIV) pandemic has posed a formidable challenge to the biomedical-research and public health communities of the world. What began as a handful of recognized cases among homosexual men in the United States has become a global pandemic of such proportions that it clearly ranks as one of the most destructive microbial scourges in history. HIV infection and/or AIDS bring additional challenges due to the rapidly changing treatment developments and outlook. In addition, this disease is unusual in the extent of stigma associated with it and the fact that HIV is both infectious and potentially fatal. Because of the risk of transmission, major and permanent changes are called for in sexual behavior and/or management of substance use, neither of which may be easily modifiable. Most patients with serious, progressive illness confront a range of psychological challenges, including the prospect of real and anticipated losses, worsening quality of life, the fear of physical decline and death, and coping with uncertainty. The psychological attributes associated with HIV infection therefore have important implications in health outcomes, quality of life, and further transmission of HIV (Whetten, Reif, Whetten, & Murphy-McMillan, 2008).In addition, this disease is unusual in the extent of stigma associated with it and the fact that HIV is both infectious and potentially fatal. The prevalence of mental illnesses in HIV-infected individuals is substantially higher than in the general population. Furthermore, HIV tends to be concentrated in highly vulnerable, marginalized and stigmatized populations; in particular, sex workers, men who have sex with men, drug users and prisoners have higher levels of mental health disorders than the general population and increased psychological distress among people with HIV infection is common. Studies in both low- and high

income countries have reported higher rates of depression in HIV-positive people compared with HIV negative control groups.

According to Malbergier and Schoffel (2001), this syndrome is a subject of interest of the mental health professionals for two reasons: the tropism of HIV for the central nervous system, and the psychological impact of the diagnosis and the evolution of infection on individuals infected. They mention yet, the emerging of two big research areas derived from this interest. Firstly, on the limits of psychiatry and neurology that maintains as a focus the clinical consequences of the action of HIV and other associated pathologies. Secondly, on the limits of psychiatry, psychology and social sciences, which investigative interest is in the psychological reactions, psychiatric complications of the infection and its social repercussions. From this second research area, the studies that seek to understand the association between the impacts of the disease with the psychiatric disorders could be highlighted. It is observed that the psychiatric disorders are common on the HIV-infected and not necessarily due to pre-existing conditions (Basu et al., 2005; Owe-Larsson et al., 2009) among those disorders (Bayés, 1995; Stumpf et al.,2006). Behavioral determinants include individual factors, the social, emotional, and physical context, as well as the differences in relationships, settings, cultural rules and expectations, and economic conditions that can all influence or underlie behaviors directly associated with HIV transmission. These factors clearly cover an enormous range of potential variables, and can be unclear, unformulated, and changeable over time.

The theoretical literature in health psychology often uses social-cognitive theories to explain HIV-risk behavior. While Becker's Health Belief Model (Becker,

1974) incorporate susceptibility, perceived severity, perceived benefits, and perceived barriers into its model, the revision of the Theory of Reasoned Action, the Theory of Planned Behavior, considers attitude, subjective norms, perceived behavioral control, and ultimately intention. Overall, they consider behavioral, personal, and interpersonal factors and processes that lead to beliefs and subjective evaluations, and therefore engagement in certain behaviors and in the context of a health risk which include the ability to protect oneself from it, confidence in changing behavior that could control it, perceived social norms and attitudes towards it, and the emotional and social costs, benefits and consequences related to its outcome. The psychosocial factors these theories draw are both significant and important, due to their ability to explain significant amounts of variance in HIV risk in adolescents, and because they are modifiable. The social context is essential to account for the reality of street life, where individual skills, positive attitudes and good intentions for healthful practices may be undermined by a context that encourages behavioral risk. As early as 1986, the American Psychological Association (APA), recognizing that the epidemic of Acquired Immune Deficiency Syndrome (AIDS) threatens the mental health and civil liberties, as well as physical health, of many persons, adopted the AIDS Resolution, which was passed by the APA Council of Representatives, 1986. The resolution recognized that the importance of psychosocial and mental health components of AIDS should be stressed in treatment, research, and prevention programs, as well as the public health aspects of AIDS. It also passed to make available the necessary mental health services and facilities for persons with AIDS, AIDS-related conditions, or an exaggerated fear about the threat of AIDS. The APA also condemned the use of the AIDS epidemic as a vehicle for fostering prejudice or discrimination against any group or individual. Psychologists were further urged to combat irrational public fears

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of AIDS through education and other professional activities including teaching of courses, lectures to the public, counseling and therapy, consultation, and research regarding the fear of AIDS. Since then, the APA has taken several measures towards the prevention, treatment and research of AIDS. For this purpose, Committee on Psychology and AIDS (COPA) was established by the APA Council of Representatives in 1990. The mission of COPA is to guide the development and implementation of the APA's organizational response to the HIV/AIDS epidemic.

Social and psychological experiences that are significantly related to health outcomes are important components of a research agenda and quality of life is an important outcome measure and includes a sense of well-being, functional health, and engagement in the psychological and social world. Research has been conducted on the psychological factors that influence health, including risk reduction, coping behavior, self-efficacy, perceptions of control, social support, and depression. The psychological and psychiatric issues associated with Human Immunodeficiency Virus (HIV) infection have received considerable attention in the last decade owing to the emotional impact of the disease and its effect on an individual's personal, sexual, occupational and social life. Apart from the more obvious impact of HIV on mental health, there are several ways in which HIV infection and psychiatric disorders are linked and numerous studies have explored the relationship between mental health and HIV and reported the complex relationship between mental health, the psychological well-being and satisfactory adjustment to society and to the ordinary demands of life. Psychological and behavioral factors are important predictors of well-being, vulnerability to disease, and disease outcomes associated with social realities of ethnic status, social class, age, and gender.

In view of the theoretical foundations and empirical findings pertaining to the importance of psychosocial and mental health components of AIDS and the need for these components to be stressed in treatment, research, and prevention programs, as well as the public health aspects of AIDS. Social and psychological experiences that are significantly related to health outcomes are important components of a research agenda and quality of life is an important outcome measure and includes a sense of well-being, functional health, and engagement in the psychological and social world.

The present study aimed to explore the psychosocial aspects and quality of life of the people living with HIV/AIDS in Aizawl the capital city of Mizoram, which is the most affected area in India and has witnessed and is experiencing the impact of HIV/AIDS. However, studies relating to psychosocial aspects of people living with HIV/AIDS in Mizoram is minimal at present and it is therefore, felt necessary to explore the psychosocial characteristics and quality of life of the people living with HIV/AIDS. The overall consideration would not only help satisfy to achieve the theoretical and methodological considerations but would provide foundations for behavioral intervention programs and further extended studies.

AIDS scenario in India and Mizoram

Demographically the second largest country in the world, India has also the third largest number of people living with HIV/AIDS. It is estimated that around 2.5 million people are currently living with HIV. In a country where poverty, illiteracy and poor health are rife, the spread of HIV presents a daunting challenge. Research has identified certain demographic and social factors that contribute to this reluctance (e.g., ethnicity, oppression, and societal reactions; Chandra et al., 2003), as well as

factors that predict reasons for refusing consent to testing (Satyanarayana, Chandra, Vaddiparti, Benegal, &Cottler, 2009). Generally, HIV/AIDS infection is concentrated among high-risk groups in urban areas, in younger populations (15-24 years) with lower education levels (NACO, 2007). However, the epidemic has spread from urban to rural areas and from high-risk populations to the general public. Comparable statistics maintained by National Sentinel Surveillance were infected with HIV/AIDS by 2006. Approximately 89% were adults (7.5% of whom were 50 years) and 3.8% were children (B15 years). Of those infected, 39.3% were female and 61% were men (NACO, 2007). HIV prevalence rates tend to be 6-8 times greater among high-risk groups, e.g., those who engage in risky sexual behavior, than the general population. Although the mode of transmission has been predominantly heterosexual contact (84.28 %), however in the north-eastern region, injecting drug use is the major cause for the epidemic spread. (NACO, 2009-10).   Intravenous drug use has been etiologically connected with the epidemic in northeast India (Shaukat & Panakadan, 2004). Men who have sex with men (MSM) were also found to be at high risk due to drug use and risky sexual behavior. As in the otherparts of the world, PLWHA in India suffer from stigma and discriminationin several contexts: household, workplace, health settings, and communities (UNAIDS, 2001).

Mizoram a small north-eastern state of India has fewer than a million inhabitants. In 1998, the HIV epidemic took off quickly among the state's male injecting drug users, with some drug clinics registering HIV rates of more than 70% among their patients. Although the incidence of HIV infection is declining globally, it has increased in Mizoram, reaching approximately 10,000 cases (MSACS, 2015). At

present, Mizoram has the highest HIV prevalence (1.19% ANC cases) in the country, followed by Nagaland (0.82%; NACO, 2016-2017). As per the report of Mizoram State Aids Control Society (MSACS), the number of blood tests conducted between October, 1990 and June, 2015 is 3, 21,622 (cumulative), and the number of HIV positive cases is 10,358 (cumulative). Among the eight districts of the state, Aizawl District has the highest HIV population. While the number of PLWHA has been increasing day by day in Mizoram, research on psychosocial factors and quality of life among PLWHA in Mizoram has so far been limited. An extensive review of literature found no published articles focusing on psychosocial aspects and quality of life among PLWHA in Mizoram. As such is the case, a null hypothesis was formed to meet the objectives set forth for the study. In inferential statistics, the provisional hypothesis is that there is no difference or no relationship and that the observed experimental results can therefore be attributed to chance alone. If the statistical test rejects the null hypothesis, then the alternative hypothesis may be accepted and the effect that has been observed may be considered statistically significant (Colman, 2001).

OBJECTIVES:

The objectives of the present study are:

i)   To profile the psychosocial aspects of people living with HIV/AIDS.

ii) To highlight gender differences on measures of the dependent variable.

iii) To elucidate the relationship between the psychosocial factors and quality of life of people living with HIV.

HYPOTHESES:

To meet the objectives set forth, the following null hypotheses are framed:

i)   There will be no significant difference between infected and non-infected samples on depression.

ii)   There will be no significant difference between infected and non-infected samples on anxiety.

iii) There will be no significant difference between infected and non-infected samples on stress.

iv)   There will be no significant difference between infected and non-infected samples on self-esteem.

v)   There will be no significant difference between infected and non-infected samples on social support.

vi)   There will be no gender difference on social support and quality of life.

vii) There will be a negative correlation between depression and quality of life.

viii) There will be a negative correlation between anxiety and quality of life.

ix)   There will be a negative correlation between stress and quality of life.

x)   There will be a positive correlation between self-esteem and quality of life.

xi)   There will be a positive correlation between social support and quality of life.

METHODS AND PROCEDURE

SAMPLE:

Purposive random sampling procedure was used for the present study. 250 PLWHA and 250 Non-Infected group aged between 30 ± 10 from Aizawl and who were willing to participate were selected to serve as subjects for the study. The same demographic factors economic, sex and marital status shall be considered in selecting the infected and non-infected HIV subjects. For the present study, subjects between 20-40 years were selected since in most studies, the majority of the subjects (PLWHA) were within 15 and 45 years of age with modal age group of $30 - 39$ years. This is similar to previous studies done in various other parts of the world (Ilebani & Fabusoro., 2011 ; Oluwagbemiga, 2007;Samuel., et al., 2008 ; Olowookere., et al., 2011). A null hypothesis was formed to meet the objectives set forth for the study. In inferential statistics, the provisional hypothesis is that there is no difference or no relationship and that the observed experimental results can therefore be attributed to chance alone. If the statistical test rejects the null hypothesis, then the alternative hypothesis may be accepted and the effect that has been observed may be considered statistically significant (Colman, 2001).

The study was carried out in Integrated Counseling and Testing Centers (ICTC), Drop in Centers, Hospice, Anti-retroviral Therapy Centers (ART Center) under Mizoram State Aids Control Society and Positive Network of Mizoram, Community Care Centre, Care and Support Centre, and other NGO's.

It was decided to carry out the investigation in these agencies mainly for the following reasons:

- These agencies are providing support to the PLWHA,
- It was expected that the investigator would be able to establish a good rapport and proper interview in the agency than in outside environment,
- It was expected that the staff of the agencies would be a great source in motivating the PLWHA to cooperate with the researcher.

DESIGN OF THE STUDY:

The design is basically aimed to highlight and elucidate the psychosocial characteristic and quality of life of infected (People Living with HIV/AIDS) based on a comparative sample group of non-infected persons. For this purpose, the quality of life is to be considered as a criterion variable while the other four namely – depression, anxiety, stress; self-esteem; social support are to be considered as predictors. The demographic variables incorporating attention to factors such as age, socioeconomic status, literacy, religious beliefs was included. To achieve the objectives, the study incorporated two-way classification of the variable of 'Gender' (male and female) and HIV status (infected and non-infected) on the dependent variables was employed, to elucidate the relationships between the measures selected for the present study.

Sample characteristics table for the N=500 HIV-infected and Non-infected on 2X2 Gender (male& female) x HIV status (HIV-infected and Non-infected) cells of the study
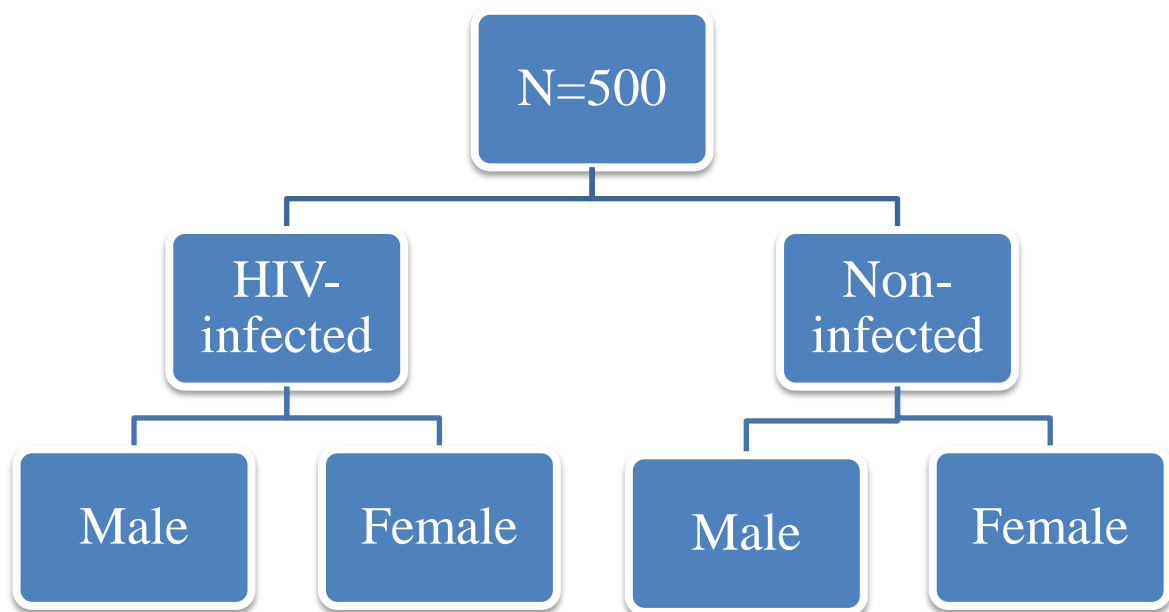
(Design of the study:2x2 factorial design)

PROCEDURES:

The primary data for the study was collected in a face to face interaction between the participants and the researcher in an optimum environmental setting after formation of a good rapport. The researcher takes care to see that the respondents provided honest and independent answers to the questions presented. The anominity, confidentiality and ethics as cited/formulated by APA, 2003 (American Psychiatric Association) was followed.

In order to determine the quality of life of PLWHA, WHOQOL-HIV BREF (QOL; WHO, 2002): was used and their psychosocial status has been highlighted by using three tools - Depression Anxiety Stress Scale-42 (Lovibond & Lovibond, 1995);

Multidimensional Scale of Perceived Social Support (Zimet et al.,1988) and Rosenberg Self- Esteem Scale (Rosenberg , 1965). All study materials were translated from English to Mizo, and then back to English to ensure accuracy and pilot tested at the various HIV care centers to ensure participant comprehension.

Psychological Tools:

The assessment tools consisted of interview and self-administered questionnaires. The time required was approximately 90 minutes for most participants to complete and included the following measures:

Socio-demographics:

An interview schedule was used to find out and record the socio-demographic profile of the subjects like their age, gender, years of infection, educational qualification, occupation, marital status, number of children, mode of infection and history of drug use.

1. WHOQOL-HIV BREF (QOL; WHO, 2002):

The WHOQOL-HIV bref consists of 31 items, with each item using a 5-point Likert scale. These items are distributed in six domains. The six domains of Quality of Life are as follows: physical health, psychological health, level of independence, social relationships, environment, and spirituality/religion/personal beliefs. The physical health domain measures pain and discomfort, energy and fatigue, and sleep and rest. The psychological health domain measures positive feelings, thinking, learning, memory and concentration, self esteem, bodily image and appearance, and negative feelings. The level of the independence domain measures mobility, daily life

activities, dependence on medications or treatments, and work capacity. The social relationships domain includes personal relationships, social support, and sexual activity. The environment domain measures physical safety and security, home environment, financial resources, health and social care, accessibility and quality, opportunities for acquiring new information and skills, participation in and opportunities for recreation and leisure activities, and physical environment (pollution, noise, traffic, climate, and transport). The spirituality/religion/personal beliefs domain measures forgiveness and blame, concerns about the future, and death and dying.

2. Depression Anxiety Stress Scale-42

(DASS- 42; Lovibond & Lovibond, 1995): The Scale is a 42- item self-report instrument; rated on 5-point scale from "strongly agree to strongly disagree"designed to measure the three related negative emotional states of depression, anxiety and stress. Each of the three DASS scale contains 14 items .Scores for depression, anxiety and stress are calculated by summing the scores for the relevant item characteristics if high scores on each DASS scale. The depression subscale assesses dysphoria, hopelessness, devaluation of life, self-depreciation, amotivation and anhedonia. The anxiety subscale assesses autonomic arousal, situational anxiety and subjective experience of anxiety. The stress subscale assesses difficulty relaxing, nervousness, agitation and irritability.

3. The Multidimensional Scale of Perceived Social Support (PSS; Zimet et al., 1988):

This 12-item scale measures perceived social support from family, friends and significant other. Respondents will use ratings along a 7-point scale, from 1 (very strongly disagree) to 7 (very strongly agree) to indicate how they feel about each statement. Total scores can range from 12 to 84, with total scores of 69-84 indicative of high acuity, 49-68 indicative of moderate acuity and 12 to 48 indicative of low acuity.

4. Rosenberg Self- Esteem Scale (SES; Rosenberg , 1965):

This 10-item scale assesses an individual's feelings of self-worth when the individual compares himself or herself to other people. The scale is an attempt to achieve a one-dimensional measure of global self-esteem. It was designed to represent a continuum of self-worth, with statements that are endorsed by individuals with low self-esteem to statement that are endorsed only by persons with high self-esteem. The scale can also be modified to measure state self-esteem by asking the respondents to reflect on their current feelings.

Statistical Analysis:

- Descriptive statistics were employed to describe the socio-demographic variables like gender, age, educational qualification, occupation, marital status, number of children, drug use status, duration of knowledge of HIV infection, mode of infection.

- Descriptive statistics were employed to describe the level of QOL, DASS, Perceived Social Support and self-esteem among PLWHA.

- Cronbach's alpha was calculated to determine the reliability and consistency of the measures

- Spearman's Correlation was used to assess the relationship between WHOQOL HIV-Bref, DASS, Perceived Social Support and Rosenberg Self-Esteem Scale and also between QoL and demographic profile

- Kruskal Wallis one way ANOVA was applied to find out if there were any significant differences based on gender and HIV-status

- Post-hoc (Bonferroni) pair-wise comparison of HIV-status and comparison of gender was calculated

- Eta square was employed to analyse the effect size of the dependent variables.

RESULTS

This chapter presents in a chronological manner, the outcomes of the results and the discussion of the results over the level of analysis. The analysis of the data had been carried out as per the design of the study and the tables and the interpretations of the data are presented in that sequence. Descriptive and inferential statistics were employed to see the difference if any in the socio-demographic variables, depicting the demographic profile of the subjects - gender, mode of infection, educational qualification, occupation, marital status, history of drug use, etc.

The psychometric adequacy of the measures used in the study was aimed in the light of the experiences of cross-cultural psychology. Psychological test(s) of proven psychometric adequacy for a given population, if transported and employed for measurement purposes in another cultural milieu, may not carry their identical psychometric properties, and unless preliminary checks are made, may not be accepted as the reliable measure(s) of the theoretical construct (Witkin & Berry, 1975; Eysenck & Eysenck, 1985). Stated otherwise, efforts were made to adapt the behavioral measures, and to find empirical bases for comparability of the test scores (the findings of the present study).

The results of the study revealed that the total coefficient of correlation of the subjects emerged to be satisfactory over the levels of analysis for the whole sample, indicating the trust-worthiness of the scales, such as, WHO QoL HIV-Bref scale, Depression Stress Anxiety Scale, The Multidimentional Scale of Perceived Social Support and Rosenberg self esteem scale.

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Reliability of instruments:

The reliability and predictive validity of the scales and sub-scales were ascertained to ensure the psychometric adequacy of the scales used for the study. Internal consistency reliability was estimated for each of the scales used in the study using Cronbach's coefficient alpha (Cronbach, 1951).

