PERSONALITY FACTORS, SPIRITUALITY, AND SOCIAL SUPPORT IN SUBSTANCE USE DISORDER

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SUBSTANCE USE DISORDER

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Submitted

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SUPERVISOR'S CERTIFICATE

This is to certify that the present research work titled, **"Personality Factors, Spirituality, and Social Support in Substance Use Disorder"** is the original research work carried out by Ms. Lalhmingmawii under my supervision. The work done is being submitted for the award of the Doctor of Philosophy in Psychology of Mizoram University.

This is to further certify that the research conducted by Ms. Lalhmingmawii has not been submitted in support of an application to this or any other University or an Institute of Learning.

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DECLARATION

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

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

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CHAPTER - I
INTRODUCTION

The excessive and unregulated use of drugs has presented and continued to present a significant public health concern and burden to the society. It affects individuals, their families and the society as a whole (Sussman and Ames, 2001). The last National Mental Health Survey of India (2015-16) indicated that Substance Use Disorders (SUDs), including alcohol use disorder, moderate to severe use of tobacco and use of other drugs (illicit and prescription drugs) was prevalent in 22.4% of the population above 18 years in all the 12 surveyed states. The survey also revealed that 0.6% of the 18+ population were recognised with illicit substance use disorders (dependence and abuse) which included cannabis products, opioid drugs, stimulant drugs, inhalant substances and prescription drugs. The burden of SUDs, contributed mainly by alcohol and tobacco, was more in middle aged (40-59) individuals (29%), among males (35.67%) and in rural areas (24.12%). Thus, drug abuse is a multifaceted problem which has to be tackled in a comprehensive manner and one of the ways to do this is by highlighting and studying the factors that may be related to such behaviors.

Personality Factors

Personality traits continue to hold a central place among the etiological factors of substance use disorders (Sher *et al*., 2000). People with certain personality traits may be at increased risk for developing drug use problems, and studying personality may help researchers better understand and treat these problems. The focus in terms of personality factors for this particular study will be on 3 factors namely: Resilience, Locus of Control and Coping Styles.

Daily difficulties and stress faced are part of our life. How we perceive those difficulties often influence our life. People differ in the ways they deal with these adversities and hardships. Some people cannot cope efficiently with those situations, thus making them unproductive and dissatisfied with their life. However, many people are able to deal with those situations successfully. **Resilience** is a term that is often used to describe the ability to bounce back or recover from stress and also adapt to stressful circumstances (Smith *et al*., 2008; Smith *et al*., 2013)and as the

root for the English word 'resilience' is 'resile' which is described as a means 'to bounce or spring back' (Agnes, 2005). The American Psychological Association defines resilience as the process of adapting well in the face of adversity, trauma, tragedy, threats, or even significant sources of stress (American Psychological Association, 2014). Since the meaning of certain words like resilience can change and evolve over time, it is crucial for studies to specify the meaning they have associated with the word resilience. A clear distinction has been made by researchers between "resilience" as in returning to a previous level of functioning after a setback (e.g., bouncing back or recovery) and "thriving" as in moving to a superior level of functioning (above the norm) after experiencing a stressful event (Carver, 1998).

Resilient people tend to have good social skills, are generally easy going, independent, remain calm under pressure, have the ability to bounce back from setbacks and hardships, are healthier, live longer, tend to be more successful in school and work, happier in relationships and less prone to depression (Masten & Coastworth, 1998; Siebert, 2005; Feldmen, 2011). According to Feldmen (2011), resilient people generally have control over their destiny and make the best of whatever situation they find themselves in. Masten (2013) observes that resilience is an essential system that supports human development in dealing with difficulties. Resilient people will be able to convert the disruptive changes and conflict into opportunities for growth (Maddi & Khoshaba, 2005). Cadet (2016) believed that resilience may buffer the effect of stress on the risk of addiction and hence intervention for addiction should include means for promoting resilience in these individuals.

Resilience is a multidimensional phenomenon affecting physical, emotional, spiritual, social, and family life domains; people may experience declines in functioning on some domains while experiencing resilience on other situations (Costanzo *et al*., 2009). Even when people acquire skills that make them more resilient as compared to others, their resilience can differ across different types of stressors and problems (Sturgeon & Zautra, 2010).

Locus of control (LOC) refers to the extent to which people believe they can control their general life outcomes (Rotter, 1990). It refers to a subjective appraisal of factors that account for the occurrence of events, situations and outcomes. Specifically, internally oriented individuals believe outcomes are mainly determined by internal factors (e.g., their own actions), whereas externally oriented individuals believe their outcomes are influenced mostly by external factors (e.g., powerful others, chance) (e.g., Teste, 2017; Levenson, 1981; Rotter, 1966). Internal–external LOC refers to an individual's beliefs that she or he has control over events (Rotter, 1975; Terborg, 1985). Internal LOC individuals believe they are mainly responsible for and in control of what happens to them while externals typically believe mainly other people or forces beyond themselves determine major events in their lives. In other words, External LOC individuals believe their life outcomes and events are under the control of powerful others, luck, or fate (Rotter, 1966). Internal LOC individuals possess an enduring and pervasive belief that one's internal and external environments are generally predictable and that there is a good chance that all things will work out as well as can be expected depending on the efforts they give themselves (Kobassa & Puccetti, 1983).

Sandler and Lakey (1982) found that LOC beliefs play an important role in moderating the effects of stress on well-being, where individuals with internal LOC reported experiencing less anxiety and depression in response to stress than individuals with external LOC. These authors suggested that under conditions of high stress, internals are able to acquire and use information more efficiently and effectively than externals and that they are more task oriented in their coping behaviours as well. Externally oriented individuals have increased feelings of helplessness when dealing with problems (Hiroto, 1974). Fogas *et al*. (1992) also found that an external LOC orientation was significantly related to higher stress and lower achievement. Additionally, a review by Cohen and Edwards (1989) established that locus of control is the personality characteristic that provides and indicates the strongest and the most reliable evidence of stress-moderation.

Coping is defined as the set of cognitive and behavioral strategies used by an individual to manage the internal and external demands of stressful situations (Carmona *et al*., 2006). Coping is generally referred to as the cognitive and behavioral efforts used to master, tolerate, and reduce demands that tax or exceed a person's resources (Cohen & Lazarus, 1979). Different coping styles can be used in different problem situations. However, a more active coping style (such as problem solving) generally is seen as a healthier coping style in the long term compared to a more passive and problem-avoiding coping style (Schreurs *et al*., 1993).

Coping styles are methods of coping that characterize an individuals' reactions to stress, either over a period of time or across different situations (Frydenberg & Lewis, 2009). According to the transactional model of coping (Lazarus, 1993), there are two global coping styles namely, emotion-focused coping (distancing, avoidance, escape), which is directed at regulating emotional distress; and problem-focused coping, which directly deals with the problem that is causing the distress and changing the problematic situation. Most coping strategies are broadly grouped as either adaptive responses that solve or remove the source of stress or maladaptive responses that give temporary escape or avoidance from the stressor (Lazarus and Folkman, 1984; Roth and Cohen 1986; Suls and Fletcher, 1985).

Lazarus and Folkman (1984) defined coping as *"constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person"*. Coping is a goal-directed process in which the individual orients thoughts and behaviours toward the goals of resolving the source of stress and managing emotional reactions to stress (Lazarus, 1993).

Higgins and Endler (1995) differentiated coping strategies into three main groups namely- task-oriented, emotion-oriented, and avoidance-oriented strategy. According to them, the task-oriented strategy is problem-focused and involves taking direct action to change the situation itself to ultimately reduce the amount of stress it evokes. The emotion-oriented strategies are aimed at changing emotional responses

to stressors. It also includes attempts to reframe the problem in such a way that it no longer leads to a negative emotional response and consequently causes less stress (Mattlin *et al*., 1990). Lastly, avoidance-oriented coping includes strategies such as avoiding the situation, denying its presence or existence, or even losing hope (Lazarus & Folkman, 1984). It also involves the use of indirect means to deal with stressors by distancing oneself from the problem or evading the problem, techniques in use can be suppression or repression, others may involve engaging in unrelated and different activities (distraction) for the purpose of decreasing feelings of stress (Roth & Cohen, 1986). Avoidant coping strategies tend to draw focus away from the main source of stress or psychological and/or somatic responses to the stressor (Suls & Fletcher, 1985). It is important to remember that avoidance is a form of adapting or coping to stressful situations; however, it is a positive adaptive strategy only in the short term (Suls & Fletcher, 1985). One can be considered to have the ability to cope effectively if they can regulate their emotions, their cognition, their behavior, and the environment around them in response to stressful events (Compas *et al*., 2001). However, it is difficult for everyone to have this ability. The first two coping strategies require active participation to alter the stressful situation. Emotion-oriented strategies is mostly favored by people whose personality disposition enables them to easily enter into and sustain a state of emotional arousal in response to, or in anticipation of, emotionally-laden events (Melamed, 1994). In contrast, avoidance strategies are characterized by the absence of attempts to change the situation. Although avoidance-oriented coping may seem like an appropriate reaction to stressful situations initially, Moss & Billings (1982) have shown that in the long run, it is in fact often associated with poor adjustment. Endler and Parker (1999) have suggested that task-oriented coping is the most effective strategy in the long run. The two proactive methods i.e., the task-oriented and emotion-oriented approaches are often associated with better adjustment, as can be seen as higher with coping effectiveness and less depression (Causey & Dubow, 1993; Compas *et al*., 1988; Strutton & Lumpkin, 1993).

Another way of understanding coping style is differentiating between positive coping and negative coping which are considered to be opposite to one another. The

individuals who often use positive coping style do not see demands, risks and opportunities as potential threat, harm or loss. Rather, they perceive these demanding situations and stressors as challenges. In this sense, they seem more as proactive and not reactive and create opportunities for growth. For them, stress is seen as "eustress" (Schwarzer & Knoll, 2003). Therefore, positive coping is characterized by problem-solving behavior and positive appraisal of the situation. In contrast, negative coping is distinguished by applying more palliative coping and emotion-focussed coping style (Li *et al.*, 2012). The individuals who use negative coping style often display distortion of thinking, tend to make negative appraisals and negative self-appraisal (e.g., feeling their inability to handle problems). They deal ineffectively with distress through negative ways which focus on negative thoughts (e.g., rumination), attempt to escape stressful situations through avoidance, denial, and wishful thinking amongst others (Ding *et al.*, 2015).

Lazarus and Folkman (1984) have argued that coping strategies are neither good nor bad and that a certain type of strategy, while useful in one situation may not be so in another. They also suggested that coping is a process that changes and evolves over time and in relation to the context of a situation or circumstance. A coping strategy is considered to be adaptive and effective if it improves a person's ability to adjust to a situation/ or event (Lazarus, 1993). Research has indicated that in stressful situations, people tend to use both problem-focused and emotion-focused coping (Lazarus& Folkman, 1987). However, problem-focused coping strategies are more often reported to have better results than emotion-focused coping (Compas *et al.*, 2001).

An important function of a healthy coping strategy includes the effective management of stress and negative emotional states. An active, problem-directed/ task-oriented coping style is found to be helpful in preventing psychosomatic problems (Frese, 1986), as well as preventing other psychiatric problems. While maladaptive coping style was found to be related to psychiatric morbidity (Rabkin & Struening, 1976), increased risk of violence (Kotler *et al*., 1993), hostile behavior

(McCormick & Smith, 1995), suicide (Linehan *et al*., 1986) and personality disorders (Vollrath *et al*., 1998)

Spirituality

Spirituality is often conceptualized as a factor that provides individuals with a sense of meaning (Steger & Frazier, 2005). The term spirituality also generally refers to the human need and longing for a sense of meaning and fulfilment through morally satisfying relationships between individuals, families, communities, cultures, and religions (Canda and Furman, 1999). Spirituality is a broad term which emphasizes being attentive to what is considered sacred and connected to a belief, power, or a concept greater than oneself as well as includes a transcendent relationship with what is considered as being sacred or divine. (Pargament *et al*., 2013; Plante, 2010).

Although often viewed in a religious context, spirituality is not necessarily about being religious. The term spirituality includes but has evolved beyond its religious moorings to include experiences that bring about a heightened sense of meaning and purpose in one's life while religion refers to organized structures that revolve around particular beliefs, ceremonies, behaviors, rituals, and traditions (Canda & Furman, 1999).

Religion refers to the organizational and community structures that emphasizes on providing people with a spiritual environment often idealized models (e.g., Jesus, Buddha, Mohammad), sacred writings and scriptures (e.g., the Bible, Bhagavad Gita), focussing on rituals (e.g., prayer, chanting fasting,), and particular beliefs system and set of practices (Pargament *et al*., 2013; Plante, 2010).

The lack of a consensual definition of spirituality in the addictions field (Cook, 2004) has resulted in both theistic (belief in God) and non-theistic (moral values, inner strength) interpretations of spirituality (Kaskutas *et al*., 2003). Pargament *et al*. (2013) defined religion as "an organized system of beliefs and

rituals associated with an institutional structure". In contrast, spirituality is based on "thoughts, feelings, and behaviors an individual engages in while in search of a relationship with the sacred". Historically, the concept of spirituality was seen as a means of mentally, physically, and emotionally coping with problematic situations (Miller, 2003). Spirituality and religiosity are constructs that have gained increasing interest in psychological and psychiatric research during recent years. This is due mainly to the belief that they impact positively on both mental and physical health, and the ability to deal effectively with stressors (e.g., Costanzo, Ryff, & Singer, 2009; Dew *et al*., 2010; Koenig, 2012). In a meta-analysis of studies looking at the relationship between religiosity and spirituality, Zinnbauer and Pargament (2005) found that there was no clear distinction in the definition of religious and spiritual in the scientific literature in Psychology.

Religious involvement may serve as protective factor through support system that helps in either moderation of substance use or abstinence from substance use, engaging in distraction activities that are not compatible with substance use, avoidance of drugs and the introduction of moral and pro-social values that is a feature of the religious affiliation that including leading a life free of drug (Morjaria & Orford, 2002). Hence, "if religious and spiritual involvement can act as a protective factor, it should come as no surprise that it could act as a means of ridding oneself of an addiction" (Morjaria & Orford, 2002).

Various modules for substance use disorder treatment have paid attention to the role of spirituality, for example the 12-step programme such as Alcoholics Anonymous (AA) have considered a major aspect of their programme to be that of the acknowledgement of a "higher power'' in influencing recovery from substance use (AA World Services Inc., 2001).

Social Support

Albrecht and Adelman (1987) defined social support as "verbal and nonverbal communication between recipients and providers that reduces uncertainty

about the situation, the self, the other, or the relationship, and functions to enhance a perception of personal control in one's experience."

Although social support seems a clear concept, it actually is an umbrella term that covers a variety of phenomena (Sarason *et al.*, 1995). Researchers have therefore emphasized on the importance to distinguish the different aspects of social support conceptually and empirically. The first of this is the extent of social integration. The first conceptualization focuses social support in terms of the number and strength of social relationships the individual establishes and maintains with others in his or her social environment. (i.e., quantitative properties). For example, marital status, participation in community organizations etc. Secondly, the perceived availability of social support (i.e., perceived support) and finally, received support. These two conceptualizations understand social support in terms of the functions that social relationships can have for the individual (Cohen & Wills, 1985; B. Sarason *et al.*, 1987). Firstly, perceived support that focuses on the different types of support a person believes to be present in case he or she should need it (Dunkel-Schetter & Bennett, 1990). Secondly, received support that focuses on the actual receipt of the different types of support during a given time period, i.e., it focuses on what people actually get from others and what kind of actions others perform to assist the person in need. For example, by helping to find a solution to a problem etc. (Rook, 1984).

Social support has been defined as a physical and psychological comfort provided by friends and family (Sarason *et al.*, 1987). Taylor and colleagues (2007) described social support as a concept in which someone receives help from others to solve the problems he/she has faced. It is a broad term that includes a variety of characteristics of an individual's social world that might promote well-being and reduce the chance of developing health problems (Cohen *et al.*, 2000). The studies on social support have seen immense growth since its emergence from the 1970s. Many researchers have tried to find the relationship between health and social support, including mental health. Social support processes are strongly related to both physical and mental health (House *et al.*, 1988). Some have attributed the beneficial health effects of social relationships as due to their buffering properties in the

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presence of stress (Cassel, 1976; Cobb, 1976; Caplan, 1974). Social support may serve a stress-buffering function by building a sense of self-efficacy and problem-solving skills (Cohen & Wills, 1985). Social support has also often been studied in terms of its potential to buffer or enhance the potentially harmful effects of psychosocial stress on health (Cobb, 1976; Hall & Wellman, 1985; House, 1987; Richmond *et al*., 2007). Lack of social support and lower perceived adequacy of social support have been linked to decrease in mental and physical health (Steptoe & Wardle, 2001).

House *et al*. (1988) identified two elements of social relationship structure such as (i) social integration, which refers to the existence or quantity of social relationships, and (ii) social network structure, referring to the structural properties that characterized a set of relationships.Zhou and colleagues (2015) have also explained social support in terms of perceived social support and received social support. According to them, perceived social support expresses the functional components of the perceived level of received support (which refers to the recipient's subjective judgment on whether or not they can get help from others in a given situation). On the other hand, received social support mainly refers to structural components, for example, how frequent members contact each other, reciprocal support and the quality of that support. Perceived social support has greater impact on treatment results and recovery as compared to received social support (Eom *et al*., 2013; Khalil & Abed, 2014; Zhou *et al*., 2015). Additionally, perceived social support may depend on individual differences in perceptual, memory processes, and judgment that may lead to differences in perception of supportive situations (Lakey & Drew, 1997), or may be affected by value judgments regarding the relationship contexts in which the supportive situations or events occur (Sarason *et al.,* 1995).

Cullen and his colleagues (Colvin *et al*., 2002; Cullen, 1994) have given a broad definition of social support, defining it as "the perceived or actual instrumental and/or expressive provisions supplied by community, social network, and confiding partners." The instrumental forms of social support involve efforts to assist the recipient with goal attainment and may include, for example, sharing of advice and

guidance, transportation to a job interview, or financial support. Expressive forms of social support on the other hand focus on the recipient's need for affection, care and love, self-worth, empathy, a sense of belonging and companionship.

Social support may have a positive as well as negative effect on health and well-being (Cohen & Syme, 1985). Considerable evidence has suggested that having a positive family and social relationship can moderate and reduce the effects of stress on a person and may even reduce illness and early death (Monroe & Steiner, 1986). Conversely, the lack of external support, personal or material, can make a given stressor more harmful and reduce a person's capacity to deal effectively with it.

Substance Use Disorder

Drugs are psychoactive substances that change an individuals' mood and behavior by altering the brain chemistry and function (Hyman & Malenka, 2001). Drugs of abuse can include medically prescribed substances (e.g., pain relievers and barbiturates), legal substances (e.g., nicotine and alcohol), and illegal substances (e.g., marijuana and heroin). Some drugs (such as alcohol) have been used since ancient times, while other drugs such as methamphetamine and designer drugs (e.g., Ecstasy) are relatively new (National Institute on Drug Abuse, 2007). Drugs of abuse can be classified into five groups or class of drugs based on their effects. The first class of drugs consists of stimulants that can enhance alertness and decrease fatigue (e.g., caffeine, amphetamines, ephedrine, and nicotine). The second class consists of depressants, which decreases tension, alleviate nervousness, and induce sedation (e.g., alcohol). The third class, hallucinogens, has an effect on sensory perceptions (e.g., cannabis, Lysergic Acid Diethylamide (LSD), Phencyclidine (PCP), and psilocybin). The fourth class consists of opiates, which induce sleep, euphoria, and relaxation, at the same time it relieves pain and anxiety (e.g., codeine, heroin, opium, and morphine). The fifth class consists of performance enhancers since they enhance athletic strength and speed and stimulate the growth and recovery of skeletal muscles (Abadinsky, 2007).

Drug abusers typically prefer one class of drugs over others. However, when they have difficulty obtaining their (preferred drug) drug of choice, they often turn to other drugs in the same class that produce similar effects. The strength and the potency of a substance can determine an abuser's drug of choice as well as the drug's potential for abuse and dependence (NIDA, 2007). Alcohol and drug use occur along a continuum. Not everyone who uses substances is addicted. Drug use can escalate to substance use disorders: abuse or dependence. Levels of use generally are identified as use, abuse, and dependence.

Abuse or dependence is usually characterized in terms of the use of a single substance such as alcohol, heroin, or tobacco. However, people who use substances may also use alcohol only, one drug only, a combination of drugs, or a combination of alcohol and drugs. Poly‑drug use (more than one drug, or alcohol and drugs combined) is a common pattern of use among substance abusers.

According to DSM 5 the essential feature of a Substance Use Disorder (SUD) is a cluster of cognitive, behavioral, and physiological symptoms indicating that the individual continues using the substance despite significant substance-related problems (American Psychiatric Association, 2013). A dependence syndrome is explained in ICD 10 by WHO as cluster of physiological, behavioral and cognitive phenomena in which the use of a substance or a class of substances takes on a much higher priority for a given individual than other behaviours that once had greater value (ICD 10).

Diagnostic guidelines (as given by ICD 10)
A definite diagnosis of dependence should usually be made only if three or more of the following have been present together at some time during the previous year:
(a) A strong desire or sense of compulsion to take the substance
(b) Difficulties in controlling substance-taking behaviour in terms of its onset, termination or levels of use
(c) A physiological withdrawal state when substance use has ceased or been reduced, as evidenced by: the characteristic withdrawal syndrome for the substance; or use of

the same (or a closely related) substance with the intention of relieving or avoiding withdrawal symptoms

(d) evidence of tolerance, such that increased doses of the psychoactive substance are required in order to achieve effects originally produced by lower doses

(e) Progressive neglect of alternative pleasures or interests because of psychoactive substance use, increased amount of time necessary to obtain or take the substance or to recover from its effects

(f) Persisting with substance use despite clear evidence of overtly harmful consequences, such as harm to the liver through excessive drinking, depressive mood states consequent to periods of heavy substance use, or drug-related impairment of cognitive functioning; efforts should be made to determine that the user was actually, or could be expected to be, aware of the nature and extent of the harm.

Abstinence

The absence of a generally accepted criteria in the field of addiction on terms like relapse and recovery have required that researchers develop definitions and criteria based primarily on their own research questions and methods. In the context of addictive behavior, there are varied definitions of recovery where "recovery" can mean "cure" of addiction, "abstinence" from drug use, or "remission" of a drug-dependent state in an individual or no longer meeting diagnostic criteria for a substance use disorder. Researchers in the field of addiction have also given terms such as "recovery," "remission," "resolution," "improved" "abstinence," "sobriety," and "clean" in their studies and each researcher may define these terms differently.

In research the term "recovery" is often used synonymously with the term "remission". DSM-5 has given a specifier to differentiate between early and sustained remission. After full criteria of substance use disorder were previously met, none of the criteria for substance use disorder have been met for at least 3 months but for less than 12 months (the exception is craving; may be present during remission) it is specified as Early remission. After full criteria for substance use disorder were previously met, none of the criteria for substance use disorder have been met at any time during a period of 12 months or longer (the exception is craving; may be present

during remission) it is specified as Sustained remission (American Psychiatric Association, 2013).

Recovery/remission prevalence can also sometimes be reported in terms of full remission (no longer meeting diagnostic criteria) or partial remission (meeting diagnostic criteria but at a lower level of problem severity) while some define recovery in terms of abstinence.

Dr. George Vaillant (1966) has suggested that, "abstinence is a relative term." While for some researchers it may mean continuous abstinence from a primary drug over the follow-up period, for others it may mean essential (virtual, partial, near) abstinence—not having consumed more than a specified amount of alcohol or particular drugs during the follow-up period, or point-in-time abstinence—not consuming alcohol or particular drugs at the time of follow-up contact. It may also mean complete abstinence—continuous abstinence from a primary drug, with no use or asymptomatic use of other drugs during the follow-up period; and involuntary versus voluntary abstinence—presence or absence of enforced abstinence via hospitalization or incarceration.

These varied criteria and variations in methodology, have contributed to wide variations in reported recovery and relapse rates, and have made comparison of the findings of different studies difficult (Maddux & Desmond, 1986).

In this study we have defined and understood abstinence as a term used in the addictions field to describe the process of abstaining—meaning avoiding, or not engaging in—certain potentially addictive substances or behaviors (Fernandez *et al*., 2020).

REVIEW OF LITERATURE

A study of literature in any area of research is a crucial step that will define the nature of the research itself. It helps to put the need for the current study in context by identifying the gap in existing knowledge and the drawbacks of previous studies that can be worked on and improved in the current. The aim of the current study is to explore Personality Factors, Spirituality, and Social Support in Substance Use Disorder. The studies and theories discussed in this chapter are used to form a cohesive picture of how the variables have been studied with regard to others and the two variables amongst other variables and between themselves. It also shines a light on the delimitations and appropriate designs and tools and the best of this knowledge for the current study.

Resilience

Ahmad *et al*. (2017) in their study assessed the socio-demographic background, personality, and resilience among 30 male patients (diagnosed as having substance use disorder) from a drug de-addiction centre. The findings of this study indicated that resilience factors were found to have helped in rehabilitation. In a related study by Jafari *et al*. (2010) among 27 subjects diagnosed with opiate use disorders who had been detoxified successfully, the participants were divided into experimental group (who took coping skills training) and control group. The results indicated that coping skills training is effective in resiliency enhancement and relapse prevention in people with substance dependency.