Table 1: Reliability and Internal Consistency of Tools

Variables	Cronbach's Alpha
Quality of Life HIV-Bref	0.887
Physical	0.733
Psychological	0.657
Level of independence	0.516
Social relationships	0.630
Environment	0.647
Religion & spirituality	0.611
Depression Anxiety Stress Scale	0.968
Depression	0.933
Anxiety	0.904
Stress	0.892
Perceived Social Support	0.888
Social	0.842
Family	0.838
Friends	0.847
Rosenberg Self Esteem Scale	0.68

The reliability and predictive validity of the scales namely, WHO Quality of Life HIV-Bref with its six sub-scales: physical, psychological, level of independence, social relationships, environment and spirituality; Depression Anxiety Stress Scale(DASS) and its three sub-scales- depression, anxiety, stress; Multidimensional Scale of Perceived Social Support and its sub scales namely, significant others, family and friends and Rosenberg Self- Esteem Scale was assessed to ensure the psychometric adequacy of the scales used for the study. Internal consistency was estimated for each of the scales used in the study using Cronbach's coefficient alpha (Cronbach's 1951) is presented in Table-1.

The overall internal consistency (Cronbach's alpha) for the entire WHO Quality of Life HIV-Bref 31-item scale was 0.887. The Cronbach's alpha for the six (6) subscales was also estimated. Thus, the Cronbach's alpha for the subscale physical domain was .733, psychological domain was .657, level of independence domain was 0.516, social relationship domain was 0.630, environment domain was 0.647 and religion and spirituality domain was 0.611. The Cronbach's alpha for DASS was 0.968, and the Cronbach's alpha for the sub-scale depression, anxiety and stress were 0.933, 0.904 and 0.892. In the Multidimensional Scale of Perceived Social Support, the overall internal consistency (Cronbach's alpha) for the entire 12-item scale was 0.888. The Cronbach's alpha for sub-scales significant others, family and friends was 0.842, 0.838 and 0.847 respectively. The Cronbach's alpha for Rosenberg Self Esteem Scale is 0.68. The scores on the reliability test show the reliability of the scales on the studied population.

Thus, the results in Table-1 revealed the trustworthiness of the test scales for measurement purposes of the project population, namely, WHOQOL HIV-Bref and its sub-scales- domain I (Physical; pain and discomfort, energy and fatigue, sleep and rest), domain II (Psychological; positive feelings, thinking, learning, memory and concentration, self-esteem, bodily image and appearance, negative feelings), domain III (Level of Independence: mobility, activities of daily living, dependence on medication or treatments, work capacity), domain IV (social relationships: personal relationships, social support, sexual activity, social inclusion),domain V (environment: physical safety and security, home environment, financial resources, health and social care: accessibility and quality, opportunities for acquiring new information and skills, participation in and opportunities for recreation/ leisure activities, physical environment (pollution/noise/traffic/climate), transport), domain VI (spirituality/religion/ personal beliefs: forgiveness and blame, concerns about the future, death and dying); DASS and its sub-scales namely- depression, anxiety and stress; PSS and its sub-scales-significant others, family and friends and Rosenberg Self Esteem Scale.

Relationship between Quality of Life, and Psychosocial variables (depression, anxiety, stress, PSS and self esteem)

In order to assess the relationship of QOL with psychosocial variables (depression, anxiety, stress, perceived social support and self esteem) components, correlation analysis was conducted and the results presented in Table 2.

TABLE 2: Inter scales correlation

Variables	D-2	D-3	D-4	D-5	D-6	QOL-TT	DASS-D	DASS-A	DASS-S	PSS-SO	PSS-FM	PSS-FR	PSS	RSES
D-1	.497**	.486**	.376**	.441**	.371**	.730**	-.512**	-.505**	-.431**	.327**	.301**	.249**	.340**	.473**
D-2		.514**	.420**	.582**	.589**	.823**	.-.582**	-.449**	-.527**	.369**	.353**	.359**	.431**	.563**
D-3			.474**	.538**	.310**	.711**	-381**	-.296**	-.306**	.363**	.332**	.281**	.383**	.475**
D-4				.439**	.266**	.624**	-.355**	-.319**	-.308**	.280**	.311**	.296**	.378**	.310**
D-5					.317**	.741**	-.401**	-.320**	-.354**	.400**	.357**	.328**	.422**	.359**
D-6						.641**	-.605**	-.515**	-.537**	.315**	.241**	.340**	.375**	.460**
QOL-TT							-.650**	-.546**	-.559**	..455**	.429**	.420**	.526**	.609**
DASS-D								.824**	.817**	-.229**	-.235**	-.315**	-.329**	-.483**
DASS-A									.870**	-.173**	-.167**	-.288**	-.291**	-.439**
DASS-S										-.135**	-139**	-.251**	-246**	-408**
PSS-SO											.767**	.526**	.793**	.100*
PSSFM												.480**	.791**	.111**
PSS-FR													.862**	.242**
PSS TT														.197**
RSES TT														

**Significant at the 0.01 level . *Significant at the 0.05 level. (QOL=Quality of life; D-1=Physical, D-2= Psychological, D-3= levels of independence, D-4=social relationship, D-5=Environmental, D-6=Religion/spirituality; DASS=Depression Anxiety Stress Scale ,DASS-D=Depression; DASS-A=Anxiety, DASS-S=Stress, PSS-TT=Perceived Social Support total, PSS-SO=Perceived social support-significant others, PSS-FM = Perceived social support-family, PSS-FR=perceived social support friends, RSES= Rosenberg Self Esteem Scale)

The above table reported that there is a significant negative correlation between QOL and depression (-.650, p<.01). The same is also seen in the relationship between QOL and anxiety (-.546, p<.01) and a negative correlation between QOL and stress (-.599, p<.01), a subscale of DASS. It is also seen that there is a significant positive correlation between QOL and PSS (.526, p<.01), as well as between QOL and the components of PSS, namely PSS from family (.429,p<.01) and PSS from friends (.420,p<.01) and PSS from significant others (.455,p<.01).

The relationship between the sub scales of QOL has also been calculated. QOL has been found to have a positive correlation with its sub-scale physical domain (.730, p<.01). There is a significant co-relationship between physical domain with psychological domain, level of independence, social relationships domain, environment domain and religion and spirituality domain (.497,p<.05;.486,p<.05; .376, p<.05; .441, p<.01; .371, p<.01) respectively.

QOL physical domain has been found to have positive correlation with PSS (.340,p<.01) and significant positive correlations with significant other (.327,p<.01), family (.301<.01), friends (.249<.01) and a significant negative correlation with sub- scales of DASS namely, depression (-.512<.01), anxiety (-.505<.01) and stress (-.431,p<.01). QOL physical domain is also found to have a positive relationship with self esteem (.473, p<.01).

The results of correlation analysis also show that there is a significant positive correlation between QOL and its sub-scale psychological domain (.823, P<.01) and between psychological domain and level of independence (.514, p<.01), social relationships (.420,p<.01), environment (.582,p<.01)and spirituality (.589<p<.01). It is also seen that there is a significant negative correlation between psychological domain and depression (-.582, p<.01), as well as between psychological domain and anxiety (-.449, p<.01) as well as psychological domain and stress (.-527,p<.01). Significant positive relationship is found between psychological domain and the components of PSS, namely PSS from significant others (.369, p<.01) and PSS from family (.353, p<.01) and PSS (.359,p<.01). The results of correlation analysis also show that there is a significant positive correlation between psychological domain and self esteem (.563, p<.01).

QOL has been found to be positively correlated with its sub-scale level of independence (.711,p<.01). Level of independence has been found to be significantly and positively correlated with social relationships(.474,p<.01),environment (.538,p<.01) and spirituality (.310,p<.01). Level of independence is significantly negatively correlated with depression (-.381,p<.01), anxiety (-.296,p<.01), stress (-.306,p<.01). However, significant relationships have been found between levels of independence and PSS (.383,p<.01) and its sub scales namely, significant others (.363,p<.01),family (.332,p<.01) and friends (.281,p<.01).The results of correlation analysis also show

that there is a significant positive correlation between level of independence and self esteem (.475, p<.01).

The results of correlation analysis also show that there is a significant positive correlation between QOL and social relationships (0.624, p<.01). It is also seen that there is a significant positive correlation between social relationships and environment (.439,p<.01) and spirituality (.266,p<.01). Social relationship is significantly negatively correlated with depression (-.355,p<.01), anxiety (-.319,p<.01), stress (-.308,p<.01). However, significant positive relationships have been found between Social relationships and PSS (.378,p<.01) and its sub scales namely, significant others (.280,p<.01),family (.311,p<.01) and friends (.296,p<.01).The results of correlation analysis also show that there is a significant positive correlation between social relationships and self esteem (.310, p<.01).

QOL and its subscale, environment has also been found to have a significant positive relationship (.741,p<.01) and significant positive correlation has also been found between environment and spirituality (.317,p<.01).Positive relationship is found between environment and PSS (.422, p<.01), as well as between environment and the components of PSS, namely PSS from significant others (.4, p<.01) , PSS from family (.357, p<.01) and PSS from friends (.328,p<.01). Positive correlation is also found between environment and self esteem (.359, p<.01).However, a negative correlation is found between environment and depression (-.-401<.01), anxiety (-.320,p<.01) and stress (-.354, p<.01).

QOL and its subscale, spirituality has also been found to have a significant positive relationship (.641,p<.01) and a positive relationship is also found between spirituality and Perceived Social support (.375, p<.01), as well as between spirituality and the components of PSS, namely PSS from significant others (.315, p<.01) , PSS from family (.241, p<.01) and PSS from friends (.340,p<.01). Positive correlation is also found between spirituality and self esteem (.460,p<.01). Spirituality is significantly negatively correlated with depression (-.605<.01), anxiety (-.515, p<.01) and stress (-.537, p<.01).

Depression has been found to be significantly and positively correlated with anxiety (0.824, p<.01), and stress (.817, p<.01). A negative relationship is also found between depression and PSS (-.329, p<.01), as well as between depression and the components of PSS, namely PSS from significant others (-.229, p<.01), PSS from family (-.235, p<.01) and PSS from friends (-.315,p<.01). Negative correlation has also been found between depression and self esteem (-.483,p<.01).

Anxiety has been found to be significantly and positively correlated with stress (.870, p<.01). A negative relationship is also found between anxiety and PSS (-.291, p<.01), as well as between anxiety and the components of PSS, namely PSS from significant others (-.173, p<.01), perceived social support from family (-.167, p<.01) and PSS from friends (-.288,p<.01).Negative correlation has also been found between anxiety and self esteem (-.439,p<.01).

Stress has been found to be significantly and negatively correlated with PSS (-.246, p<.01), as well as between stress and the components of PSS, namely PSS from significant others (-.135, p<.01), PSS from family (-.139, p<.01) and PSS from friends (-.251,p<.01).Negative correlation has also been found between stress and self esteem (-.408,p<.01).

PSS is significantly and positively correlated with its component significant others (.793, p<.01). Significant positive correlation is also found between PSS from significant others and family (.767, p<.01), PSS from significant others and friends (.526, p<.01) and PSS from significant others and self esteem (.1, p<.05).

PSS is significantly and positively correlated with its component family (.791, p<.01). Positive correlation is also found between PSS from family and PSS from friends (.480, p<.01), and a positive correlation between PSS from family and self esteem (.111, p<.01).

PSS is significantly and positively correlated with its component friends (.862, p<.01) as well as between the components of PSS from friends and self-esteem (.242, p<.01).Moreover significant and positive correlation is found between PSS and self esteem (.197,p<.01).

Psychosocial factors and Quality of life of people living with HIV/AID in Aizawl

Demographic profile of PLWHA and non infected males and females in Aizawl (percentage):

Figure-1: Mode of infection of all HIV-infected subjects

Mode of Infection

| Sex | Injecting drugs | Others | Sex | Injecting drugs |
| Male | | | Female | |
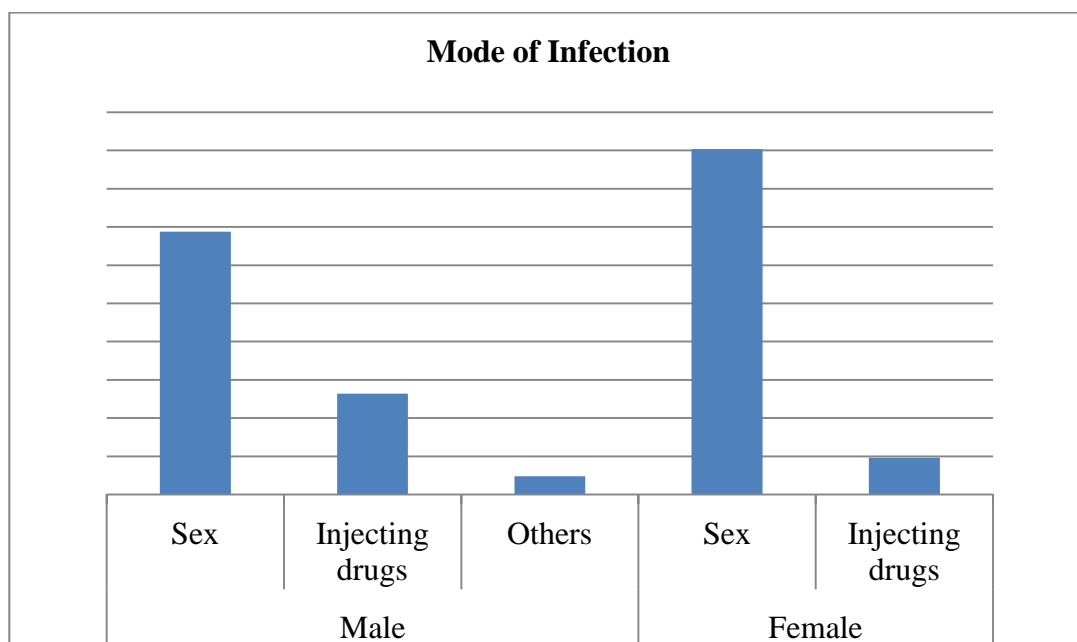
Figure-2: History of drug use of the whole samples
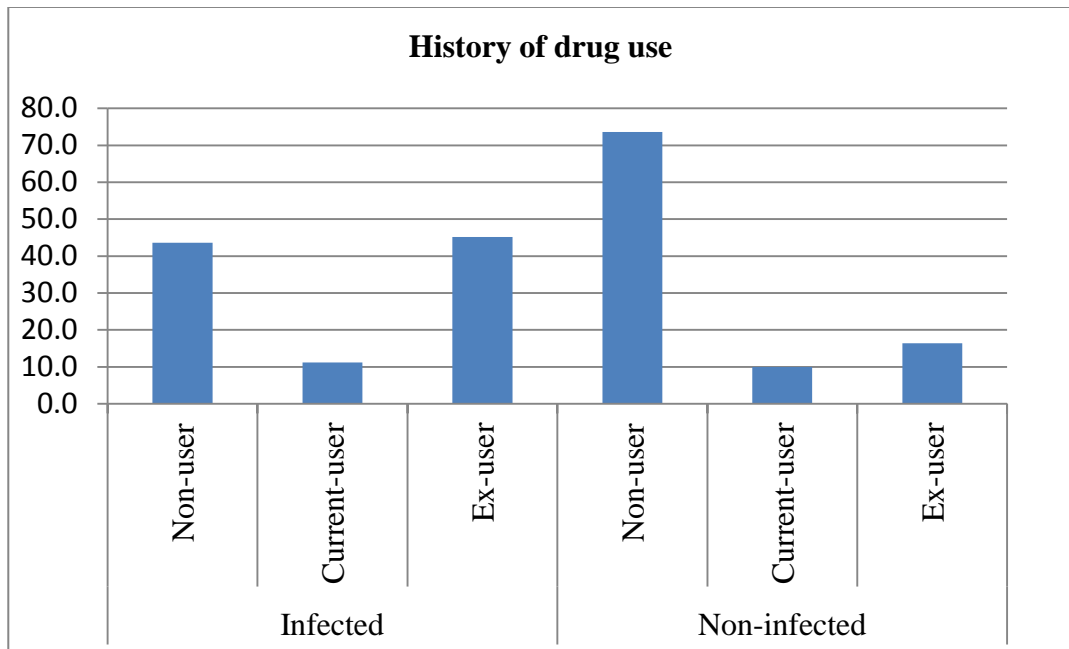
Figure 3: Educational qualification of the whole samples
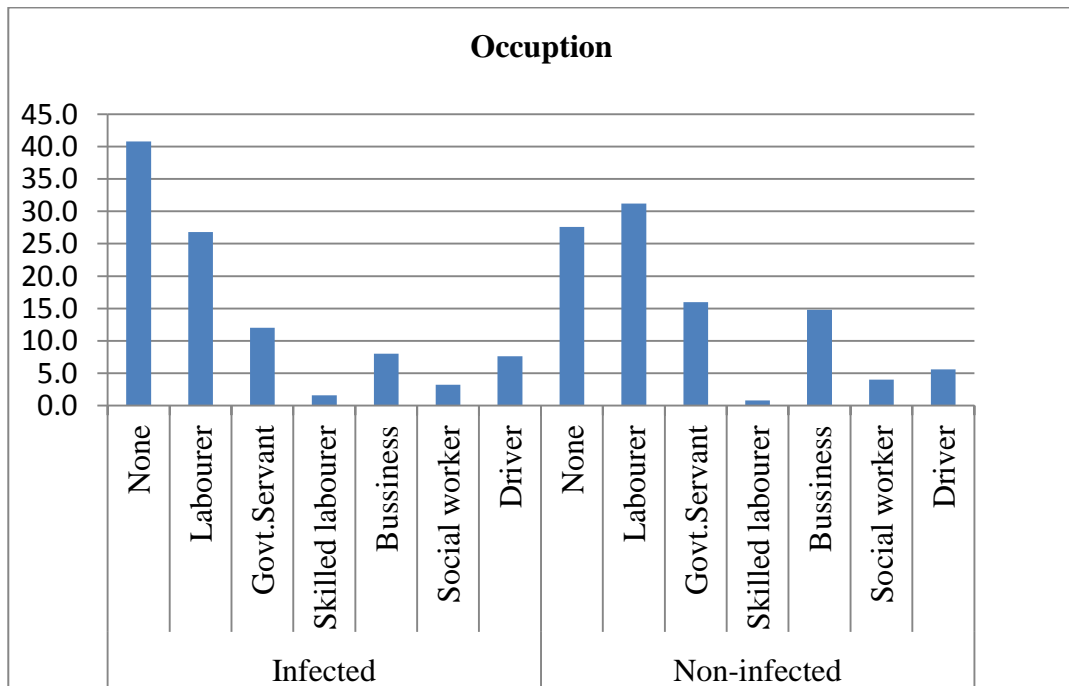
Figure-4: Occupation of the whole samples

Educational Qualification
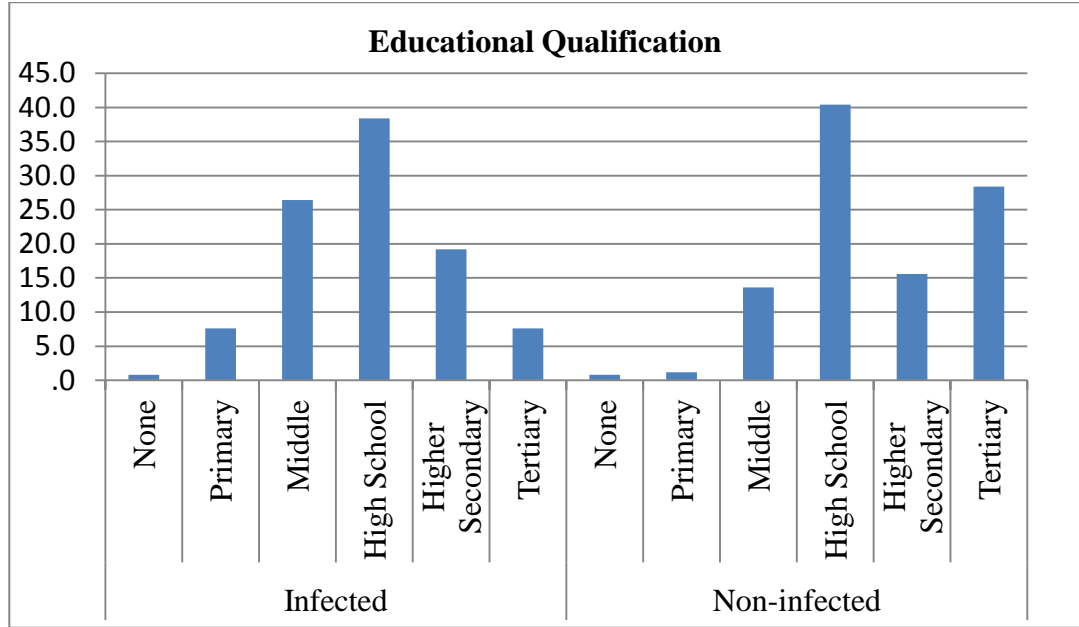
Figure 5: Marital status of the whole samples