Resilience was also found to play an important role in recovery. Rehabilitation programs including counseling intervention conducted at various rehabilitation centres (amongst a total of 493 clients) had an impact on clients' resiliency and cognitive distortion as could be seen by a study for the National Anti-Drug Agency (NADA) in Malaysia. The results indicated that the participants family functioning was at a moderate level, their cognitive distortion was at a low level, but their resilience is at a higher level (Zamani *et al*., 2014). In another study of

detoxification centers in Kerman city, Ramezani *et al.* (2015) compared the resilience with spirituality among 45 addicted and non- addicted women. The results indicated that the non- addicted women acquired higher scores in variables of resilience and spirituality. These findings suggested the necessity for improving skills to increase resilience in the addicted women in detoxification centers including spirituality, meaning of life, and training of resilience.

A study by Wingo *et al.* (2014) with a large sample of adults in the city of Iran has showed that childhood abuse is associated with alcohol and illegal drug abuse in people with less resilience, but in people with high resilience, it had no relation with drug abuse. Veenstra *et al.* (2007) found that participants with alcohol or other substance addiction had low scores on resilience and problem solving. In another study by the National Institute of Drug Abuse has also found that the chemically dependent women scored significantly lower on measures of resilience and self-differentiation as compared to non-chemically dependent group (Sutherland *et al.*, 2009).

Resilience was also seen to play an important role in predicting substance use among university students. Fadardi *et al.* (2010) found that among university students, resilience and adaptive motivational structure were independent predictors of substance use. Among high school students in South Khorasan province, it was also found that academic burnout, perceived stress, and resilience were positively correlated with potential for addiction. In other words, burnout, perceived stress and resilience could predict 20% of potential for addiction (Salamabadi *et al.*, 2015).

Studies with medical students have also indicated a relationship between substance use, coping styles and resilience. Howe *et al.* (2012) found that amongst medical students, those who scored high on resilience also had a higher score on problem solving subscale of coping. In other words, resilient people are better at coping with stressful situations. In another study, medical students with having addiction of any sort had significantly lower score on resilience and problem-solving coping (Faye *et al.*, 2018).

Locus of Control (LOC)

The concept of locus of control (Rotter, 1966) tries to understand the degree to which an individual perceives that he/she has control over the functions that impact his/her life. These belief orientations can be either internalized or externalized understanding of the world such as being self-reliant and independent of others or, on the other side, being communal and dependent of others (e.g., Teste, 2017; Levenson, 1981; Rotter, 1966).

Niazi *et al*. (2005) assessed and compared personality traits and locus of control among 50 male substance abusers and 50 non-abusers in Pakistan who were aged 18 to 50 years old and were all educated up to intermediate level. Majority of the substance abusers involved in the study were using heroin and poly drugs. The findings indicated that the male substance abusers scored lower than non-abusers on personality traits of Openness to change, Perfectionism. However, in terms of locus of control, it was found that substance abusers significantly scored higher on external locus of control. Similar results were found in a study by Prakash *et al*. (2015) also studied personality disorder, emotional intelligence, and locus of control among patients with alcohol dependence that were selected from the De-Addiction Ward of Ranchi Institute of Neuro-Psychiatry and Allied Sciences (RINPAS) and compared them with normal controls. The results revealed that alcohol-dependent patients have higher co-morbid pathological personality traits and disorders as compared to the normal controls. As compared to the control group, alcohol-dependent patients were significantly deficient in almost all the areas of emotional intelligence (EI) and their locus of control was externally oriented.

Locus of control has also been found to be relevant in understanding other psychopathology. In a meta-analytic study reviewing 40 years of literature across 18 different cultures, Cheng *et al*. (2013) found that there was a moderately strong association between external locus of control and key symptoms of depression. Zawawi and Hamaideh (2009) estimated the prevalence of depressive symptoms among undergraduate students in Hashemite University (HU) - Jordan, and the correlates of such depressive symptoms with locus of control. The results showed a

great ratio of depressive symptoms and statistical analyses also reveal that while Externality of locus of control (Chance) was found to be significantly positively related to depression. It also indicated Chance to be a significant predictor of depressive symptoms.

A study was carried out by Heidari & Ghodusi (2016) to determine the relationship between self-esteem and locus of in a sample of 150 patients during treatment stages referred to various drug de-addiction centres in Borujen city, Iran. It was found that 96 participants out of 150 participants exhibited moderate self-esteem, 102 participants out of 150 participants had internal locus of control.

There have been some contrasting findings regarding whether internal or external locus of control plays a role in treatment programmes for individuals with substance use problems. A study by Huckstadt (1987) who compared Drinking-Related Locus of Control (DRIE) scores among alcoholics, recovering alcoholics, and non-alcoholics in a study found significant differences among the three groups in terms of locus of control where the non-alcoholic groups scored more internally than the alcoholic or recovering alcoholic groups and also the recovering alcoholic groups scored more internally than the alcoholic groups. While in other studies, internal locus of control was found to be associated with drug-taking behaviours. Dean & Edwards (1990) found that out of 47 patients with alcohol problem in a treatment program, the majority had higher belief that their health status is more under their own control than under the control of chance or powerful others. However, surprisingly, the results also indicated that recovering alcoholics with a more powerful other health orientation tended to maintain membership with Alcoholics Anonymous for a longer period of time. In a study with related findings, Ersche *et al*. (2012) compared the drug-related locus of control scale (DR-LOC) of participants who were receiving treatment in a drug treatment program for opiates, stimulants and/or alcohol dependence with others who had no history of drug dependence. The findings indicated that drug-dependent individuals have a greater internal sense of control with regard to addiction recovery or drug-taking behaviors than health professionals and/or non-dependent control volunteers.

A study has also highlighted a positive relationship between internal locus of control and external locus of control. Amongst a total of 509 patients who entered residential abstinence-oriented treatment program. Regression analysis revealed a significant interaction effect between internal and external control suggesting that patients with a high internal locus of control as well as a high frequency of control by staff from the program showed the least amount of alcohol use during treatment whereas patients with a low internal locus of control along with low external control were found to be more likely to use alcohol during treatment (Soravia *et al*. 2015).

Amongst adolescents, although Dielman *et al*. (1987) who studied adolescents' susceptibility to peer pressure, self-esteem, and health locus of control in terms of substance use found that the indices measuring self-esteem, susceptibility to peer pressure, and internal health locus of control was significantly and negatively correlated with most of the substance use, misuse, and intention items. In a related longitudinal study, among young adults it was found that having a more external locus of control at age 16 was associated with increased tobacco consumption by 17 and 21 years of age and even alcohol consumption by 17 years of age (Lassi *et al*., 2019).

Coping Styles

In a number of studies, among the different coping strategies, emotion-focussed coping has been found to be used more by people with substance use problems in dealing with stressful situation. A qualitative study conducted by Valtonen *et al*. (2006) examine the types of coping strategies among persons recovering from substance abuse from three rehabilitation facilities in Trinidad. They found that the coping styles reported were mainly in the category of emotion-focused coping, which were developed to regulate stress in uncontrollable situations during childhood and to cope with the loss of significant others. This type of coping was found to be relatively higher compared to, problem-focused or social support coping strategies. A'zami *et al*. (2015) in their study compared dysfunctional attitudes and coping strategies in substance-dependent individuals attending addiction rehabilitation centers and healthy individuals. And as was expected, it was found that

substance-dependent individuals applied emotion-focused coping more and had greater dysfunctional attitudes than the healthy ones, and that the latter applied more problem-focused strategies. The relationships among coping and psychological distress were investigated in research comprising of 71 men with substance use disorders, at both pre- and post-treatment. The results indicated that high emotion-oriented coping predicted anxiety, hypochondriasis and depression amongst these individuals. They also found that task-oriented and avoidance-oriented coping did not cause psychological distress, and that task-oriented coping was negatively related to anxiety, hypochondriasis and depression (Christine *et al*., 2002).

In most of the studies, task-oriented coping was found to be the most effective in dealing with stressful situations. Pence *et al*. (2008) studied the distribution and psychosocial predictors of alcohol and drug use amongst patients with HIV/AIDS from clinical centres in 5 southeastern U.S. states. In terms of coping, it was found that stronger adaptive coping strategies were the most consistent predictor of less frequent alcohol and drug use, specifically, coping through action and coping through relying on religion. It was also found that stronger maladaptive coping strategies predicted greater frequency of drinking to intoxication. A study by Wynn (2017) examined the relationship between perceived stress, perceived social support, functional coping strategies and dysfunctional coping strategies to see if these variables may contribute to higher levels of alcohol consumption amongst 201 undergraduate students from the University of Denver. The hierarchical regression analysis findings indicated that the use of functional coping strategies is a statistically significant predictor of lower levels of alcohol consumption. In a similar study McConnell *et al.* (2014) found that higher levels of engagement coping were associated with lower chance of tobacco and marijuana use and as expected, higher levels of disengagement coping were associated with greater odds of tobacco and marijuana use. Additionally, they found that engagement coping also played a protective role against the intention to use tobacco or marijuana for those who have never tried them.

In other studies, avoidance coping styles has been found to be associated with substance use problem. Kronenberg *et al*. (2015) in their study compared the various coping styles between SUD patients (with and without ADHD or ASD) with subjects from a general population sample. The findings of this cross-sectional study indicated that compared with the general population, regardless of the presence of a co-occurring disorder, SUD patients reported more palliative, avoidant and passive coping when confronted. In related findings on a retrospective study by Lyness and Koehler (2016), the relationship between internalising/externalising behaviours, coping behaviours and substance use was investigated in adolescent. The findings indicated a significant positive relationship between internalising/externalising behaviours and escape/avoidance coping and also a significant positive relationship between drug use and externalising behaviours.

Franken *et al.* (2001) examined the coping style as well as the effects of mood and anxiety disorders on changes in coping style of patients during cognitive-behavioral group therapy at predetoxification, pretreatment, and after 3 and 6 months of receiving treatment for substance use problem. The results indicated considerable change in coping style between predetoxification and pretreatment, wherein the coping style of participants who have undergone detoxification was related to the presence of anxiety and mood disorders. Additionally, it was found that adaptive coping styles remained stable for few months during in-patient treatment while maladaptive coping styles decreased after a few months of inpatient treatment. In another study based in Latvia, statistically significant differences were found between patients with alcohol and drug addiction in stress coping strategies subscales such as Confrontive Coping, Seeking Social Support, Distancing, Self-Controlling and Positive Reappraisal (Sudraba *et al*., 2015).

Spirituality

The concept of spirituality is often linked with a sense of meaning (Steger & Frazier, 2005). Steger (2012) believed that spirituality may promote meaning in one's life since it involves a sense of "transcendence" as well as connection with

something bigger than one's self. Kurtz & White (2015) highlighted the importance of finding meaning in the lives of individuals recovering from addiction as well as learning how to experience a new life in recovery. They believed that this could be attained by connecting with others in recovery, connecting with the self, and with a power greater than oneself, which is often described as Spiritual. Apart from promoting a sense of meaning, spirituality may be considered to be a helpful resource while dealing with highly stressful situations (Park *et al*., 2013). This relationship can be observed in a cross-sectional survey done on over 450,000 individuals from 154 nations as part of the Gallup World Poll where it was found that spirituality was related to greater meaning (Diener *et al.,* 2011). Dermatis & Galanter (2015) have also found that components of spiritual health such as believing in a higher power and God's presence are predictors of positive outcomes in the treatment of addiction.

Spiritual and religious factors have been consistently found by to play a role in substance use outcomes. Robinson *et al*. (2011) investigated the effect of spiritual and religious (SR) change on subsequent drinking outcomes which included alcohol-dependent individuals and found significant 6-month changes in 8 out of 12 SR measures, which included private SR practices, beliefs, daily spiritual experiences, three measures of forgiveness, negative religious coping, and having a purpose in life. Apart from these, increases in private SR practices and forgiveness of self were the strongest predictors of improvements in drinking outcomes. Lucchetti *et al*. (2012) assessed the role of religious beliefs and involvement in the prevalence and frequency of alcohol and smoking consumption in 383 individuals from a Brazilian town. They found that high religious involvement was associated with less substance use (whether it be alcohol or tobacco). In addition, they found that a high non-organizational religious behavior was associated with less tobacco and combined alcohol/tobacco use.

Koenig *et al*. (2001) in their extensive research review found that an inverse relationship occurs between involvement in religion (e.g., attending services, presence of religious beliefs etc.) and the likelihood of substance use across different

life stages. In another review, 105 articles about the relationship between religiosity/ spirituality and alcohol and drug use that were published between 1997 and 2006 were studied. It was found that regardless of how they were measured, higher levels of religiosity and spirituality were associated with a decrease in risk for substance use (Chitwood *et al.*, 2008).

Religiosity was also found to be lacking amongst youth with substance use problem. In a cross-sectional study done in Hamadan City, Iran by Farhadinasab *et al*. (2006) on 398 male participants whose substance use history from adolescence to adulthood was recorded. Other measures such as religiosity, parental support and locus of control were also measured. They found that approximately half of the participants were regularly smoking, drinking alcohol, abusing marijuana and/or opium and that their age of initiation of substance use was from 13 to 18 years. They also found that most of their participants report to be lacking support from the family while 60.8% report themselves as having low level of religiosity. In a related study, religiosity (regardless of how religion was defined) was consistently associated with less youth substance use on four types of substance use namely cigarette, alcohol, marijuana and other illicit drugs in a meta-analysis done by Yeung *et al*. (2009) on 22 studies from 1995 to 2007 to investigate the role of protective effects of religiosity on youth involvement in substance use.

The role of religious practice in maintaining abstinence in people with substance use problem was demonstrated in a study by Stewart *et al*. (2008), where it was found that participants who reported 'regular practice of one's religion or faith' were over five times as likely to achieve abstinence at 3 months. Another study demonstrated that public religious practices and existential well-being were significantly related to continuous abstinence for at least 1 year, whereas private spiritual practices, religious coping and well-being, and intrinsic religiosity were not related (Piderman *et al*., 2008).

According to Koenig (2001), from a review of 1000 scholarly articles from 2000 to 2002 focussing on the relationship between religion and mental health, it was

reported that religious people tend to be less anxious, less depressed, and less suicidal than nonreligious people, and that they are better able to cope with traumatic events such as illness, divorce, and bereavement. The studies also reveal that the more a person includes religion into their daily life, the more they report experiencing positive emotions and an overall sense of satisfaction with life (Paul, 2005).

The impact of spirituality in substance abuse treatment has also been the conclusion found in several studies. Kaskutas *et al.* (2003) interviewed 587 participants at the start of receiving treatment, then 1 and 3 years later after treatment. They observed that an experience of spiritual awakening significantly related to continued abstinence after completion of treatment compared with participants who had never reported an experience of spiritual awakening. They also found that participants who reported a presence of spiritual awakening at the 3rd year were most likely to also report continuous abstinence. McGovern (1986) in a qualitative study done on 50 men and women participants from an alcoholism treatment programme in a hospital found that these individuals reported spirituality as one of the three categories of losses associated with alcoholism that they experienced.

Spirituality has also been found to play a more important role in people receiving treatment for substance abuse. A study by Robinson *et al.* (2003) had interesting findings. In this study, they compared people in treatment for alcohol use problems with non-alcoholic individuals as control on various aspects of spirituality, such as finding comfort in religion, feeling God's presence, the desire to be closer to God, and the feeling of being touched by the beauty of creation. They found that these aspects of spirituality were in fact scored higher by the treatment population. These findings may suggest that either people become increasingly interested spirituality while in treatment or the impact of alcohol abuse may not always be negative on all aspects of spirituality.

Spirituality has also been found to play a part in substance use treatment and relapse prevention. Noormohammadi *et al*. (2017) conducted a cross-sectional study in 2015 to determine spiritual well-being and factors associated with relapse on 312 patients with opioid addiction. The findings indicated that the most important factors associated with opioid dependence relapse consist of factors such as unemployment, family conflicts, relation with an addict friend, living expenses, and somatic pain. Additionally, the addicted patients with relapse had significantly lower scores of spiritual well-being compared with non-relapse patients (p<0.001). Laudet *et al*. (2006) used structural equation modeling to test the hypothesis that social supports, spirituality, religiousness, life meaning, and 12-step affiliation buffer stress toward enhanced life satisfaction. The participants comprised of recovering persons (N = 353) who were mostly inner-city ethnic minority members from New York City whose main substance had been crack or heroin. It was found that constructs such as social support, spirituality, religiousness, life meaning and 12-step affiliation accounted for 22% of the variance in life satisfaction.

Social Support

Regardless of what theoretical model is being studied, research has shown the importance of social support in the dynamic of substance abuse and recovery.Social support is an important determinant that affects addiction and the role of perceived social support in the prevention and treatment of drug abuse and relapse has been studied comprehensively. A study by Nikmanesh & Honalzehi (2016) examined perceived social support, positive affection, and spirituality, as resilience factors, between two groups of drug dependent (also called the low resilience group) and nondependent males (the high resilience group), who had drug dependent fathers. The findings indicated that the mean score of all the factors such as perceived social support, positive affection and spirituality of the group with high resilience was higher than that of the group with low resilience. These differences were all statistically significant (P _0.01). Perceived Social Support has also been found to predict wellbeing in people with Substance Use Disorder (SUD) amongst a sample of 100 treatment seeking patients (i.e., people with substance use disorder) and was

derived from different inpatient treatment and rehabilitation centres for treatment of drug addicts in Karachi and Sindh in Pakistan. It was found that, as expected, Multi-dimensional Perceived Social Support (MPSS) i.e., significant others, family and friends are predictors of wellbeing (Shahzad *et al.,* 2014).

Perceived social support and family expressed emotion have also been found to play a role in addiction relapse in a study done amongst amongst individuals referred to addiction treatment centers in Ardabil. The results indicated a significant negative relationship between perceived social support and the frequency of relapse and a positive relationship between family expressed emotions and the frequency of relapse. Additionally, multiple regression analysis also showed that perceived social support from family and the family expressed emotions significantly explained 12% of the total variance of relapse frequency (Atadokht *et al*., 2015). The perception of family support has been found to be related to the intensity of hopelessness, depression, and anxiety symptoms experienced in patients with alcohol or drug dependence. This study comprised of 60 patients who with alcohol or drug dependence and compared them with 65 individuals not dependent on alcohol or drug. And it was found that high scores of depression, anxiety, and hopelessness were present in Individuals with alcohol or drug dependence and low scores of family support perception. Hence, family support perception could be a useful 'social marker' of alcohol or drug dependence with other psychiatric problems (de Aquino Lemos *et al*., 2012).Another study by Rapiera *et al*. (2019) has also provided support for an important association between perceived social support and frequency of substance use in socially stigmatized and marginalized populations namely substance-using male prison inmates and primary methamphetamine-using men who have sex with men.

Perceived social support has also been found to be important in various populations with substance use problems. Gázquez *et al*. (2016) were interested in finding out whether social support played an important role in decision-making regarding drug use and the behavior of adolescents (high school students). The results highlighted that higher drug use was significantly related to perceived social

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support by the peer group and less support by family. In another study amongst urban adolescents, their coping was studied in terms of coping through support-seeking from peers and adults and were found to be related to substance use indices. The findings also indicated that peer support was positively related to substance use, whereas parental and other adult support was negatively related to substance use. Additionally, peer support had interactive relationships and positively weighted with peer smoking and alcohol use, specifically, peer support had no effect when there were no friends who smoke or drank but had an increasingly greater effect for when a greater number of peers were smoking or drinking. Adult support was negatively weighted and had an interactive effect in relation to peer smoking and alcohol use. Finally, Peer and adult support interacted, with an increasingly greater effect of peer support on substance use for subjects with lower levels of adult support (Wills & Vaughan, 1989).A study by Lewandowski *et al*. (2009) supported the hypothesis that woman's perceptions of the social support (emotional and material) they receive from family, partners, friends, drug treatment, child welfare, and welfare agencies will have an effect on their treatment completion. The sample comprised of 117 women who were a part of a women's residential treatment program. The results also emphasized that depending on the type and source of support provided, social support can have both positive and negative effects on treatment completion.

The importance of social support has been highlighted in a number of recovery studies. In the aim to explore how positive and negative social relationships are associated with adjustment among individuals struggling with addiction, 97 patients, who were participating in two Drug Court programs were assessed. The findings suggested that amongst all the measures, global positive social support accounted the most for well-being outcomes of self-efficacy for recovery and depression. Additionally, they found that global positive social support was more important than the role of recovery-specific unsupportive social interactions in relation to well-being (Schmitt, 2003). Another research finding highlighted that the 12-step program such as Narcotics Anonymous (implementing social support and experiential spiritual program components in its intervention as part of a rehabilitation/treatment process for individuals with drug addiction) was found to

lead to a higher sense of meaning in life and coherence and a gradual reduction in the intensity/strength of negative emotions namely depression, anxiety and hostility in inmates who were recovering addicts when it was compared against only primarily social support (NA meetings only, without the 12-step program) (Chen, 2006).

Some other studies have also highlighted the impact social support has in attaining and maintaining recovery. Kelly *et al.* (2010) study comprised of 196 opioid-dependent adults who were in or out of methadone treatment programme between 2004 and 2006 in Baltimore, Maryland and the result indicated that in-treatment participants reported significantly more support at the start of treatment than out-of-treatment participants. This study's findings indicate social support is an important factor in treatment entry. A study by Stevens *et al.* (2015) has also found that a significant positive relationship was found between general social support including supportive networks and abstinence-specific self-efficacy amongst 33 individuals residing in five recovery homes. Additionally, general social support was also significantly associated with the specific social support measures of sense of community and Alcoholic Anonymous affiliation (Stevens *et al.*, 2015). A qualitative study by Pettersen *et al.* (2019) examined the role social relationships play in attaining and maintaining stable recovery (for at least 5 years) after many years of having being diagnosed with substance use disorder using semi structured interviews among 18 participants. These interviews revealed that the support that most participants mentioned as helpful for initiating abstinence was recognition by a peer or a caring relationship with a care giver or sibling. And to maintain abstinence, it is further important to have positive relationships with peers, care givers or sibling among others.

So, we can see that based on the majority of research findings on social support and substance abuse recovery, social support often acts as a buffer against variables that lead to relapse, in other words, having an inadequate number of social support sources would mean that the relapse cases lack the buffer that would otherwise protect them from factors that cause relapse. Interestingly, research has also suggested that relationships can serve as a risk-factor if it is conflict-filled

(Cummings *et al*., 1980) and when there is drug use in the social network especially within the family (Hawkins *et al*., 1992). Not all studies of social support found an inverse relationship with psychological dysfunction. Chadda (1995) has mentioned that the relationship between social support and psychological dysfunction can be construed as complex because certain elements of social support have a healthy relationship while others can have an unhealthy relationship. Hence, one can say that social networks and connections not only serve as protective factors; it can also serve as risk factors especially in the field of substance addiction.

CHAPTER-II

STATEMENT OF THE PROBLEM

Substance use problem is an escalating phenomenon in Mizoram. The State Excise and Narcotics Department reported (2016) that there had been considerable increase in drug trafficking particularly heroin through the Mizoram-Myanmar border during the last couple of years and the cost of heroin in the local market has decreased over the years. It is also important to mention that the state shares a long international border with Myanmar and the infamous Golden Triangle makes Mizoram vulnerable to illicit drug trafficking. The Excise and Narcotics Department seized a huge quantity of drugs, including 11.55 kg of heroin, 129.47 kg of ganja and 45.54 kg of methamphetamine tablets in 2020, majority of which have been found to be smuggled from Myanmar Ethnic ties of the people of Mizoram with residents from Manipur and Myanmar make the border porous. Seizures of Illicit drugs such as Heroin and Methamphetamine by Government law enforcers and local NGOs such as Young Mizo Association (YMA) is a common occurrence in the state (Lalchhuana, 2013).

Although there is no official record of the approximate amount of drug users in Mizoram prior to 1990, the introduction of illicit drugs such as heroin go back as far as the early 1970s. In 2004, the Mizoram Social Defence and Rehabilitation Board (MSD&RB) in collaboration with the biggest non-government organization in Mizoram called Young Mizo Association (YMA) and Village Councils conducted People/Person Using Drugs (PUD) population mapping and reported that there were approximately 25,500 PUD in the state and out of this 10,500 were injecting drug users (Lallianzuala, 2007).   By 2006, Central YMA had estimated that there were over 30,000 Drug Abusers in the state of Mizoram. Despite massive efforts made by the Mizoram government and civil society organizations like NGO's and church groups to curb drug menace, the drug death toll has been reported to be increasing in the state of Mizoram. According to data available with the state Excise and Narcotics Department, at least 67 people, have died due to drug use during 2020 against 55 in 2019 and all 67 victims died due to heroin. The first drug-related death due to heroin was reported in Mizoram in 1984. So far, 1,646 people, including 193 females, have been reported to die due to drug abuse in 36 years since 1984. And over the past five years since 2016 at least 302 people, including 52 females, have died due to abuse of

various drugs. Heroin has overtaken Spasmo-proxyvon as the main killer drug since 2015 and so far at least 227 people have died due to it.

According to the 'National Survey on the Extent, Pattern and Trends on Drug Abuse in India' done in 2004, it was found that despite alcohol being prohibited in Mizoram, alcohol users were the second largest group seeking treatment services in the state after opiate users (Ray, 2004) and following the introduction of heroin in the early 1970s, in a span of only about a decade, many local young males and to a lesser extent young females in their mid-teens started injecting heroin (Panda, 2006). This has led to a socio-economic and moral crisis affecting the population of Mizoram with thousands been affected (directly or indirectly) by this problem. Hence, it is an issue which needs to be constantly studied so that a better understanding of this crisis will eventually lead to better preventive, protective, and treatment strategies to combat it.