Marital status
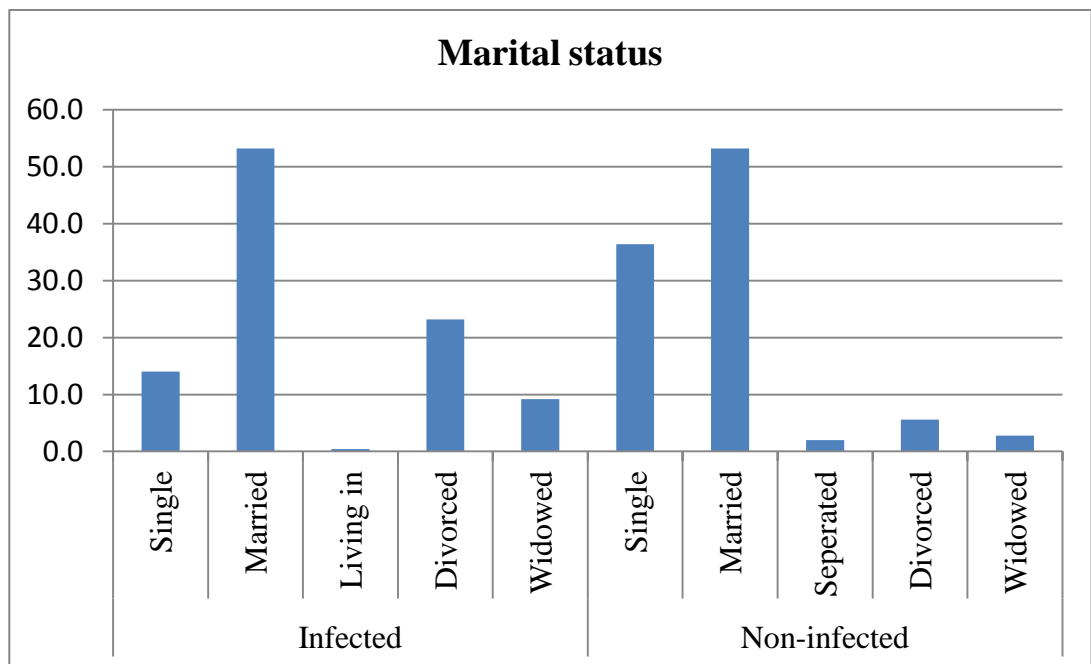
Figure 6: Duration of knowledge of HIV-infection
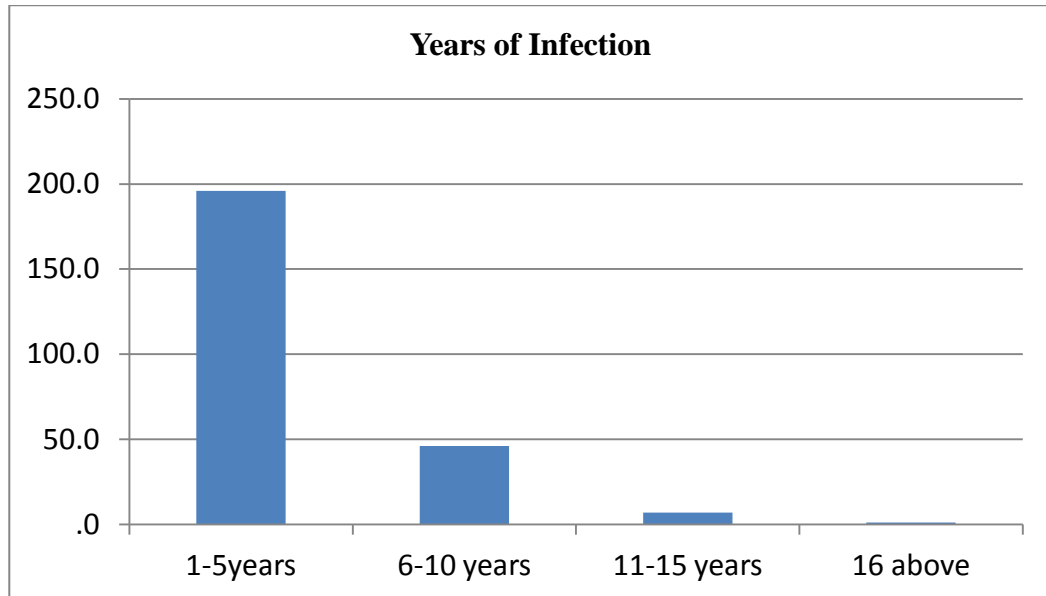
Years of Infection

Figure-7: Household members of the whole samples

Household members
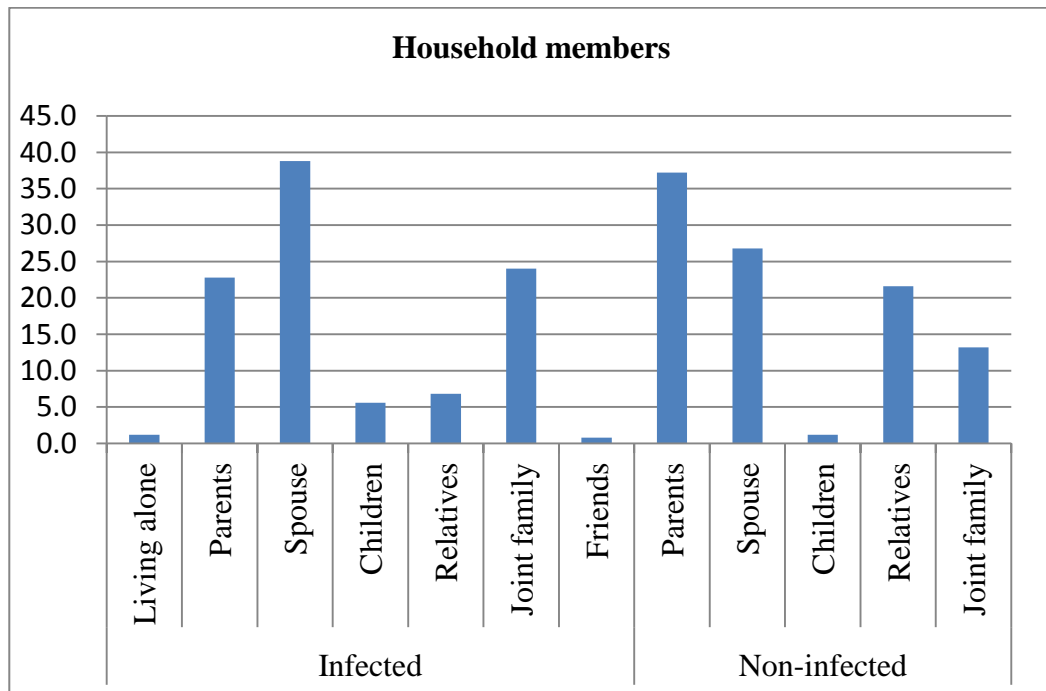
The mode of infection among HIV-infected male and infected-female is presented in figure 1. Among the 250 subjects, 79.6% of all infected respondents (68.8% male and 90.4% female) got infected through sex, 18% (26.4% males and 9.6% females) through sharing needles and syringes and 2.4% of them through unknown source. The history of drug use by all the respondents (500 samples) revealed that among the PLHIV, 43.6% were non users, 11.2% were current users, while 45.2% were ex-users. 73.6% of the non-infected group report not using drug, 10% current user and 16.4% ex-users (Fig.2).

As depicted in figure 3, scores on educational qualification of the whole samples shows that among the HIV-infected group, 7.6% of the participants had tertiary education, and 19.2% had completed their higher secondary education, 38.4% studied till high school, 26.4% had studied till middle school, and 7.6% had studied only up to primary while .8% of the population has no formal education. Among the non-infected group, 28.4% of the participants had tertiary education, 15.6% had completed their higher secondary education, 40.4% studied till high school, 13.6% had studied till middle school, and 1.2% had studied only up to primary while .8% of the population has no formal education.

Figure 4 shows that among HIV infected respondents, 40.8%(16.8% male & 64% females)respondents are currently unemployed, 26.8% (35.2% males & 18.4%females) are daily labourers, 12%(16.8%males & 7.2% females) government

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servant, 8%(12% males and 4% females)business persons, 3.2%(4% males & 2.4% females)social worker,1.6%(3.2% females) skilled labourer and 7.6%(15.2% male) drivers .

Among non-infected respondents, 27.6%(16% males & 39.2% females) were unemployed, 31.2%(32%males & 30.4% females) daily labourers, 16%(21.6%males &10.4% females) government servant, 8%(1.6% females) skilled labourers , 14.8% (16 %males& 13.6% feamales) business persons , 4%(3.2% males and 4.8% females) social worker, 5.6%(11.2% males)driver.

Figure 5 shows that among the HIV-infected subjects, 53.6% married, 23.2% divorced, 14% were single and 9.2% widowed. Among the non-infected groups 53.4% were married, 36.4% single, 5.6% divorced and 2.8% widowed. Figure 6 reports the duration of knowledge of HIV infection.74% of the subject have the knowledge of their infection during the past one to five years, 18.4% in the past six to ten years and 3.2% in the past eleven or more years. Figure 7 shows that 38.8 % of PLWHA were living with their spouse, 24% in a joint family, 22.8% with parents, 6.8% relatives, 5.6% children,1.2% living alone and .8% living with friends. Among the non-infected group, 37.2% live with their parents, 26.8% with their spouse, 21.6% with relatives, 13.2% in a joint family and 1.2%with children.

Correlation between QOL and demographic variables:

Table 3: Correlation of QOL and demographic variables

Varible	Age	Occupation	Education	Marital Status	House hold	History of drug use	Years of infection	Mode of infection
QOL	-0.088	.165**	0.007	-0.058	0.001	0.02	-0.116	-0.117
*** Significant at the 0.01 level* ** Significant at the 0.05 level*								

Correlation between QOL and demographic variables was calculated by employing Spearman correlation coefficient. Significant correlation is found between QOL and occupation at p< .01 levels (Table 3).

Levels of Psychosocial variables of people living with HIV AIDS in Aizawl:

Levels of QOL among PLWHA in Aizawl:

The study included 125 HIV-infected males and 125 HIV-infected females, 125 Non-infected males and 125 Non-infected females' ages between 20 and 40 years. Domain scores in the WHOQOL-HIV Bref were scaled in positive direction with higher score denoting good quality of life. Negative questions like pain and discomfort were recorded so that higher scores reflected better QOL. In this study, the overall QOL scores were categorized into three categories such as low, moderate and high using the 33rd and 66th percentile cut off values from the distribution of scores.

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Figure 8: Levels of Quality of Life of PLWHA
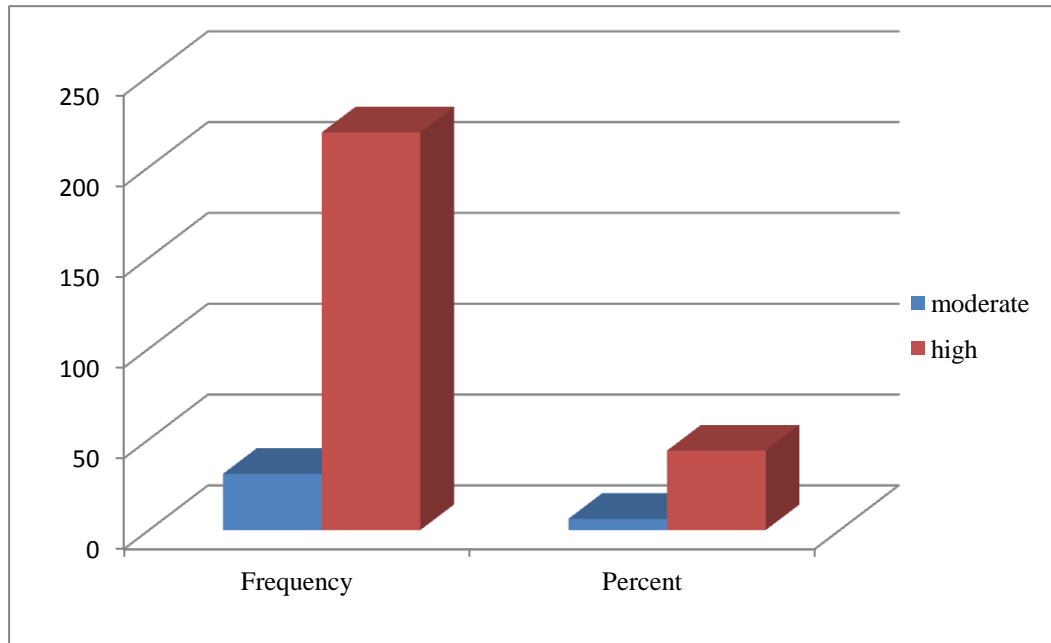
Figure 9: Levels of Quality of life and Gender
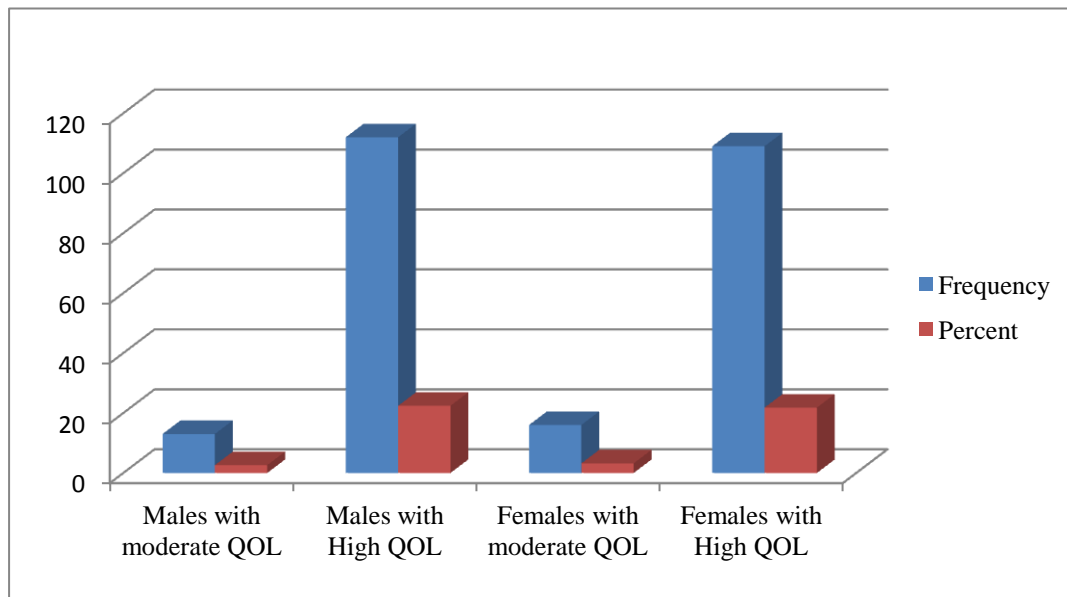
Table 4.1: Levels of Quality of life

QOL	Male	Female	Total
Moderate	23(18.4%)	32(25.6%)	55(22%)
High	102(81.6%)	93(74.4%)	195(78%)
Physical	**Male**	**Female**	**Total**
Low	2(.8%)	2(.8%)	4(1.6%)
Moderate	42(33.6%)	53(42.4%)	95(38%)
High	81(64.8%)	70(56%)	151(60.4%)
Psychological	**Male**	**Female**	**Total**
Low		1(.8%)	1(.4%)
Moderate	28(22.4%)	47(37.6%)	75(30%)
High	97(77.6%)	77(61.6%)	174(69.6%)
Level of independence	**Male**	**Female**	**Total**
Moderate	33(26.4%)	43(34.4%)	76(30.4%)
High	93(73.6%)	82(65.6%)	174(69.6%)
Social relationship	**Male**	**Female**	**Total**
Low		1(.8%)	1(.4%)
Moderate	26(20.8%)	26(20.8%)	52(20.8)
High	99(79.2%)	98(78.4%)	197(78.8%)
Environmental	**Male**	**Female**	**Total**
Low		1(.8%)	1(.4%)
Moderate	35(28%)	37(29.6%)	72(28.8%)
High	90(72%)	87(69.6%)	179(70.8%)
Religion & spirituality	**Male**	**Female**	**Total**
Low		1(.8%)	1(.4%)
Moderate	18(14.4%)	42(33.6%)	60(24%)
High	107(85.6%)	82(65.6%)	189(75.6%)

The level of QoL among PLWHA is presented in Figure 8 and 9.Figure 8 shows that 22% reported moderate and 78% reported high level of QOL.18.4% of males reported having moderate level of QOL and 81.6% of male reported to have high level of QoL. 25.6% of females reported having moderate level of QOL and 74.4 % reported to have high level of QOL. The scores on the six subscales of the QOL measure were also categorized into three levels (low, moderate and high QOL).Table 4.1 shows the frequency and percentage of the overall QOL scores and its sub-scales namely, domain 1(physical), domain 2(physical) domain 3(independent), domain 4(social), domain 5(environment) and domain 6(spirituality).In domain 1(physical), 1.6% (.8% males and .8% females) of the subjects reported low level of QOL,38% (33.6% males and 42.4% females) reported moderate level of QOL and 60.4%(64.8% males and 56% females) reported having high QOL.

In domain 2(physical),.4% of the subjects reported having low level of QOL, 30% (22.4%males and 37.6% females)of the subjects reported moderate level, 69.6%(77.6% males and 61.6% females) of the subjects reported high level. In domain 3(independent), 30.4 % (26.4% males and 34.4% females) reported moderate level of QOL and 69.6% (73.6% males and 65.6% females) reported high level QOL. In the subscale domain 4(social), 78.8 % (39.6% males and 39.2% females) reported high level QOL, 20.8 % (20.8% males and 20.8% females) reported moderate level QOL, while .4%(.8% females) of subjects reported low

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level QOL. In domain 5(environment), 70.8% (72% males and 69.6%females) report high level QOL, 28.8 % (28% males and 29.6% females) reported moderate level QOL, while .4% (.8%females) reported low level of QOL. in domain 6(spirituality), 75.6% (85.6% males and 65.6 % females) reported the high level QOL,24 % (14.4 %males and 33.6% females) have moderate level, while .4%(.8% females) report low level QOL. The overall result shows a good QOL among PLHIV with all respondents having a moderate and high QOL.

Levels of Depression, Anxiety and Stress among the studied samples:

The psychosocial factors of the subjects in this study were highlighted by measuring their level of depression, anxiety and stress statuses, which are presented in Table 4.2. Scores of Depression, Anxiety and Stress are calculated by summing the scores for the relevant items. The score for each of the respondents over each of the sub-scales are then evaluated as per the severity-rating index.

Table 4.2: Levels of depression, stress anxiety of all samples

Levels of Depression		Male	Female	Total
HIV-infected	Normal	92(36.8%)	78(31.2%)	170(68%)
	Mild	13(5.2%)	20(8%)	33(13.2%)
	Moderate	19(7.6%)	15(6)%	34(13.6%)
	Severe	1(.4%)	6(2.4%)	7(2.8%)
	Extremely Severe		6(2.4%)	6(2.4%)
Non-infected	Normal	108(43.2%)	114(45.6%)	222(88.8%)
	Mild	7(2.8%)	8(3.2%)	15(6%)
	Moderate	10(4%)	3(1.2%)	13(5.2%)
Levels of Anxiety		Male	Female	Total
HIV-infected	Normal	77(30.8%)	44(17.6%)	121(48.4%)
	Mild	6(2.4%)	16(6.4%)	22(8.8%)
	Moderate	21(8.4%)	35(14%)	56(22.4%)
	Severe	20(8%)	12(4.8%)	32(12.8%)
	Extremely Severe	1(.4%)	18(7.2%)	19(7.6%)
Non-infected	Normal	95(38%)	95(38%)	190(76%)
	Mild	11(4.4%)	19(7.6%)	30(12%)
	Moderate	10(4%)	10(4%)	20(8%)
	Severe	9(3.6%)	1(.4%)	10(4%)
Levels of Stress		Male	Female	Total
HIV-infected	Normal	119(47.6%)	104(41.6%)	223(89.2%)
	Mild	4(1.6%)	5(2%)	9(3.6%)
	Moderate	2(.8%)	11(4.4%)	13(5.2%)
	Severe		4(1.6%)	4(1.6%)
	Extremely Severe		1(.2%)	1(.4%)
Non-infected	Normal	119(47.6%)	125(50%)	244(97.6%)
	Mild	3(1.2%)		3(1.2%)
	Moderate	3(1.2%)		3(1.2%)

More than half of the HIV infected subjects 68 %,(36.8% male and 31.2% female) report normal level of depression, 13.2%(5.2 % male and 8% female) report mild depression, 13.6%(7.6% male and 6% female) report moderate depression, while 2.8%(.4% male and 2.4% female) report severe depression and 2.4% females report extremely severe depression. Among the non-infected subjects, 88.8%, (43.2% male and 45.6% female) report normal level of depression, 6%(2.8% male and 3.2% female) report mild depression, 5.2%(4% male and1.2 % female) report moderate depression.

48.4% of the infected subjects (30.8% males and 17.6 % females) report normal level of anxiety, while 8.8%(2.4%males and 6.4% females) report mild anxiety,22.4 % (8.4% males and 14% females)report moderate anxiety and 12.8% (8% male and 4.8% females) report severe anxiety 7.6% (.4% males and 7.2 % females) report extremely severe anxiety. The highest proportion of the non-infected subjects 76%(38% males and 38% females) report normal level of anxiety, while 12 % (4.4% males and 7.6% females)report mild anxiety, 8% (4% males and 4% females) report moderate anxiety and 4%(3.6% males and .4% females) report severe anxiety.

89.2% of the HIV- infected subjects (47.6% males and41.6 % females) report normal level of stress, while 3.6%(1.6% males and 2% females) report mild stress, 5.2% (.8% males and 4.4% females)report moderate stress and 1.6% and .4%of females report severe and extremely severe levels of stress. The highest proportion

of the non-infected subjects, 97.6% report normal level of stress with 1.2% each of males report mild and moderate stress.

Levels of PSS among PLWHA and non-infected samples in Aizawl:

In this study, the overall PSS scores were categorized into three categories such as low, moderate and high using the 33rd and 66th percentile cut off values from the distribution of scores.