A National Survey on Extent and Pattern of Substance Use in India was conducted in all the 36 states and Union Territories of the country under the guidance of The National Drug Dependence Treatment Centre (NDDTC), All India Institute of Medical Sciences (AIIMS), New Delhi, in collaboration with ten other medical institutes and a network of 15 NGOs which was conducted between December 2017 and October 2018. This is the first occasion in the history of the country when effort has been made to study and document substance use from all the states and UTs of the country. More than 1500 personnel were involved in data collection exercise (Ambekar *et al*., 2019). In this survey it was found that Alcohol is the most common psychoactive substance used by Indians (among those included in this survey). Nationally, there were around 16 crore persons who consume alcohol in the country. Use of alcohol is considerably higher among men (27.3%) as compared to women (1.6%). States with the highest prevalence of alcohol use are Chhattisgarh, Tripura, Punjab, Arunachal Pradesh and Goa. They also found that at the national level, as many as 19% of current users of alcohol consume alcohol in a dependent pattern. The prevalence of dependent pattern of alcohol use in the general population (10—75 years) is estimated to be 2.7%, or 2.9 crore individuals. States with high

prevalence (more than 10%) of alcohol use disorders are: Tripura, Andhra Pradesh, Punjab, Chhattisgarh, and Arunachal Pradesh. Overall, in the country, about 5.2% of population aged 10-75 years (about 5.7 crore individuals) need help for their alcohol use problems (i.e., they consume alcohol in a harmful or dependent pattern).

Ambekar *et al.* (2019) also found that after Alcohol, Cannabis and Opioids are the next commonly used substances in India. About 2.1% of the country's population (2.26 crore individuals) use opioids which includes Opium (or its variants like poppy husk known as doda/phukki), Heroin (or its impure form – smack or brown sugar) and a variety of pharmaceutical opioids. Nationally, the most common opioid used is Heroin (1.14%) followed by pharmaceutical opioids (0.96%) and Opium (0.52%). Sikkim, Arunachal Pradesh, Nagaland, Manipur and Mizoram have the highest prevalence of opioid use in the general population (more than 10%). The survey also indicated that a sizeable number of individuals use Sedatives and Inhalants. About 1.08% of 10-75 year old Indians (approximately 1.18 crore people) are current users of sedatives (non-medical, nonprescription use). States with the highest prevalence of current Sedative use are Sikkim, Nagaland, Manipur and Mizoram. About 0.70% of Indians (approximately 77 lakh individuals) are estimated to need help for their opioid use problems. A far higher proportion of Heroin users are dependent on opioids when compared with users of other opioids like Opium and Pharmaceutical Opioids. Of the total estimated approximately 77 lakh people with opioid use disorders (harmful or dependent pattern) in the country, more than half are contributed by just a few states: Uttar Pradesh, Punjab, Haryana, Delhi, Maharashtra, Rajasthan, Andhra Pradesh and Gujarat. However, in terms of percentage of population affected, the top states in the country are those in the north east (Mizoram, Nagaland, Arunachal Pradesh, Sikkim, Manipur) along with Punjab, Haryana and Delhi (Ambekar *et al.*, 2019). Such is the enormity of the problem, especially in a small state like Mizoram.

In the state of Mizoram, various efforts have been made by the Government, NGO's, and Church Organizations in terms of opening rehabilitations centres for people with substance use problems. Mizoram Social Defence &

Rehabilitation Board was established by the Government of Mizoram in 1999, and some of its functions included taking measures for prevention, treatment and rehabilitation of individuals with substance use problem as well as to establish essential Institutions and Centres for the purpose of prevention, treatment and rehabilitation for these individuals. Some notable rehabilitation centres recognized by them include Agape Moral Reformation Organization (AMRO), Blessing Home, *Damna In*, Faith Home Society, Jeriko *Khualbuk*, *Thutak Nunpuitu Team* (TNT) amongst others. Jordan Centre previously known as De-Addiction –cum-Rehabilitation Centre which was established 1990 under the Health & Family Welfare Department, Govt. of Mizoram for the treatment of victims of Drug abuse and alcoholism recently opened admission on 7th February 2022 after being handed over to the Social Welfare Department in 1993. The focus of this centre is to provide after care services for recovering addicts and it has been recognized as a centre which provides comprehensive drug treatment services which include detoxification, rehabilitation and after care services.

Apart from the Government, several churches in Mizoram are also actively engaging in the rehabilitation of substance use problems. One of the biggest churches in Mizoram, the Mizoram Presbyterian Church Synod constituted a commission called the Synod Social Front as it felt the need to strengthen and widen the Ministry of the Church especially in the Society. One very important developmental work of this Committee which has been highlighted by them is the "Mizoram Total Liquor Prohibition Act" which was implemented due to the Committee's repeated request. A major project of the Social Front, is establishing rehabilitation centre for substance abusers popularly known as the Synod Rescue Home, providing Detoxification Unit, rehabilitation and after care services. As reported by them, therapy is administered to the patients through three foundational approaches such as Christian Approach, Psychological Approach and Physical Approach. These foundational approaches are used in personal and group counselling, work therapy, physical exercises, games, worship and Bible studies. Apart from opening rehabilitation centres, the various churches in Mizoram have been responsible for organizing evangelical camping centering on individuals with various substance use problems.

Other non- government organizations such as the Young Mizo Association (Central YMA), the largest NGO in the state have also actively participated in the effort to combat substance use problems in the state. Supply Reduction Service (SRS), the anti-drug squad of the central YMA has also been responsible in seizing illicit drugs being smuggled through the state border.

In spite of the various efforts given by governmental and non-governmental sectors in this area, and although there is no proper record of the relapse rates across the various centres mentioned above, the population of substance users is rapidly increasing as can be seen in the National Survey on Extent and Pattern of Substance Use in India (2019) in the context of Mizoram. Hence, it can be seen that whatever efforts have been made in the State is still not enough to deal with this rampaging social problem.

The nature and extent of drugs and substance use, the people involved and the circumstances vary from person to person, community to community, and from culture to culture. Due to this reason, it is important to study the psychological and social factors surrounding this phenomenon, such personality factors like Resilience, Locus of Control and Coping Styles, social aspect in the form of Social Support, and Spirituality. These variables are envisaged to be the mechanisms by which people tend to sustain abstinence from their addiction, and therefore the main variables that would differentiate SUDs from non- SUDs depending on the strength of these variables people have attained in themselves.

Evidence has suggested that resilient people tend to have an overall better mental health status including better problem-solving skills, more efficient self-regulatory skills, higher self-esteem and are also less likely to get involved in high-risk behaviors such as drug abuse (Bonanno *et al*., 2007; Buckner *et al*., 2003). Cadet (2016) believed that resilience may buffer the effect of stress on the risk of addiction. And most recently it was found that there was a significant negative correlation between the tendency to addiction and resilience (Jebraeili *et al*., 2019).

Although locus of control (LOC) is one of the most extensively studied constructs in the field of psychology and social science, its use by substance abuse researchers has been limited (Hall, 2001).Past researches have revealed significant correlation between internal locus of control (ILOC) and greater motivation to receive treatment (Murphy & Bentall, 1992) and significant tendency to shift towards a more internal locus of control during treatment amongst alcoholics (Abbott, 1984).Studies have also found that Substance abusers significantly scored higher on external locus of control in comparison to their normal counterparts (Niazi *et al*., 2005; Prakash *et al*., 2015).

Some authors have also suggested that maladaptive coping is related to the development of a substance use disorder- (Labouvie, 1986). Most substance-use treatment programs focus on dealing with maladaptive coping style and subsequently increasing adaptive coping skill can reduce current and anticipatory stress and psychopathological symptoms. Substances use is usually seen as a form of short-term coping strategy that provides temporary relief from distress/problems but leaves the main source of the distress unchanged; thus, it is considered to be maladaptive (Lazarus and Folkman, 1984). Further, according to Finney *et al.* (1999), patients who depend more on dealing directly with problem by approaching it were more likely to be free of substance use problems after a one-year follow-up as compared to avoidance coping at the time of discharge from treatment.

Spiritual issues (a belief in things metaphysical or unexplainable) have been reported as an important, but neglected area in drug and alcohol treatment research (Miller, 2003). Prezioso (1987) has suggested that spiritual concepts like 'powerlessness' and 'relationship to a higher power' were at the heart of addiction and recovery. There have been studies that state that individuals with higher degrees of religiosity and spirituality are less likely to consume alcohol and other drugs and to consume less of such substances when they do use them (Brizer, 1993; Miller, 2003).

Spirituality has been shown by studies to be a significant and independent predictor of recovery and/or improvement indicator of treatment outcome (Avants *et al.*, 2004). In retrospective studies, recovering addicts frequently reported spirituality as helpful in maintaining changes made during treatment and as an important aspect of their efforts to recovery (Flynn *et al.*, 2003). Researchers have also found that levels of spirituality may be greater in individuals whose recovery is successful compared to those who have relapsed, in other words, length of abstinence has also been positively associated with spirituality (Jarusiewicz, 2000; Poage *et al.*, 2004).

The unifying assumption of Alcoholics Anonymous is that the most effective path to recovery from alcoholism is through the bond of one alcoholic helping another or through positive social support (Alcoholics Anonymous, 2001; Rudy & Everman, 2008). Previous studies have highlighted the roles network members may play in both use and recovery in substance abuse treatment (Laudet *et al.*, 2006; Tracy *et al.*, 2010). Lai & Ma (2016) in their study found partial mediation effect of social support (from family, friends, and significant others) that accounted for the link between psychological well-being (i.e., depression, hopelessness, and life satisfaction) and health-risk behaviors (i.e., smoking, drinking, suicide, and physical inactivity). The results also showed that perceived social support from family and friends partially accounted for the effects of psychological well-being on health-risk behaviors. Davis and Jason (2005) also concluded that there was a positive relationship between drug abstinence duration and the individuals receiving social support.

Although the criteria for diagnosing Alcohol Dependence and Opioid Dependence may be similar, their effects may be different from a pharmacological stand point, and also the characteristic behaviour sequelae of intoxication and withdrawal syndrome for alcohol may be different from that of Opioid use. Therefore, the psychosocial factors such as Personality factors (Resilience, Locus Of Control and Coping Styles), Spirituality and Social Support that may play a role in the use of each of these substances need to be studied separately and in comparison to one another as there is lack of research in this regard. It is especially important to

understand these factors in the context of Mizo society as the use of these two substances account   for majority of the cases found in the population. As observed above there is still a lacuna in the studies that have been done accounting these psychological constructs. A new study in these constructs in relation to substance use disorder will give a better understanding in filling the gaps and reducing anonymity in the various researches as stated above.

Further, studying these factors together will help in giving a more comprehensive understanding of the difference between people who are currently actively using substances, individuals who have remained abstinent and individuals who have never met the criteria for substance dependence. It will also give some understanding as to why relapse occurs in the context of the factors to be studied; also help in understanding what sets these three groups apart as well as throw light upon how to intervene in these regards.

The focus in this particular study is also on Spirituality as a whole which also includes Religiosity factor. This may resonate better with the individuals with either theistic (belief in God) and non-theistic (inner strength, moral values) interpretations of spirituality (Kaskutas *et al*., 2003). And as mentioned above it is an important but often neglected area of research. This particular factor needs to be studied in the context of other personality and social factors as mentioned above. Spirituality and Religiosity have played a pivotal role in the Mizo society and its impact can be seen in the way Substance use problem is dealt with by various religious organizations within the community. Aspects such as rehabilitation homes run by religious institutions and use of spiritual counseling play centre role in terms of recovery and rehabilitation in Mizoram. Hence including this important factor will create more avenues to approach this ever-increasing problem within the Mizo Society.

Amidst this backdrop of literature, this study will examine Personality Factors (namely Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment and Connectedness with Transcendent) and Social Support (Perceived Social Support, Negative Social

Support, Instrumental Social Support and Cultural Social Support) in substance Dependent Group, substance Recovering Group and Non-user Group separately under alcohol and opioid substances. Therefore, the variables of the proposed study are operationally defined, and objectives and hypotheses are drawn based on the foregoing literature and observations to serve the purpose of the study as given in the following:

Operational definitions of the main variables:

1) Personality factors: For the current study, personality factors refer to factors of personality including resilience, locus of control and coping styles as mentioned below:

> a) Resilience: For the current study, Resilience may be defined as given by Luthans (2002) as ''the positive psychological capacity to rebound, to 'bounce back' from adversity, uncertainty, conflict, failure or even positive change, progress and increased responsibility'' as measured by Resiliency Scale (Siu, O.-L., Hui, C. H., Phillips, D. R., Lin, L., Wong, T.-w., & Shi, K., 2009).
>
> b) Locus of Control: For the current study, Locus of Control refers to the extent to which people believe they can control general life outcomes. Specifically, internally oriented individuals believe outcomes are primarily related to internal factors (e.g., their own actions), whereas externally oriented individuals believe outcomes are influenced mostly by external factors or that chance or fate controls their lives (e.g., Teste, 2017; Levenson, 1981; Rotter, 1966, Rotter, 1990) as measured by Multidimensional Locus of Control Scales: (Levenson, H., 1974).
>
> c) Coping Style: For the current study, Coping Style includes maladaptive strategies (e.g., rumination and over-reaction) that seem helpful in the short term but are detrimental in the long run, adaptive coping strategies such as acceptance and reappraisal are thought to prevent and reduce harm and emotional problems both in the short and long run and avoidance

strategies(e.g., suppression and avoidance)which include maladaptive form of coping in which a person changes their behavior to avoid thinking about, feeling, or doing difficult things as measured by Maladaptive and Adaptive Coping Style Questionnaire (MAX) (Moritz, S., Jahns, A. K., Schröder, J., Berger, T., Lincoln, T. M., Klein, J. P., & Göritz, A. S., 2016).

2) Spirituality: For the current study, Spirituality is defined as 'one's striving for and experience of connection with the essence of life', which encompasses three main dimensions: connectedness with oneself, connectedness with others and nature, and connectedness with the transcendent (De JagerMeezenbroek, *et al*., 2012) as measured by Spiritual Attitude and Involvement List (SAIL) (De JagerMeezenbroek, E., Garssen, B., van den Berg, M., Tuytel, G., van Dierendonck, D., Visser, A., & Schaufeli, W. B., 2012).

3) Social Support: For the current study, Social Support will include four categories namely perceived social support (the perception of emotional and appraisal support), negative social support (criticism), instrumental social support (tangible aid), and cultural social support (feelings of isolation) as measured by Social Support Scales (Duran, B., Oetzel, J., Lucero, J., Jiang, Y., Novins, D. K., Manson, S., & Beals, J., 2005).

4) Dependence syndrome (ICD-10)

A cluster of physiological, behavioral and cognitive phenomena in which the use of a substance or a class of substances takes on a much higher priority for a given individual than other behaviours that once had greater value. A central descriptive characteristic of the dependence syndrome is the desire (often strong, sometimes overpowering) to take psychoactive drugs (which may or may not have been medically prescribed), alcohol, or tobacco. There may be evidence that return to substance use after a period of abstinence leads to a more rapid reappearance of other features of the syndrome than occurs with nondependent individuals.

Diagnostic guidelines

A definite diagnosis of dependence should usually be made only if three or more of the following have been present together at some time during the previous year:

(a) a strong desire or sense of compulsion to take the substance;

(b) difficulties in controlling substance-taking behaviour in terms of its onset, termination, or levels of use;

(c) a physiological withdrawal state when substance use has ceased or been reduced, as evidenced by: the characteristic withdrawal syndrome for the substance; or use of the same (or a closely related) substance with the intention of relieving or avoiding withdrawal symptoms;

(d) evidence of tolerance, such that increased doses of the psychoactive substance are required in order to achieve effects originally produced by lower doses (clear examples of this are found in alcohol- and opiate-dependent individuals who may take daily doses sufficient to incapacitate or kill nontolerant users);

(e) progressive neglect of alternative pleasures or interests because of psychoactive substance use, increased amount of time necessary to obtain or take the substance or to recover from its effects;

(f) persisting with substance use despite clear evidence of overtly harmful consequences, such as harm to the liver through excessive drinking, depressive mood states consequent to periods of heavy substance use, or drug-related impairment of cognitive functioning; efforts should be made to determine that the user was actually, or could be expected to be, aware of the nature and extent of the harm.

5) For the current study, 3 Status of Substance use will include:

a) Dependent Group - Individuals who fulfill the criteria of dependence   syndrome (ICD-10)

b) Recovering Group- Individual should be currently abstinent for at least 12 months

c) Non-user Group-Individuals who have never met criteria for dependence syndrome

6) For the current study, the 2 Types of Substance use will include:

a) Alcohol Group-Individuals who fulfill the ICD-10 criteria of dependence syndrome for Alcohol

b) Opioid Group-Individuals who fulfill the ICD-10 criteria of dependence syndrome for Opioid

Objectives of the Study:

1. To examine the differences in Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment and Connectedness with Transcendent), and Social Support (Perceived Social Support, Negative Social Support, Instrumental Social Support and Cultural Social Support) in the two 'Type of Substance Use' (Alcohol or Opioid Dependent and Recovering Groups separately).

2. To examine the differences based on the 'Status of Substance Use' (Dependent, Recovering & Non-user) on Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment and Connectedness with Transcendent), and Social Support (Perceived Social Support, Negative Social Support, Instrumental Social Support and Cultural Social Support) separately in the Alcohol Group and Opioid Group.

3. To compare the patterns of the dependent variables based on the 'Status of Substance Use' (Dependent, Recovering & Non-user) in the two 'Type of Substance Use' (Alcohol or Opioid) on Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment and Connectedness with Transcendent), and Social Support (Perceived Social Support, Negative Social Support, Instrumental Social Support and Cultural Social Support).

4. To study the relationships between Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment and Connectedness with Transcendent) and Social Support (Perceived Social Support, Negative Social Support, Instrumental Social Support and Cultural Social Support) in the status of Substance Use (Dependent Group, Recovering Group and Non-user Group) under the 'Type of Substance Use' (Alcohol Group & Opioid Group).

5. To determine the predictability of 'Status of Substance Use' (Dependent, Recovering and Non-user Group) from Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment and Connectedness with Transcendent) and Social Support (Perceived Social Support, Negative Social Support, Instrumental Social Support and Cultural Social Support) .

Hypotheses:

1. Alcohol Group will score significantly higher in Resilience, Internal Locus of Control, Adaptive Coping Style, Spirituality (Connectedness with Oneself, Connectedness with Environment and Connectedness with Transcendent), Perceived Social Support, Instrumental Social Support and Cultural Social Support whereas they will score significantly lower on Powerful Others and Chance Locus of Control, Maladaptive Coping Style, Avoidance and Negative Social Support than Opioid Group.

2. Recovering Group and Non-user Group will score significantly higher in Resilience, Internal Locus of Control, Adaptive Coping Style, Spirituality, Perceived Social Support, Instrumental Social Support and Cultural Social Support whereas they will score significantly lower on Powerful Others and Chance LOC, Maladaptive Coping Style, Avoidance and Negative Social Support than Dependent Group.

3. There will be significant different patterns of the dependent variables based on the 'Status of Substance Use' (Dependent, Recovering & Non-user) in the two 'Type of Substance Use' (Alcohol or Opioid) on Personality Factors (Resilience, Locus of

Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment and Connectedness with Transcendent), and Social Support (Perceived Social Support, Negative Social Support, Instrumental Social Support and Cultural Social Support).

4. There will be significant relationship between the variables of Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment and Connectedness with Transcendent) and Social Support in the 'Status of Substance Use' (Dependent Group, Recovering Group and Non-user Group) under the 'Type of Substance Use' (Alcohol Group & Opioid Group).

5. Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment and Connectedness with Transcendent) and Social Support (Perceived Social Support, Negative Social Support, Instrumental Social Support and Cultural Social Support) will play a significant predicting role in 'Status of Substance Use' (Dependent, Recovering and Non-user Group).

CHAPTER-III

METHODS AND PROCEDURES

Sample:

The sample consisted of 360 participants comprising of 180 participants in Alcohol Group (60 Dependent, 60 Recovering and 60 Non-user sub-groups) and 180 participants in the Opioid Group (60 Dependent, 60 Recovering and 60 Non-user sub-groups) in equal proportion of gender as far as possible. The Alcohol and Opioid Dependent participants were selected randomly using convenient sampling from the rehabilitation centres and among the patients of Psychiatric Ward, Kulikawn Hospital, Synod Hospital, *Tawngtai* Bethel Camping Centre (TBCC), Agape Centre, Blessing Home Rehabilitation Centre within Aizawl city who met the criteria for Substance Dependence Syndrome under the ICD-10 Classification Of Mental and Behavioural Disorders. The Recovering group was drawn from the community through snowball sampling. Finally, the Non-user matched group in terms of age and gender was drawn randomly from the general population. The age of the participants ranged between 19-58 years.

The background information of the participants such as age, sex, family structure (joint/nuclear), marital status (single/married/separated/divorced/widowed), educational qualification/occupational status/ history, socioeconomic status, religious affiliation, denomination, substance use history (which included abstinence history, reason for abstinence), and family history of substance use were recorded to equate/match the participants in order to maintain comparability of the samples for the study. Further, whether the individual was in a controlled environment was recorded as an ancillary variable.

The Inclusion and Exclusion Criteria for the three groups (Dependents, Recovering, and Non-users) under each substance (Alcohol or Opioid) were

A. Alcohol Group

1. *Alcohol Dependent Group* - Individuals who currently meet Dependence Syndrome criteria for Alcohol

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Inclusion Criteria:

- Patient has fulfilled Alcohol Dependence Syndrome criteria of ICD 10

- Patient should have history of alcohol abstinence for less than 12 months. The duration of abstinence has been kept for lesser than 12 months as this would be considered to be in early remission (as per DSM 5) and this particular study is interested in studying people who have been able to maintain abstinence for a relatively longer period of time versus those who have not.

- Age: 19-58 years of age

- Education: Literate

- Gender: Male and female

Exclusion Criteria:

- Individuals who currently meet criteria for Alcohol Dependence Syndrome without any history of abstinence. This criterion has been set to exclude all participants who have not abstained from substance use in the past as this particular study is interested in studying people who have been able to maintain abstinence for a relatively longer period of time versus those who have not.

- Individuals with other Mental Disorders

- The presence of Dependence Syndrome on any other substance other than tobacco dependence. A joint survey by the ICMR-NCDIR has found that the prevalence of tobacco use (smoked and smokeless) in Mizoram is as high as 77.1 percent, with the use of smokeless tobacco higher at 54.1 per cent as compared to smoked tobacco at 43.6 per cent. Hence, looking at this high rate of prevalence, it was decided that Tobacco Dependence Syndrome be left out of exclusion criteria for fear that its inclusion will dramatically reduce the sample pool.

- Individuals with major medical condition

2. *Alcohol Recovering Group*- Individuals who are currently abstinent from alcohol use

Inclusion Criteria:

- Patient has fulfilled Alcohol Dependence Syndrome criteria of ICD 10 in the past

- Abstinent for at least 12 months

- Age: 19-58 years of age

- Education: Literate

- Gender: Male and Female

Exclusion Criteria:

- Individuals with other Mental Disorders

- The presence of Dependence Syndrome on any other substance other than tobacco dependence. A joint survey by the ICMR-NCDIR has found that the prevalence of tobacco use (smoked and smokeless) in Mizoram is as high as 77.1 percent. Hence, looking at this high rate of prevalence, it was decided that Tobacco Dependence Syndrome be left out of exclusion criteria for fear that its inclusion will dramatically reduce the sample pool.

- Individuals with major medical condition

3. *Alcohol Non-user Group*

Inclusion Criteria:

- Individuals who have never met criteria for Dependence Syndrome for any substance

- Age, Education and gender matched to those of Dependent And Recovering Groups within mean plus or minus 1 standard deviation (M+1SD)

Exclusion Criteria:

- Individuals with other Mental Disorders

- The presence of dependence syndrome for any Substance other than Tobacco. A joint survey by the ICMR-NCDIR has found that the prevalence of tobacco use (smoked and smokeless) in Mizoram is as high as 77.1 percent. Hence, looking at this high rate of prevalence, it was decided that Tobacco Dependence Syndrome be left out of exclusion criteria for fear that its inclusion will dramatically reduce the sample pool.

- Individuals with major medical condition

B. Opioid Group

1. *Opioid Dependent Group* - Individuals who currently meet Dependence Syndrome criteria for Opioid

Inclusion Criteria:

- Patient has fulfilled Dependence criteria for ICD 10

- Patient should have history of Opioid Abstinence for less than 12 months. The duration of abstinence has been kept for lesser than 12 months as this would be considered to be in early remission (as per DSM 5) and this particular study is interested in studying people who have been able to maintain abstinence for a relatively longer period of time versus those who have not.

- Age: 19-58 years of age

- Education: Literate

- Gender: Male and female

Exclusion Criteria:

- Individuals who currently meet Dependence Syndrome criteria for Opioid without any history of abstinence. This criterion has been set to exclude all participants who have not abstained from substance use in the past as this particular study is interested in studying people who have been able to maintain abstinence for a relatively longer period of time versus those who have not.

- The presence of Dependence Syndrome on any other substance other than tobacco dependence. A joint survey by the ICMR-NCDIR has found that the prevalence of tobacco use (smoked and smokeless) in Mizoram is as high as 77.1 percent. Hence, looking at this high rate of prevalence, it was decided that Tobacco Dependence Syndrome be left out of exclusion criteria for fear that its inclusion will dramatically reduce the sample pool.