Table 4.3: Levels of Perceived Social Support (PSS)

PSS		Male	Female	Total
HIV-infected	Low	9(3.6%)	9(3.6%)	18(7.2%)
	Moderate	20(8%)	29(11.6%)	49(19.6%)
	High	96(38.4%)	87(34.8%)	183(73.2%)
Non-infected	Low	6(2.4%)	3(1.2%)	9(3.6%)
	Moderate	39(15.6%)	25(10%)	64(25.6%)
	High	80(32%)	97(38.8%)	177(70.8%)
PSS-SO		Male	Female	Total
HIV-infected	Low	5(2%)	5(2%)	10(4%)
	Moderate	16(6.4%)	21(8.4%)	37(14.8%)
	High	104(41.6%)	99(39.6)	203(81.2%)
Non infected	Low	5(2%)	2(.8%)	7(2.8%)
	Moderate	39(15.6%)	31(12.4%)	70(28%)
	High	81(32.4%)	92(36.8%)	173(69.2%)
PSS -FM		Male	Female	Total
HIV-infected	Low	5(2%)	4(1.6%)	9(3.6%)
	Moderate	7(2.8%)	9(3.6%)	16(6.4%)
	High	113(45.2%)	112(44.8%)	225(90%)
Non-infected	Moderate	6(2.4%)	5(2%)	11(4.4%)
	High	119(47.6%)	120(48%)	239(95.6%)
PSS-FR		Male	Female	Total
HIV-infected	Low	9(3.6%)	11(4.4%)	20(8%)
	Moderate	20(8%)	22(8.8%)	42 (16.8%)
	High	97(38.8%)	90(36%)	187(74.8%)
Non-infected	Low	2(.8%)		2(.8%)
	Moderate	7(2.8%)	7(2.8%)	14(5.6%)
	High	116(46.4%)	119(47.6%)	235(94%)

Analysis of the scores obtained by the subjects in the overall scores of PSS reveals that 73.2 %(34.4% infected males and 34.8% infected females) have high acuity, 19.6% (8% infected males and 11.6% infected females) have moderate acuity and 7.2% (3.6% non-infected males and 3.6% non-infected females) have low acuity of PSS (Table 4.3). 70.8 %(32% non-infected males and 38.8% non-infected females) have high acuity,25.6 % (15.6% non-infected males and 10% non-infected females) have moderate acuity and 3.6% (2.4% non- infected males and 1.2% non- infected females) have low acuity of PSS.

The scores obtained by the subjects in the measures of significant others, a sub-scale of PSS reveals that among HIV-infected groups , 81.2%(41.6% males and 39.6% females) have high acuity, 14.8% (6.4% males and8.4 % females) have moderate acuity and 4% (2%males and 2% females) have low acuity of significant others. 69.2%(32.4 % non-infected males and 36.8% non-infected females) have high acuity, 28% (15.6% non-infected males and 12.4% non-infected females) have moderate acuity and 2.8% (2% non- infected males and .8% non- infected females) have low acuity of significant others.

The scores obtained by the subjects in the measures of family, a sub-scale of PSS reveals that among HIV-infected groups 90%(45.2% males and 44.8% females) have high acuity, 6.4% (2.8% males and 3.6% females) have moderate acuity and 3.6% (2%males and 1.6% females) have low acuity of PSS 95.6%(

47.6% non-infected males and 48% non-infected females) have moderate acuity, 4.4% (2.4% non-infected males and2 % non-infected females) have low acuity.

The scores obtained by the subjects in the measures of friends, a sub-scale of PSS reveals that among HIV-infected groups, 74.8%(38.8% males and 36% females) have high acuity, 16.8% (8% males and 8.8% females) have moderate acuity and 8% (3.6%males and 4.4 % females) have low acuity of PSS 94%(46.4% non-infected males and 47.6% non-infected females) have high acuity, 5.6% (2.8% non-infected males and 2.8 % non-infected females) have moderate acuity and .8% non- infected males have low acuity on the subscale, friends(Table 4.3).

Levels of Self-Esteem among PLWHA and non-infected samples in Aizawl:

In this study, the overall Self-esteem scores were categorized into three categories such as low, moderate and high using the 33rd and 66th percentile cut off values from the distribution of scores.

Table 4.4: Levels of Self Esteem

	Level of Self Esteem	Male	Female	Total
	Low	-	3(1.2%)	3(1.2%)
HIV-infected	Moderate	88(35.2%)	95(38%)	183(73.2%)
	High	37(14.8%)	27(10.8%)	64(25.6%)
Non-infected	Moderate	78(31.2%)	56(22.4%)	134(53.6%)
	High	47(18.8%)	69(27.6%)	116(46.4%)

The scores obtained by the subjects in the measures of self-esteem, reveals that 25.6 %(14.8% infected males and 10.8% infected females) have reported to having high self-esteem, 73.2% (35.2% infected males and38 % infected females) have moderate level of self esteem and 1.2% infected females have low level of self-esteem. 46.4 %(18.8% non-infected males and 27.6% non-infected females) have high level of self-esteem, 53.6% (31.2% non-infected males and 22.4% non-infected females) have moderate level of self-esteem. However there is no report of non- infected males and non- infected females having low level of self-esteem (Table 4.4).

Gender differences on measures of the dependent variable:

To find out whether gender (infected/non-infected) causes differences on the scores of the different psychosocial measures of QOL, depression, anxiety, stress, PSS and self-esteem the "Kruskal-Wallis one way analysis of variance by ranks" is employed. The method relies on the ranks of the scored values and the means of those ranks, rather than examining the means of the data. A significance level of .05 significance level (95% level of confidence),was used to conduct the Kruskal-Wallis one way ANOVA to decide if any attributes are statistically different from the others with the specified degree of significance. Post hoc (Bonferroni) pair-wise comparison was employed to find out the difference between genders on the dependent measures.

Gender differences in measures of the overall QOL and its sub scales; physical domain, psychological domain, level of independence domain, social relationships domain, environment domain and spirituality domain:

Table 5.1: Mean rank-comparing gender differences in measures of QOL and its sub‑scales

Variables	N	Mean Rank Male	Mean Rank Female
D-1 (Physical)	250	135.73	115.27
D-2 (Psychological)	250	143.72	107.28
D-3 (Level of independence)	250	130.42	120.58
D-4 (Social relationship)	250	126.82	124.18
D-5 (Environment)	250	128.36	122.64
D-6 (Religion& Spirituality)	250	147.82	103.18
QoL_TT	250	139.69	111.31

Table 5.2: Kruskal Wallis one way ANOVA on gender in the six (6) subscales of QOL and overall QOL

Test statistics[ab]							
	D-1	D-2	D-3	D-4	D-5	D-6	QOL
Chi Square	5.066	16.115	1.274	0.087	0.394	24.21	9.636
Df	1	1	1	1	1	1	1
Asymp. Sig.	0.024	0.00	0.259	0.769	0.768	0.00	0.002
Eta Square	0.0203	0.064	0.005	0.00034	0.0015	0.097	0.0187
a. Kruskal Wallis one way ANOVA b.Grouping Variable:GENDER							

Table 5.3: Post hoc (Bonferroni) comparisons of gender on the dependent measures of QOL and its sub-scales

Contrast	Difference	Standardized difference	Critical value	Pr > Diff	Significant
QOL:Gender / Bonferroni / Analysis of the differences between the categories with a confidence interval of 95%					
QOL1 vs 2	5.76	3.0425	1.9696	0.0026	Yes
D11 vs 2	0.816	2.0055	1.9696	0.046	Yes
D21 vs 2	1.632	4.0848	1.9696	< 0.0001	Yes
D31 vs 2	0.248	0.9639	1.9696	0.336	No
D41 vs 2	0.168	0.5816	1.9696	0.5614	No
D51 vs 2	0.528	1.046	1.9696	0.2966	No
D61 vs 2	1.872	5.1164	1.9696	< 0.0001	Yes
Modified significance level:0.05 (QOL1vs 2=quality of Life male vs female, D11vs2= physical male vs female, D21 vs 2= psychological male vs female, D31= level of independence male vs female,D41vs 2=social relationship male vs female, D51 vs 2=environment male vs female, D61 vs 2=religion,/spirituality male vs female)					

Significant gender differences were found on the measures of physical domain (p<.05) and psychological domain (p<.01), spirituality domain (p<.01) and in overall QOL (p<.01). Eta Square values reveal that gender accounts for 2% of the variability in domain 1(physical), 6% of the variability in domain 2, 0.5% of the variability in domain 3, 9% of the variability in domain 6 and 1% of the variability in the overall QOL (Table5.2). The mean rank table (Table 5.1) shows that males scored higher than females in all the sub-scales and overall QoL and also on all the subscales of QOL. Table 5.3 shows the Post hoc (Bonferonni) pairwise comparison scores revealed that there is a significant difference between male and female on

overall QOL, physical, psychological and spirituality domain at.05 level with a mean difference of 5.76, 0.816, 1.632, and 1.872 respectively.

Gender differences in measures of depression stress and anxiety:

Table 6.1: Mean rank-comparing gender differences in measures of depression, stress and   anxiety

	Variables	N	Mean Rank Male	Mean Rank Female
HIV-infected	Depression	250	109.05	141.95
	Anxiety	250	103.94	147.06
	Stress	250	103.99	147.01
Non-infected	Depression	250	123.29	127.71
	Anxiety	250	118.10	132.90
	Stress	250	120.65	130.35

Table 6.2: Kruskal Wallis one way ANOVA on gender in depression, stress anxiety scale

Test statistics[ab]			
HIV-infected	**Depression**	**Anxiety**	**Stress**
Chi Square	13.078	22.183	22.339
Df	1	1	1
Asymp.Sig.	.000	.000	.000
Eta Square	0.0525	0.089	0.087
Non-infected	**Depression**	**Anxiety**	**Stress**
Chi Square	.240	1.137	2.639
Df	1	1	1
Asymp.Sig.	.624	.286	.104
Eta Square	.000	0.004	0.010
a. Kruskal Wallis Test b.Grouping Variable: Gender			

Table 6.3: Post hoc (Bonferroni test) comparisons of gender on the dependent measure of depression, stress, anxiety

DASS :HIV*Gender / Bonferroni / Analysis of the differences between the categories with a confidence interval of 95%:					
Contrast	Difference	Standardized difference	Critical value	Pr > Diff	Significant
D 3 vs 1	3.28	4.3321	2.6489	< 0.0001	Yes
D 2 vs 4	0.424	0.56	2.6489	0.5757	No
A 3 vs 1	4.376	6.1701	2.6489	< 0.0001	Yes
A 2 vs 4	0.048	0.0677	2.6489	0.9461	No
S 3 vs 1	4.08	6.1349	2.6489	< 0.0001	Yes
S 4 vs 2	0.152	0.2286	2.6489	0.8193	No
Modified significance level:0.0083(D=depression,A=anxiety,S=stress;1=HIV- infected male, 2=Non-infected male, 3=HIV-infected female, 4=Non-infected female)					

To find out whether gender causes differences on the scores of depression, stress and anxiety the "Kruskal-Wallis one-way analysis of variance by ranks" is employed. Significant gender differences among PLWHA were found on the measures of depression (p<.01), anxiety (p<.01) and stress (p<.01). Eta Square values reveal that gender accounts for 5.2% of the variability in depression, 8.9% of the variability in anxiety and 8.7 % of the variability in stress among the PLHWA (Table 6.2). Significant gender differences were not found among non-infected subjects. Eta Square values reveal that gender accounts for .4% of the variability in Anxiety and 1 % of the variability in Stress (Table 6.2) among the non-infected groups. As depicted in the mean rank table, both infected and non-infected females scored higher than their male counterpart in all the psychological measures of depression, anxiety and stress. Table 6.3 shows the Post hoc (Bonferonni) pair-wise comparison scores. It reveals that there is a significant difference between male and female on depression, anxiety and stress among the HIV-infected group at .01 levels with a mean difference of 3.28 in depression, 4.376 on anxiety and 4.08 on stress. The mean difference on depression, anxiety and stress among non-infected subjects were 0.424, 0.048 and 0.152 respectively suggesting that no significant difference is found between the two genders.

Gender differences in measures of Perceived Social Support (PSS):

TABLE 7.1: Mean rank-comparing gender differences in measures of PSS

	Variables	N	Mean Rank Male	Mean Rank Female
HIV-infected	PSS	250	132.46	118.54
	PSS_SO	250	130.15	120.85
	PSS_FM	250	126.50	124.50
	PSS_FR	250	130.99	120.01
Non-infected	PSS	250	111.40	139.60
	PSS_SO	250	115.78	135.22
	PSS_FM	250	116.24	134.76
	PSS_FR	250	112.68	138.32

Table 7.2: Kruskal Wallis Test- Comparing gender differences in PSS

Test statistics[ab]				
HIV-infected	**PSS-SO**	**PSS-FM**	**PSS-FR**	**PSS**
Chi Square	1.617	0.066	1.561	2.421
Df	1	1	1	1
Asymp.Sig.	0.204	0.797	0.212	0.120
Eta Square	0.006	0.0026	0.006	0.009
Non-infected	**PSS-SO**	**PSS-FM**	**PSS-FR**	**PSS**
Chi Square	5.002	4.527	8.615	9.907
Df	1	1	1	1
Asymp.Sig.	.025	.033	.003	.002
Eta Square	0.020	0.018	0.034	0.039
a. Kruskal Wallis one way ANOVA b.Grouping Variable:Gender				

Table 7.3: Post hoc (Bonferroni test) comparisons of gender on the dependent measures   of PSS

PSS:HIV*Gender / Bonferroni / Analysis of the differences between the categories with a confidence interval of 95%						
Variable	Contrast	Difference	Standardized difference	Critical value	Pr > Diff	Significant
PSS	1 vs 3	2.344	1.4709	2.6489	0.142	No
PSS	4 vs 2	4.248	2.6656	2.6489	0.0079	Yes
PSS-SO	1 vs 3	0.312	0.6931	2.6489	0.4886	No
PSS-SO	3 vs 4	0.2880	0.6398	2.6489	0.5226	No
PSS-FM	1 vs 3	0.168	0.2858	2.6489	0.7751	No
PSS-FM	4 vs 2	1.112	1.8918	2.6489	0.0591	No
PSS-FR	1 vs 3	1.336	1.8573	2.6489	0.0639	No
PSS-FR	4 vs 2	1.376	1.9129	2.6489	0.0563	No
Modified significance level:0.0083 (1= HIV-infected male, 2=Non-infected male, 3=HIV-infected female, 4=Non-infected female)						

As depicted in Table 7.1 and 7.2, no significant gender differences among PLHWA were found on the sub-scales of PSS namely; significant others, family and friends and in the overall PSS. Eta Square values reveal that gender accounts for .6% of the variability in significant others, .26% of the variability in Family, .6 % of the variability in Friends and .9 % of the variability in the overall PSS among PLHWA. The mean rank table depicted that PLHWA males scored higher than their female counterpart on all the subscales of PSS namely, PSS from significant others, PSS from family and friends as well as on the overall scores of PSS.

Significant gender differences was found among the non-infected samples on the sub-scales of PSS namely; social (p<.05), family (p<.05) and friends (p<.01) and in the overall PSS (p<.01) using Kruskal Wallis one way ANOVA(Table-7.2). Post hoc (Bonferonni) pairwise comparison scores (Table 7.3) revealed that there is

a significant difference between male and female on PSS among non-infected group at .01 levels with a mean difference of 4.248. Eta Square values reveal that gender accounts for 2% of the variability in significant others, 1.8% of the variability in Family, 3.4% of the variability in Friends and 3.9% of the variability in the overall PSS among the non-infected groups. The mean rank table (Table 7.1) depicted that PLHWA females scored higher than their male counterpart on all the subscales of PSS namely, PSS from Significant others, PSS from family and friends as well as on the overall scores of SS. In contrast, the mean rank table shows that non-infected females scored higher than their male counterpart on all the subscales of PSS namely, PSS from Significant others, PSS from family and friends as well as on the overall scores of PSS.

Gender differences in measures of Self-esteem

TABLE 8.1: Mean rank-comparing gender differences in measures of self esteem

	Variables	N	Mean Rank Male	Mean Rank Female
HIV-infected	RSES	250	135.39	115.61
Non-infected	RSES	250	113.36	137.64

TABLE 8.2: Kruskal Wallis Test- Comparing gender differences in self esteem

Test statistics[ab]	
HIV-infected	Self Esteem
Chi Square	4.715
df	1
Asymp.Sig.	.030
Eta Square	0.018
Non-infected	Self Esteem
Chi Square	7.130
df	1
Asymp.Sig.	.008
Eta Square	0.028
a. Kruskal Wallis one way ANOVA b.Grouping Variable:Gender	

Table 8.3: Post hoc (Bonferroni test) comparisons of gender on the dependent measures of self esteem

Self-esteem: HIVGender / Bonferroni / Analysis of the differences between the categories with a confidence interval of 95%:						
Variable	Contrast	Difference	Standardized difference	Critical value	Pr > Diff	Significant
Self-esteem	1 vs 3	1.2	2.8656	2.6489	0.0043	Yes
Self-esteem	4 vs 2	0.968	2.3116	2.6489	0.0212	No
Modified significance level:0.0083 (1= HIV-infected male, 2=Non-infected Male, 3=HIV-infected female, 4=Non-infected female)						

Table 8.2 shows a significant gender differences among PLHWA (p<.05) and also among non-infected (p<.01) on self esteem scale. Eta Square values for PLHWA reveal that gender accounts for 1.8% and 2.8% of the variability for non-infected samples (Table 8.1). Among the PLHWA, males have higher mean rank score (135.39). In oppose to this, non-infected females scored higher (137.64) than their male counterpart on the measures of self esteem. Table 8.3 shows the Post hoc (Bonferonni) pairwise comparison on gender. There is a significant difference between male and female on self esteem among HIV-infected group at .01 levels with a mean difference of 1.2. The mean difference on self esteem among non-infected group was 0.968 which indicated no significant differences between the two genders.

HIV Status difference on measures of different variables

To find out whether HIV-status (infected/non-infected) causes differences on the scores of the different psychological measures of QOL, depression, anxiety, stress, PSS and self-esteem the "Kruskal-Wallis one-way analysis of variance by ranks" is employed. The method relies on the ranks of the scored values and the means of those ranks, rather than examining the means of the data. A significance level of .05 significance level (95% level of confidence),was used to conduct the Kruskal-Wallis analysis of variance to decide if any attributes are statistically different from the others with the specified degree of significance. Post hoc (Bonferroni) pairwise comparison test was employed to find out the significant differences on the dependent measures based on HIV status.

HIV Status difference on measures of depression, anxiety and stress

Table 9.1: Mean rank – comparing HIV-status in measures of depression, anxiety and stress

Variables	N	Mean Rank HIV- infected	Mean Rank Non-infected
DASS_DTT	500	284.02	216.98
DASS_ATT	500	300.47	200.53
DASS_STT	500	293.83	207.17

Table 9.2: Kruskal Wallis Test- Comparing HIV status differences in depression anxiety and stress .

Test statistics[ab]			
	Depression	Anxiety	Stress
Chi Square	27.38	60.126	45.218
Df	1	1	1
Asymp.Sig.	0	0	0
Eta Square	0.0548	0.12	0.0906
a. Kruskal Wallis one way ANOVA b.Grouping Variable:HIV-status			

Table 9.3: Post hoc (Bonferroni) pairwise comparison for the significant effect of HIV status on the dependent measures of depression, anxiety, stress.

Variables	Contrast	Difference	Standardized difference	Critical value	Pr > Diff	Significant
Depression	1 vs 2	3.5080	6.4428	1.9647	< 0.0001	Yes
Anxiety	1 vs 2	4.4680	8.6032	1.9647	< 0.0001	Yes
Stress	1 vs 2	3.636	7.4688	1.9647	< 0.0001	Yes
Modified significance level:0.05 (1=HIV infected, 2=Non-infected)						

To find out whether HIV Status causes differences on the scores of depression, stress and anxiety the "Kruskal-Wallis one-way analysis of variance by ranks" was employed (Table 9.2). Significant HIV-status differences were found on the measures of depression ($p<.01$), anxiety($p<.01$) and stress ($p<.01$). Eta Square values reveal that HIV status accounts for 5% of the variability in depression , 12% of the variability in anxiety and 9% of the variability in stress. Results from the mean rank table (Table 9.1) clearly explain that HIV Infected respondents scored higher on measures of depression, stress and anxiety as compared to non-infected respondents. Table 9.3 shows the Post hoc (Bonferonni) pairwise comparison on HIV-status. The pair-wise comparison scores revealed that there is a significant difference on depression, anxiety and stress between the HIV-infected and non-infected group at .05 level with a mean difference of 3.508 in depression,4.468 on anxiety and 3.636 on stress.

Comparing HIV status in measures of PSS

TABLE 10.1: Mean rank-comparing HIV- status differences in measures of PSS

Variables	N	Mean Rank HIV-infected	Mean rank Non-infected
PSS_SO	500	279.6	221.4
PSS_FM	500	272.82	228.18
PSS_FR	500	233.94	267.06
PSS_TT	500	253.9	247.1

TABLE 10.2: Kruskal Wallis Test- Comparing HIV status differences PSS

Test statistics[ab]				
	PSS-SO	PSS-FM	PSS-FR	PSS
Chi Square	25.353	14.336	7.154	0.29
Df	1	1	1	1
Asymp.Sig.	0	0	0.007	0.59
Eta Square	0.05	0.02	0.014	0
a. Kruskal Wallis one way ANOVA b.Grouping Variable:HIV-status				

Table 10.3: Post hoc (Bonferroni) pairwise comparison for the significant effect of HIV status on the dependent measures of PSS

Variables	Contrast	Differnce	Standardized diff	Critical Value	Pr>Diff	Significant
PSS						
	2 vs 1	0.472	0.4158	1.9647	0.6777	No
PSS-SO						
	1 vs 2	0.996	3.1149	1.9647	0.0019	Yes
PSS-FM						
	1 vs 2	0.52	1.249	1.9647	0.2123	No
PSS-FR						
	2 vs 1	2.484	4.8587	1.9647	< 0.0001	YES
Modified significance level:0.05(1=HIV-infected,2=Non-infected)						

Significant differences in PSS based on HIV status were found on the subscales of Perceived Social Support namely; social (p<.01), family (p<.01), friends (p<.01). However, there is no significant difference in the overall PSS based on HIV status. Eta Square values reveal that HIV status accounts for 5% of the variability in significant others, 2% of the variability in family and1.4% of the variability in friends (Table 10.2) .Table 10.1(mean rank table) shows that infected subjects scored higher on significant others and family while non-infected subjects scored higher on friends. Table 10.3 shows the Post hoc (Bonferonni) test on HIV-status. The pair-wise comparison scores revealed that there is no significant difference between HIV-infected and non-infected group with a mean difference of 0.472 on PSS. However, there is a significant difference between the infected and non-infected group on the sub-scales namely, significant others (.996) and family (2.484).