- Individuals with other Mental Disorders

- Individuals with major medical condition

2. *Opioid Recovering Group*- Individuals who are currently abstinent from Opioid use

Inclusion Criteria:

- Patient has fulfilled Dependence Syndrome criteria of ICD 10 in the past

- Abstinent for at least 12 months

- Age: 19-58 years of age

- Education: Literate

- Gender: Male and Female

Exclusion Criteria:
- Individuals with other Mental Disorders

- The presence of Dependence Syndrome on any other substance other than tobacco dependence. A joint survey by the ICMR-NCDIR has found that the prevalence of tobacco use (smoked and smokeless) in Mizoram is as high as 77.1 percent. Hence, looking at this high rate of prevalence, it was decided that Tobacco Dependence Syndrome be left out of exclusion criteria for fear that its inclusion will dramatically reduce the sample pool.

- Individuals with major medical condition

3. *Opioid Non-user Group*

Inclusion Criteria:
- Individuals who have never met criteria for Dependence Syndrome for any substance

- Age, Education and gender matched to those of Dependent And Recovering Groups within mean plus or minus 1 standard deviation (M+1SD)

Exclusion Criteria:
- Individuals with other Mental Disorders

- The presence of Dependence Syndrome for any Substance other than Tobacco. A joint survey by the ICMR-NCDIR has found that the prevalence of tobacco use (smoked and smokeless) in Mizoram is as high as 77.1 percent. Hence, looking at this high rate of prevalence, it was decided that Tobacco Dependence Syndrome be left out of exclusion criteria for fear that its inclusion will dramatically reduce the sample pool.

- Individuals with major medical condition

Design of the study: A separate group design was used wherein Alcohol Group comprised of Alcohol Dependent, Alcohol Recovering and Alcohol Non-user sub-groups; and Opioid Group comprised of Opioid Dependent, Opioid Recovering and

Opioid Non-user Groups. The sample characteristics may be seen in the design given below:
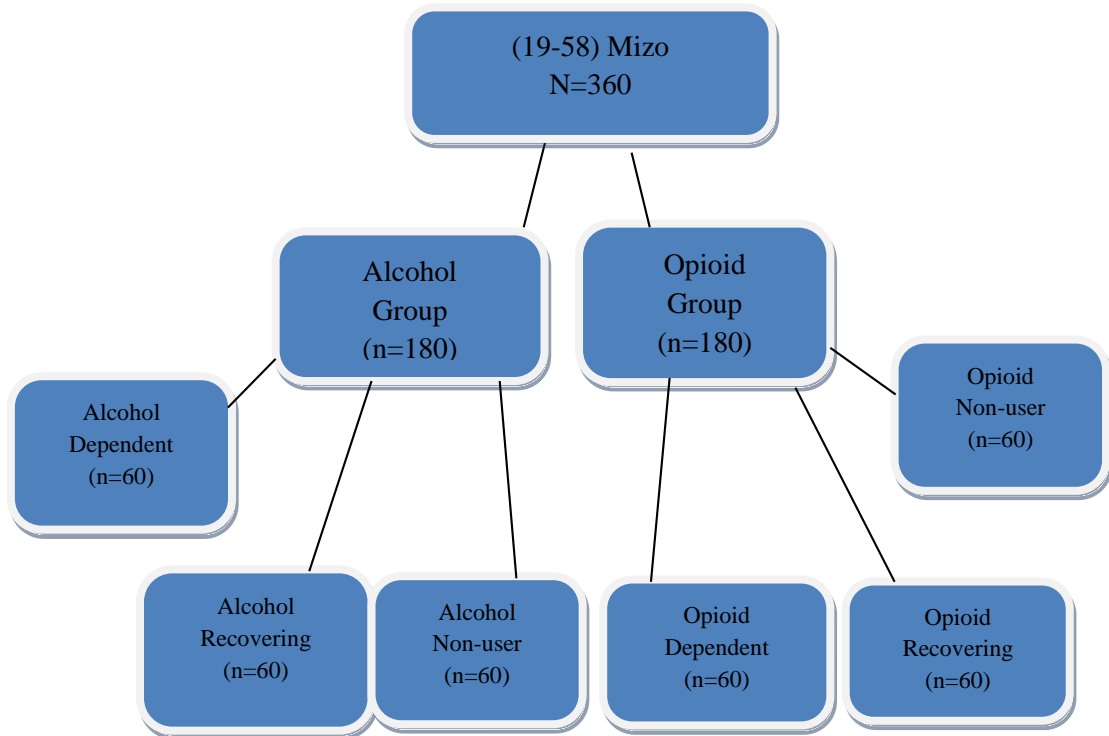
Fig 1: Depicting the design of the study

Psychological Tools:

The following psychological tools were used for the purpose of diagnosis and measurement of the psychological constructs:

1. ICD-10 Classification of Mental and Behavioural Disorders (WHO, 1993). Clinical descriptions and diagnostic guidelines

Mental and behavioural disorders due to psychoactive substance use: **Dependence syndrome** includes a cluster of physiological, behavioral and cognitive phenomena in which the use of a substance or a class of substances takes on a much

higher priority for a given individual than other behaviours that once had greater value. A central descriptive characteristic of the dependence syndrome is the desire (often strong, sometimes overpowering) to take psychoactive drugs (which may or may not have been medically prescribed), alcohol, or tobacco. There may be evidence that return to substance use after a period of abstinence leads to a more rapid reappearance of other features of the syndrome than occurs with nondependent individuals.

2. Resiliency Scale: (Siu, O.-L., Hui, C. H., Phillips, D. R., Lin, L., Wong, T.-w., &Shi,K.,2009)

To measure resilience, Resiliency Scale by Siu *et al.,* 2009 was used where resiliency was conceptualized as a unidimensional construct representing capacity to cope with stress. It is a rating scale with 9 items whose items are presented on a six-point Likert scale (1 = very inaccurate; 6 = very accurate). A confirmatory factor analysis of the 9 items confirmed a one-factor structure, which was found to be internally consistent with Cronbach's alpha 0.90 in the standardization sample (Siu, *et al*., 2009). The specimen sample of this scale can be seen in Appendix-1.

3. Multidimensional Locus of Control Scales: (Levenson, H., 1974)

This is an instrument for assessing the locus of control of adults. This scale is composed of three subscales namely- Internal (I), Powerful Others (P) and Chance (C).Each of the I, P, and C scales consist of 8 items in a Likert format (6-point scale; possible range on each scale, 0- 48) which is presented to subjects as a unified attitude scale of 24 items In a nationwide sample of 3668 Greek educators collected by Kourmousi,*et al.* (2015), it was found that Internal consistency was satisfactory with a Cronbach's alpha above 0.70 for all LOC dimensions. Confirmatory factor analysis (CFA) confirmed that the items comprising the three subscales of the IPC LOC Scale measure the same construct. The specimen sample of this scale can be seen in Appendix-2.

4. Maladaptive and Adaptive Coping Style Questionnaire (MAX): (Moritz, S., Jahns, A. K., Schröder, J., Berger, T., Lincoln, T. M., Klein, J. P., & Göritz, A. S.,2016).

The purpose of the Maladaptive and Adaptive Coping Style Questionnaire was to assess coping profiles across different psychopathological syndromes covering adaptive coping, maladaptive coping and avoidance. Items were answered on a 4-point Likert scale: not true (=1), rather not true (=2), rather true (=3), true (=4). Principal component analysis resulted in the extraction of 3 components: adaptive coping (including acceptance, re-appraisal) and consisted of 9 items, maladaptive coping (including rumination, self-blaming attributional style, catastrophizing, low self-esteem) and consisted of 7 items, and finally avoidance including suppression, hiding expressions and consisted of 3 items. The test-retest reliability done by Moritz *et al*. (2015) was good for maladaptive coping (r=.75) and satisfactory for adaptive coping and avoidance (around r=.6) on a sample of 2200 individuals from the general population who participated in an online survey.The specimen sample of this scale can be seen in Appendix-3.

5.Spiritual Attitude and Involvement List (SAIL): (De JagerMeezenbroek, E., Garssen, B., van den Berg, M., Tuytel, G., van Dierendonck, D., Visser, A., &Schaufeli, W. B., 2012).

The 26-item Spiritual Attitude and Involvement List were developed by De JagerMeezenbroek *et al*., 2012to examine spirituality among religious and nonreligious people. It has 7 subscales: Meaningfulness (3 items); Trust (4 items); Acceptance (4 items); Caring for Others (4 items); Connectedness with Nature (2 items); Transcendent Experiences (5 items); and Spiritual Activities (4 items). These subscales have been divided into three dimensions: Connectedness with Oneself, Connectedness with Environment and Connectedness with Transcendent. For most items, a Likert-type scale ranging from 1 (not at all) to 6 (to a very high degree) is used. For the subscale Transcendent Experiences and the last 3 items of the subscale

Spiritual Activities, a Likert-type scale ranging from 1 (never) to 6 (very often) is used. de Jager Meezenbroek *et al*. (2012) determined the internal consistency of each scale nine times in four samples namely two samples of healthy adults (healthy population=52, healthy interested=222), curative cancer sample (n=134) and palliative cancer group (n=48) and found Mean Cronbach's alphas across these nine measurements raging between .73 to .86. The specimen sample of this scale can be seen in Appendix-4.

6. Social Support Scales: (Duran, B., Oetzel, J., Lucero, J., Jiang, Y., Novins, D. K., Manson, S., Beals, J., 2005)

This scale measures 4 categories of social support with 20 items. The first category is Perceived Social Support (the perception of emotional and appraisal support and consists of 6 items. The second category is Negative Social Support (criticism) and consists of 6 items. The third category is Instrumental Social Support (tangible aid) which consists of 5 items and finally, Cultural Social Support (feelings of isolation) which comprises of 3 items. The responses are provided using a yes/no format and 3-point scale was used (e.g., "often," "sometimes," "never").Internal consistencies for each of the 4 measures were established in a sample of American Indians by Duran et al. (2005). The reliabilities were found to be as follows-perceived support (.86), negative support (.77), instrumental support (.74), and cultural support (.62) (Duran *et al*., 2005).The specimen sample of this scale can be seen in Appendix-5.

Procedure:

APA's Ethics Code of Conduct was followed and Institutional Approval was taken from all the hospitals, de-addiction and rehabilitation centres where data was collectedwhereby information about the research was given and prior approval to conduct the research was obtained. Informed Consent to Research was taken from the participants as well where the purpose of the research was explained as well as expected duration. They were also informed of their right to decline to participate

and to withdraw from the research once participation has begun. After sufficient rapport formation and careful explanation of instructions about the question booklet, background demographic sheets and consent forms were distributed and filled up by all participants. Confidentiality was assured and anonymity was guaranteed to minimize any potential influence of social desirability. The participants were then asked to proceed with the booklet. Each session lasted for approximately1hour.

CHAPTER- IV

RESULTS AND DISCUSSION

The demographic characteristics of the participants such as age, sex, family structure (joint/nuclear), marital status (single/married/separated/divorced/widowed), educational qualification/occupational status/ history, socioeconomic status, religious affiliation, denomination, substance use history (which included abstinence history, reason for abstinence), and family history of substance use were recorded to equate/match the participants in order to maintain comparability of the samples for the study. The results of the demographic data depicting the sample characteristics is presented in the following section.

Sample characteristics:

The sample characteristics of the present study are depicted in the Tables 1.1-01.12 side by side for description of the two groups of Alcohol and Opioid Groups separately, and for comparison of the two groups along the lines of age, educational qualification, employment status, family type, marital status, employment status, socioeconomic status, religious affiliation, current substance use history, age of initiation, reasons for initiation, history of family substance use and reasons for abstinence.

Table 1.1 below portrays the results of the **distribution of age** of Alcohol Dependent Group and Opioid Dependent Group. The Alcohol Dependent Group had the highest mean (Mean=38.20, 9.08) while the Opioid Dependent Group had the lowest mean (Mean=29.92, SD=5.14) while the rest of the other groups namely Opioid Recovering Group (Mean=36.63, SD=8.04), Opioid Non-user Group (Mean=38.80, SD=5.45) and Alcohol Recovering Group (35.35, SD=9.80) and Alcohol Non-user Group (Mean=33.63, SD=5.49) were located in between. The Opioid Dependent Group comprised of individuals currently dependent on opioid and hence this group having the lowest age mean is not surprising considering that Mizoram has one of the highest prevalence of opioid use in the general population (more than 10%) Ambekar *et al*. (2019).Basu *et al*. (2012) studied the changing pattern of substance abuse in North India (from 1978 to 2008) and observed that majority of the subjects were males and that maximum prevalence of drug abuse was in the age group of 26–35 years, with no decade-wise difference. Pandey *et al*. (2015) in their study to

generate information for better understanding of socioeconomic characteristics of alcohol and other substance users who were undergoing treatment

in Sikkim found that predominant participants (86%) were in the age group of 15-44.

	ALCOHOL	OPIOID
DEPENDENT		
RECOVERING		
NON-USER		
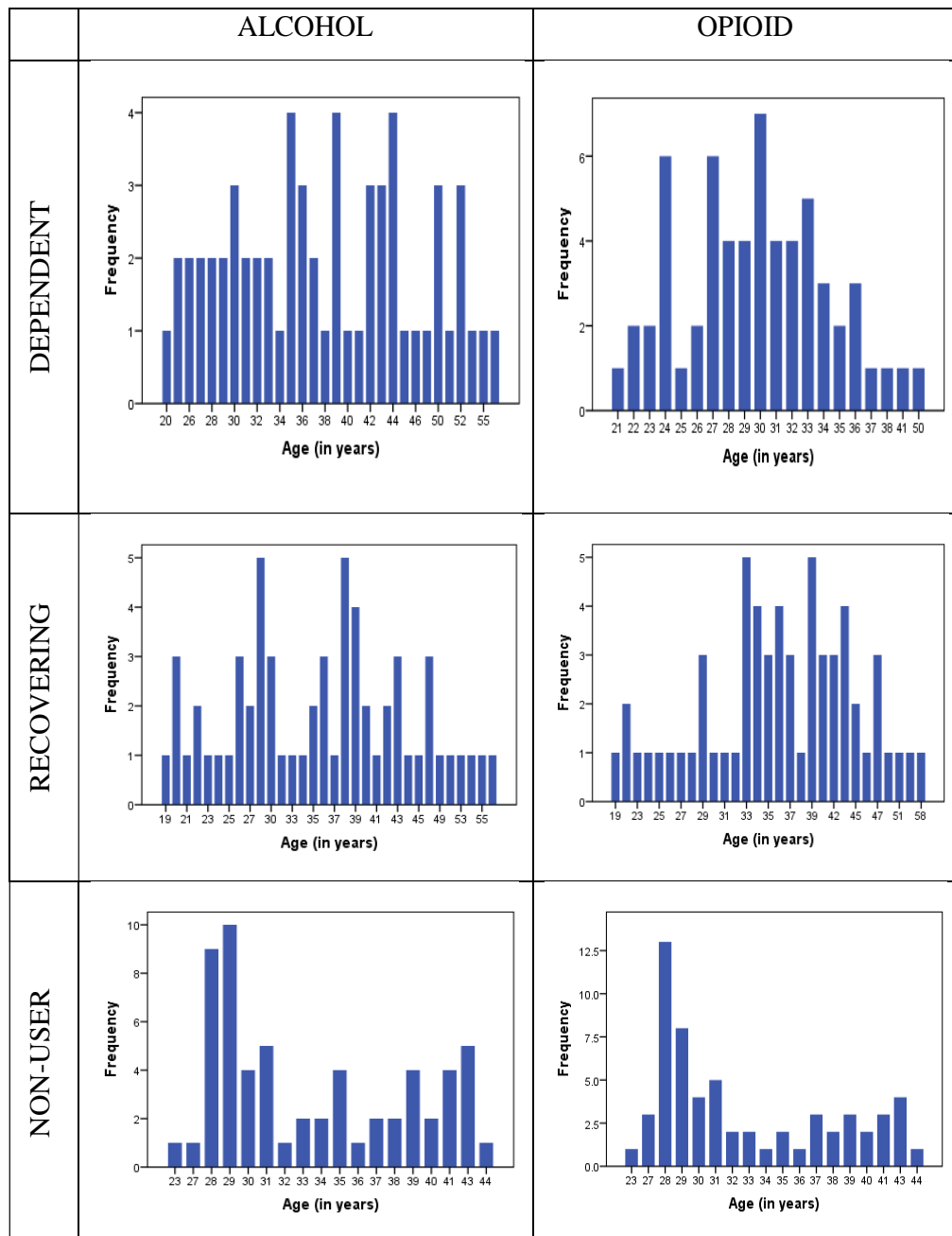
Table 1.1: Table showing distribution of age for both Alcohol Group (Dependent, Recovering and Non-user) and Opioid Group (Dependent, Recovering and Non-user).

The result (Table 1.2) depicted the mean distribution of the **educational qualification** of the different groups. Amongst the Alcohol Dependent Group, majority of the participants (28.3%) completed up to High School level followed closely by both Middle School and Higher Secondary School level (23.3%) with (8.3%) completing till postgraduate level. The highest percentage (33.3%) of participants in the Alcohol Recovering Group studied up to Middle School, a lesser percentage (23.3%) up to Higher Secondary level, 21.7% up to Graduate level and a very low percentage (1.7%) study up to Post graduate level. Amongst the Opioid Dependent Group, it was found that a majority (35%) of the participants studied up to High and Higher Secondary level. However, none of the participants in this group had a post graduate degree. In the Opioid Recovering Group, the highest percentage of participants study upto High School (30%) followed closely by Graduate (28.3%) and Higher Secondary (26.7%) levels and a very low percentage (1.7%) studied upto postgraduate levels. Finally, in the Alcohol Non-user Group, it was found that majority (51.7%) of the participants studied till Graduate level followed closely by Post Graduate level (31.7%). Similarly, in the Opioid Non-user group, it was found that all the participants study past High School, majority (48.3 %) study upto Graduate level and a high percentage (33.3%) level study upto Post Graduate level. From this educational qualification level alone, we can reflect on the fact that substance use may have an impact on studies and disrupt higher studies as supported by previous studies. Engberg & Morral (2006) suggest that adolescent drug use is related to decrease in sustained engagement in academic career and pursuits.In a study by Kumar *et al*. (2013) in De-addiction Centers of New Delhi, 21% of the addicts were illiterate or educated till primary level as compared to 17.3% in the present study. Pandey *et al*. (2015) in their study amongst alcohol and other substance users in Sikkim found that majority of the sample were in the school dropout group (37%).

	ALCOHOL	OPIOID
DEPENDENT		
RECOVERING		
NON-USER		
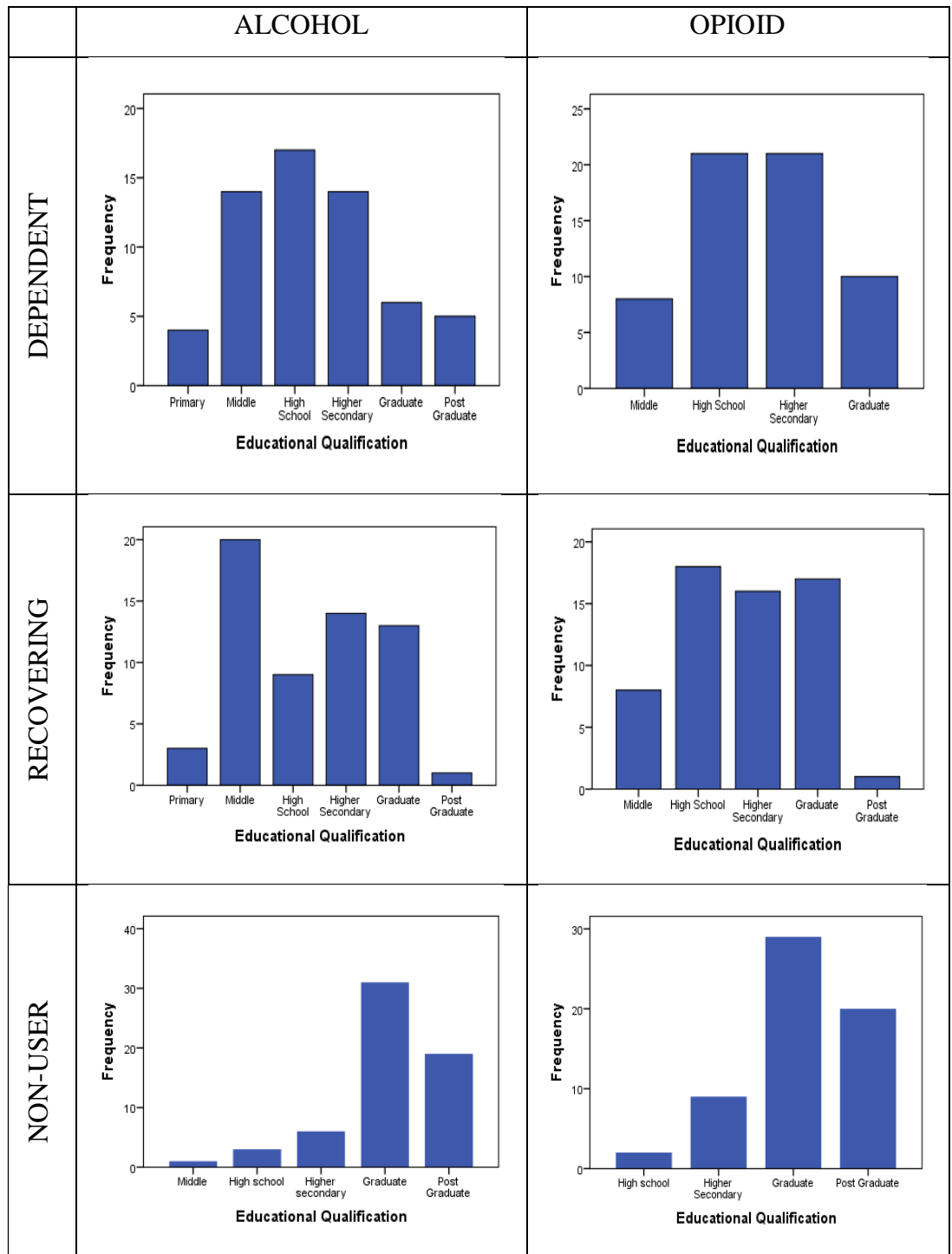
Table 1.2: Table showing educational qualification for both Alcohol Group
(Dependent, Recovering and Non-user) and Opioid Group (Dependent, Recovering
and Non-user)

In the **employment status** (Table 1.3), the number of unemployed was the highest (38.3%) amongst the Opioid Dependent Group, followed by Alcohol Recovering Group (28.3%) and Opioid Recovering Group (23%). The Alcohol Recovering Group reported higher employment (28.3%). Unsurprisingly, the number of employments in an organised sector was the highest (47% and 35%) in the Alcohol and Opioid Non-User Group respectively while being lowest in the Opioid Recovering Group (10%) and Alcohol Recovering Group (13.3%) followed closely by the Opioid Dependent Group (15%).Unemployment is a common problem among adults who have substance use disorder that often persists during treatment and recovery (Henkel *et al*., 2011). Randhawa *et al*. (2020) in their study among individuals seeking treatment for substance dependence found that majority of the patients (47.20%) were self-employed while 26.50% were unemployed.

	ALCOHOL	OPIOID
DEPENDENT		
RECOVERING		
NON-USER		
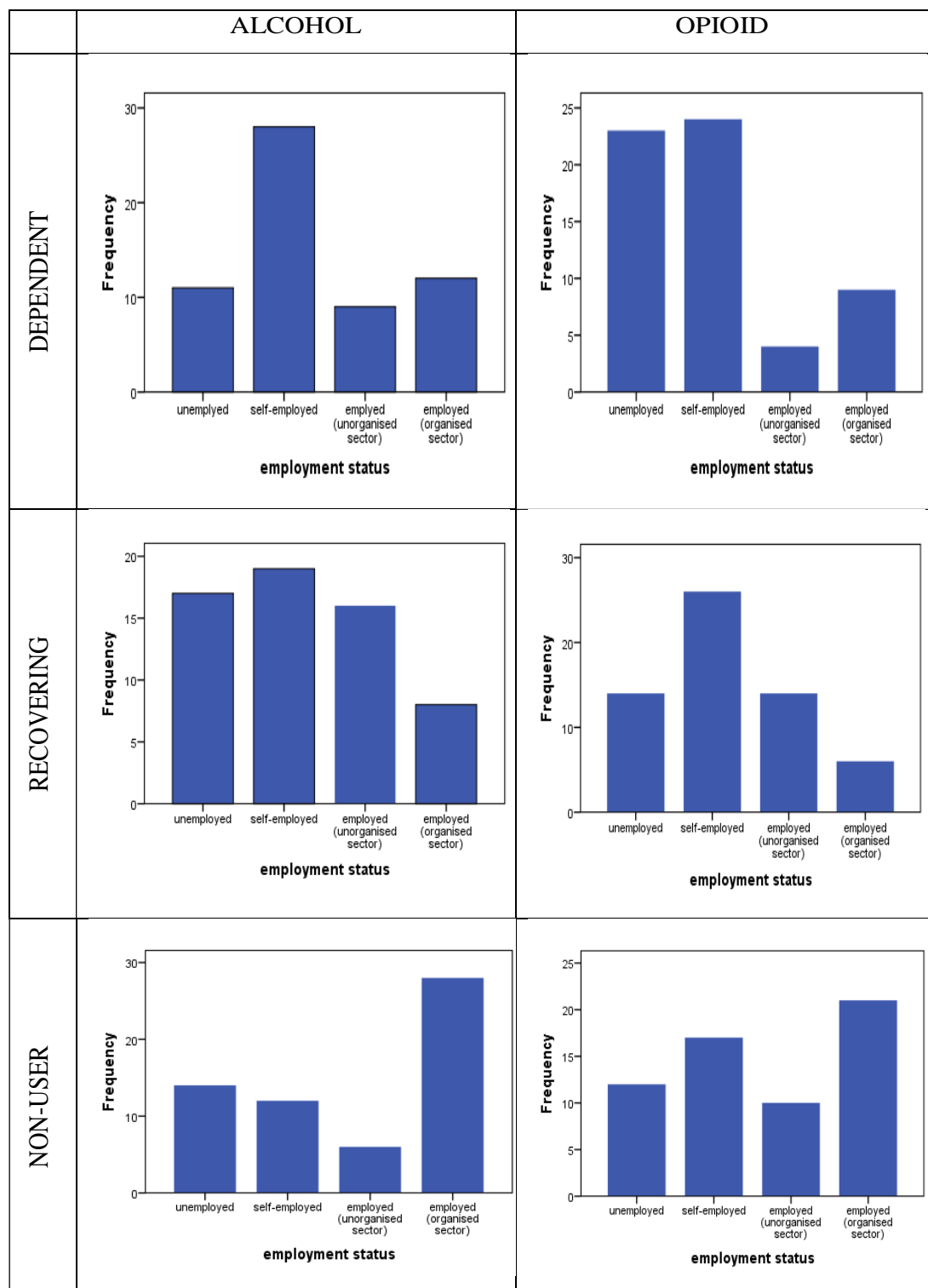
Table 1.3: Table showing employment status for both Alcohol Group (Dependent, Recovering and Non-user) and Opioid Group (Dependent, Recovering and Non-user).

In terms of **marital status** (Table 1.4, both the Non-User Group had the highest percentage of Never married status (55% and 60%) compared to the other groups. The percentage of Married status was the highest (43.3%) in the Alcohol Dependent Group followed by the two Non-user Groups (36.7% and 38.3% respectively). Separation rate was particularly high amongst the Alcohol Recovering Group (26.7%). However, the Opioid Dependent Group (26.7%) and Alcohol Dependent Group (21.7%) had the highest divorce rate.Rates of drug abuse are higher among divorced individuals than among those who are married, but it is not clear whether divorce itself is a risk factor for drug abuse or whether the observed association is confounded by other factors. Divorce has been associated with alcohol problems and other manifestations of subsequent psychopathology (Simon *et al*., 2002) while Lin *et al*. (2011) have also found that substance use is more common among individuals who are divorced, separated, or widowed.
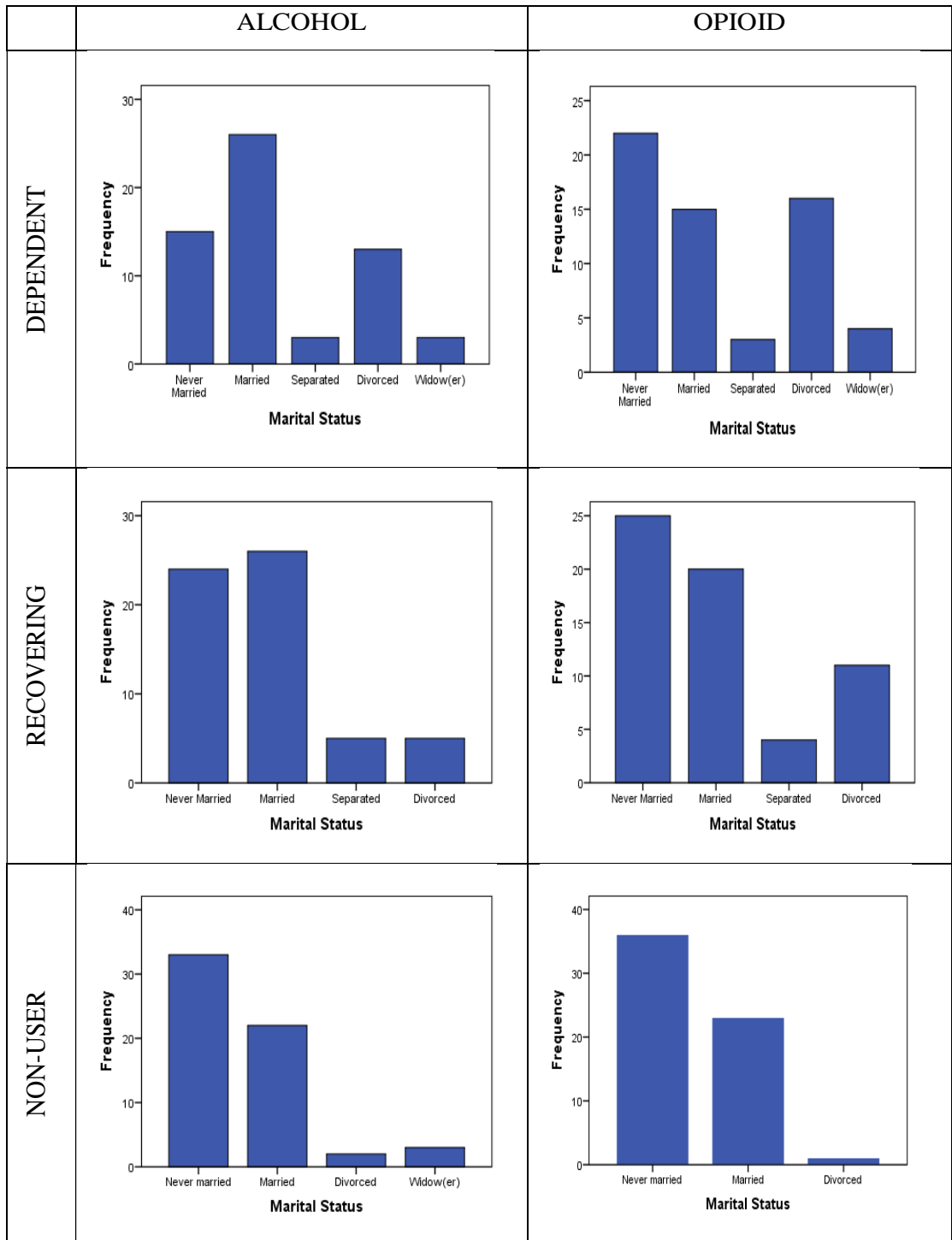
Table 1.4: Table showing marital status for both Alcohol Group (Dependent, Recovering and Non-user) and Opioid Group (Dependent, Recovering and Non-user)

For the **Family Type** (Table 1.5), majority of the participants (58.3%) of the Alcohol Non-user group and (66.7%) of the Opioid Non-user Group were from a nuclear family which is the highest percentage amongst the groups as well. A nuclear family set up was the most popular in the other groups as well except for the Opioid Dependent Group where majority of the participants belong to a joint family type (50%). It was also found that quite a number of participants in the Alcohol Recovering Group (20%) and Opioid Recovering Group (13.3%) were staying with distant relatives, community-based shared homes etc. This may be because a lot of these individuals with their history of addiction have left their family of origin and have gone on to stay with distant relatives or community-based shared homes.
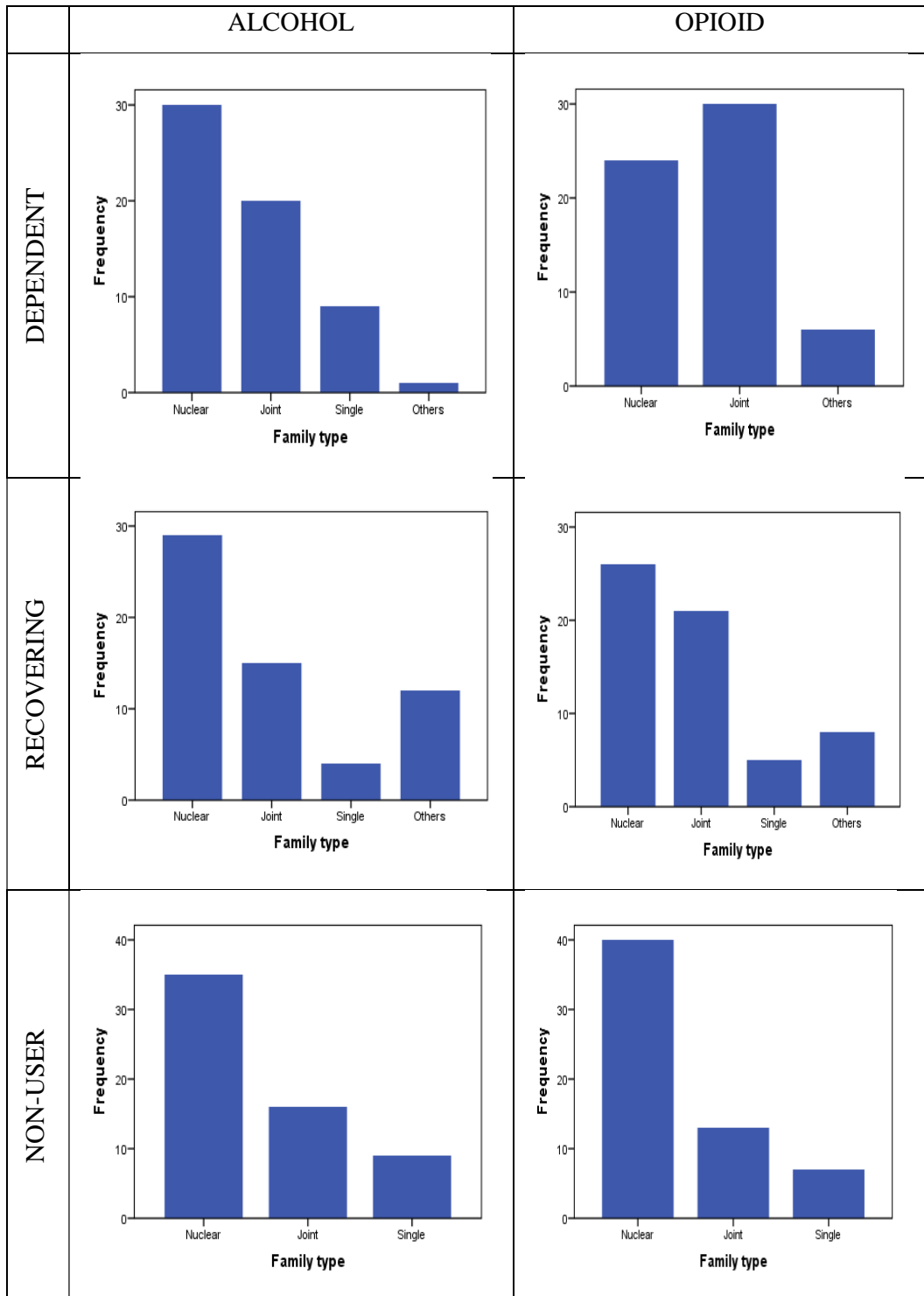
Table 1.5: Table showing family type for both Alcohol Group (Dependent, Recovering and Non-user) and Opioid Group (Dependent, Recovering and Non-user)

Socio-Economic Status (Table 1.6): In the both the Non-user Groups namely the Alcohol Non-user Group and Opioid Non-user Group, majority of the participants (96.7% & 93.3% respectively) reported themselves to be above poverty line. While in the rest of the other groups, there is quite an even distribution of participants belonging to both above poverty line and below poverty line especially in the Opioid Recovering Group and Alcohol Recovering Group. In the Opioid Dependent Group (66.7%) and Alcohol Dependent Group (65%) were from above poverty line. In a related demographic, in terms of income per month, as compared to the rest of the other groups, where participants (31.7 % and 28.3 %) in both the Non-user Groups appear to be earning the most with over 50,000 Rupees p.m. More than half (51.7%) of the participants in the Opioid Dependent Group and quite a large number of participants (35%, 33.3% and 30%) from the Alcohol Recovering Group, Alcohol Non-user Group and Opioid Recovering Group respectively and reported to be earning less than Rs. 5000 p.m.Disparities due to socioeconomic status can be seen in terms of access to and utilization of mental health care services (Steele *et al*., 2007). Lower SES is often associated with increased alcohol, cigarette, and cocaine use among teenagers (Goodman & Huang, 2002).Pandey *et al*. (2015) found that among alcohol and other substance users who were undergoing treatment in Sikkim, most of the samples were unemployed (31.1%) and the annual income of most of the participant (74%) was below INR 10,000/month.

	ALCOHOL	OPIOID
DEPENDENT		
RECOVERING		
NON-USER		
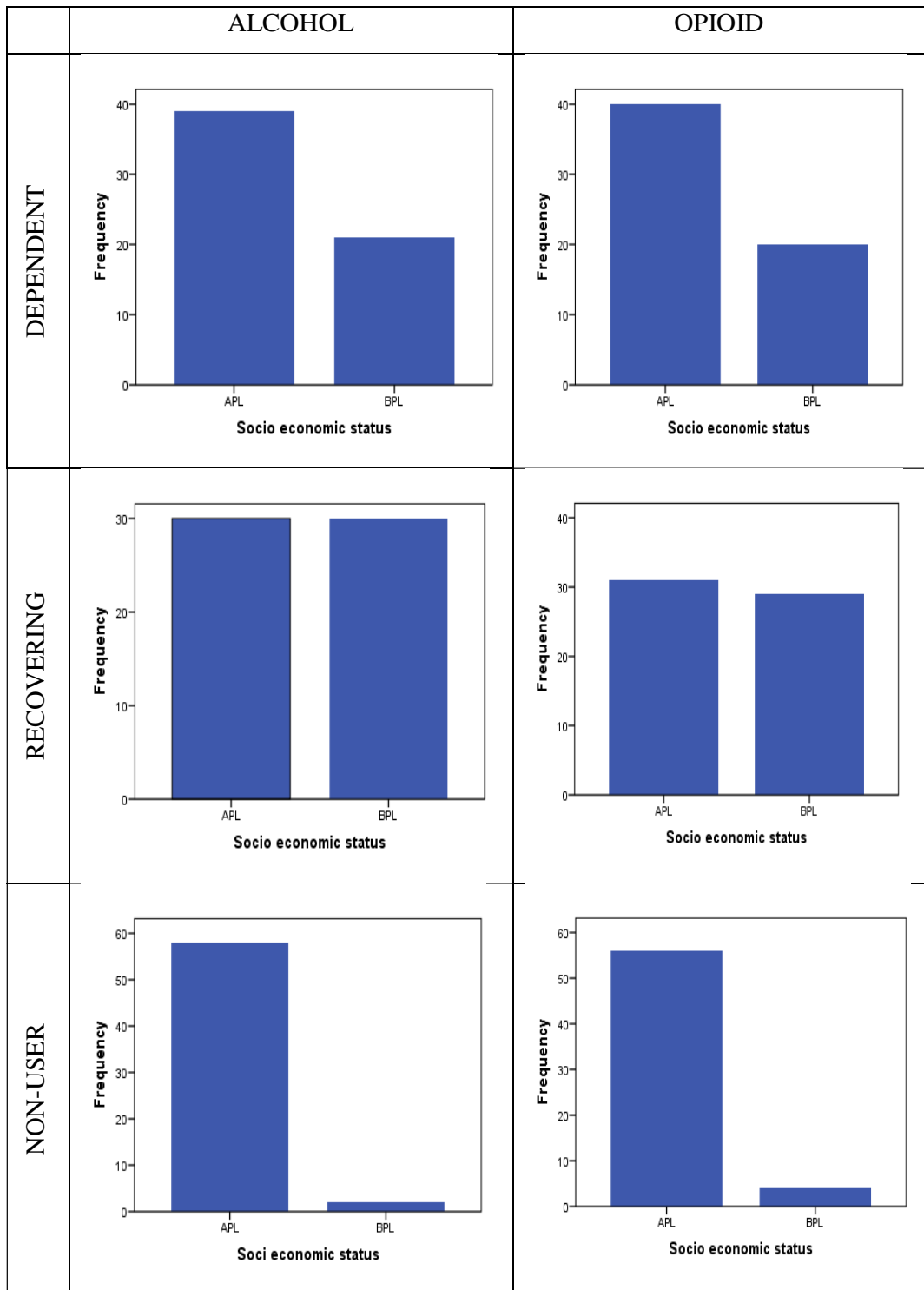
Table 1.6: Table showing socio economic status for both Alcohol Group (Dependent, Recovering and Non-user) and Opioid Group (Dependent, Recovering and Non-user).

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In terms of **religious affiliation**, most of the participants (98%) across the different groups identified themselves as Christians, only a small percentage, chose not to identify their religious affiliations. Amongst the Christians, the **denomination** the participants belong to in the different groups differed. However, across all the groups, majority of the participants (66-81.7%) belong to the Presbyterian Church, followed by much fewer participants from Baptist Church, Salvation Army, United Pentecostal Church amongst others. (Table 1.7). This finding is not surprising since as per the Statistical Handbook of Mizoram 2020, the Presbyterian Church had the highest number of members followed by the Baptist Church of Mizoram.
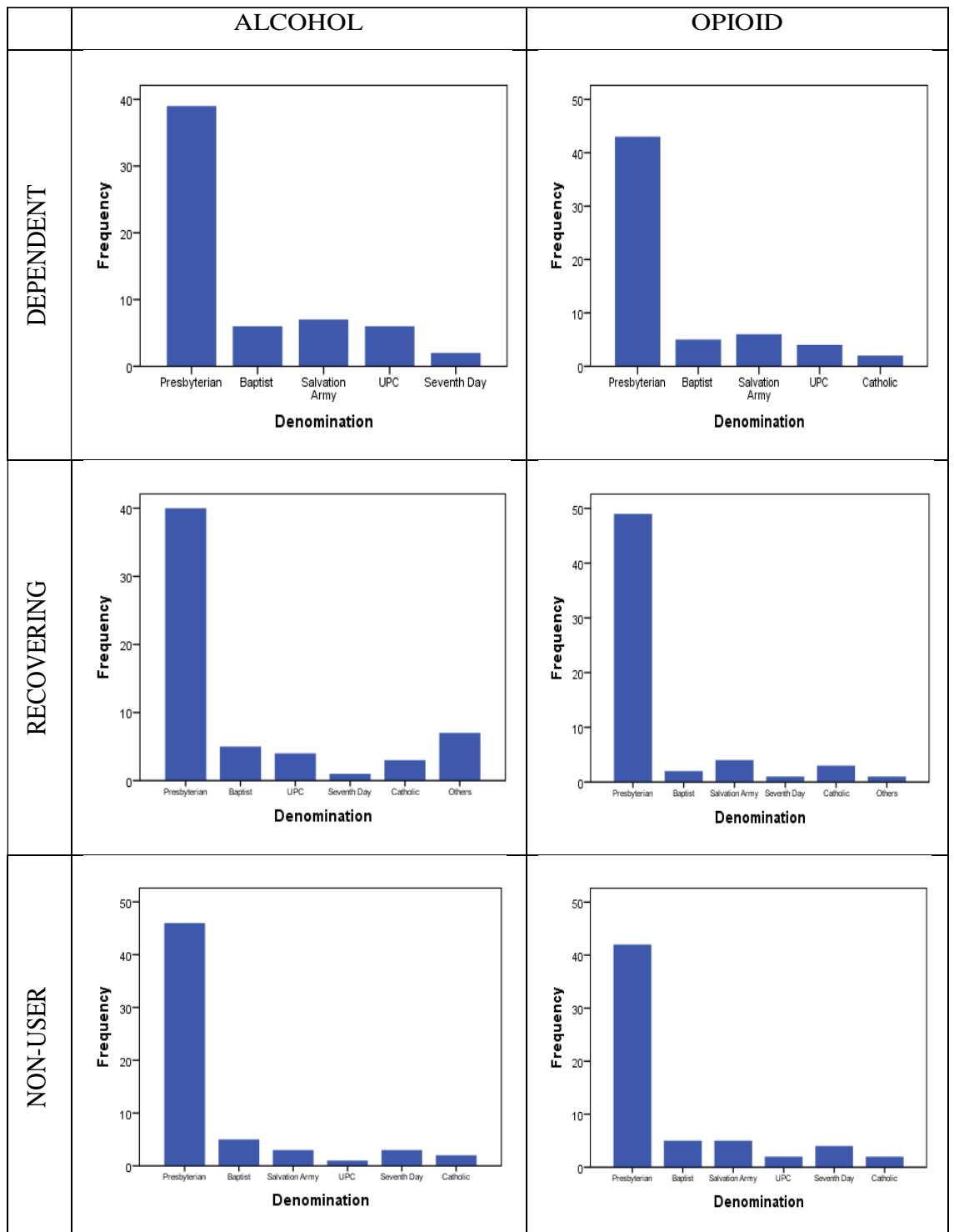
Table 1.7: Table showing denomination for both Alcohol Group (Dependent, Recovering and Non-user) and Opioid Group (Dependent, Recovering and Non-user).

Across all the groups, majority of the participants were based in an Urban setting, while very few participants (6.8%) Alcohol Dependent Group, (10%) Alcohol Recovering Group, (3.4%) Opioid Dependent Group and Opioid Recovering Group were based in a rural setting. Since the data for the current study was collected from Aizawl city, most of the respondents were from Aizawl city while a few were from rural setting and were currently staying in Aizawl due to treatment or due to some other reason.

In the Alcohol Dependent Group (Table 1.8), the number of participants with **current use history** of 1 to 5 years was the highest (36.7%), followed closely by 6 to 10 years (26.6%), 11-15 years (10%), 16-20 years (16.7%) and finally >20years (10.1%). In the Opioid Dependent Group, the number of participants with current use history of 1 to 5 years was the highest (75%), 6 to 10 years (15%), 11-15 years (6.7%) and 16-20 years (3.4%).

	DEPENDENT
A L C O H O L	
O P I O I D	
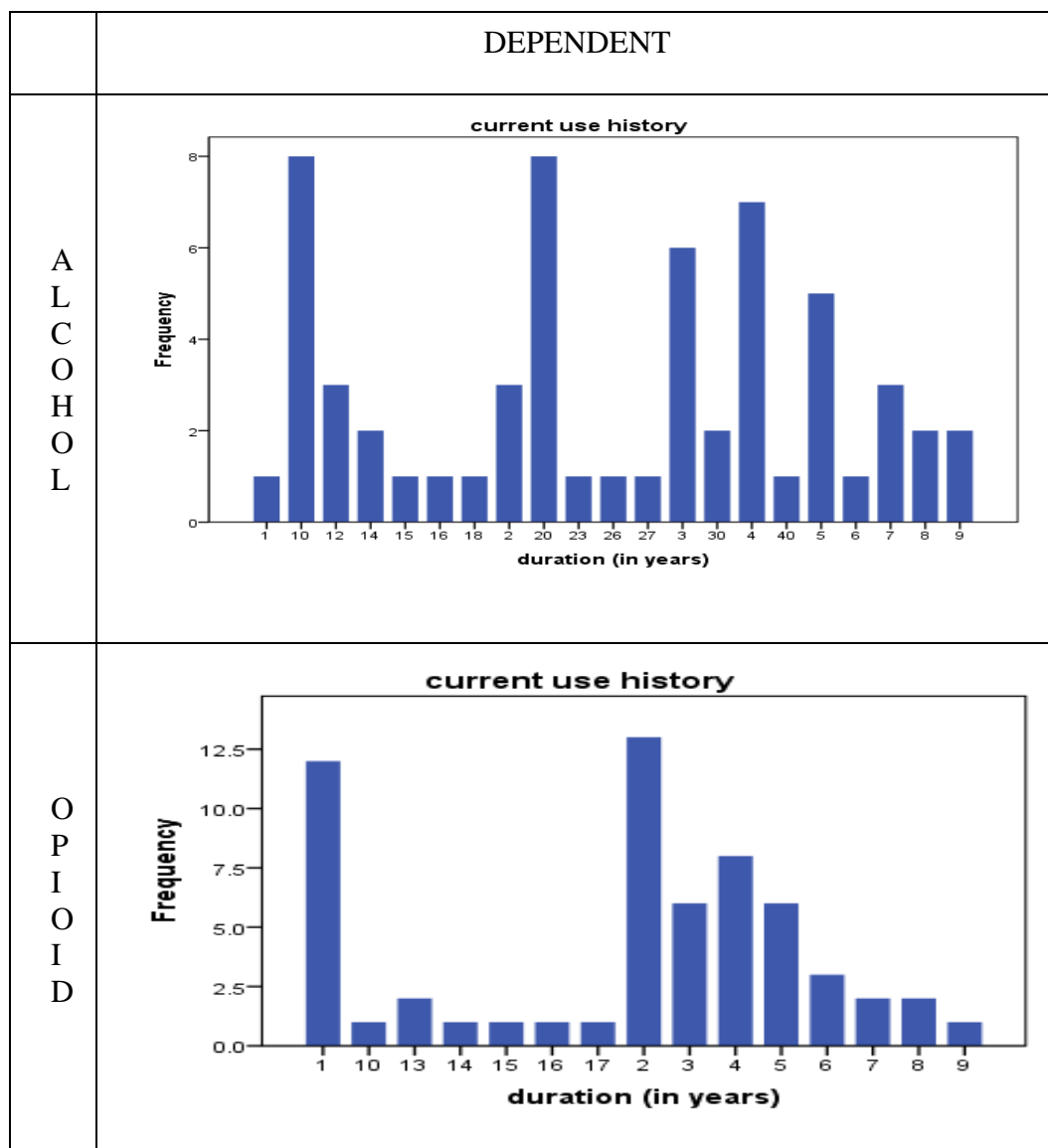
Table 1.8: Table showing current use history for both Alcohol Dependent Group and Opioid Dependent Group

The mean **age of initiation** (Table 1.9) was the highest amongst the Opioid Recovering Group (M=23.88, SD=5.70) and lowest amongst the Alcohol Dependent Group (M=20.57, SD=5.90). For the Opioid Dependent Group (M=22.97, SD=4.50) and for the Alcohol Recovering Group (M=21.55, SD=5.47). This finding was similar to a study done on the residents of Sikkim by Pandey *et al*. (2015) where they found that among the substance (drug) using population in this study, 54.4% respondent started in the age group of 16-25 years while for the alcohol using

population 70.5% respondent had started taking alcohol in the age group of 15-30 years.