Comparing HIV Status differences in measures of Self Esteem

TABLE 11.1: Mean rank-comparing HIV-status on measures of self esteem

Variable	HIVStatus	N	Mean Rank
	Hiv-infected	250	199.88
RSES	Non-infected	250	301.12
	Total	500	

TABLE 11.2: Kruskal Wallis Test- Comparing HIV-status differences in self-esteem

Test statistics[ab]	
	Self-esteem
Chi Square	61.82
Df	1
Asymp.Sig.	0
Eta Square	0.123
a. Kruskal Wallis one way ANOVA b.Grouping variable: HIV-status	

Table 11.3: Post hoc (Bonferroni) pairwise comparison for the significant effect of HIV status on the dependent measures of self- esteem

Variables	Contrast	Difference	Standardized difference	Critical value	Pr > Diff	Significant
RSES	2 vs 1	2.3400	7.8124	1.9647	< 0.0001	Yes
Modified significance level:0.05 1=HIV-infected, 2=non-infecte						

On Table-11.2, significant differences based on HIV status were found on the Rosenberg Self Esteem Scale (p<.01).Eta Square values reveal that HIV Status accounts for 12% of the variability on self-esteem. Mean rank table (Table 11.1) reveals that non-infected respondents are higher on the measures of self esteem as compared to HIV infected individuals. Table 11.3 shows the Post hoc (Bonferonni) pair-wise comparison scores revealed that there is a significant difference on self esteem between HIV-infected and non-infected group at .05 levels with a mean difference of 2.3

DISCUSSION:

The psychometric adequacy of the psychological measures used in the study was aimed in the light of the experiences of cross-cultural psychology. Psychological test(s) of proven psychometric adequacy for a given population, if transported and employed for measurement purposes in another cultural milieu, may not carry their identical psychometric properties, and unless preliminary checks are made, may not be accepted as the reliable measure(s) of the theoretical construct (Witkin & Berry, 1975; Eysenck & Eysenck, 1985). Stated otherwise, efforts were made to adapt the behavioral measures, and to find empirical bases for comparability of the test scores (the findings of the present study).

The present study was designed to study 'The Psychosocial aspects and Quality of Life (QOL) of people living with HIV/AIDS in order to provide empirical and methodological foundations for further studies on Mizo population. For this study a group of HIV-infected and non-infected with the same demographic profile were selected. This study is an attempt to determine the psychosocial aspects and quality of life of people living with HIV/AIDS. This chapter attempts a summary of the whole study and some conclusions drawn based on the results and the findings. The findings, conclusions and recommendations may help to provide data on the quality of life and perhaps provide data/information for development of intervention strategies for the pose (d) problems.

The present study has been designed: i) to study the psychosocial aspects of people living with HIV/AIDS, ii) to highlight sex differences on measures of the dependent variable and iii) to elucidate the relationship between the psychosocial factors and quality of life of people living with HIV. The study incorporated purposive sampling procedure. Keeping in view the objectives of the study, 250 HIV-Infected (M= 125; F= 125) with age ranging between 20-40 years and a comparative group of non-infected peer (M=125; F=125) with the same demographic profile from Aizawl city served as subjects for the present study. Quality of life of the PLHIV was determined by WHO Quality of Life HIV-Bref (WHO, 2002) and psychosocial aspects were determined by three scales-i) Depression Anxiety Stress Scale (DASS- 42; Lovibond & Lovibond,1995) ii) Multidimensional Scale of Perceived Social Support (PSS; Zimet et al., 1988), and iii) Rosenberg Self- Esteem Scale (SES; Rosenberg,1965).

The socio-demographic background information of the subjects like age, gender, education, occupation, mode of infection, history of drug use, marital status, income, etc. were recorded with the help of a socio-demographic information schedule to match the subjects in order to maintain the homogeneity of the sample.

All main domains of the questionnaires had Cronbach's α score of more than 0.68, supporting an acceptable internal consistency for the instruments. Results revealed that the total coefficient of correlation of the subjects emerged to be

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satisfactory over the levels of analysis for the whole sample, indicating the trust-worthiness of the test scales, namely, QOL scale (0.88) and the inter domain correlations were found positively significant, namely, physical domain (0.887), psychological domain (0.657), levels of independence (.513) , social relationships (.630), environment (.647) and spirituality(.611), DASS (0.97) and its sub-scales; depression(.933), anxiety(.904) and stress(.892) the PSS (0.88) and its sub-scales namely, significant others(.842), family(.838), friends(.847) and SES (.68).

Levels of QOL among PLWHA in Aizawl:

To study the quality of life of HIV-infected the sample comprised of 125 HIV-infected males and 125 HIV-infected females aged between 20 and 40 years. The domain scores of the WHOQOL-HIV Bref were scaled in positive direction with higher score denoting good quality of life. In this study, the overall QOL scores were categorized into low, moderate and high using the 33rd and 66th percentile cut off values from the distribution of scores.

Analysis of the level of QOL in the PLWHA shows that 78% (81.6% male and 74.4% female) reported high level of QOL and 22% (18.4% males and 25.6% females) reported moderate. In contrast to this finding In contrast to this finding, Jian-Hui He,et al (2012) their studies reported that PLWHA in have relatively lower scores of quality of life subjects with regards to overall perception on QOL.

The present study revealed a high level of QOL among PLWHA in Aizawl, with only a few of the subjects reporting moderate level of QOL, indicating an

overall sense of well-being that includes aspects such as happiness and satisfaction with life as a whole. World Health Organization has defined QOL as "individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, standards, expectations and concerns."(WHO,1995). Quality of Life (QOL) relates both to the adequacy of material circumstances and to personal feelings about these circumstances with overall subjective feelings of well-being that is closely related to morale, happiness, and satisfaction. It has been considered synonymous with health status, functional status, psychological well-being, happiness with life, satisfaction of needs, and assessment of one's own life. (Elisabete, Morandi Dos Santos, Ivan & Fernanda, 2007).

The scores on the six domains (subscales) of the QOL measures were categorized into three levels (low, moderate and high QOL).

In Domain 1(physical), 1.6% (1.6% males and 1.6% females) of the subjects reported low level, 38% (33.6% males and 42.4% females) reported moderate level, and 60.4%(64.8% males and 56% females) reported having high in the physical domain which states that PLWHA in Aizawl are capable of performing their daily activities, are able to sleep and rest, and have the energy to work.. In another study Hasanah, Zaliha and Mahiran, (2010) found that PLWHA functioning satisfactorily in the physical domain were impaired in the social domain. Some other studies have shown that in the social relationship domain, high

social support for PLWHA have shown a strong potential to influence QOL (Yadav,2010).

In Domain 2 (psychological): .4% of the subjects reported having low level, 30% (22.4% males and 37.6% females) of the subjects reported moderate level, 69.6% (77.6% males and 61.6% females) of the subjects reported high level. It means that the PLWHA in Aizawl have positive feelings, thinking, learning, memory and are able to concentrate. It also explains that that they have a good self-esteem and positive bodily image. In a study conducted by Elisabete et al. (2007), PLWHA had a better physical and psychological health than patients with other chronic illness.

In Domain 3(level of independence): 69.6% (73.6% males and 65.6% females) reported high level of independence, and 30.4 % (26.4% males and 34.4% females) reported moderate level which may suggested that PLHWA in Aizawl operate well on mobility and daily life activities. Fatiregun et al., 2009 in their studies found that better scores observed in physical, psychological, and environmental domain could be attributed to pharmacists' impact through comprehensive and consistent counseling on patients' antiretroviral drugs and education on their disease state.

In domain4 (social relationship): 78.8 % (39.6% males and 39.2% females) reported high level, 20.8 % (20.8% males and 20.8% females) reported moderate

level, while .4%(.8% females) of subjects reported low level, which may indicate that PLWHA in Aizawl can deal with personal relationships, have social support, and sexual activity. In a study by Wig et al., (1997) the scores were highest for the social relationship domain assessing personal relationships, social support, and sexual activity. In contrary to this finding, a study conducted by Fatiregun et al., (2009) in Kogi State, Nigeria, reported a lower level in the social relationship domain, where the social domain was affected by societal discrimination and stigmatization, as well as HIV/AIDS influences on PLWHA's sexual desire, personal relationships, and family life. Also, in a study conducted by Adewuya et al., 2008 it was reported that poor social support correlated with poor QOL scores on the domain of physical health and social relationship.

In domain 5(environment): 70.8% (72% males and 69.6%females) report high level, 28.8 % (28% males and 29.6% females) reported moderate level, while .4% (.8%females) reported low level. This indicates that PLHIV in Aizawl may have physical safety and security, good home environment, financial resources, health and social care, accessibility and quality, opportunities for acquiring new information and skills, participation in and opportunities for recreation and leisure activities. Other studies have reported moderate levels in the environment domain (Fatiregan et al.,2009; Ebisabete et al.,2007).

Domain 6 (spirituality): 75.6% (85.6% males and 65.6 % females) reported high level, 24 % (14.4 %males and 33.6% females) report moderate level, while

.4%(.8% females) report low level on the spirituality domain. This reveals that PLWHA in Aizawl have positive attitude towards the future, death and dying. This finding is in line with that of a study by Kaldjian et al., (1998) which reported that 98% of hospitalized patients with HIV indicated belief in a divine being called God and 84% expressed a personal relationship with God. Harrison et al., (2001), states that if people are pushed beyond their limits by situations outside their control, they may want to choose their coping strategies based upon a pre-existing orienting system, including their religious faith.

Whether HIV/AIDS is viewed as a terminal disease or chronic illness, individuals with HIV have reported relying on religiosity and spirituality as a source of comfort, support, and hope (Saleh & Brockopp, 2001). HIV infection is accompanied by several physical symptoms that have the potential to adversely affect quality of life (Cunningham et al., 1998). Many studies indicated, HIV/AIDS has changed individual's lifestyles and quality of life. Empirical evidence shows that as the HIV disease progresses, quality of life deteriorates (Burgoyne & Sanders, 2001; Holzemer, 1998). PLHWA face physiological, physical, psychological, and socio-cultural problems that are caused by many factors such as symptoms of the virus, side effects of the antiretroviral treatment, and opportunistic infections (Portillo et.al. 2005). In a study conducted by Rajeev et al., (2014), QOL scores were highest for psychological domain, followed by spirituality, social relationship, and level of independence domains in descending order. Similar results were also observed in Soa Paulo, Brazil that the mean scores

for social relationships and environment domains fell in the intermediate level (Elisabete , Marandi , Ivan & Fermanda ,2007). These results were also affirmed by Fleck et al.(2000) that PLWHA had a better QOL related to their physical and psychological health but worse QOL in the social relationship domain. Fatiregun et al.,(2009); Skevington & O'Connell, (2003); Wu et al.,(1997); Pibernik Okanovic, M., S. Szabo, Z. Metelko, (1998)   in their studies reported that participants reported moderate to high on the overall QOL.

We can summarise that the overall QOL of the findings of the present study indicates that Quality of Life among PLWHA in Aizawl was highest in the social domain followed by spiritual domain, environmental domain, psychological domain, level of independence and lastly by physical domain. The overall result of the present study shows high QOL among HIV-infected respondents in Aizawl with all respondents having a high and moderate QOL. In support of the finding, Kalichman et al., (2000) suggested that HIV/AIDS patients who are older than 45 years experience significant emotional distress and thoughts of suicide. Also, besides, older age has also been shown to be associated with dissatisfaction with one's social relationships (Masthoff et al., 2005). As reported earlier since the sample for the present study were PLWHA with age ranging between 20-40 years and availing ART, counseling and other services in Aizawl, which is more or less expected to have a positive impact on their QOL. As earlier studies have indicated that patients on ART go through proper psychological counseling and medical check-up which undoubtedly contribute to a high QOL, Fatiregun et al., (2009) in

their studies found that better scores observed in physical, psychological, and environmental domain could be attributed to pharmacists' impact through comprehensive and consistent counseling on patients' antiretroviral drugs and education on their disease state, also in line with this study, Emmanuel et al.,(2004) and Bayers, (1992), in their studies found that subjects reporting high QOL may be because the available anti-retroviral therapy has considerably improved rates of mortality and morbidity, prolonged lives and hence improved QOL. Various studies have shown better quality of life among HIV patients treated with antiretroviral drugs (Cohen et al., 1998, Pitt, Myer and Wood, 2009). Cohen et al., (1998), also stated that persons with advanced HIV disease and low QOL scores have demonstrated significant improvements in QOL with ARV treatment. Regarding physical health having the high score may be attributed to the availability of anti retroviral therapy which is highly subsidized by the government (Federal Ministry of Health, 2004). Moreover, the demographic data reported that PLWHA in the present study were between 20 to 40 years of age which may be instrumental in the outcome as Sanja et al, 2006 reported that younger subjects reported better psychological adjustment than older subjects.

Gender and Quality of Life

To elucidate the gender differences in the PLWHA participants (i.e125 HIV-infected males and 125 HIV-infected females), aged between 20 and 40 years, the Kruskal Wallis one way ANOVA and Post-Hoc Bonferroni pair-wise comparison was employed.

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The results indicated that there is a significant difference on QOL based on gender among PLWHA in Aizawl. The analysis of QoL of PLWHA in the study by employing Kruskal Wallis one-way ANOVA revealed there is a significant gender difference in measures of physical domain (p<.01), psychological (p<.01) and spirituality (p<.01) and on the overall QOL (p<.05). Post hoc pair-wise comparison on gender scores revealed that there is a significant difference between males and females on the overall QOL, and its subscales namely, physical, psychological and spiritual domain at .05 level with a mean difference of 5.76; 0.816; 1.632, 1.872 respectively. The mean rank table (Table 5.1) revealed higher QOL in males on all the sub-scales namely, physical, psychological, levels of independence, social relationships, environment and spirituality. Effect sizes of gender on QOL were calculated by employing Eta square and results reveals that gender accounts for 2% of the variability in domain1 (physical domain), 6% of the variability in domain 2 (psychological domain), 0.5% of the variability in domain 3 (level of independence), 9% of the variability in domain 6 (spirituality) and 1% of the variability in the overall QOL. Thus, gender effect is found to be the highest in the spiritual domain.

The findings of the present study show, that HIV-infected males in Aizawl demonstrated higher quality of life than their female counterparts on all the domains of QOL. This finding is in line with the earlier findings of Mrus et al., (2005); Mast et al., (2004) and Cederfjall et al., (2001); Nojomi et al., (2008); Eriksson et.al., (2000); Imam et al, (2011); Basavaraj et al., (2010) ; Wachtel et al.,

1992; Elisabete et al., (2007); Tesfay, Gebremariam, Gerbaba and Abrha, (2015). However, some studies have also reported otherwise, Fatiregan et al., (2009), found that women showed a higher QOL score compared to men in virtually all domains and a significantly higher level on the independence domain Elisabete , Marandi , Ivan , Fermanda (2007).

Thus, it can be concluded that HIV-infected males in Aizawl display a higher Quality of life as compared to females. According to Mawar et al., (2002) higher QOL scores in men may be attributed to the fact that when a female is diagnosed with HIV, she is looked down immediately with suspicion cast over her morality, especially if she is diagnosed earlier to her husband during antenatal check up.

Prior studies also reported the incidence where women are treated unequally in socioeconomic, cultural and political terms, with less access to consumer goods, basic social security and, certainly, to the education, which justifies the fact that the infection of individuals by the HIV/AIDS has suffered a transition from high to low socioeconomic and cultural level (Fonseca et al., 2002). Therefore, the cultural acceptance, among other factors, to social and economical aspects, also observed unequal opportunities of health maintenance, promotion and protection, inequality of the social role between men and women influences may impact negatively the quality of life of women with HIV/AIDS and perhaps could be an explanation for the better QoL in males as compared to females. The study also revealed that gender accounts for the highest variability in the spiritual domain. This finding is

in line with earlier studies, Chandra et al., (2009), reported women had higher score in spirituality domain of the WHO Quality of Life instrument for HIV. Also, according to Coleman et al., (1999) creating meaning and purpose in life more than religious experiences was found to correlate with psychological well-being in a large sample of African American men and women with HIV/AIDS due to the devastating physical and psychological impact of the disease, spirituality is an important contributor to feelings of well-being. Additionally, Saleh & Brockopp, (2001) have also reported that individuals with HIV have reported relying on religiosity and spirituality as a source of comfort, support, and hope maybe for conclusion.

The findings with regards to the psychosocial aspect, the socio-demographic data revealed that 64.8% of the HIV-infected females in Aizawl were unemployed and only 4% of the HIV- infected females had tertiary (graduate) education. Educational level is often directly connected to the employment bond and also the monthly income in different studies, Schaurich et al., (2006) in a study in Estonia highlighted the importance of employment to reduce stress, promote psychological health and good social relationship which influences the quality of life, similarly, Ruutel, (2009) also emphasized that working may provide a context for social support, identity, and meaning, accounting for observed better quality of life. This factor may also have played a role in the present study and account for the findings of the present study.

Psychosocial Aspects:

The main objective of the present study was to study the quality of life of PLWHA in relation to psychosocial aspects. To study the relationship in addition to the PLWHA participants a representative sample of non-infected participants (125 non-infected males and 125 non-infected females) were selected to elucidate the psychosocial aspects, the following psychosocial variables i.e., depression, anxiety, stress, perceived social support and self-esteem and a comprehensive socio-demographic data was administered. The levels of the variables were ranked and the scores for depression, stress, anxiety for each of the respondents over each of the sub-scales were evaluated as per the severity-rating index and the scores for PSS and self-esteem were categorized into three levels low, moderate and high by means of the 33rd and 66th percentile cut off values from the distribution of scores.

Levels of Depression

The findings of the present study revealed that among the HIV infected 68 %, (73.6% male and 62.4% female) reported normal level of depression, 13.6%(15.2% male and 12% female) moderate depression, 13.2% (10.4% male and 16% female) mild depression, while 2.8%(.8% male and 4.8% female) severe depression and 2.4% extremely severe depression. While the non-infected participants reported 88.8%, (86.4% male and 91.2% female) reported normal level of depression, 6% (5.6% male and 6.4% female) mild depression, 5.2%(8% male and 2.4 % female) report moderate depression.

HIV-status and Depression:

The present study reveals a significant difference on depression between PLWHA and non-infected HIV participants. Analysis of Kruskal Wallis one-way ANOVA reveals that there is a significant HIV-status difference ($p<.01$) on depression between HIV-infected and non-infected. Post-Hoc pair-wise comparison was employed for the significant effect of HIV status on depression which revealed a significant difference on depression between the HIV-infected and non-infected group at .05 level with a mean difference of 3.508. Analysis of eta-square reveals that HIV-status accounts for 5% of the variability in depression. In line with this finding, several other studies also reported that HIV status serves as a determinant for depression (Li, Lang, Lee & Farmer, 2012; Eller et al., 2014). Studies have reported depression as one of the most common co-morbidities of HIV infection and compared to the general population, PLWHA has a threefold greater prevalence of major depression (Bing et al., 2001; Valente et al., 2003; Kessler et al., 2008). Many studies highlighted that the rates of depression have ranged from 5 to 25 per cent or even higher (Perkins et al., 1994; Summers et al., 1995). Thus, many studies have reported the high prevalence of depression among PLWHA (Shanthi , Damodharan & Priya ,2007; Chandra, Ravi, Desai & Subbakrishna, 1998; Kagee & Martin, 2010). However, Akena,Musisi and Kinyanda, (2010). reported that the severity of depression in HIV-positive and negative groups show no statistically significant differences. Prior studies reported the association of depression and isolated lives as well as the absence of pleasure social and vocational impairment (Deshmukh et al., 2013), in line with this, the

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demographic data of the present study reveals that only 1.2 PLHIV were living alone and 53.6% were married. Studies have reported marriage as being protective factor against depression; and that being single, divorced, and widowed is associated with depression and suicide risk (Komiti, 2003). In line with this finding where 53.6% of the PLWHA participants of the present study were married and on ART and this may have been a factor which has a positive impact on their levels of depression.

Gender and Depression

The study reveals significant gender differences among PLWHA. Kruskal Wallis one way ANOVA reveals a significant gender difference on measures of depression (p<.01).Post-hoc Bonferroni pair-wise comparison revealed that there is a significant difference between male and female on depression among the HIV-infected group at .01 levels with a mean difference of 3.28. Eta square was used to explain the predictability of gender which shows that gender accounts for 5.2% of the variability in depression.

The result of the study reveals that there is significant gender difference on depression among the HIV-infected group in Aizawl. This is in line with various studies that reported higher rates of depression among females as compared to males (Gordillo et al., 2009; Wisniewski et al., 2005; Unnikrishnan et al., 2012; Bharath, 1995; Chandra, 1996, Bharat & Aggeleton, 1999;Deichert et al., 2008; Gonzalez et al.,2004; McDowell & Serovich, 2007; and Cederfjäll et al., 2001). This difference may be due to societal and cultural expectations from women as a

wife and mother are highly demanding as they play a major role in child rearing and are also worried about their family after their death. Feelings of guilt are also present as they are unable to take care of themselves and the family, which results in helplessness, hopelessness and worthlessness (Leserman , Perkins, Evans,1992; Yi , Mrus & Wade , et al., 2006).

Levels of Anxiety

Analysis of scores revealed that 48.4% (61.6% males and 35.2% females) of the HIV- infected subjects report to have normal level of anxiety, while 8.8% (4.8% males and 12.8%) report mild anxiety, 22.4 % (16.8% males and 28% females) report moderate anxiety and 12.8% (16% males and 9.6% females) report severe anxiety 7.6%(.8% males and 14.4% females) report extremely severe anxiety. The highest portion of the non-infected subjects i.e. 76% (76% males and 76% females) report normal level of anxiety, while 12(8.8% males and 15.2% females) report mild anxiety, 8% (8% males and 8% females) report moderate anxiety and 4%(7.2% males and .8% females) report severe anxiety.

HIV-status and Anxiety:

Kruskal Wallis one way ANOVA shows a significant difference on anxiety based on HIV status (p<.01). Post hoc pair-wise comparison test on HIV-status shows that there is a significant difference on anxiety between the HIV-infected and non-infected group at .05 level with a mean difference of 4.468. Eta square results states that HIV-status accounts for 12% of the variability in anxiety.

The result of the present study depicted that there is a significant difference on anxiety based on HIV-status. In line with our studies, several researches reported the prevalence of higher anxiety disorders among infected as compared to non-infected individuals (Gordillo et al., 2009; Perkins et al., 1995; Wisniewski et al., 2005). Summers (1995), reported that anxiety disorders may manifest throughout the course of HIV infection, with increased prevalence as the illness progresses at prevalence range of 29 to 38 per cent depending upon the stage of illness. Due to the catastrophic impact in their personal and job relationships, and self-images and self-esteem (Watstein & Chandler, 1998), PLWHA are generally subject to higher prevalence of mental illness (Logie & Gadalla, 2009). Lutgendorf et al., (1998) and Nokes & Kendrew, (2001) report that anxiety has a detrimental effect on physical health, physical functioning, sleep and mood. The findings of the present study indicate that the HIV infected participants had normal levels of anxiety. However, the presence of symptoms of anxiety among PLWHA in the present study is consistent with that of other studies in other parts of India and the world, which have found symptoms of anxiety among PLWHA (Kagee & Martin, 2010; Nel & Kagee, 2013; Chandra, Ravi, Desai & Subbakrishna, 1998). In contrary to this finding studies have reported a high prevalence of anxiety (Perkins et al., 1994; Morrison et al, 2011). Chandra, (1998) found 36 per cent of the PLWHA to score above the cut-off level for diagnosis of anxiety disorders. With major advances in anti-retroviral therapy, disease progression is slowed and PLWHA are now living longer and healthier lives and medical advancements, help people living with HIV infection in developed countries live longer (Palella et al., 1998).

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Moreover, studies have indicated that high QOL of PLWHA may also be accountable for the normal levels of anxiety as according to Brenes,(2007); Fatemeh,(2013), the severity of anxiety increases, QOL decreases. The PLWHA in the present study were on antiretroviral therapy (ART) which may be held responsible for normal levels of anxiety in the study, besides Collins et al., (2006) and Stout et al., (2004) reported that lower adherence to antiretroviral therapy (ART) and medical recommendations correlate with anxiety.

Gender and Anxiety

The analysis of Kruskal Wallis one-way ANOVA on anxiety reported significant gender differences on both the HIV-infected and non-infected group ($p < .01$). Post hoc pair-wise comparison test revealed that there is a significant difference between male and female on anxiety among the HIV-infected group at .01 levels with a mean difference of 4.376. The mean difference on anxiety among non-infected subjects was 0.048 suggesting that no significant gender difference among the non-infected group. Eta square reveals that gender accounts for 8.9% of the variability in anxiety among the PLWHA.

There is a significant gender difference on anxiety among the HIV-infected group in Aizawl. Several studies support the findings of this study (Deshmukh et al.,2013 ;Gordillo et al. 2009; Wisniewski et al. 2005; Deichert et al., 2008; Gonzalez, et al.,2004; McDowell & Serovich , 2007; Cederfjäll,et al, 2001). Primarily due to women's lower education, unemployment and financial

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dependence, women bear greater burdens than men. The socio-demographic data revealed that 64.8% of the HIV-infected females in Aizawl were unemployed and only 4% of the HIV- infected females had tertiary (graduate) education. Educational level is often directly connected to the employment bond and also the monthly income in different studies, Schaurich et al., (2006) in a study in Estonia highlighted the importance of employment to reduce stress, promote psychological health and good social relationship which influences psychological quality of life.

Levels of stress:

In this study, 89.2% (95.2% males and 86.6% females) of the HIV- infected report normal level of stress, while 3.6(3.2% males and 4% females) report mild stress, 5.2% (1.6% males and 8.8% females) report moderate stress and 1.6% (3.2% females) report severe and .4% (.8%females) extremely severe levels of stress. The highest percentage of the non-infected subjects, 97.6% (95.2% males 100% females) report normal level of anxiety with 1.2% each of males report mild and moderate anxiety.

HIV-status and stress:

Analysis using Kruskal Wallis one way ANOVA shows a significant difference on the psychological measure of stress based on HIV-status (p<.01). Post hoc pair-wise comparison test on HIV-status revealed that there is a significant difference on stress between the HIV-infected and non-infected group at

.05 level with a mean difference of 3.636 on stress. Eta square reveals that HIV-status accounts for 9% of the variability in stress.

The study indicated the presence of differences based on HIV-status on stress. In line with our studies, Deshmukh et al., 2013; Maetinez et al., 2002 reported difference on stress based on HIV-status. Most studies focus on the effect of stress on the PLWHA. According to Hays et.al, 1992, HIV infected status is associated with a large measure of stress and depression and HIV disease is a major source of emotional and physiological stress for those who are infected. Faulstich, (1987). Koopman et al., (2000) reported that PLWHA with high stress in their daily life were disengaged behaviourally and emotionally in coping with their illness and those with less severe stress. However, another study reported that HIV-infected who participate in stress management activities improve in physical health, as well as mental health and quality of life (Gielen et al., 2001). In the present study PLWHA in Aizawl have a normal level of stress, this may be due to several factors, one of which may be acceptance of stress, (Deshmukh et al., 2013). Also, Sanja et al, 2006 reported that younger subjects reported better psychological adjustment than older subjects and since the participants in the present study were between 20 to 40 years, age may account for low level of stress in the present study.

Gender and stress:

Kruskal Wallis one way ANOVA also reports significant gender differences among PLHWA on measures of stress (p<.01). Post hoc pair-wise comparison test revealed that there is a significant difference between male and female on stress among the HIV-infected group at .01 levels with a mean difference of 4.08 on stress. The mean difference on stress among non-infected subjects was 0.152 respectively, suggesting that no significant difference is found between the two genders. Eta square was used to explain the predictability of gender where gender accounts for 8.7 % of the variability in stress among the PLHWA and 1 % of the variability in stress among the non-infected groups.

Hence, the result shows that there is a significant gender difference on stress level among PLWHA in Aizawl. In line with our studies, several studies reported women having more depression, anxiety and stress Deshmukh et al.(2013), Gordillo et al. (2009); Wisniewski et al. (2005); Deichert et al.,(2008); Gonzalez et al, (2004); McDowell & Serovich , (2007); and Cederfjäll et al., (200). However, Zahra et al., (2015) found that the mean stress in males is greater than females. Additionally, Martinez et al, (2002) found that HIV positive females have a higher prevalence of post traumatic stress disorder symptoms. Women living with HIV experienced higher rates of stress depression and anxiety than their male counterparts, in addition received less social support from their friends and families (Deichert , et al, 2008; Gonzalez , et al, 2004; McDowell and Serovich,

2007; Cederfjäll, et al, 2001) which may be the causal factor for gender differences.

Levels of Perceived Social Support (PSS):

Among HIV-infected samples, 73.2 (76.8% males and 69.6% females) report high acuity, 19.6 %(16% males and 23.2% females) moderate acuity and 7.2 % (7.2% males and 7.2% females) low acuity of PSS. 70.8 % (64% males and 77.7% females). 70.8% of non-infected subjects report high acuity, 25.6 % (31.2% males and 20% females) moderate acuity and 3.6% (4.8% males and 2.4% females) low acuity of PSS.

The scores obtained by the participants in the measures of significant others, a sub-scale of PSS reveals that PLWHA reports, 81.2%(83.2% males and 79.2% females) having high acuity, 14.8% (12.8% males and 16.8% females) moderate acuity and 4% (4%males and 4% females) low acuity of significant others. Among the non-infected, 69.2%(64.8% males and 73.6% females) report high acuity, 28% (31.2% males and 24.8% females) moderate acuity and 2.8% (4% males and 1.6% females) low acuity of significant others.

In the measures of family, a sub-scale of PSS reveals that among HIV-infected groups 90% (90.4% males and 89.6% females) report high acuity, 6.4% (5.6% males and 7.2% females) moderate acuity and 3.6% (4%males and 3.2% females)

low acuity . Among the non-infected 95.6 %(95.2% males and 96% females) report moderate acuity, 4.4% (4.8% males and 4 % females) have low acuity.

In the measures of friends, a sub-scale of PSS reveals that among HIV-infected groups, 74.8%(77.6% males and 72% females) have high acuity, 16.8% (16% males and 17.6% females) moderate acuity and 8% (7.2%males and 8.8 % females) low acuity . 94% of non-infected subjects (92.8% males and 95.2% females) have high acuity, 5.6% (5.6% males and 5.6% females) moderate acuity and .8% low acuity on the subscale.

PSS and HIV-status

In the present study there was no significant difference between PLWHA and non-infected groups on PSS. However, high acuity was seen on PSS among PLHWA in Aizawl, which is in line with a number of previous studies (Okawa, 2011; Sun, Zhang & Fu, 2007). Also, the findings indicate that HIV-infected and non-infected groups in the present study perceived highest support from their families, and this finding is corroborated by other studies (Shippy, 2007); Crystal & Kersting, (1998). However, a few other studies indicate that family gave the least support, while friends, lovers with significant others were the most common sources of emotional support (Friedland, Renwick & McColl, 1996). PLWHA in the present study experience a high level of QOL which may also be attributable to high acuity on PSS as found in previous studies (Hirabayashi et al., 2002; Nunes et al., 1995; Swindells et al., 1999). According to an earlier study (Halliday M.,

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2016), PLHWA in Aizawl do not experience stigma, and as the demographic data suggested, only 1.2% in the study were living alone, 53.6% were married discrimination from the people they were residing.

Gender and Perceived Social Support:

By employing Kuskal Wallis one-way ANOVA, significant differences was found in PSS based on gender among the non-infected group (p<.01). Post hoc pair-wise comparison on gender revealed that there is a significant difference between male and female on PSS among non-infected group (p<.01) with a mean difference of 4.248.Among non-infected groups, gender accounts for 2% of the variability in significant others, 1.8% in family, 3.4% in friends and 3.9% in the overall PSS.

No significant gender difference was found in PSS among PLHWA in Aizawl. A few studies have reported in this line, (McDowell & Serovich, (2007). In contrary to the present findings, many studies report that women received less social support from their friends and families (Deichert et al., 2008; Gonzalez et al., 2004; Cederfjall et al., 2001).

Levels of Self-Esteem:

The result reveals that among HIV-infected groups, 25.6 %(29.6% males and 21.6% females) report high self-esteem, 73.2%(70.4% males and 76% females) moderate level of self esteem and 1.2% (2.4% females) have low level of self-

esteem. 46.4 %(37.6% males and 55.2% females) of non-infected subjects have high level of self-esteem and 53.6 %(62.4% males and 44.8% females) moderate level of self-esteem.

HIV-status and self-esteem:

Kruskal Wallis one way ANOVA reveals significant differences based on HIV-status on self -esteem ($p < .01$). Eta Square values reveal that HIV-status accounts for 12% of the variability on self-esteem. Mean rank table reveals that non-infected respondents are higher on the measures of self esteem as compared to HIV-infected individuals (Table-11a). The Post hoc pair-wise comparison scores revealed that there is a significant difference on self esteem between HIV-infected and non-infected group at .05 levels with a mean difference of 2.34. In line with our study, Mohan & Bedi, (2010) reported that PLWHA score significantly lower on self-esteem than the non infected HIV participants. Other studies also reported that people living with HIV/AIDS present poorer self-esteem as compared to individuals living with other chronic diseases (Vargas & Dantas ,2005; Silvério, Dantas, & Carvalho , 2009). The low self-esteem found in people living with HIV/AIDS may be related to the negative consequences of dealing with the HIV/ AIDS infection, broadly reported in literature as depression, and social and emotional isolation (Reis et al., 2011; Cechim & Selli L. Mulheres, 2007). It may also be due to shame, guilt and non-sharing of illness-related emotions, lower frequencies of social sharing of emotion and less sharing partners (Cantisano et al., 2012). Some researchers have reported that social exclusion of PLWHA that

begins in the family and extends into the community has been linked with poor self-esteem of PLWHA (Fieldblum and Fortney, 1988; Herek and Glunt, 1988; UNAIDS, 2002).

The present study indicates that PLWHA in Aizawl have moderate level of self-esteem, a similar finding was reported by Jagannath et al, (2011). A few however reported that self-esteem inclined towards below average among HIV-infected subjects (Manhas, 2013). Different studies have indicated that the variations in the levels, according to Magalhaes et al, (2008), self-esteem may be predisposed by social features such as gender, age, marital status as well as by the disease affecting oneself. Also Kovacevic et al., 2006 reported that younger subjects experience better psychological adjustment than older subjects. Furthermore, studies indicate that those people with a higher level of education also have a higher level of self-esteem than those with lower educational background (Maruyama et al., 1981; Owens, 1992). The employment status, economic independence, financial security, educational background and knowledge along with the learning and thinking together contribute to an increased self-esteem (Manhas, 2013). Also Castrighini et al., (2013) has explained that single individuals present the worst mean compared to married, separated/ divorced and widowed individuals suggesting that single individuals have less family support, less support for coping with life with HIV/AIDS and worse self-esteem. This explanation may also account for normal level of self- esteem in the present study as 53.6% of HIV-infected were married, and only 1.2% were living alone.

Gender and self-esteem:

The Kruskal Wallis one way ANOVA test reveals that there is a significant gender differences among PLHWA ($p<.05$) and also among non-infected ($p<.01$) on self-esteem. Eta square values for PLHWA reveal that gender accounts for 1.8% and 2.8% of the variability for non-infected samples. Among the PLHWA, males have higher mean rank score (135.39). In oppose to this, non-infected females scored higher (137.64) than their male counterpart on the measures of self esteem. Post hoc pair-wise comparison reveals a significant difference between male and female on self esteem among HIV-infected group at .01 levels with a mean difference of 1.2.

The result of the study indicated gender difference in self-esteem among HIV-infected and non-infected in Aizawl. In line with our studies, Manhas , (2013) and Kling et al., (1999) also found a significant difference based on gender. According to Manhas, (2013) HIV-infected females experience poorer mental health compared to the males and the reason maybe because of the presence of low score on self-esteem among HIV-women could be attributed to perceived lack of self-worth, relationship break-ups, high levels of anxiety or stress. Also according to Oppong, 2012) self-esteem may have played a role in the extent to which women were able to perceive and receive support efforts from friends and families. On the other hand, Mohan & Bedi,(2010) indicates no significant gender difference on self esteem for both HIV-positive and HIV free samples

Relationship between psychosocial aspects (Depression, Anxiety, Stress, Perceived Social Support and Self Esteem) and QOL:

QOL & Depression, Anxiety and Stress:

Results of the present study shows that there is a significant negative correlation between QOL and psychosocial aspects namely, depression (-.650, p<.01), indicating that higher the QOL of the PLWHA, lower will be their depression. Negative correlation is also found between QOL and anxiety (-.546, p<.01) and stress (-.599,p<.01) indicating that higher the QOL of the PLWHA, lower will be their level of anxiety and stress. The result indicated that as the severity of depression, anxiety and stress increased, quality of life decreased, which is consistent with various other studies (Charles et al, (2012); Fatemeh, 2013;Pokhrel et al, 2017; Mukund & Gopalan, 2015). Also according to (Global epidemiology of HTLV-1 infection and associated diseases, 2005; Stumpf et al.2005; Souza, 2009) depression and anxiety symptoms may contribute to progressive disability and limitations in daily living activities impacting their perceptions about QOL.

QOL & PSS

In the present study, positive correlation was found between QOL and perceived social support at .01 levels, as well as between QOL and the components of PSS , namely PSS from family (.429, p<.01) and PSS from friends (.420,p<.01) and PSS from significant others(.455,p<.01). The result indicated a positive

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correlation between QOL and PSS. Prior studies indicated that social support can be an important factor for influences on well-being and QOL (Theorell et al., 1995; Friedland et al., 1996; Galvan et al., 2008; Ichikawa, & Natpratan, 2006). Studies have also provided evidence of social support as an aspect of psychological adjustment (Kalichman et al.,2003) and can improve physical and psychological health outcomes (Battaglioli,2007) and self-care behaviors (Theorell et al.,1995). Moreover, Bastardo & Kimberlin, 2000;Coleman & Berry, 1994 suggested psycho-social support for increasing the quality of life.

QOL & Self-esteem

The study indicated that there is a positive correlation between QOL and self esteem. If the QOL is high, scores on self esteem will also be high. It means that PLWHA who have scored high on QOL have higher level of self-esteem. In line with this study, Coral Manhas (2013) and Adejunmobi & Odunmosu (1998) reported a significant and positive correlation between QOL and self-esteem. A significant positive correlation between self esteem and the different dimensions of QOL was also established (Manhas, 2013). However, Sinclair et al., (2010) reported that self-esteem was negatively associated with QOL in a national sample of adults and Castanha et al., (2006), explained that low self-esteem makes PLWHA feel more limited and discouraged.

DASS and PSS

The study reveals a significant negative correlation between depression and overall PSS and its sub-scales namely, significant others, family and friends (p<.01). This finding is consistent with several other studies (Bganya, 1999; Olley, Seedat, Nei & Stein, 2004; Lindner, 2006; Adewuya et al., 2007; Brandt, 2007; Simbayi, Kalichman, Strebel, Cloete, Henda & Mqeketo, 2007). On the other hand, Gonzalez et al., 2004 reported that PSS has been associated with less depressive symptoms.

There is a significant negative correlation between anxiety and PSS and between stress and PSS at .01 levels. The results of the present study is consistent with previous studies where social support is correlated with better mental health (Baumeister & Leary, 1995; Rook, 1987; Safren et al.,2002; Johnson et al.,2001). Crosby et al., (2001); Hudson et al., (2001); Solomon & Temoshok, (2002) rightly report social support as a primary mediator of perceived stress and can lessen feelings of emotional distress and enhance health outcomes in those infected with HIV. Moreover, previous studies have also stated that PLWHA who are satisfied with the amount of support available to them tend to experience less psychological distress, a higher quality of life, and more self-esteem (Turner et al., 2002). Cohen et al.,(1985) also implied that a lack of positive social relationships leads to negative psychological states such as anxiety or depression, and support that is perceived as adequate would influence the appraisal process and function as a stress buffer .

Depression, Anxiety, Stress and Self esteem:

Results of the Spearman correlation test reveals that there exists a significant negative correlation between depression and self-esteem (-.483), between anxiety and self-esteem (-.439) and between stress and self esteem (-.408) at .01 level. Thus, there exists a negative relationship between self-esteem and depression, anxiety and stress. The result is in line with several studies (Orth, Robins, & Meier, 2009; Jagannath et al., 2011). Also, Simoni et al., (2006) showed that PLWHA have higher risk of developing depression and depression is influenced by self-esteem.

PSS and Self-esteem

Results of the Spearman correlation test reveals that there exists a significant positive correlation between PSS and self-esteem (.199) at .01 level, between significant others and self-esteem (.100) at .05 level and between family and self esteem (.111) and between friends and self-esteem (.242) at .01 level. The study reveals positive correlation between PSS and self-esteem which is in line with various studies that reported the presence of positive correlation between PSS and self-esteem (Stinson, Logel , Zanna , Holmes , Cameron, Wood, et al.,2008). However, Stinson et al., 2008 found a negative relationship between self esteem and sub-scales of PSS namely significant others, family and friends.

Demographic characteristics of PLWHA

The socio-demographic variables were analyzed to highlight the profile of PLWHA and explore the relationship with QOL to provide information for further in-depth studies.

Age: The participants of this research were of the age group 20 to 40 years, 49.8% were between 20 and 30 years of age and 50.2% were between 31 to 40 years of age.

Marital Status: Among PLWHA, married respondents constituted more than one-half of the entire sample size i.e. 53.6%, 14% were single, while 23.2% had been divorced, 9.2% widowed. Among the non-infected groups 53.4% were married, 36.4% single, 5.6% divorced and 2.8% widowed.

Educational Qualification: Among the HIV-infected group, 7.6% of the participants had tertiary education, 19.2% completed their Higher Secondary education, 38.4% studied till High School, 26.4% had studied till Middle School, 7.6% had studied only up to Primary while .8% illiterate. Among the non-infected group, 28.4% of the participants had tertiary education, 15.6% had completed their Higher Secondary education, 40.4% studied till High School, 13.6% had studied till Middle School, 1.2% had studied only up to Primary while .8% illiterate.

Employment Status: Among the HIV-infected participants, 40.8% were unemployed. Among those employed, 26.8% were daily laborers, 8% were running businesses, 12% were government servants, 7.6% were drivers and 3.2% were social workers and 1.6% constitute skilled labourers (handloom workers, tailors, mechanics, carpenters). Among the non-infected participants, 27.6% were

unemployed. 31.8% were daily laborers, 14.8% were running businesses, 16% were government servants, 5.6% were drivers and 4% were social workers and .8% constitutes skilled labourers (weavers, tailors, mechanics, carpenters).