The **reasons for initiation** of substance use given by the participants in all the groups were quite similar. In the Alcohol Dependent Group, 35% of the participants reported initiating drug use due to peer influence, 33.4% reported as due to recreational purposes and 6.7% reported it to be due to stress. In the Alcohol Recovering Group, 46.8% cited influence of peers as the main reason for initiation, 20.1% due to curiosity/interest and 19.9% due to stress. For the Opioid Dependent Group, a majority (35%) reported initiating due to curiosity, 23.4% due to peer influence, 8.3% each due to recreational purpose and 10% due to stress. And finally, in the Opioid Recovering Group, 31.7% reported initiating due to peer influence, 23.4% as due to curiosity/interest, 11.7% due to recreational and 6.7% started in order to replace another drug like proxyvon. Lokhande *et al.* (2018) in their study also highlighted reason for initiation of the substance use among some residents of Miraj town, Maharashtra. It was found that majority of the respondents (53.79%) report that it was due peer pressure, followed by curiosity (24.89%), as an experience (15.27%), to feel good (4%) and seeing actors in movies (2.05%).
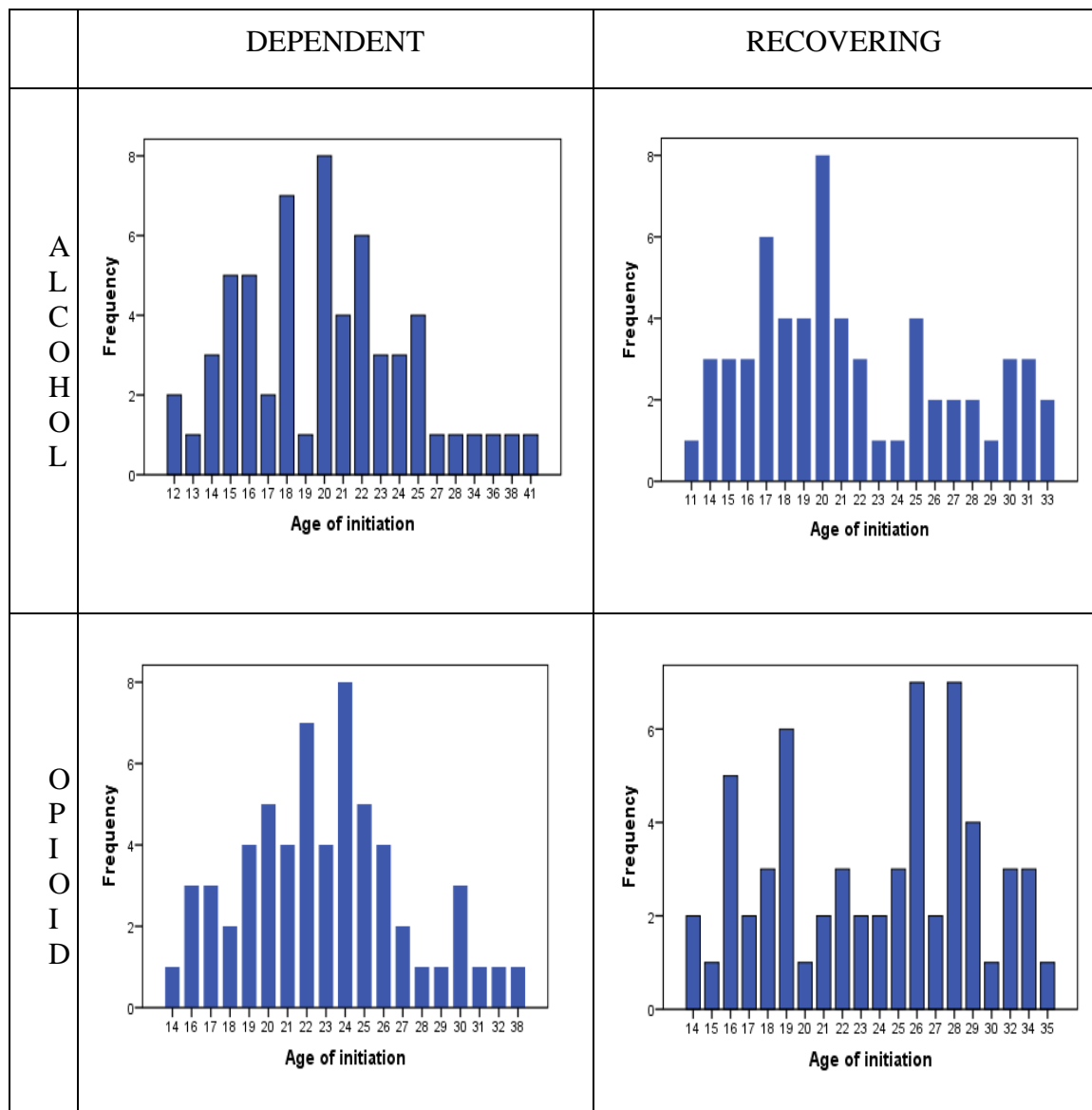
Table 1.9: Table showing age of initiation for both Alcohol Group (Dependent and Recovering and Opioid Group (Dependent and Recovering)

In both the Non-user Groups, majority of the participants (86% and 85%) report not having any **history of family substance abuse** (Table 1.10). However, in most of the other groups namely the Alcohol Dependent Group, Opioid Dependent Group and Opioid Recovering Group (46.7%, 55% & 58.3% respectively) there was a higher distribution of participants with family history of substance abuse as compared to the Non-user Groups. There is however, a slight difference with the Alcohol Recovering Group where more than half (76.7%) report not having any

history of family substance abuse. There have been numerous studies supporting the role of genetics in substance use disorders. A study by Merikangas *et al*. (1998) found that there was an 8-fold increased risk of drug related disorders among the relatives of probands with drug related disorders across a wide range of substances such as opioids, cocaine, cannabis, and alcohol. Hartman *et al*. (2006) found tetrachoric correlations among siblings and parent-offspring ranged from .19 to .34 for abuse and dependence and through Modeling of familial transmission also found that 33% of the variance in abuse and 56% of the variance in dependence was accounted for by factors transmitted from parents. Whether the differences between the groups in this current study are due to genetic factors or environmental influences cannot be stated here since it is not within the purview of this particular research.

	ALCOHOL	OPIOID
DEPENDENT		
RECOVERING		
NON-USER		

Table 1.10: Table showing history of substance use in family for both Alcohol Group (Dependent, Recovering and Non-user) and Opioid Group (Dependent, Recovering and Non-user)

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In the Alcohol Recovering Group, only one participant reported having a history of Proxyvon abuse and none of the participants from the Alcohol Dependent Group reported any other history of substance abuse other than alcohol. In the Opioid Recovering Group, a majority (41.7%) had never had a history of substance use other than Heroin, 15.1% had a history of proxyvon abuse, whereas 30.2% of the participants had a history of alcohol abuse. In the Opioid Dependent Group, 73.4% had no history of other substance abuse while 11.6% reported having a history of Alcohol use, 10.1% reported history of cannabis use as well as 8.5% reported occasional sedative abuse namely, alprazolam, nitrazepam.

In terms of **length of current abstinence** (Table 1.11), majority of the participants (71.7%) in the Alcohol Recovering Group and (66.8%) in the Opioid Recovering Group have been abstinent for the past 1-5 years, 20% in the Alcohol Recovering Group and 18.3% in the Opioid Recovering Group for the past 6-10 years. 6.8% from the Alcohol Recovering Group and 5.1% from the Opioid Recovering Group have been abstinent for the past 11-15 years and finally 1.7% from the Alcohol Recovering Group and 10.1% from the Opioid Recovering Group have been abstinent for more than 15 years.
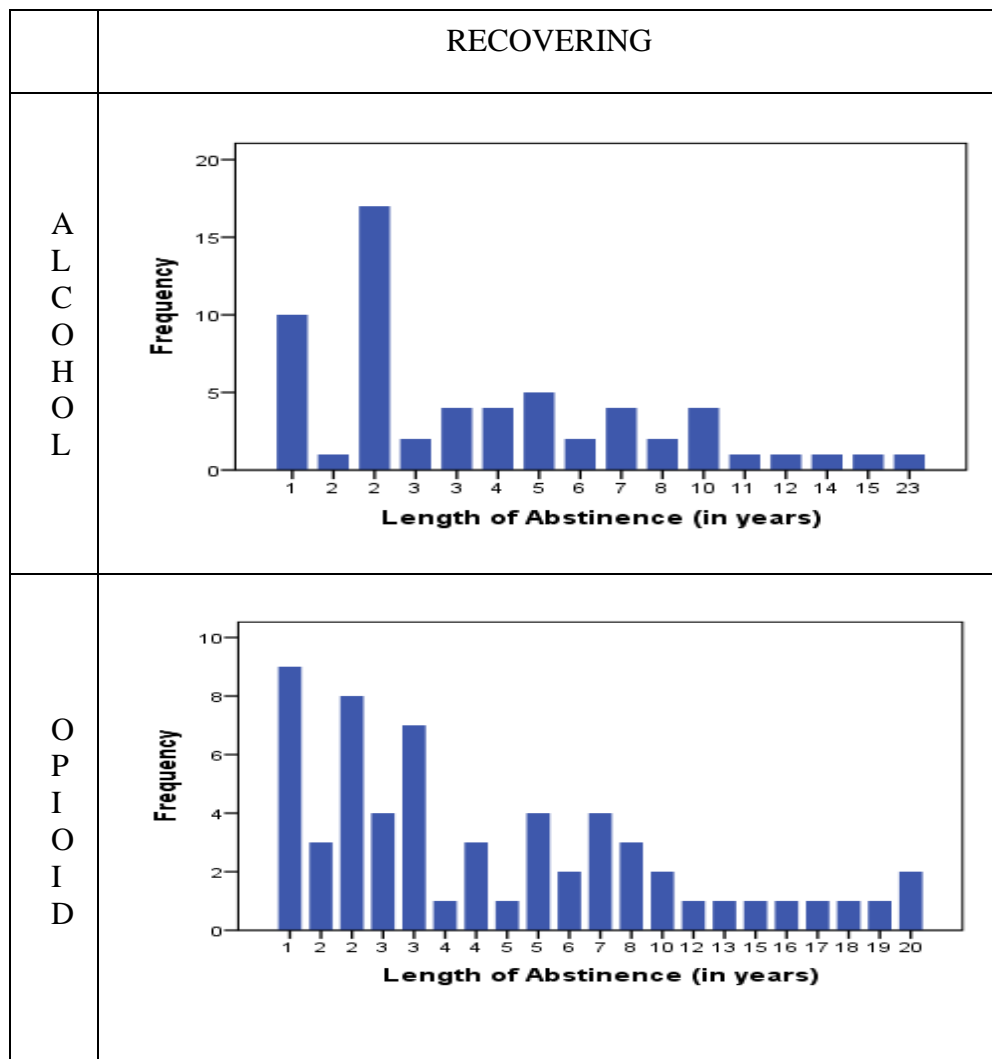
Table 1.11: Table showing length of abstinence for both Alcohol Recovering Group and Opioid Recovering Group

As for **reason for abstinence** (Table 1.12), in the Alcohol Recovering Group, majority of the participants (33.4%) reported being 'fed up' of addiction life, 23.4% cited religious reasons and another significant amount (15.1%) reported pressure from the family as reasons for abstinence. Similarly, majority of the participants (33.5%) from the Opioid Recovering Group reported being 'fed up' of addiction life, withdrawal symptoms and health problems associated to it and a considerable number of participants (20%) cited religious reasons. Rosansky & Rosenberg (2019) identified 15 relevant studies that assessed and quantified participants' expressed reasons for having abstained from substances including

alcohol and other drugs). They highlighted five reasons that were most highly endorsed such as concerns about physical health, lack of interest, harmful psychological consequences, personal beliefs/morals, and peer/family disapproval – were most frequently identified as salient across studies and substances.
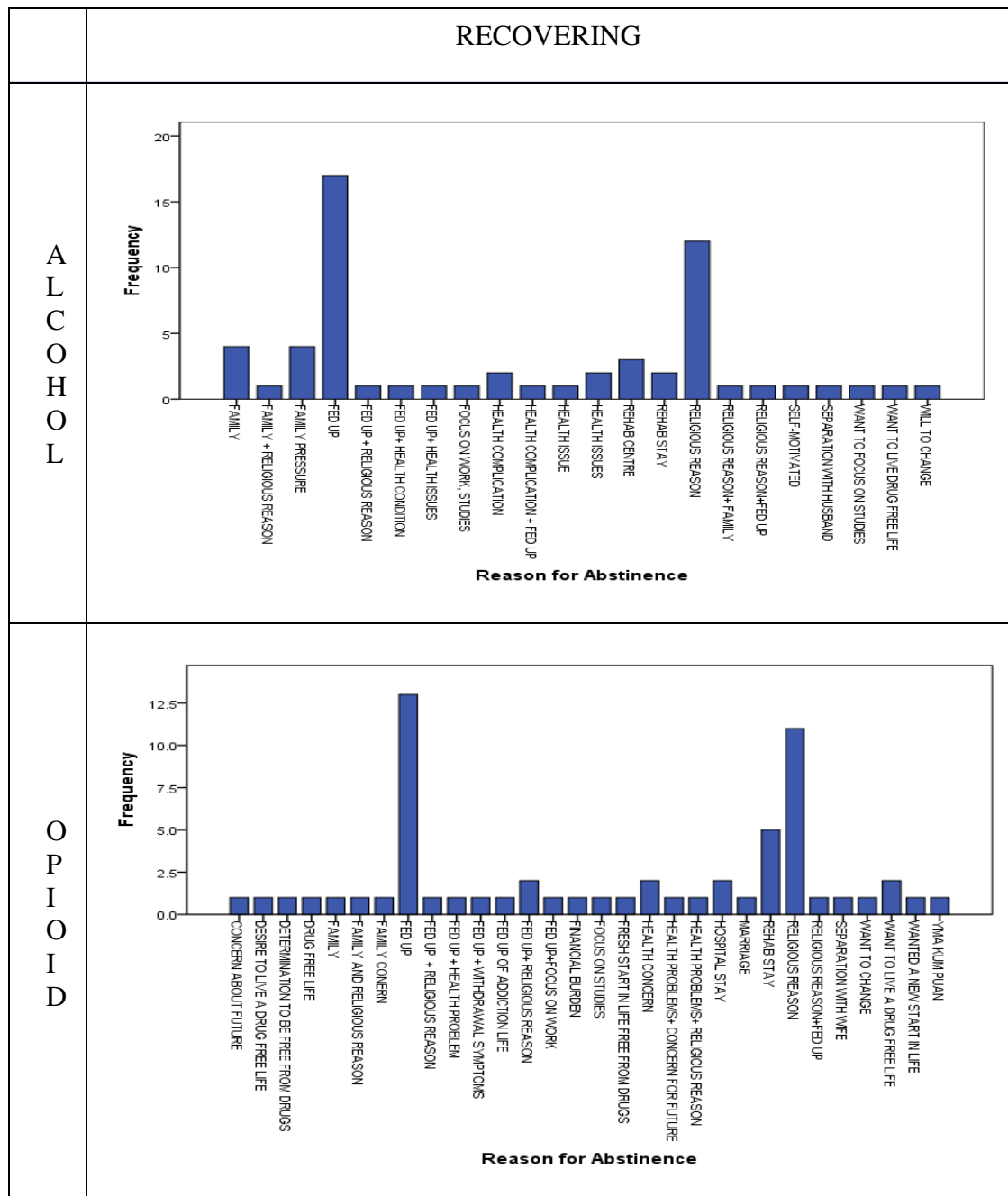
Table 1.12: Table showing reason for abstinence for both Alcohol Recovering Group and Opioid Recovering Group

To address the main objective of studying the Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environmentand Connectedness with Transcendent) and Social Support (Perceived Social Support, Negative Social Support, Instrumental Social Support and Cultural Social Support) in relation to 'Type of Substance Use' (Alcohol & Opioid Groups) and 'Status of Substance Use' (Dependent, Recovering and Non-user), subject-wise scores on the specific items of all the psychological measures of personality factors including resilience (Resiliency Scale, Siu, O.-L., Hui, C. H., Phillips, D. R., Lin, L., Wong, T.-w., & Shi, K, 2009), locus of control (Multidimensional Locus of Control Scales, Levenson, H., 1974), coping styles (Maladaptive and Adaptive Coping Style Questionnaire, Moritz, S., Jahns, A. K., Schröder, J., Berger, T., Lincoln, T. M., Klein, J. P., & Göritz, A. S., 2016), and spirituality (Spiritual Attitude and Involvement List, de JagerMeezenbroek, Eltica; Garssen, Bert; van den Berg, Machteld; Tuytel, Gerwi; van Dierendonck, Dirk; Visser, Adriaan; Schaufeli, Wilmar B. , 2012) and finally social support (Social Support Scales, Duran, B., Oetzel, J., Lucero, J., Jiang, Y., Novins, D. K., Manson, S., Beals, J., 2005) were first prepared in SPSS 22 (Statistical Package for Social Sciences, Version 22) for statistical analyses.

As parametric statistics were envisaged to be used, data were first screened, extreme outliers were deleted, mild outliers were winsorized to maintain equal sample size in each cell of the design (2 types of substance use x 3 status of substance use). The following diagnostic tests of assumptions that underlie the application of parametric tests were first checked and were found generally acceptable: linearity, normality (skewness/kurtosis, Kolmogorov-Smirnov test and Shapiro-Wilk test), homogeneity of variance (Levene's statistic, Box's test)/ homoscedasticity, and independence of errors as applicable for the groups, viz. Alcohol Dependent group, Alcohol Recovering group, Opioid Dependent group, Opioid Recovering group, and two Non-user groups. In instances where parametric assumptions were violated, appropriate non-parametric methods were resorted to. However, given the robustness of the parametric methods used, and considering the

equal sample sizes randomly generated using SPSS 22 for each cell of the design, non-significant level of diagnostic test of parametric assumptions were set at a lenient .01 level and interpreted with caution, following Fields (2016). These exercises in data screening yielded a total sample size of 360 with 60 participants in each cell of the design (2 type of substance x 3 status of substance use).

Psychometric Properties of the Behavioural Measures

Psychometric adequacy of each of the behavioural measures were first ascertained which included (i) item-total coefficients of correlation (ii) inter-scale relationships, and (i) reliability coefficients (Cronbach's Alpha) over all the different groups namely Alcohol Dependent group, Alcohol Recovering group, Opioid Dependent group, Opioid Recovering group, and two Non-user groups. Descriptive statistics comprising of Mean, *SD*, Skewness, Kurtosis and Standard Errors were also included for comparison of the test scores between the groups and to check the data distributions for further statistical analyses (Miles & Shevlin, 2004). This was followed by statistical analyses of the data using SPSS 22 to address each of the objectives and hypotheses set forth for the study. The results are given below: -

i) Resiliency Scale (Siu, O.-L., Hui, C. H., Phillips, D. R., Lin, L., Wong, T.-w., & Shi, K, 2009)

To measure resilience, Resiliency Scale by Siu *et al.,* 2009 was used where resiliency was conceptualized as a unidimensional construct representing capacity to cope with stress. It is a rating scale with 9 items whose items are presented on a six-point Likert scale (1 = very inaccurate; 6 = very accurate). A confirmatory factor analysis of the 9 items confirmed a one-factor structure, which was found to be internally consistent with Cronbach's alpha 0.90 in the standardization sample (Siu, *et al*. 2009). Results of psychometric analyses of the applicability of the Resiliency Scale among the samples may be seen in Table 1.21 and Table 1.22. In this study, except for a less than perfect reliability coefficient of .62 for the Alcohol Dependent

Group, Cronbach's Alpha ranging from .71 to .81 for all the other groups, viz. Alcohol Dependent Group, Alcohol Recovering Group, Opioid Dependent Group, Opioid Recovering Group and the two Non-user groups were found to be acceptable.

Descriptive statistics of Mean, *SD*, Skewness and Kurtosis with their Standard Errors are also given in Table 1.21 and Table 1.22. on a 6-point scale, Item mean values on Resiliency Scale for the Recovering and Non-user Groups under both Alcohol and Opioid Groups were above average (3.80 to 4.00). For the Dependent Groups, Scores on Resiliency Scale were just average (from 3.30 to 3.50). It may be noted that high score on this scale indicates ability to cope effectively with stress. Several other studies have also highlighted a negative relationship between resilience and tendency to addiction (Bahadori-Krosroshahi *et al.*, 2010; Salmabadi *et al.*, 2015; Asnaani *et al.*, 2015; Faye *et al.*, 2018 & Jebraeili *et al.*, 2019). Hence, resilience may buffer the effect of stress on the risk of addiction (Cadet, 2016). Other studies have also found that people with high resilience have better health, higher self-esteem, more social support and are less prone to substance use (Buckner *et al.*, 2003), and that becoming a member of the addicts and non-addicts groups could be predicted by the factors such as personality, identity style, spirituality, and resilience (Sutherland *et al.*, 2009; Hosseini-Almadani *et al.*, 2010; Slamabadi *et al.*, 2015; Ramezani *et al.*, 2015)

Table1.21: Cronbach's Alphas, Mean, *SD*, Skewness, Kurtosis and Standard Errors of Resiliency Scale for Dependent (n=60), Recovering (n=60) and Non-user (60) in the Alcohol Group.

Alcohol Group on Resiliency Scale			
Status	Dependent	Recovering	Non-user
Cronbach's Alpha	.62	.73	.83
Mean	3.30	4.00	3.91
SD	.72	.82	.96

Skewness	-.524	.000	-.306
Std.Error	.309	.309	.309
Kurtosis	-.900	-.546	-.508
Std.Error	.608	.608	.608

**Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 1.22: Cronbach's Alphas, Mean, *SD*, Skewness, Kurtosis and Standard Errors of Resiliency Scale for Dependent (n=60), Recovering (n=60) and Non-user (60) in the Opioid Group.

Opioid Group on Resiliency Scale			
Status	Dependent	Recovering	Non-user
Cronbach's Alpha	.71	.77	.81
Mean	3.50	3.80	3.98
SD	.92	.88	.91
Skewness Std.Error	.411	-.100	-.058
	.309	.309	.309
Kurtosis Std.Error	-.365	.221	-.441
	.608	.608	.608

**Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

ii) *Multidimensional Locus of Control Scales: (Levenson, H., 1974)*

This is an instrument for assessing the locus of control of adults. This scale is composed of three subscales namely- Internal (I), Powerful Others (P) and Chance

(C).Each of the I, P, and C scales consist of 8 items in a Likert format (6-point scale; possible range on each scale, 0- 48) which is presented to subjects as a unified attitude scale of 24 items In a nationwide sample of 3668 Greek educators collected by Kourmousi, N. *et al.*(2015), it was found that Internal consistency was satisfactory with a Cronbach's alpha above 0.70 for all LOC dimensions. Confirmatory factor analysis (CFA) confirmed that the items comprising the three subscales of the IPC LOC Scale measure the same construct. In this study, Item-total coefficients of correlations of the Multidimensional Locus of Control subscales indicated inadequate loadings resulting in low alpha reliabilities. This necessitated elimination of 1 item in Internal Scale and 2 items in Others Scale across all the groups for comparability. The retained items revealed item-total correlation coefficients ranging from .26 to .72 for the Internal Scale and .27 to .81 for Powerful Others Scale across all the groups. Since a value of 0.20 is acceptable for exploratory purposes in item-total correlation (Cristobal *et al*., 2007; Steyn *et al*., 2005), items were not further reduced considering the lowest alpha reliability was .50.

As shown in Table 1.23 and Table 1.24 below, the order of the reliability coefficients (Cronbach's Alpha) after item reduction ranged between .50 and .80 in the Internal Scale and .64 to .75 in the Powerful others scale over all the groups, viz. Alcohol Dependent Group, Alcohol Recovering Group, Opioid Dependent Group, Opioid Recovering Group and the two Non-user groups. However, the Cronbach's Alpha for the Chance Scale was still low at .39and therefore was rejected for use in this study.

The interscale relationship between Internal Scale and Powerful Others was found to be negative and significant as expected for the Opioid Recovering Group (r = -.31 at p < .01) (Table 1.24). In case of Alcohol Recovering Group, it was negligible negative (Table 1.23) and non-significant correlation (r = -.14 at p> .01) as well as in the case of the Non-user Groups, negligible negative (Table 1.23 & 1.24) and non-significant correlation (r = -.09 and r = -.06 respectively at p> .05). The interscale relationship between Internal Scale and Powerful Others was also not found to be significant in both the Dependent Group. In fact, they were negligible

positive (Table 1.3 & 1.4) and non-significant correlation ($r= .18$ at $p> .01$) among Opioid Dependent Group and negligible positive (Table 1.23) and non-significant correlation ($r= .14$ at $p> .01$) among Alcohol Dependent Group (Table 1.24). Past findings regarding locus of control among substance abusers have yielded conflicting results. Soravia *et al.* (2015) in their study suggest association between internal and external control on alcohol use during treatment, indicating that patients with low internal and low external control by staff workers show the highest rate of alcohol use during treatment, while patients with high internal and high external control demonstrate the lowest rate of alcohol use during treatment. Some studies have compared the locus of control between drug dependent individuals receiving treatment with normal controls and have found internal locus of control to be higher amongst drug dependent individuals (Dean & Edwards, 1990; Ersche *et al.*, 2012; Heidari & Ghodusi, 2016). Similar finding was seen by Huckstadt (1987) who compared alcoholics, recovering alcoholics, and non-alcoholics in a study and found significant differences among the three groups where the non-alcoholic groups scored more internally than the alcoholic or recovering alcoholic groups and the recovering alcoholic groups scored more internally than the alcoholic groups. Whereas findings on other studies have found that individuals with substance abuse scored significantly higher on external locus of control as compared to normal controls (Niazi *et al.*, 2005; Prakash *et al.*, 2015). Similarly, Dean & Edwards (1990) found that recovering alcoholics with a more powerful other health orientation tended to maintain membership with Alcoholics Anonymous for a longer period of time. In line with these contrasting findings, the results in the current findings are not surprising.