History of Drug Use: 43.6% of PLWHA were non users, 11.2% were current users, while 45.2% were ex-users. 73.6% of the non-infected group reports not using drug, 10% current user and 16.4% ex-users.

Mode of Infection: 79.6% reported having been infected through sexual intercourse, 18% had been infected from Sharing of needles/ syringes, 2.4% not specified. This result is consistent with MSACS report (2017) which reveal that the initial route of transmission at present is through sexual mode in Mizoram.

Household members: 38.8 % of PLWHA were living with their spouse, 24% in a joint family, and 22.8% with parents, 6.8% relatives, 5.6% children, 1.2% living alone and .8% living with friends. Among the non-infected group, 37.2% live with their parents, 26.8% with their spouse, 21.6% with relatives, 13.2% in a joint family and 1.2% with children.

Duration of knowledge of HIV Infection: 74% of the subjects were infected during the past one to five years, 18.4% in the past six to ten years and 3.2% in the past eleven or more years.

Correlation between QOL and demographic variables was further analyzed by employing Spearman correlation and significant correlation was found between QOL and occupation at .01 levels. However, there is no significant difference on QOL on the basis of age, history of drug use and marital status. Significant

correlation was found between QOL and occupation. PLHIV whose income was maintained had better social support scores (Mahalakshmy, et al 2010). This reflects that decrease in income due to symptoms of HIV has impact on social support. The effect of employment on QOL and psychological functioning in HIV patients was investigated by Blalock et al., 2002 which stated that as the disease progressed, employed participants reported significantly higher QOL. Although there was no significant correlation between QOL and education, several other studies reported that those with less education reported significantly poorer QOL than those with more education (Wachtel et al.,1992; Skevington, 2010; Skevington & O'Connell et al.,2003 ; Lubeck & Fries, 1997; Smith et al.,1996) .

The findings of the study indicate that PLWHA in Aizawl experience a high level of QOL, perceived social support and moderate levels of self esteem. Factors strongly associated with QOL domains in men and women living with HIV in the current study were social support and self-esteem. Significant gender differences were found in the measures of QOL, depression, anxiety, stress and self esteem and with regards to the demographic data, there is a significant correlation between occupation and QOL Other study by Blalock et al., (2002), investigated the effect of employment on QOL and psychological functioning in HIV patients. The results stated that as the disease progressed, employed participants reported significantly higher QOL. The present study indicated that HIV-infected males have higher QOL and self esteem compared to HIV-infected females, while HIV-infected women experienced higher level of depression, anxiety and stress.

SUMMARY AND CONCLUSION

This chapter attempts a brief summary of the study and draw conclusions based on the results and the findings. The present study was designed to study 'The Psychosocial aspects and quality of life of people living with HIV/AIDS" in order to provide empirical and methodological foundations for further studies in the Mizo population. The findings, conclusions may help to provide an insight into the quality of life of PLWHA, the relationship between the psychosocial variables and perhaps provide information for further in-depth studies and the recommendations may serve as a basis for development of intervention strategies.

Research investigating and documenting psychosocial consequences of human immuno deficiency virus (HIV) infection has accumulated during the past two decades. Several studies have pointed out that psychiatric disorders may be diagnosed in a high percentage of HIV-infected patients. With reference to this fact, the relationship between coping and psychosocial morbidity represents a field of specific interesting HIV and AIDS literature. A number of studies of patients who seek HIV/AIDS treatment or preventive health services have indicated that there is fairly high prevalence of psychosocial problems including depression, anxiety, and hostility (Kalichman, 2000; Cohen *et al.,* 2002). The psychological attributes associated with HIV infection therefore have important implications in health outcomes, quality of life, and further transmission of HIV (Whetten, Reif,

Whetten, & Murphy-McMillan, 2008). These social and behavioral issues are central to the global AIDS (Mann,1987). The theoretical framework of theory of reasoned action (Sheppard, Hartwick & Warshaw,1988) and theory of Planned Behavior (Ajzen,1991), considers behavioral, personal, and interpersonal factors and processes that lead to beliefs and subjective evaluations, and therefore engagement in certain behaviors and confidence in changing behavior that could control it, perceived social norms and attitudes towards it, and the emotional and social costs, benefits and consequences related to its outcome. Although these frameworks have been successfully used in industrialized settings, care needs to be taken when employing them in developing ones. The psychosocial factors these theories draw are both significant and important, due to their ability to explain significant amounts of variance in HIV risk in adolescents, and because they are modifiable. The social context is essential to account for the reality of street life, where individual skills, positive attitudes and good intentions for healthful practices may be undermined by a context that encourages behavioral risk. Social and psychological experiences that are significantly related to health outcomes are important components of a research agenda and quality of life is an important outcome measure and includes a sense of well-being, functional health, and engagement in the psychological and social world.

The first objective of the study was to analyze the various levels of psychosocial variables and the findings revealed normal level of depression, anxiety and stress. High level of PSS and moderate level of self esteem among the

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PLWHA. The result indicated that PLWHA in Aizawl experience normal levels of depression, anxiety and stress. Studies have reported depression, anxiety and stress as one of the most common co-morbidities of HIV infection and compared to the general population. In contrary to the present findings, prior studies have reported high prevalence of depression, anxiety and stress among HIV infected respondents (Chandra, Ravi, Desai &Subbakrishna, 1998; Kagee& Martin, 2010;Perkins et al, 1994; Morrison et al., 2011; Deshmukh et al., 2013). Koopman et al., (2000) reported that PLWHA with high stress in their daily life were disengaged behaviourally and emotionally in coping with their illness and those with less severe stress. Hays et.al, (1992), states that psychosocial aspects of HIV-positive status shows that living with HIV is associated with a large measure of stress and depression.

Significant gender differences were found where male subjects scored higher in psychological measures of QOL and self-esteem. This finding is supported by the earlier findings of Mrus et al., (2005); Mast et al., (2004) ;Cederfjall et al., (2001); Nojomi et al., (2008); Eriksson et al., (2000); Imam et.al, (2011) where females reported higher QOL compared to females.In measures of self esteem, the present study reported significant gender differences which is supported by previous other studies (Manhas, 2013; Kling et al.,1999). .In addition, the present study, reported females having higher scores on depression, stress and anxiety. In line with our studies, several studies reported women having more depression, anxiety and stress (Gordillo et al., 2009; Wisniewski et al., 2005;Cederfjall et al.,

2001;Gonzalez et al., (2004); McDowell &Serovich, 2007).However, significant gender differences were not found in PSS among the PLWHA in Aizawl. Schaurich et al., (2006) in a study in Estonia highlighted the importance of education and employment to reduce stress, promote psychological health and good social relationship which influences the quality of life.

In addition, HIV-infected females in the present study experience poorer mental health. This finding may be attributed to among many other factors due to lower education (4% of the HIV- infected females had tertiary (graduate) education), unemployment (64.8% of the HIV-infected females were unemployed) and financially dependent status of the female participants of the study. In line with this, Manhas, (2013) has reported that poor mental health may be attributed to the presence of low score on self-esteem among HIV-women, perceived lack of self-worth, relationship break-ups, high levels of anxiety or stress.

With regards to the third objective, positive correlation was found between QOL and social support. Prior studies indicated that social support can be an important factor for influences on well-being and QOL (Theorell et al., 1995; Friedland et al.,1996; Galvan et al.,2008; Friedland, (1996); Ichikawa, &Natpratan, (2006). Studies have provided evidence that social support as an aspect of psychological adjustment (Kalichman et al.,2003) and can improve physical and psychological health outcomes, (Battaglioli,2007), and between QOL and self esteem.In line with this study, Coral Manhas (2013) and Adejunmobi and

Odunmosu (1998) reported a significant and positive correlation between QOL and self-esteem. Negative correlation was found between QOL and sub-scales of DASS namely, depression, stress and anxiety.The result indicated that as the severity of depression, anxiety and stress increased, quality of life decreased, which is consistent with various other studies (Charles et al, (2012); Fatemeh, 2013;Pokhrel et al, 2017; Mukund & Gopalan, 2015). Positive correlation was found between QOL and PSS which is in line with studies conducted by Hou et al, (2014) and between QOL and self-esteem which is also supported by Manhas, 2013. Furthermore, significant differences were found between HIV-infected and non-infected groups on measures of depression, anxiety, stress, and self-esteem.

Hypothesis 1

It was hypothesized that there will be no significant difference between infected and non-infected samples on depression. To examine this, Kruskal Wallis one-way ANOVA was conducted to compare mean ranks in HIV-status based on depression.Results reported that HIV status serve as a determinant for depression.Thus, the null hypothesis was rejected.

This finding was supported by various studies (Chandra et al.,2005; Li, Lang, Lee & Farmer, 2012; Eller et al., 2014) reporting that individuals with HIV have significantly higher levels of psychological distress than the general population. Depression has been documented as the most common form of psychological distress and common co-morbidities of HIV infection, with prevalence estimates of

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major depressive disorder among persons living with HIV(PLWHA) ranging from 20% to as high as 37% (Being et al ., 2001;Valennte et al.,2003). Kessler et al., (2008) also stated that there is a threefold greater prevalence of major depression than in the general population.

Hypothesis 2

Hypothesis 2 predicted that there would be no significant difference between infected and non-infected samples on anxiety. Kruskal Wallis one way ANOVA was employed which reveals that there is a significant differences based on HIV-status on the measures of anxiety (p<.01).Thus, the second null hypothesis was rejected.

This finding is consistent with that of other studies which found significant difference between HIV-infected and non-infected subjects on anxiety (Gordillo et al. , 2009; Perkins et al.,1995;Wisniewski et al.,2005;Charles Brandt et al., 2017). In line with the present findings, a number of studies of patients who seek HIV/AIDS treatment or preventive health services have indicated that there is fairly high prevalence of psychosocial problems including depression, anxiety, and hostility (Kalichman, 2000; Cohen et al., 2002).Moreover, the median value of anxiety disorders among PLWHA in the reviewed studies was 22.85%, which is notably higher than the general population (Kessler, Chiu, Demler, & Walters, 2005).Subsequently, there have been reports of a spectrum of disorders such as anxiety disorders, panic, hypochondriacal beliefs and obsessive-compulsive

disorders related to HIV infection (Faulstich, 1987; Jacob,1989; Chandra, 1995) ; Jacob et al., (1991) and Perkins et al., (1994) claimed that anxiety disorders may manifest throughout the course of HIV infection, with a general trend for increased prevalence of these disorders as the illness progresses. Summers et al, 1995 also found elevated level of panic disorders in HIV positive men with unresolved grief compared to those with resolved grief.

Hypothesis 3

Hypothesis 3, predicted that there will be no significant difference between infected and non-infected samples on stress. Kruskal Wallis one way ANOVA test reveals that there is a significant differences based on HIV-status on the measures of stress (p<.01).Therefore, the third null hypothesis was rejected.

This finding is supported with other researches which claimed that majority of PLWHA experience high rates of mental health problems (McCormack, Hayes, Lacey, & Johnson, 2001; Yi et al., 2006). Besides, Howlett, Luabey & Kayembe, (1994) has stated that adjustment and stress reactions are observed in as many as 90% of people recently diagnosed as having HIV sero-positivity. Although this usually subsides in most people with the passage of time and acceptance of the implications of the diagnosis, in a few people, these may persist for long, and result in serious psychiatric disorders (Rundell& Brown, 1990).

Hypothesis 4

Hypothesis 4 predicted that there will be no significant difference between HIV infected and non-infected samples on self-esteem. Result of the analysis using Kruskal Wallis one-way ANOVA test indicated that there is a significant difference between infected and non-infected samples on self-esteem (p<.01). The study result reveals that non-infected respondents scored higher on the measures of self-esteem as compared to HIV infected individuals. Thus,the null hypothesis 4 was rejected.

In consistent with the present study, Mohan and Bedi, (2010) reported that PLWHA score significantly lower on self-esteem than the HIV-free subjects. In addition,Vargas and Dantas,(2005); Silverio, Dantas & Carvalho, (2009) reported that people living with HIV/AIDS present worse self-esteem as compared to individuals living with other chronic diseases. The lower self-esteem found in PLWHA may be related to the negative consequences of dealing with the HIV/AIDS infection, broadly reported in literature as depression, and social and emotional isolation (Reis et al., 2011;Cechim, Selli& Mulheres,2007). Jagannath et al., (2011) also highlighted high prevalence of depression in HIV positive patients along with the importance of self-esteem.

Hypothesis 5

Hypothesis 5 predicted that there will be no significant difference between infected and non-infected samples on social support.The Kruskal Wallis one way

ANOVA test reveals that there is no significant difference based on HIV-status on PSS. The result indicated that there is no significant difference between HIV-infected and non-infected group, hence Hypothesis 5 was accepted.

In line with our studies, Folasire, Akinyemi,and Owoaje (2014) reported that perceived social support was higher among the HIV-infected group.Many other studies report high perceived social support in PLWHA (Okawa et al, (2011);Sun, Zhang &Fu, (2007).A number of studies have confirmed that social support is correlated with better mental health and that receiving support from an important person incrementally predicted mental health beyond receiving other forms of support (Baumeister & Leary, 1995; Rook, 1987; Reich, Lounsbury, Zaid-Muhammad &Rapkin, 2010). Moreover, people living with HIV and AIDS who are satisfied with the amount of support available to them tend to experience less psychological distress, a higher quality of life, and more self-esteem (Turner et al.,2002). Safren et al.,2002; Johnson et al.,2001 also found out that those who perceive low levels of social support experience increased distress.

Hypothesis 6

Hypothesis 6 predicted that there will be no gender difference on social support and quality of life. Gender difference was calculated using Kruskal Wallis one way ANOVA. Analysis of Kruskal Wallis test reveals that there is no significant gender difference among the PLWHA on PSS. Thus, we reject the null hypothesis.

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This finding is consistent with that of another study which found no significant differences between gay men, women and straight/bisexual men on the amount of PSS (McDowell &Serovich, 2007). However, Asante (2012), stated that social support is associated with gender, such that men living with HIV derived more psychological benefits than women living with HIV. The results also indicated that social support may have positive implication for the psychological well-being of men and women living with HIV. Asante,(2012)explained that self-esteem may have played a role in the extent to which women were able to perceive and receive support efforts from friends and families. Moreover, Legard, (2010) reported no difference in Perceived Social Support and social integration among males and females. In contrary to the present findings, many studies report that women received less social support from their friends and families (Deichert et al.,2008; Gonzalez et al., 2004; McDowell & Serovich , 2007; Cederfjäll et al.,2001).

The Kruskal Wallis one way ANOVA report a significant gender difference on the overall QoL and its sub-scales-physical domain (p<.05) and psychological domain (p<.01), spirituality domain (p<.01) and in overall QOL (p<.01). The present study revealed that there is a significant gender differences on the overall QOL. We therefore reject the null hypothesis.

This finding is in line with the earlier findings of Mrus et al., (2005), Mast et al., (2004) and Cederfjall et al., (2001); Nojomi et.al., (2008); Eriksson et.al., (2000); Imam Et.al, (2011); Basavaraj et al., (2010) ;Lenderking et al., 1997;

Wachtel et al., 1992. However, some studies have also reported otherwise, Fatiregan et al. (2009), found that women showed a higher QOL score compared to men in virtually all domains and a significantly higher level on the independence domain while Samson-Akpan, Ojong , Ella and Edet (2013) found no significant difference in all the domains when men and women were compared.

Hypothesis 7

Hypothesis 7 predicted that there will be a negative correlation between depression and QOL.The relationship between QOL with Depression was analyzed using Spearman Correlation. The result reveals that there is a significant negative correlation between QOL and Depression. This indicated that if the scores on QOL are high, scores will be low on depression. Thus, the result accepts the null hypothesis.

Several studies are in line with the study (Charles et al, (2012); Fatemeh, 2013;Pokhrel et al, 2017; Mukund & Gopalan, 2015) stated that depression, as one of the factors which is shown to influence the person's QOL and health outcomes. In addition, Banks,(1995) suggested that treatment of depression in patients with HIV disease may not prolong life but can lower the risk of suicide and improve QOL. According to Clark, Beck, and Alford , (1999), the depressed state is a result of cognitive schemas and processing, which is often a result of dysfunctional and destructive ways of viewing oneself. This often results in the individuals' inability to access alternate and more constructive ways of thinking, inability to deal

effectively and react adequately and functionally in life. This influences the individuals diagnosed with HIV or AIDS wellbeing and QOL (Clark, Beck, & Alford, 1999).

Hypothesis 8

Hypothesis 8 predicted that there will be a negative correlation between anxiety and QOL. Analysis of Spearman correlation between QOL and DASS-Anxiety found a significant negative relationship between the two. Thus, the result raccepts the null hypothesis.

In line with the present study,it was reported that high prevalence and high cost of the anxiety disorders have a substantial negative impact on quality of life (Gladis, Gosch, Dishuk, &Crits-Christoph, 1999; Mendlowicz & Stein, 2000). These findings suggest that anxiety disorders negatively impact many functional areas that may contribute to QOL. Various other studies mentioned the impact of anxiety disorders on QOL appears to be robust in that it is independent of symptom severity, demographic variables, somatic health, and diagnostic comorbidity (Cramer, Torgersen, & Kringlen, 2005; Markowitz, Wiesssman, Ouellette, Lish, &Klerman, 1989; Rapaport, Clary, Fayyad, & Endicott, 2005; Strine, Chapman, Kobau, &Balluz, 2005).

Hypothesis 9

Hypothesis 9 predicted that there will be a negative correlation between stress and QOL.The result of Spearman correlation reveals that there is a significant negative correlation between QOL and stress. Results indicate that if QOL is high, scores on stress tend to be low. Thus, the result accepts the null hypothesis.

Various studies suggested that stress level of PLWHA has a significant contribution to QOL. For PLWHA, stress was correlated with QOL in many countries (Murri et al.,2003; Yen et al.,2004;Corless et al.,2013).Interestingly, some data suggested that HIV-infected individuals who participate in stress management activities improve in physical health, as well as mental health and quality of life (Gielen et al., 2001).

Hypothesis 10

Hypothesis 10 predicted that there will be a positive correlation between self-esteem and QOL. Spearman correlation analysis reveals a positive correlation between QOL and self-esteem indicating that if the score on QOL is high; the score will automatically is high in self-esteem and vice versa, thus, supporting the null hypothesis.

In support to the present finding , Coral Manhas (2013); Adejunmobi & Odunmosu, (1998) found significant and positive correlation between quality of life and self-esteem. In contrary to this finding, Sinclair et al., (2010) reported the

negative correlation between self-esteem with quality of life in a national sample of adults whereas Stangl et al., (2007) also found socio-economic and psychosocial factors as predictors of better QOL.

Hypothesis 11

Hypothesis 11 predicted that there will be a positive correlation between social support and QOL.Spearman correlation analysis shows a significant positive correlation between QOL and PSS, thus, supporting the null hypothesis.

Research done by Wilcox et al.,(1996); Ferri et al.,(2001);Sullivan &Dworkin,(2003); Eller, (2001) also support this finding. According to them, the diagnosis of HIV infection, in and of itself, can have deleterious ramifications, including the discontinuation of work, limitations in social activity, and dependence on others and hence limited social support and poor coping skills as well as negatively affect health related QOL.Also in line with the study, Abrefa et al.,(2016) reported that there was a positive association between overall social support and overall quality of life. Previous studies suggested that social support can be an important factor for influences on well-being and quality of life (Theorell et al.,1995).Prior studies also reported that social and psychological resources tend to enrich each other, for instance, people with high self-esteem may be more likely to receive or perceive more social support and self-esteem (Druley& Townsend, 1998; Hall, Kotch, Browne, &Rayens, 1996; Symister& Friend, 2003).

HIV/AIDS causes debilitating illness and premature death in people during their prime years of life and has adversely affected the families and communities. The impact of HIV/AIDS on children and young people is a severe and a growing problem (UNAID 2008). Since its discovery, the expansion of HIV/AIDS epidemic has been considered an issue of great concern.The psychological attributes associated with HIV infection therefore have important implications in health outcomes, quality of life, and further transmission of HIV (Whetten, Reif, Whetten, & Murphy-McMillan, 2008). These social and behavioral issues are central to the global AIDS. (Mann,J., 1987) Thirty years after the initial discovery of the virus that causes AIDS, the epidemic continues to spread, both nationally and globally, and it continues to affect millions of individuals across the developmental spectrum (UNAIDS, 2010).

The findings of the present study indicate high Quality of Life in the PLHWA population in Aizawl and this finding is supported by a host of studies (Swindells et al., 1999; Tate, David , Berg, ,Hansen, May, 2006; McDowell &Serovich, 2007) that conclude that those with increased social support, decreased hopelessness, and effective coping had increased QOL. However a few studies have hypothesized that since HIV infection is accompanied by several physical symptoms it has the potential to adversely affect quality of life (Cunningham et al.,1998). Additionally, gender differences also emerged in the present study and this finding is corroborated by studies conducted by Cederfjall et al., 2001; O'Keefe & Wood, 1996; Holzemer et al., 1998,where HIV infected females tend to have

decreased HRQOL measures regardless of the instrument used. Cederfjall et al., 2001, hypothesized that women with HIV do not possess the support given to HIV positive men and thus have decreased HRQOL. Perhaps women also blame themselves for not protecting themselves from HIV contraction, causing feelings of guilt that could also account for the discrepancy by gender HRQOL. HIV/AIDS causes debilitating illness and premature death in people during their prime years of life and has adversely affected the families and communities.

The psychological attributes associated with HIV infection therefore have important implications in health outcomes, quality of life, and further transmission of HIV (Whetten, Reif,Whetten, & Murphy-McMillan, 2008). These social and behavioral issues are central to the global AIDS. (Mann,J., 1987).