Descriptive statistics of Mean, *SD*, Skewness and Kurtosis with their Standard Errors are also given in Table 1.23 and Table 1.24 below. Item Mean values ranging from 4.14 to 4.43 on a 6-point scale in the Internal Scale imply that all the groups irrespective of type of substance use and status of substance use reported a tendency to believe outcomes are primarily related to internal factors (e.g., their own actions). The item Mean values in the Powerful Others Scale were below average (from 2.54 to 2.65) in all the groups. Meaning that there is lesser tendency to believe

their outcomes are influenced mostly by external factors (e.g., other people) however, in Alcohol Dependent group, the item mean score on Powerful Others Scale was above average and much higher than the other groups (M=3.52). Although there are conflicting findings regarding the locus of control among individuals with drug abuse, the findings of some research have indicated that individuals with substance abuse scored significantly higher on external locus of control as compared to normal controls (Niazi *et al.*, 2005; Prakash *et al.*, 2015).

Table 1.23: Inter-scale relationships, Cronbach's Alphas, Mean, *SD*, Skewness, Kurtosis and Standard Errors of Multidimensional Locus of Control Scales for Dependent (n=60), Recovering (n=60) and Non-user (60) in the Alcohol Group

	Alcohol Group on Multidimensional Locus of Control Scales								
Status	Dependent			Recovering			Non-user		
Scale	Internal Scale	Powerful others Scale	Chance scale	Internal Scale	Powerful others Scale	Chance scale	Internal Scale	Powerful others Scale	Chance scale
Internal Scale	1			1			1		
Powerful others	.140	1		-.142	1		-.091	1	
Chance	.236	.366**	1	.063	.292*	1	.403**	.380**	1
Cronbach's Alpha	.80	.72	.64	.55	.64	.39	.50	.76	.64
Mean	4.35	3.52	4.37	4.43	2.65	3.87	4.14	2.44	3.40
SD	1.162	1.27	1.01	.69	.84	.57	.75	.89	.83
Skewness Std.Error	.076	-.142	-.289	.091	.393	-.027	-.251	1.092	-.148
	.309	.309	.309	.309	.309	.309	.309	.309	.309
Kurtosis Std.Error	-.749	-.113	.029	-.117	.008	.086	-.508	1.100	-.554
	.608	.608	.608	.608	.608	.608	.608	.608	.608

**Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 1.24: Inter-scale relationships, Cronbach's Alphas, Mean, *SD*, Skewness, Kurtosis and Standard Errors of Multidimensional Locus of Control Scales for, Dependent (n=60), Recovering (n=60) and Non-user (60) in the Opioid Group.

Opioid Group on Multidimensional Locus of Control Scales								
Status	Dependent			Recovering			Non-user		
Scale	Internal Scale	Powerful others Scale	Chance scale	Internal Scale	Powerful others Scale	Chance scale	Internal Scale	Powerful others Scale	Chance scale
Internal Scale	1			1			1		
Powerful others	.181	1		-.310*	1		-.060	1	
Chance	.257*	.024	1	.040	.372**	1	.101	.503**	1
Cronbach's Alpha	.54	.68	.74	.70	.65	.58	.54	.75	.64
Mean	4.41	2.78	4.34	4.29	2.77	3.81	4.14	2.54	3.43
SD	.85	1.07	.81	.87	.85	.66	.67	.94	.76
Skewness Std.Error	-.773	.087	-.204	-1.019	.582	-.625	-.346	1.047	.332
	.309	.309	.309	.309	.309	.309	.309	.309	.309
Kurtosis Std.Error	.405	-.655	.187	1.556	.669	.918	-.067	1.223	.183
	.608	.608	.608	.608	.608	.608	.608	.608	.608

**Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at th 0.05 level (2-tailed).

iii) Maladaptive and Adaptive Coping Style Questionnaire (MAX): (Moritz, S., Jahns, A. K., Schröder, J., Berger, T., Lincoln, T. M., Klein, J. P., & Göritz, A. S., 2016).

The purpose of the Maladaptive and Adaptive Coping Style Questionnaire was to assess coping profiles across different psychopathological syndromes covering adaptive coping, maladaptive coping and avoidance. Items were answered on a 4-point Likert scale: not true (=1), rather not true (=2), rather true (=3), true (=4). Principal component analysis resulted in the extraction of 3 components: adaptive coping (including acceptance, re-appraisal) and consisted of 9 items, maladaptive coping (including rumination, self-blaming attributional style, catastrophizing, low self-esteem) and consisted of 7 items, and finally avoidance including suppression, hiding expressions and consisted of 3 items. The test-retest reliability done by Moritz *et al*. (2015) was good for maladaptive coping (r=.75) and satisfactory for adaptive coping and avoidance (around r=.6) on a sample of 2200 individuals from the general population who participated in an online survey.

In the current study, Item-total coefficients of correlations of the Maladaptive and Adaptive Coping Style Questionnaire (MAX) subscales indicated inadequate loadings resulting in low alpha reliabilities. This necessitated elimination of 2 items in Adaptive Coping and Maladaptive Coping respectively across all the groups. The retained items revealed item-total correlation coefficients ranging from .35 to .79 for the Adaptive Coping and .54 to .83 for Maladaptive Coping across all the groups. Since a value of 0.20 is acceptable for exploratory purposes in item-total correlation, items were not further reduced considering the alpha reliability of $> .50$. (Cristobal *et al*., 2007; Steyn *et al*., 2005). As shown in Table 1.25 and Table 1.26 below, the reliability coefficients (Cronbach's Alpha) after item reduction ranged between .65 and .80 in the Adaptive Coping and .62 to .84 in the Maladaptive Coping over all the six groups, viz. Alcohol Dependent Group, Alcohol Recovering Group, Opioid Dependent Group, Opioid Recovering Group and the two Non-user groups. However, the Cronbach's Alpha for the Avoidance was low (less than 0.5 in the Alcohol Groups) and cannot be used for further analysis.

The interscale relationship between Adaptive Coping and Maladaptive Coping was found to be negative and significant as expected for the Non-user Group ($r = -.39$, $r = -.44$ at $p < .01$). However, in the case of Alcohol Recovering Group, it was negligible negative (Table 1.25) and non-significant correlation ($r = -.17$ at $p>$

.01) as well as in the case of Opioid Recovering Group, negligible negative (Table 1.26) and non-significant correlation ($r = -.05$ at $p> .05$) and similar findings can be seen in the Opioid Dependent Group with negligible negative (Table 1.26) and non-significant correlation ($r= -.16$ at $p> .01$). While Lazarus and Folkman (1984) have argued that coping strategies are neither good nor bad and that a certain type of strategy, while effective in one situation may not be effective in another. Others like Ding *et al.* (2015) have found that individuals who apply negative coping style often express distortion of thinking, make negative appraisals and inappropriate self-evaluation (e.g., feeling their inability to deal with problems). They minimize distress by focusing on negative thoughts (e.g., rumination) and attempt to escape stressful situations (e.g. through use of avoidance, denial, and wishful thinking). Problem-focused coping strategies are more often reported to have better adjustment outcomes than emotion-focused coping (Compas *et al.*, 2001). Pence *et al.* (2008) found that stronger adaptive coping strategies (such as coping through action and coping through relying on religion) were the most consistent predictor of less frequent alcohol and drug use. It was also found that stronger maladaptive coping strategies predicted greater frequency of drinking to intoxication. In the same vein, Wynn (2017) also indicated that utilization of functional coping strategies is a statistically significant predictor of lower levels of alcohol consumption.

Descriptive statistics of mean, *SD*, Skewness and Kurtosis with their standard errors are also given in Table 1.25 and Table 1.26. Item mean values for Alcohol Recovering Group indicated a higher Adaptive Coping level (M=3.15) as compared to Maladaptive Coping (M=2.42), while for the Dependent Group, adaptive and maladaptive coping levels were also similar (M=2.92 and 2.85 respectively). Item mean values for Opioid Recovering Group indicated a more or less similar levels of adaptive (M=2.94) and maladaptive (M=2.56) coping patterns. For the Dependent Group, adaptive and maladaptive coping levels were also similar (M=2.88 and 2.79 respectively). For the Non-user Groups, adaptive coping level was high (M=3.34 and 3.18 respectively) and maladaptive coping level was only average (M=2.0 and 2.04 respectively). Sarada & Radharani (2017) compared the coping strategies among abstinent and relapsed individuals with alcohol dependence and the results showed

that patients in the relapsed group tend to use more maladaptive strategies (negative thinking) (P<0.01) and less adaptive strategies such as positive thinking (P<0.01) as compared to the abstinent group. A study on the relationship between coping strategies and drinking behavior using regression analyses has revealed that sensitivity to reward, avoidant and emotion-focused coping strategies were positively related to drinking behavior and negatively related to problem-focused coping (Feil & Hasking, 2008). A'zami *et al*. (2015) also found that substance-dependent individuals applied emotion-focused coping more than the healthy ones, and the latter applied problem-focused strategies more.

Table 1.25: Inter-scale relationships, Cronbach's Alphas, Mean, *SD*, Skewness, Kurtosis and Standard Errors of Maladaptive and Adaptive Coping Style Questionnaire (MAX) for Dependent (n=60), Recovering (n=60) and Non-user (60) in the Alcohol Group.

Alcohol Group on Maladaptive and Adaptive Coping Style Questionnaire (MAX)									
Status	Dependent			Recovering			Non-user		
Scale	Adaptive	Maladaptive	Avoidance	Adaptive	Maladaptive	Avoidance	Adaptive	Maladaptive	Avoidance
Adaptive	1			1			1		
Maladaptive	.125	1		-.167	1		-.436**	1	
Avoidance	-.101	.361**	1	.073	.180	1	-.028	.181	1
Cronbach's Alpha	.69	.62	.49	.68	.70	.33	.80	.84	.64
Mean	2.92	2.85	3.03	3.15	2.42	3.08	3.34	2.00	2.65
SD	.46	.66	.66	.07	.09	.07	.70	.84	.78
Skewness Std.Error	-.324	.168	-.036	.092	.152	.096	-.600	.525	-.186
	.309	.309	.309	.309	.309	.309	.309	.309	.309
Kurtosis Std.Error	1.736	-.662	-.643	.211	-.078	.649	-.763	-.271	-.234
	.608	.608	.608	.608	.608	.608	.608	.608	.608

**Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 1.26: Inter-scale relationships, Cronach's Alphas, Mean, *SD*, Skewness, Kurtosis and Standard Errors of Maladaptive and Adaptive Coping Style Questionnaire (MAX) for Dependent (n=60), Recovering (n=60) and Non-user (60) in the Opioid Group.

	Opioid Group on Maladaptive and Adaptive Coping Style Questionnaire MAX								
Status	Dependent			Recovering			Non-user		
Scale	Adaptive	Maladaptive	Avoidance	Adaptive	Maladaptive	Avoidance	Adaptive	Maladaptive	Avoidance
Adaptive	1			1			1		
Maladaptive	-.157	1		-.054	1		-.393[**]	1	
Avoidance	.074	.344[**]	1	.001	.476[**]	1	-.001	.427[**]	1
Cronbach's Alpha	.67	.75	.55	.65	.83	.53	.79	.84	.63
Mean	2.88	2.79	3.11	2.94	2.57	2.66	3.18	2.04	2.62
SD	.58	.74	.68	.53	.84	.75	.54	.75	.67
Skewness Std.Error	-.215	-.428	-1.006	-.362	.098	-.575	-.548	.527	-.173
	.309	.309	.309	.309	.309	.309	.309	.309	.309
Kurtosis Std.Error	-.288	-.418	.670	.480	-.865	.260	-.378	-.599	-.165
	.608	.608	.608	.608	.608	.608	.608	.608	.608

**Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

iv) Spiritual Attitude and Involvement List (SAIL):*(De JagerMeezenbroek, E., Garssen, B., van den Berg, M., Tuytel, G., van Dierendonck, D., Visser, A., & Schaufeli, W. B., 2012).*

The 26-item Spiritual Attitude and Involvement List (SAIL) was developed (***de JagerMeezenbroek et al., 2012***) to examine spirituality among religious and nonreligious people. It has 7 subscales: Meaningfulness (3 items), Trust (4 items), Acceptance (4 items), Caring for Others (4 items), Connectedness with Nature (2 items), Transcendent Experiences (5 items), and Spiritual Activities (4 items). For

most items, a Likert-type scale ranging from 1 (not at all) to 6 (to a very high degree) is used. For the subscale Transcendent Experiences and the last 3 items of the subscale Spiritual Activities, a Likert-type scale ranging from 1 (never) to 6 (very often) is used. The SAIL was divided into three main dimensions: Connectedness with Oneself (including subscales Meaningfulness, Trust and Acceptance), Connectedness with The Environment (including Caring for others and Connectedness with Nature), and Connectedness with the Transcendent (including Transcendent Experiences and Spiritual Activities) (de JagerMeezenbroek *et al*., 2012). de Jager Meezenbroek *et al*. (2012) determined the internal consistency of each scale nine times in four samples namely two samples of healthy adults (healthy population=52, healthy interested=222), curative cancer sample (n=134) and palliative cancer group (n=48) and found Mean Cronbach's Alphas across these nine measurements raging between .73 to .86.

In this current study, Item-total coefficients of correlations of the Spiritual Attitude and Involvement List (SAIL) dimensions ranged from .21 to .76 in the Connectedness with Oneself dimension, between .26 to .83 in the Connectedness with Environment (Caring for Others) dimension and between .26 to .82 in the Connectedness with Transcendent dimension. Since a value of 0.20 is acceptable for exploratory purposes in item-total correlation, no reduction of items were done considering the alpha reliability of $> .50$. (Cristobal *et al*., 2007; Steyn *et al*., 2005).

The reliability coefficients showed acceptable Cronbach's Alpha ranges between .65 to .87 for Connectedness with Oneself dimension, between .63 to .82 for Connectedness with Environment (Caring for others) and between .69 to .86 for Connectedness with The Transcendent across all the groups- Alcohol Dependent Group, Alcohol Recovering Group, Opioid Dependent Group, Opioid Recovering Group and the two Control non-users groups. Connectedness with Nature subscale which was a part of the Connectedness with the Environment dimension had a low Cronbach's Alpha .22 in the Opioid Recovering Group, -.05 in the Alcohol Recovering Group and .31 in the Opioid Dependent Group so it could not be used for further analysis (Table 1.27 & 1.28).

The interscale relationship between Connectedness with Oneself and all the other SAIL subscales namely Connectedness with Environment (Caring for Others, Connectedness with Nature) and Connectedness with Transcendent was significantly positive with correlation coefficients ranging from .31 to .77 across all the sample groups (Table 1.27 & 1.28). This finding is not surprising considering the term spirituality includes but has evolved beyond its religious connotation to address experiences that bring a heightened sense of meaning and purpose in one's life (Canda & Furman, 1999; Steger & Frazier, 2005).

The relationship between Connectedness with Others and Connectedness with Transcendent was also significantly positive with correlation coefficients ranging from .30 to .68 across all the sample groups (Table 1.27 & 1.28). This finding is in line with the understanding that Spirituality is defined as 'one's striving for and experience of connection with the essence of life', which includes three main dimensions namely connectedness with oneself, connectedness with others and nature, and connectedness with the transcendent (De JagerMeezenbroek *et al.*, 2012). The term spirituality is also understood to imply the human longing for a sense of meaning and fulfillment with the help of morally satisfying relationships between individuals, families, communities, cultures, and religions (Canda and Furman, 1999).

Descriptive statistics of Mean, *SD*, Skewness and Kurtosis with their Standard Errors are also given in Table 1.27 and Table 1.28. Item Mean values ranging from 4.19 to 4.89 on a 6-point scale ranging from 1 (not at all) to 6 (to a very high degree) in the Connectedness with Oneself (including subscales Meaningfulness, Trust and Acceptance) and Connectedness with The Environment (Caring for others) dimension may indicate that in all the groups, the need for Connectedness with Oneself by experiencing meaning in life, having trust and acceptance as well as connecting with others by being compassionate and caring is particularly high. These high average scores as expected from the Mizo community as it may be noted that Mizoram is uniquely characterized by the presence of community-based organisations (CBOs) (Lalmuanpuii, 2004; Patnaik, 2008) to

which all Mizos are socially obligated to be a member as well as contribute for its functioning. As for the connectedness with the transcendent (including Transcendent Experiences and Spiritual Activities) dimension, the item Mean values ranging from 3.88 to 4.56 on a 6 –point scale ranging from 1 (never) to 6 (very often) may be a good indicator of experiencing connectedness with the transcendent includes connectedness with something or someone beyond the human level, such as the universe, transcendent reality, a higher power, or God as well as participating in spiritual activities.

Table 1.27: Inter-scale relationships, Cronbach's Alphas, Mean, *SD*, Skewness, Kurtosis and Standard Errors of Spiritual Attitude and Involvement List (SAIL) for Dependent (n=60), Recovering (n=60) and Non-user (60) in the Alcohol Group.

	Alcohol Group on Spiritual Attitude and Involvement List (SAIL)											
Status	Dependent				Recovering				Non-user			
Scale	Oneself	Others	Nature	Transcendent	Oneself	Others	Nature	Transcendent	Oneself	Others	Nature	Transcendent
Oneself	1				1				1			
Others	.458**	1			.572**	1			.652**	1		
Nature	.390**	.041	1		.318*	.171	1		.378**	.443**	1	
Transcendent	.475**	.300*	.472**	1	.493**	.679**	.203	1	.396**	.469**	.361**	1
Cronbach's Alpha	.79	.69	.68	.73	.84	.78	-.05	.86	.81	.71	.64	.69
Mean	4.62	4.80	4.13	4.47	4.32	4.37	3.98	3.88	4.85	5.08	4.70	4.76
SD	.69	.92	.93	.83	.79	.84	1.17	.64	.63	.81	1.15	.59
Skewness Std.Error	.211	.436	.099	.104	.042	-.131	.251	-.346	-.702	-.932	-.475	-.844
	.309	.309	.309	.309	.309	.309	.309	.309	.309	.309	.309	.309
Kurtosis Std.Error	-.265	.601	-.316	-.507	-.193	-.945	.880	.387	1.475	2.012	.553	1.436
	.608	.608	.608	.608	.608	.608	.608	.608	.608	.608	.608	.608

**Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 1.28: Inter-scale relationships, Cronbach's Alphas, Mean, *SD*, Skewness, Kurtosis and Standard Errors of Spiritual Attitude and Involvement List (SAIL) for Dependent (n=60), Recovering (n=60) and Non-user (60) in the Opioid Group

| | Opioid Group on Spiritual Attitude and Involvement List (SAIL) | | | | | | | | | | | |
| Status | Dependent | | | | Recovering | | | | Non-user | | | |
Scale	Oneself	Others	Nature	Transcendent	Oneself	Others	Nature	Transcendent	Oneself	Others	Nature	Transcendent
Oneself	1				1				1			
Others	.665**	1			.703**	1			.584**	1		
Nature	.343**	.257*	1		.314*	.074	1		.473**	.379**	1	
Transcendent	.688**	.445**	.575**	1	.775**	.615**	.231	1	.502**	.553**	.447**	1
Cronbach's Alpha	.65	.63	.31	.77	.87	.82	.22	.78	.80	.73	.64	.80
Mean	4.19	4.42	3.70	3.98	4.67	4.76	3.95	4.55	4.84	4.89	4.59	4.56
SD	.54	.74	1.15	.76	.65	.96	.96	.92	.56	.68	1.06	.67
Skewness Std.Error	-.520	.198	.055	-.104	-.150	-.451	.147	-.485	-.283	-.613	-.325	-.506
	.309	.309	.309	.309	.309	.309	.309	.309	.309	.309	.309	.309
Kurtosis Std.Error	-.073	-.231	.065	-.237	-.184	-1.113	-.388	-.321	.228	.147	-.478	-.044
	.608	.608	.608	.608	.608	.608	.608	.608	.608	.608	.608	.608

**Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

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v) Social Support Scales: (Duran, B., Oetzel, J., Lucero, J., Jiang, Y., Novins, D. K., Manson, S., Beals, J., 2005)

This scale measures 4 categories of social support with 20 items. The first category is Perceived Social Support (the perception of emotional and appraisal support and consists of 6 items. The second category is Negative Social Support (criticism) and consists of 6 items. The third category is Instrumental Social Support (tangible aid) which consists of 5 items and finally, Cultural Social Support (feelings of isolation) which comprises of 3 items. The responses are provided using a yes/no format and 3-point scale was used (e.g., "often," "sometimes," "never").Internal consistencies for each of the 4 measures were established in a sample of American Indians by Duran *et al*. (2005). The reliabilities were found to be as follows- perceived support (.86), negative support (.77), instrumental support (.74), and cultural support (.62) (Duran *et al*., 2005).

Item-total coefficients of correlations of the Social Support Scales indicated inadequate loadings in the Instrumental Social Support subscale resulting in low alpha reliabilities. This necessitated elimination of 3 items in this subscale. The retained items revealed item-total correlation coefficients ranging from .58 to .82 for the Instrumental Social Support subscale across all the groups. No item reduction was done for Perceived Social Support subscale whose item-total coefficients of correlation ranged from .44 to .79.

As shown in Table 1.29 and Table 1.30 below, the reliability coefficients (Cronbach's Alpha) ranged between .70 and .84 in Perceived Social Support and .56 to .89 in Instrumental Social Support over all the six groups, viz. Alcohol Dependent Group, Alcohol Recovering Group, Opioid Dependent Group, Opioid Recovering Group and the two Non-user groups. However, the Cronbach's Alpha for the Negative Social Support and Cultural Social Support were low (less than 0.5 in the Dependent and Recovering Groups from both Opioid and Alcohol Groups) and cannot be used for further analysis.

The interscale relationship between Perceived Social Support and Instrumental Social Support was found to be positive and significant as expected only in the Opioid Dependent Group ($r = .31$ at $p < .01$). Related findings have indicated similar results whereby low social support and lack of perceived adequacy of social support have been linked to poorer mental and physical health (Allgower *et al.,* 2001; Decker, 2007). In all the other cases, relationship between Perceived Social Support and Instrumental Social Support ranged from .23 to .18 which was negligible positive (Table 1.29 & 1.30) and non-significant correlation. Although social support has been broadly understood by Colvin *et al*. (2002) as "the perceived or actual instrumental and/or expressive provisions supplied by community, social network, and confiding partners", in this particular study, there does not appear to be strong relationship between perceived social support and instrumental social support. Previous studies have also found that Perceived social support has greater impact on treatment success and recovery compared to received social support (Eom *et al*., 2013; Khalil & Abed, 2014; Zhou *et al*., 2015). Another reason why there is no significant relationship between perceived social support and instrumental social support maybe that Social support may have both positive as well as negative effects on health and well-being (Cohen & Syme, 1985). Not all studies of social support have found an inverse relationship with psychological dysfunction. Chadda (1995) has argued that the relationship between social support and psychological dysfunction is complex because certain aspects of social support have a healthy relationship while others can have an unhealthy relationship. Interestingly, research has also found that relationships can serve as a risk-factor if it is conflict-filled (Cummings *et al*., 1980) and when there is drug use in the social network of the individual especially within the family (Hawkins *et al*., 1992). So, one can say that social networks and relationships not only serve as protective factors, it can also serve as risk factors especially in the field of substance abuse. Hence, explaining the relationship between Perceived Social Support and Instrumental Social Support.

Descriptive statistics of Mean, *SD*, Skewness and Kurtosis with their Standard Errors are also given below in Table 1.29 and Table 1.30. Item Mean values ranging from 2.25 to 2.73 on a 3-point scale ("often," with a score of 3 "sometimes,"

with a score of 2 and "never" with a score of 1) in the Perceived Social Support which may imply that the all the groups irrespective of type of substance use and status of substance use have a good perception of emotional and appraisal support. In the Instrumental Social Support, the item mean values ranging from 1.62 to 1.92 provided using a Yes/No format (Yes with a score of 2 and No with a score of 1) indicated that in all the groups, there was a good indication of the presence of instrumental support(tangible aid) from others. The higher-than-average Mean in Social Support is not surprising amongst the Mizo community. In the close-knit Mizo Society, voluntary organizations have been found to be a very effective means of rendering several social services to society. For example, there is a system of voluntary labour called *hnatlang* (free altruistic service for Public work) which continue to still exist today. When *hnatlang* is called for a work either for a village or for an individual, one member from each family of a village would participate in *hnatlang* (Siama, V.L., 1965). Another related concept is "*Tlawmngaihna*" which is a moral and ethical norm of Mizo society. As Zawla (1989) puts it - "it (*tlawmngaihna*)is to deny and sacrifice oneself to help individuals and society in times of troubles, hardships without expecting honour in return and act without one's own profit" and it encompasses integrity, endurance, courage, sincerity, humility and kindness (Ralte, 2017).

Table 1.29: Inter-scale relationships, Cronbach's Alphas, Mean, *SD*, Skewness, Kurtosis and Standard Errors of Social Support Scales for Dependent (n=60), Recovering (n=60) and Non-user (60) in the Alcohol Group.