The gender differences emerged in the present study and this finding is corroborated by studies conducted by Cederfjall et al., 2001; O'Keefe & Wood, 1996; Holzemer et al., 1998,where HIV females tend to have decreased HRQOL measures regardless of the instrument used. Cederfjall et al., 2001, hypothesized that women with HIV do not possess the support given to HIV positive men and thus have decreased HRQOL. Perhaps women also blame themselves for not protecting themselves from HIV contraction, causing feelings of guilt that could also account for the discrepancy by gender HRQOL.

Significant differences found between HIV-infected and non-infected groups in Aizawl on depression, anxiety and stress, and self esteem suggesting that, non-infected subjects have a healthier mental health compared to HIV- infected subjects. Most patients with serious, progressive illness confront a range of psychological challenges, including the prospect of real and anticipated losses, worsening quality of life, the fear of physical decline and death, and coping with uncertainty. Furthermore, HIV tends to be concentrated in highly vulnerable, marginalized and stigmatized populations; in particular, sex workers, men who have sex with men, drug users and prisoners.

Studies on many societies all over the world report that many HIV patients struggle with numerous social problems such as stigma, poverty, depression, substance abuse, and cultural beliefs which can affect their QOL not only from the physical health aspect, but also from mental and social health point of view and cause numerous problems in useful activities and interests of the patients (Lee, Kochman, &Sikkema, 2002;Galea&Vlahov,2002; Aranda-Naranjo,2004). given that, spirituality and social support may influence the positive outcome of their responses; spirituality and social support may influence survival in patients with chronic disease (Spinale, Cohen, & Khetpal et al., 2008). Saleh & Brockopp, (2001) also reported PLWHA relying on religiosity and spirituality as a source of comfort, support, and hope. And in line with this, several studies (Crosby et al., 2001; Hudson et al., 2001; Solomon, & Temoshok, 2002) reported social support as a primary mediator of perceived stress and can lessen feelings of emotional

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distress and enhance health outcomes in those infected with HIV.

The present study report high level of QOL and PSS; normal and moderate levels of depression, anxiety, stress and self-esteem among the PLWHA population in Aizawl.; the study participants were PLHIV between 20-40 years which may serve as a factor for the positive outcomes of the study. In addition, most the respondents were on ART which is more or less expected to have a positive impact on their QOL as various studies reported better quality of life among HIV patients treated with antiretroviral drugs. PLWHA in Aizawl report high PSS and moderate Self-esteem, which to a great extent affect the outcome of their QOL. The excellent services (care and support through: counselling, antiretroviral therapy, oral substitution therapy, and targeted interventions) provided by Mizoram State AIDS Control Society (MSACS) may also be instrumental for the results.

There is a host of possible explanation for gender differences among PLHWA in Aizawl in measures of QOL, depression, anxiety, stress and self esteem. In a traditional Mizo society, women were not treated equality with men and it is opined strongly by certain sections of people that women were relegated to the lowest ebb of social hierarchical order though they occupied a place of honor within the family (Vanlaltlani,1983) ,therefore, may adversely affect their social and psychological functioning. Moreover, regardless of the positive outcomes on measures of levels of QOL, DASS, PSS and Self-Esteem, HIV-status still remains a determinant; result depicted that non-infected samples have a better PSS and

higher self-esteem, additionally, experience less depression, anxiety and stress as compared to PLWHA.

The overall result depicted good QOL, mental health and perceived social support. Halliday, (2016) highlighted that PLWHA in Aizawl district experience moderate level of internalised HIV stigma and perceived social support which may be instrumental for the positive outcomes. Furthermore, it can also be attributed to the excellent services (care and support through: counseling, ART, OST, and targeted interventions) provided by Mizoram State AIDS Control Society (MSACS) which greatly enhance the result of this study.

It can be summarized from the results that acquired immunodeficiency syndrome, which has become a serious global health problem with diverse clinical and psychiatric manifestations has significant incidence of psychiatric disorders like depression, anxiety and stress. Psychiatric manifestations need early detection and its treatment together with treatment of HIV disease. The psychological attributes associated with HIV infection therefore have important implications in health outcomes, quality of life, and further transmission of HIV (Whetten, Reif,Whetten, & Murphy-McMillan, 2008). Along with medical treatment, support of friends, family and spouse may improve QOL. Upcoming studies should encompass the evaluation of more determinants of QOL in HIV/AIDS. The constellations of HIV-related symptoms negatively affect the QOL for people living with HIV infection. As HIV disease is among the most devastating of illnesses, having multiple and profound effects upon all aspects of life, hence the

evaluation of QOL is very important. Although research has suggested relationships among various psychosocial and spiritual factors, and physical health, much more research is still needed to document their potential influences on immune function, as well as health status and disease progression. Stress management interventions for HIV-infected persons are a promising approach to facilitate positive adjustment.

Given the magnitude of the problem in the country and the multiple physical and psychological stressors that persons with HIV face, more research is needed and the results of the present study reveals that acquired immunodeficiency syndrome, which is a serious global health problem with diverse clinical and psychiatric manifestations and significant incidence of psychiatric disorders like depression, anxiety and stress and psychological attributes associated with HIV infection have important implications in health outcomes, quality of life, and further transmission of HIV,   the need for early detection and treatment of HIV disease and along with medical treatment the need support of friends and family to improve quality of life requires to be addressed urgently.

Since the present study is the first to study the QOL among Mizo population, a few limitations were faced that are worth mentioning: The sample consists of PLWHA in Aizawl, identified from health care centers and testing centers that were availing the services. The answers on the various psychological measures as observed may vary due to social desirability. PLHIV who are not availing services

were not included in the study. Moreover, as the study is concentrated only among

PLWHA in Aizawl, measures need to be taken to include PLWHA from other

districts so as to have a broader and a clearer picture of the PLWHA in Mizoram.

The findings of the present study is attempted to be explained in light of the religious and cultural backdrop of the Mizo society.

The results of the study indicating high level of QOL, PSS and self-esteem among PLWHA in Aizawl may be attempted to be explained in the light of religious aspect given that, The Mizo came under the influence of the British missionaries in the nineteenth century, and now most of the Mizo are Christians.

Mizo society revolves around Christianity and the church playing a vital role in the life of a Mizo which is connected with the Church and its manifold activities (Lalnithanga, 2005). With much dedication that their entire social life and thought-process has been transformed and guided by the Christian church and their sense of values has also undergone drastic change. Their perception of what is right or wrong is based on Christian beliefs, as is their judgment of what is moral and immoral. This is reflected in their behavior towards those in their community as HIV tends to be concentrated in highly vulnerable, marginalized and stigmatized populations; in particular, sex workers, men who have sex with men, drug users and prisoners.

Another rationale for the present finding maybe the custom which has prevailed in the Mizo society – "Tlawmngaihna" where everyone is required to be courteous and considerate in relation to others and be prepared to help, irrespective of one's inconvenience under all circumstances (Lalnithanga, 2005).

Gender differences in the mental health of PLHWA in Aizawl may be attempted to be explained by the writings of Dr.T.Vanlalthlani in her book "Mizo Hmeichhiate Kawngzawh", Wherein she writes that in the traditional Mizo society, the male-child preference is deeply rooted in the culture as man is regarded the head of the family. According to census 2011, 87.16% in Mizoram are Christians and religiously, in a traditional set up, it is a taboo to think of having women as a church elder. Therefore, one can expect the Christian faith to influence the perception of women in the State. Vanlaltlani, (1983), also argued that traditionally, women were not treated equally with men and in traditional and social circles, one can easily perceive strong tides of patriarchy. The male attitudes towards the position of women has changed to a great extent that less discrimination is made on the basis of gender. But there is still a need to change in the attitudes of men towards women in the Mizo society (Rev.Lalrinawma). The power imbalance reduces women's choices as they negotiate their relationships with men , in addition, poverty prevents poor women from receiving adequate health care and education – two essential elements for preventing HIV/AIDS.

Hence, it is observed that positive women report poorer QOL and seriously, and therefore receive less empathy and social support compared to their male counterparts. Moreover, gender norms and expectations keep women uninformed about their bodies and sexual health and are often denied health services. According to MSACS report (June 2017), 5968 males and 4535 females, are

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registered for ART. In Mizoram, and men with HIV commonly access ART through registered ICTC centres and women with HIV primarily access HIV testing and linkage to ART via outreach activities for female sex workers, and through routine HIV testing at antenatal care clinics this mode of access to available services for PLWHA could be another indicator for gender disparity.

However, the overall result depicted a good QOL, mental health and perceived social support. Halliday, (2016) highlighted that PLWHA in Aizawl district experience moderate level of internalised HIV stigma and perceived social support which may be instrumental for the positive outcomes. Furthermore, it can also be attributed to the excellent services (care and support through: counseling, ART, OST, and targeted interventions) provided by Mizoram State AIDS Control Society (MSACS) which greatly enhance the result of this study.

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DEMOGRAPHICS SHEET

Please indicate your responses to the following questions by circling the number against each question wherein applicable.

1. Gender:
   a) Male
   b) Female
2. Age:……..(in figure)
3. Educational Qualification:
   a) Primary
   b) Middle
   c) High-school
   d) Higher secondary
   e) Tertiary
4. Occupation:…………..
5. Marital status:
   a) single
   b) married
   c) divorced
   d) widowed
6. History of Drug Use:
   a) current user
   b) ex-user
   c) non-user
7. Mode of infection:
   a) sex
   b) sharing of needles/ syringes
   c) others
8. Years of infection………………….
9. Household :
   a) spouse
   b) parents
   c) joint family
   d) children
   e) relatives
   f) living with friends
   g) living alone

PARTICIPANT CONSENT FORM (ENGLISH)

> Purpose: The purpose of this study is to examine the thoughts PLWHA may experience. The study is part of research under the Mizoram University.

Procedure:

If you agree to be in this study, you will be asked to do the following:

1. The estimated required time for completion of the questionnaires is 30 minutes.
2. Please read each group of statements carefully, and then pick out the one statement in each group that best describes the way you have been feeling.
3. There are no right or wrong answers, so please do not spend too much time on one question.
4. Please answer all the questions.

Benefits/Risks to Participant:

The research is the first endeavor towards the mentality of PLWHA in Mizoram. It is expected to make contributions to the care and support of PLWHA in Mizoram.

Confidentiality:

Your name will never be connected to your results or to your responses on the questionnaires; instead, a number will be used for identification purposes. Information that would make it possible to identify you or any other participant will never be included in any sort of report. The data will be accessible only to those working on the project.

Contacts and Questions:

If you have questions later, you may contact the following person:

1. C.Lalremruati

Statement of Consent:

I have read the above information. I have asked any questions I had regarding the experimental procedure and they have been answered to my satisfaction. I consent to participate in this study.

Signature of Participant _____ Date:_____

Thanks for your participation!

QOL

WHOQOL-HIV BREF (QOL):(Department of Mental Health and Substance Dependence,World Health Organization, CH-1211 Geneva 27, Switzerland)

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.**

Please read each question, assess your feelings, and circle the number on the scale for each question that gives the best answer for you.					
1	How wo uld you rate your quality of life?	Very poor 1	Poor 2	Neither poor nor good **3**	Good 4	Very good 5
2	How satisfied are you with your health?	Very dissatisfied **1**	Dissatisfied 2	Neither satisfied nor dissatisfied 3	Satisfied 4	Very Satisfied 5
The following questions ask about **how much** you have experienced certain things in the last two weeks.					
3	To what extent do you feel that physical pain prevents you from doing what you need to do?	Not at all 1	A little 2	A moderate Amount 3	Very much 4	An extreme Amount 5
4	How much are you bothered by any physical problems related to your HIV infection?	Not at all 1	A little 2	A moderate Amount 3	Very much 4	An extreme Amount 5
5	How much do you need any medical treatment to function in your daily life?	Not at all 1	A little 2	A moderate Amount 3	Very much 4	An extreme Amount 5
6	How much do you enjoy life?	Not at all 1	A little 2	A moderate Amount 3	Very much 4	An extreme Amount 5
7	To what extent do you feel your life to be meaningful?	Not at all 1	A little 2	A moderate Amount 3	Very much 4	An extreme Amount 5
8	To what extent are you bothered by people blaming you for your HIV status	Not at all 1	A little 2	A moderate Amount 3	Very much 4	An extreme Amount 5
9	How much do you fear the future?	Not at all 1	A little 2	A moderate Amount 3	Very much 4	An extreme Amount 5

10	How much do you worry about death?	Not at all 1	A little 2	A moderate Amount 3	Very much 4	An extreme Amount 5
11	How well are you able to concentrate?	Not at all 1	A little 2	A moderate Amount 3	Very much 4	Extremely 5
12	How safe do you feel in your daily life?	Not at all 1	A little 2	A moderate Amount 3	Very much 4	Extremely 5
13	How healthy is your physical environment?	Not at all 1	A little 2	A moderate Amount 3	Very much 4	Extremely 5

The following questions ask about **how completely** you experience or were able to do certain things in the last two weeks.						
14	Do you have enough energy for everyday life?	Not at all 1	A little 2	Moderately 3	Mostly 4	Completely 5
15	Are you able to accept your bodily appearance?	Not at all 1	A little 2	Moderately 3	Mostly 4	Completely 5
16	Have you enough money to meet your needs?	Not at all 1	A little 2	Moderately 3	Mostly 4	Completely 5
17	To what extent do you feel accepted by the people you know?	Not at all 1	A little 2	Moderately 3	Mostly 4	Completely 5
18	How available to you is the information that you need in your day-to-day life?	Not at all 1	A little 2	Moderately 3	Mostly 4	Completely 5
19	To what extent do you have the opportunity for leisure activities?	Not at all 1	A little 2	Moderately 3	Mostly 4	Completely 5
20	How well are you able to get around?	Very poor 1	Poor 2	Neither poor nor good 3	Good 4	Very good 5
The following questions ask you how **good or satisfied** you have felt about various aspects of your life over the last two weeks.						
21	How satisfied are you with your sleep?	Very Dissatisfied 1	Dissatisfied 2	Neither satisfied nor dissatisfied 3	Satisfied 4	Very Satisfied 5
22	How satisfied are you with your ability to perform your daily living activities?	Very Dissatisfied 1	Dissatisfied 2	Neither satisfied nor dissatisfied 3	Satisfied 4	Very Satisfied 5

23	How satisfied are you with your capacity for work?	Very Dissatisfied 1	Dissatisfied 2	Neither satisfied nor dissatisfied 3	Satisfied 4	Very Satisfied 5
24	How satisfied are you with yourself?	Very Dissatisfied 1	Dissatisfied 2	Neither satisfied nor dissatisfied 3	Satisfied 4	Very Satisfied 5
25	How satisfied are you with your personal relationships?	Very Dissatisfied 1	Dissatisfied 2	Neither satisfied nor dissatisfied 3	Satisfied 4	Very Satisfied 5
26	How satisfied are you with your sex life?	Very Dissatisfied 1	Dissatisfied 2	Neither satisfied nor dissatisfied 3	Satisfied 4	Very Satisfied 5
27	How satisfied are you with the support you get from your friends?	Very Dissatisfied 1	Dissatisfied 2	Neither satisfied nor dissatisfied 3	Satisfied 4	Very Satisfied 5
28	How satisfied are you with the conditions of your living place?	Very Dissatisfied 1	Dissatisfied 2	Neither satisfied nor dissatisfied 3	Satisfied 4	Very Satisfied 5
29	How satisfied are you with your access to health services?	Very Dissatisfied 1	Dissatisfied 2	Neither satisfied nor dissatisfied 3	Satisfied 4	Very Satisfied 5
30	How satisfied are you with your transport?	Very Dissatisfied 1	Dissatisfied 2	Neither satisfied nor dissatisfied 3	Satisfied 4	Very Satisfied 5
The following question refers to **how often** you have felt or experienced certain things in the last two weeks.						
31	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	Never	Seldom	Quite often	Very often	Always

Did someone help you to fill out this form?

_____

How long did it take to fill this form out?

_____

Do you have any comments about the assessment?

_____

DASS-44

Depression Anxiety Stress Scale (Lovibond & Lovibond, 1995)

Please read each statement and circle a number 0, 1, 2 0r 3 which may indicate how much the statement apply to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all

1 Apply to me to some degree, or some of the time

2Applied to me a considerable degree, or a good part of time

3 Applied to me very much, or most of the time

1	I found myself getting upset by quite trivial things	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I just couldn't seem to get going	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I had a feeling of shakiness (eg, legs going to give way)	0	1	2	3
8	I found it difficult to relax	0	1	2	3
9	I found myself in situations that made me so anxious I was most relieved when they ended	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting upset rather easily	0	1	2	3
12	I felt that I was using a lot of nervous energy	0	1	2	3
13	I felt sad and depressed	0	1	2	3
14	I found myself getting impatient when I was delayed in any way (eg, lifts, traffic lights, being kept waiting)	0	1	2	3
15	I had a feeling of faintness	0	1	2	3
16	I felt that I had lost interest in just about everything	0	1	2	3

17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3
19	I perspired noticeably (eg, hands sweaty) in the absence of high temperatures or physical exertion	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life wasn't worthwhile	0	1	2	3
22	I found it hard to wind down	0	1	2	3
23	I had difficulty in swallowing	0	1	2	3
24	I couldn't seem to get any enjoyment out of the things I did	0	1	2	3
25	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
26	I felt down-hearted and blue	0	1	2	3
27	I found that I was very irritable	0	1	2	3
28	I felt I was close to panic	0	1	2	3
29	I found it hard to calm down after something upset me	0	1	2	3
30	I feared that I would be "thrown" by some trivial but unfamiliar task	0	1	2	3
31	I was unable to become enthusiastic about anything	0	1	2	3
32	I found it difficult to tolerate interruptions to what I was doing	0	1	2	3
33	I was in a state of nervous tension	0	1	2	3
34	I felt I was pretty worthless	0	1	2	3
35	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
36	I felt terrified	0	1	2	3
37	I could see nothing in the future to be hopeful about	0	1	2	3
38	I felt that life was meaningless	0	1	2	3

DASS-44(cont…)

39	I found myself getting agitated	0	1	2	3
40	I was worried about situations in which I might panic and makeıa fool of myself	0	1	2	3
41	I experienced trembling (eg, in the hands)	0	1	2	3
42	I found it difficult to work up the initiative to do things	0	1	2	3

PSS

Multidimensional Scale of Perceived Social Support(Zimet, Dahlem, Zimet &
Farley, 1988)
Instructions: We are interested in how you feel about the following statements. Read
each statement carefully. Indicate how you feel about each statement.

Circle the "1" if you **Very Strongly Disagree**
Circle the "2" if you **Strongly Disagree**
Circle the "3" if you **Mildly Disagree**
Circle the "4" if you are **Neutral**
Circle the "5" if you **Mildly Agree**
Circle the "6" if you **Strongly Agree**
Circle the "7" if you **Very Strongly Agree**

1	There is a special person who is around when I am in need.	1	2	3	4	5	6	7
2	There is a special person with whom I can share my joys and sorrows.	1	2	3	4	5	6	7
3	My family really tries to help me.	1	2	3	4	5	6	7
4	I get the emotional help and support I need from my family.	1	2	3	4	5	6	7
5	I have a special person who is a real source of comfort to me.	1	2	3	4	5	6	7
6	My friends really try to help me.	1	2	3	4	5	6	7
7	I can count on my friends when things go wrong.	1	2	3	4	5	6	7
8	I can talk about my problems with my family.	1	2	3	4	5	6	7
9	I have friends with whom I can share my joys and sorrows.	1	2	3	4	5	6	7
10	There is a special person in my life who cares about my feelings.	1	2	3	4	5	6	7
11	My family is willing to help me make decisions.	1	2	3	4	5	6	7
12	I can talk about my problems with my friends.	1	2	3	4	5	6	7

The items tended to divide into factor groups relating to the source of the social support,
namely family (Fam), friends (Fri) or significant other (SO).

SES
Rosenberg Self-Esteem Scale (Rosenberg, 1965)

The scale is ten item Likert scales with items answered on a four point scale - from strongly agree to strongly disagree. The original sample for which the scale was developed consisted of 5,024 High School Juniors and Seniors from 10 randomly selected schools in New York State.

Instructions: Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle **SA**. If you agree with the statement, circle **A**. If you disagree, circle **D**. If you strongly disagree, circle **SD**.

1.	On the whole, I am satisfied with myself.	SA	A	D	SD
2.*	At times, I think I am no good at all.	SA	A	D	SD
3.	I feel that I have a number of good qualities.	SA	A	D	SD
4.	I am able to do things as well as most other people.	SA	A	D	SD
5.*	I feel I do not have much to be proud of.	SA	A	D	SD
6.*	I certainly feel useless at times.	SA	A	D	SD
7.	I feel that I'm a person of worth, at least on an equal plane with others.	SA	A	D	SD
8.*	I wish I could have more respect for myself.	SA	A	D	SD
9.*	All in all, I am inclined to feel that I am a failure.	SA	A	D	SD
10.	I take a positive attitude toward myself.	SA	A	D	SD

THANK YOU

MIZORAM UNIVERSITY

DEPARTMENT OF

PSYCHOLOGY AIZAWL: 796004

PARTICULARS OF THE CANDIDATE

Name of Candidate	:	Ms. C.Lalremruati
Degree	:	Doctor of Philosophy
Department	:	Psychology
Title of Thesis	:	'Psychosocial Aspects and Quality of Life of People Living with HIV/AIDS in Aizawl'
Date of Admission	:	06.07.2001

Approval of Research Proposal

1. Board of Studies	:	18.10. 2012
2. School Board	:	02.11. 2012
Registration and Date	:	MZU/Ph.D/ 556 of 02.11.2012
Academic Council	:	15.11.2012
Extension (if any)	:	Nil

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