	Alcohol Group on Social Support Scales											
Status	Dependent				Recovering				Non-user			
Scale	Perceived	Negative	Instrumental	Cultural	Perceived	Negative	Instrumental	Cultural	Perceived	Negative	Instrumental	Cultural
Perceived	1				1				1			
Negative	.041	1			-.138	1			-.071	1		
Instrumental	.177	.076	1		.035	-.053	1		-.064	-.028	1	
Cultural	.113	-.275*	.165	1	.283*	.015	.015	1	.121	.019	-.126	1
Cronbach's Alpha	.71	.31	.56	.34	.70	.36	.67	.41	.84	.64	.55	.66
Mean	2.25	2.05	1.90	1.90	2.73	1.95	1.95	2.37	2.78	1.94	1.98	2.39
SD	.47	.22	.30	.48	.45	.22	.22	.52	.45	.30	.13	.64
Skewness Std.Error	.680	4.236	-2.736	-.311	-1.083	-4.236	-4.236	.189	-1.929	-1.513	-7.746	-.575
	.309	.309	.309	.309	.309	.309	.309	.309	.309	.309	.309	.309
Kurtosis Std.Error	-.304	16.494	5.671	1.360	-.858	16.494	16.494	-1.142	3.095	7.188	60.000	-.547
	.608	.608	.608	.608	.608	.608	.608	.608	.608	.608	.608	.608

**Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 1.30: Inter-scale relationships, Cronbach's Alphas, Mean, *SD*, Skewness, Kurtosis and Standard Errors of Social Support Scales for Dependent (n=60), Recovering (n=60) and Non-user (60) in the Opioid Group.

	Opioid Group on Social Support Scales											
Status	Dependent				Recovering				Non-user			
Scale	Perceived	Negative	Instrumental	Cultural	Perceived	Negative	Instrumental	Cultural	Perceived	Negative	Instrumental	Cultural
Perceived	1				1				1			
Negative	.129	1			-.372**	1			-.112	1		
Instrumental	.313*	-.082	1		.023	.111	1		.045	.084	1	
Cultural	.294*	-.168	.292*	1	.287*	.084	.144	1	.332**	-.065	.003	1
Cronbach's Alpha	.71	-.10	.86	.39	.79	.34	.73	.53	.80	.66	.89	.56
Mean	2.44	2.10	1.62	1.82	2.40	2.05	1.87	2.09	2.67	1.89	1.96	2.47
SD	.35	.19	.46	.42	.42	.30	.24	.47	.33	.32	.19	.42
Skewness Std.Error	-.340	.177	-.526	.172	-.932	-.210	-2.155	-.046	-.940	-.361	-4.683	-.366
	.309	.309	.309	.309	.309	.309	.309	.309	.309	.309	.309	.309
Kurtosis Std.Error	-.332	-.543	-1.619	.164	.814	.216	3.357	-.410	.061	.045	21.39	-.864
	.608	.608	.608	.608	.608	.608	.608	.608	.608	.608	.608	.608

**Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Personality, Spirituality, and Social Support in Substance Use Disorders

Given the psychometric adequacy of the psychological measures used in this study, the first three objectives and hypotheses of the study to be addressed may be briefly reiterated here.

1. The first objective of studying the differences in Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment, Connectedness with Transcendent), and Social Support (Perceived and Instrumental) in the two 'Type of Substance Use' (Alcohol or Opioid Dependent and Recovering groups separately) was put forth as it has often been observed that the behaviour of people addicted to hard drugs like opioid are quite different from the people addicted to alcohol substance. It was, therefore, hypothesized that there will be significant differences between Alcohol Dependent and Opioid Dependent and Alcohol Recovering and Opioid Recovering on measures of Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment, Connectedness with Transcendent), and Social Support (Perceived and Instrumental).

2. The second objective of studying the differences based on the 'Status of Substance Use' (Dependent, Recovering, and Non-user) on Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment-Caring for Others, Connectedness with Transcendent), and Social Support (Perceived and Instrumental) separately in the Alcohol Group and Opioid Group was put forth as the measures of these dependent variables were expected to be different based on whether they are dependent users, abstaining from use, or not using substances at all, factors that may be assumed to sustain or help in the addiction or rehabilitation process among the substance users.

3. The third objective of comparing the patterns of the dependent (2 Types of Substances x 3 Status of Substance Use) based on the 'Status of Substance Use' (Dependent, Recovering and Non-user) in the two 'Type of Substance Use'

(Opioid or Alcohol) on Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment-Caring for Others, Connectedness with Transcendent), and Social Support (Perceived Social Support and Instrumental Social Support) was put forth as these variables were expected to differ based on the status of use under the two types of substances used. However, the ways in which the differences would emerge were exploratory.

These first three objectives of delineating the differences in the dependent variables of Personality, Spirituality, and Social Support together according to the 'Type of Substance used' (Alcohol and Opioid), the 'Status of Substance Use' (Dependent, Recovering, Non-user), and their interaction effects were first looked into using 2 x 3 (2 Types of Substances x 3 Status of Substance Use) factorial Multivariate Analysis of variance (MANOVA). The results of the Box's Test of Equality of Covariance Matrices, Multivariate Tests, Tests of Between-Subjects Effects are given it Tables 2.1, 2.2, and 2.4. As Box's Test revealed a significant unequal covariance matrices of the dependent variables, Pillai's Trace in significant Multivariate Test was interpreted (instead of Wilk's Lambda), which indicated significant main effects of 'Type of Substance Use', 'Status of Substance Use', and their interaction effects. Levene's test of Homogeneity of Variance indicated instances of significance in measures of Internal Locus of Control and Instrumental Social Support at a liberal cut off set at .001 level for significance of diagnostic tests of parametric assumptions. A cautious interpretation of the results of Tests of Between-Subjects Effects indicated significant differences in Adaptive Coping, Perceived Social Support, and Instrumental Social Support according to 'Type of Substance Use'. Significant effect of 'Status of Substance Use' is also seen in all the dependent variables of Personality, Spirituality, and Social Support. Further, interaction effects were also evident in measures of Powerful Others Locus of Control and Instrumental Social Support as seen in the Tables 2.1, 2.2, 2.4. given below.

Table 2.1: Results of the Box's Test of Equality of Covariance Matrices

Box's Test of Equality of Covariance Matrices[a]

Box's M	584.895
F	1.978
df1	275
df2	188553.673
Sig.	.000

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept + SUBTYPE + STATUSOFSUBS + SUBTYPE * STATUSOFSUBS

Table 2.2: Results of Multivariate Tests

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
SUBTYPE	Pillai's Trace	.071	2.633[b]	10.000	345.000	.004	.071
	Wilks' Lambda	.929	2.633[b]	10.000	345.000	.004	.071
	Hotelling's Trace	.076	2.633[b]	10.000	345.000	.004	.071
	Roy's Largest Root	.076	2.633[b]	10.000	345.000	.004	.071

STATUS OF SUBSTANCE	Pillai's Trace	.411	8.943	20.000	692.000	.000	.205
	Wilks' Lambda	.609	9.723[b]	20.000	690.000	.000	.220
	Hotelling's Trace	.611	10.513	20.000	688.000	.000	.234
	Roy's Largest Root	.554	19.158[c]	10.000	346.000	.000	.356
SUBTYPE * STATUS OF SUBSTANCE	Pillai's Trace	.125	2.307	20.000	692.000	.001	.063
	Wilks' Lambda	.878	2.323[b]	20.000	690.000	.001	.063
	Hotelling's Trace	.136	2.338	20.000	688.000	.001	.064
	Roy's Largest Root	.105	3.633[c]	10.000	346.000	.000	.095

a. Design: Intercept + SUBTYPE + STATUSOFSUBS + SUBTYPE * STATUSOFSUBS

b. Exact statistic

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

Table 2.3: Levene's test of Homogeneity of Variance

Levene's Test of Equality of Error Variances[a]

	F	df1	df2	Sig.
Resilience	2.032	5	354	.074
Internal LOC	6.525	5	354	.000
Powerful Others LOC	2.521	5	354	.029
Adaptive Coping	4.962	5	354	.000
Maladaptive Coping	1.515	5	354	.184
Connect with Oneself	2.112	5	354	.063
Caring for Others	2.839	5	354	.016
Connect with Transcendent	3.296	5	354	.006
Perceived Social Support	2.779	5	354	.018
Instrumental Social Support	39.670	5	354	.000

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + SUBTYPE + STATUSOFSUBS + SUBTYPE * STATUSOFSUBS

Table 2.4: Results of Tests of Between-Subjects Effects

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
SUBTYPE	Resilience	.014	1	.014	.019	.890	.000
	Internal LOC	.110	1	.110	.155	.694	.000
	Powerful Others LOC	2.964	1	2.964	3.102	.079	.009
	Adaptive Coping	1.776	1	1.776	5.640	**.018**	.016
	Maladaptive Coping	.152	1	.152	.274	.601	.001
	Connect with Oneself	.031	1	.031	.077	.781	.000
	Caring for Others	.021	1	.021	.032	.858	.000
	Connect with Transcendent	.023	1	.023	.043	.836	.000
	Perceived Social Support	1.130	1	1.130	8.241	**.004**	.023
	Instrumental Social Support	.584	1	.584	6.622	**.010**	.018
STATUSOF SUBS	Resilience	18.305	2	9.152	12.682	**.000**	.067
	Internal LOC	4.334	2	2.167	3.066	**.048**	.017
	Powerful Others LOC	25.189	2	12.595	13.182	**.000**	.069

		Value	df	Mean Square	F	Sig.	Eta
	Adaptive Coping	7.004	2	3.502	11.119	**.000**	.059
	Maladaptive Coping	38.341	2	19.170	34.590	**.000**	.163
	Connect with Oneself	22.255	2	11.127	27.355	**.000**	.134
	Caring for Others	23.551	2	11.776	18.020	**.000**	.092
	Connect with Transcendent	31.464	2	15.732	29.059	**.000**	.141
	Perceived Social Support	6.200	2	3.100	22.615	**.000**	.113
	Instrumental Social Support	4.172	2	2.086	23.654	**.000**	.118
	Resilience	1.691	2	.846	1.172	.311	.007
	Internal LOC	.863	2	.431	.610	.544	.003
	Powerful Others LOC	11.871	2	5.935	6.212	**.002**	.034
	Adaptive Coping	.145	2	.073	.231	.794	.001
SUBTYPE * STATUSOF SUBS	Maladaptive Coping	.468	2	.234	.422	.656	.002
	Connect with Oneself	.346	2	.173	.425	.654	.002
	Caring for Others	1.485	2	.742	1.136	.322	.006
	Connect with Transcendent	1.556	2	.778	1.437	.239	.008
	Perceived Social Support	1.986	2	.993	7.245	**.001**	.039
	Instrumental Social Support	.406	2	.203	2.299	.102	.013

a. R Squared = .073 (Adjusted R Squared = .060)

b. R Squared = .021 (Adjusted R Squared = .007)

c. R Squared = .106 (Adjusted R Squared = .093)

d. R Squared = .074 (Adjusted R Squared = .061)

e. R Squared = .166 (Adjusted R Squared = .154)

f. R Squared = .136 (Adjusted R Squared = .124)

g. R Squared = .098 (Adjusted R Squared = .085)

h. R Squared = .147 (Adjusted R Squared = .135)

i. R Squared = .161 (Adjusted R Squared = .149)

j. R Squared = .142 (Adjusted R Squared = .130)

However, it may be noted that the factorial 2 x 3 (2 Types of Substances x 3 Status of Substance Use) MANOVA calculated the 'Type' effect from the combined scores of the groups under the Alcohol Type together, including the Non-user group; likewise for the main effects of Opioid Type, that is irrespective of 'Status'. Similarly, the 'Status' main effect is also based on the combination of the scores of 'Status' (Dependent, Recovering, Non-user) irrespective of the 'Type' (Alcohol or Opioid) of substance use. Therefore, in order to refine and clarify the significant differences in the 'Type' and the 'Status' sub-groups separately on each of the dependent variables, Independent Samples *t-* test was used to clarify differences in 'Type' (Alcohol Dependent versus Opioid Dependent, Alcohol Recovering versus Opioid Recovering). A One-Way Analysis of Variance (ANOVA) for 'Status of Substance Use' (Dependent, Recovering, Non-user) difference in Alcohol and Opioid groups separately was employed in order to more adequately address the objectives of the study. The interaction effects are then presented in the last segment following presentation of the 'Type' and 'Status' main effects below.

1. Differences in Personality Factors, Spirituality and Social Support in the two groups of 'Type of substance use' (Alcohol and Opioid): Alcohol Dependent versus Opioid Dependent, and Alcohol Recovering versus Opioid Recovering groups

The first objective of studying the Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment-Caring for Others and Connectedness with Transcendent), and Social Support (Perceived and Instrumental) in the two 'Type of Substance Use' (Opioid or Alcohol Dependent and Recovering groups) was specifically addressed using Independent Sample t-test. In order to meet the requirements for use of parametric statistics, skewness, kurtosis and homogeneity of variances (Levene's statistics) were scrutinized. The results of skewness and kurtosis hardly violated the demands for normal distribution. In instances where the assumption of homogeneity of variance (in Table 2.5 & 2.7) were violated, equal variance was not assumed (Welch- Satterthwaite's Statistic) also indicated some instances of violation of the assumption of homogeneity of variance; though the criterion for non-significance level of diagnostic test of parametric assumptions were set leniently at a .01 level considering the robustness of parametric methods and equal sample sizes randomly generated using *SPSS* 22 for all units of analyses (Fields, 2016).

*1.a. Differences in Personality Factors, Spirituality and Social Support in the two groups of 'Type of Substance Use' who were currently **Dependent**: Alcohol Dependent Group versus Opioid Dependent Group.*

Results of the Independent Sample t-test studying the differences between the two 'Type of Substance Use' (Alcohol Dependent Group and Opioid Dependent Group) on Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment- Caring for Others and Connectedness with Transcendent), and Social Support (Perceived Social Support and Instrumental Social Support) may be seen in Table 2.5 along with

Levene's statistics. The corresponding descriptive statistics comprising of Mean, *SD*, skewness, kurtosis and their Standard Errors for each group are given in Table 2.6.

Results (vide Table 2.5) indicated that there were significant differences between the Alcohol Dependent and Opioid Dependent Groups on Powerful Others Locus of Control as well as on Instrumental Social Support. However, no other significant differences were found between the Alcohol Dependent and Opioid Dependent Groups on the other variables of Personality (Resilience, Internal Locus of Control, Adaptive Coping, Maladaptive Coping), Spirituality (Connectedness with Oneself, Connectedness with Environment- Caring for Others, Connectedness with Transcendent) and Perceived Social Support.

As mentioned above, results of the Independent Sample *t*-test showed that the difference between the Alcohol Dependent Group and Opioid Dependent Group was significant (*t* = 3.304, df= 118, *p* = .001) in the **Powerful Others Locus of Control** (Table 2.5 , Fig 2.1 given below). The Alcohol Dependent Group (*M*=3.48, *SD*= 1.23) scored significantly higher than Opioid Dependent Group (*M*=2.78, *SD*=1.07) in Powerful Others Locus of Control with moderate effect size (Cohen's *d* =.69, CI 95% 0.27 to 1.11). This particular result contradicted the first hypothesis stating that Alcohol Dependent Group will score significantly lower in Powerful Others Locus of Control than Opioid Dependent Group. Internally oriented individuals tend to believe that outcomes are primarily related to internal factors (e.g., their own actions), whereas externally oriented individuals believe outcomes are influenced mostly by external factors (e.g., powerful others or chance factors). Most of the studies have found the higher external locus of control in individuals with substance use as compared with non-users. Niazi *et al*., (2005) in their study of two drug treatment centers of Rawalpindi and Islamabad found that substance abusers (majority of the substance abusers were using heroin and poly drugs) significantly scored higher on external locus of control than non-users. Prakash *et al*., (2015) carried out a study in Ranchi and nearby places to compare Locus of control (LoC) on Alcohol-dependent (AD) patients with normal controls and found that their locus of control was externally oriented.
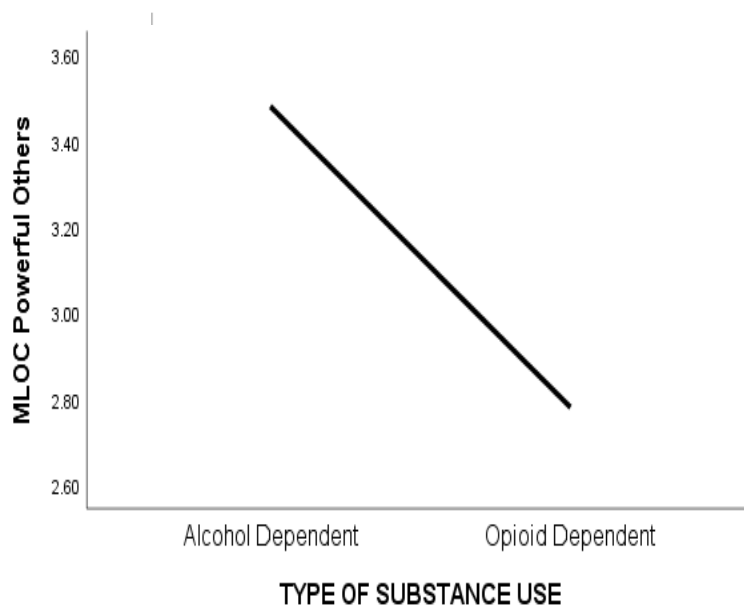
Figure 2.1: Significant differences in Mean scores on Powerful Others LOC between Alcohol Dependent & Opioid Dependent Groups (Type of Substance Use)

Literature on comparison of Powerful Others Locus of Control in individuals between these two types of Substances (Alcohol and Opioid) is scarce. So, with limited literature comparing this particular variable in these two groups, it may be surmised that when it comes to the Mizo society, people who are dependent on alcohol tend to view the impact of other people on their lives i.e., on Powerful Others Locus of Control as higher than those with Opioid dependent people. This may be seen as an impact of the kind of attitude Mizo Society has towards alcohol use which has been a part and parcel of Mizo history versus Opioid which is considered relatively new and is not a part in its collective memory and history. And with a strongly unfavourable attitude towards illicit drugs such as heroin, opioid users may distance themselves and feel less connected towards the society as a whole as compared to individuals with Alcohol users. As Mizo population has been shown to display collectivistic characteristics (Fente & Singh, 2008, Lalkhawngaihi & Fente, 2019) where social behavior is determined by shared goals, attitudes and values with their in-groups (Hofstede, 1980; Markus & Kitayama, 1991; Triandis, 1995). Hence, it may be said that, this cultural context may have an impact on the locus of control of substance users.

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Further, results of the Independent Sample *t*-test also showed significant difference in the **Instrumental Social Support** between Alcohol Dependent Group and Opioid Dependent Group**s** ($t = 2.394$ df= 108.135, $p =.018$) as may be seen from the independent samples *t*-test results given in Table 2.5 (Fig 2.2 given below). The Alcohol Dependent Group (*M*=1.80, *SD*=.33) scored significantly higher than Opioid Dependent Group (*M*=1.63, *SD*=.46) in Instrumental Social Support with medium effect size (Cohen's *d* =.42, CI 95% .03 to .31; Equality of Variance not assumed). This implies that the Alcohol Dependent Group in general tend to receive more instrumental support in the form of tangible aid than the Opioid Dependent Group. This result supported the hypothesis stating that the Alcohol Dependent Group will score higher on instrumental social support than Opioid Dependent Group.
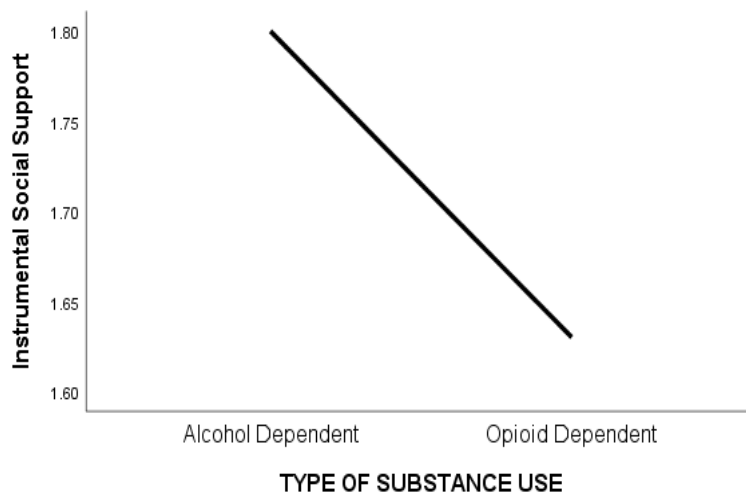
Figure 2.2: Significant differences in mean scores in Instrumental Social Support between Alcohol Dependent & Opioid Dependent Groups ('Type of Substance Use')

Although social support has been found to play an important role in recovery from addiction in numerous studies (Schmitt, 2003; Pettersen *et al*., 2019) and has also been found to reduce the risk for substance use (Gázquez *et al*., 2016), there is lack of research comparing the social support received by individuals with various

types of substance dependence especially in terms of tangible aid. From this particular finding we can infer that people with alcohol dependence receive more support in terms of tangible aid than do people with opioid dependence. This may have to do with the perception the *Mizo* society has towards illicit drugs like opioid as compared to the complicated history it has had towards alcohol sale and production. Consumption of '*Zu*', traditional rice beer, was a common practice in *Mizo* society in the olden days (McCall, 2003). It was an essential component of all the sociocultural and religious ceremonies in the pre-colonial *Mizo* society, including sacrifice, marriage, birth, death, festival and for celebration of successful hunting and harvesting included '*Zu*' (Lalremruata, T., 2019). Hence, keeping this history in mind, *Mizo* people may view alcoholism as more acceptable than addiction to other 'hard' drugs like opioid, making it more likely to provide tangible aid to those having problems with the former rather than the latter.

To summarize the analyses of differences in Personality, Spirituality, and Social Support according to 'Type of Substance Use' (Alcohol and Opioid Dependent), significant differences were found only in **Powerful Others Locus of Control** and **Instrumental Social Support**. Alcohol Dependent Group scored significantly higher than Opioid Dependent Group in Powerful Others Locus of Control. This particular result contradicted the first hypothesis stating that Alcohol Dependent Group will score significantly lower in Powerful Others Locus of Control than Opioid Dependent Group. As for the Instrumental Support, the Alcohol Dependent Group scored significantly higher than Opioid Dependent Group. Hence, the hypothesis stating that the Alcohol Dependent Group will score higher on Instrumental social support than Opioid Dependent Group was supported. No other significant differences were found between the Alcohol Dependent and Opioid Dependent Groups on the other variables of Personality (Resilience, Internal Locus of Control, Adaptive Coping, Maladaptive Coping), Spirituality (Connectedness with Oneself, Connectedness with Environment- Caring for Others, Connectedness with Transcendent) and Perceived Social Support.

Table 2.5: Results of Independent Sample *t*-test on Resilience, Internal Locus of Control, Powerful Others Locus of Control, Adaptive Coping, Maladaptive Coping, Connectedness with Oneself, Connectedness with Environment-Caring for Others, Connectedness with transcendent, Perceived Social Support and Instrumental Social Support in the Type of Substance Use among the Dependent Groups(Alcohol Dependent and Opioid Dependent)

		Levene's Test for Equality of Variances		*t*-test for Equality of Means					
		F	Sig.	*t*	*df*	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Cohen's *d*
Resilience	Equal variances assumed	8.775	.004	-.678	118	.499	-.098	.145	-.12
	Equal variances not assumed			-.678	104.638	.499	-.098	.145	-.12
Internal LOC	Equal variances assumed	7.692	.006	-.335	118	.738	-.062	.185	-.06
	Equal variances not assumed			-.335	108.966	.738	-.062	.185	-.06
Powerful Others LOC	Equal variances assumed	.379	.540	3.304	118	**.001**	.694	.210	.57
Adaptive Coping	Equal variances assumed	3.072	.082	.891	118	.375	.086	.096	.16
Maladaptive Coping	Equal variances assumed	2.345	.128	.379	118	.706	.047	.123	.06
Connectedness with Onesel	Equal variances assumed	4.505	.036	.827	118	.410	.097	.117	.15
Caring for Others	Equal variances assumed	.640	.425	-.838	118	.404	-.122	.144	-.15

ctednes s with Transc	Equal variances assumed	1.047	.308	-.218	118	.828	-.028	.127	-.04
ed Social Suppor	Equal variances assumed	.080	.778	-1.069	118	.287	-.069	.065	-.19
Instrumental Social Support	Equal variances assumed	22.079	.000	2.394	118	.018	.175	.073	.42
	Equal variances not assumed			2.394	108.135	**.018**	.175	.073	.42

Table 2.6: Descriptive statistics Mean, SD, Skewness, Kurtosis and Standard Errors for the Type of Substance Use (Alcohol Dependent Group and Opioid Dependent Group)

Type		N	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
Resilience	Alcohol	60	3.40	.64	-.352	.309	-.634	.608
	Opioid	60	3.50	.92	.411	.309	-.365	.608
Internal LoC	Alcohol	60	4.35	1.15	.118	.309	-.735	.608
	Opioid	60	4.41	.85	-.773	.309	.405	.608
Powerful others LoC	Alcohol	60	3.48	1.23	.118	.309	-.735	.608
	Opioid	60	2.78	1.07	.087	.309	-.655	.608
Adaptive Coping	Alcohol	60	2.97	.47	-.925	.309	1.577	.608
	Opioid	60	2.88	.58	-.215	.309	-.288	.608
Maladaptive Coping	Alcohol	60	2.84	.61	.396	.309	-.504	.608
	Opioid	60	2.79	.74	-.428	.309	-.418	.608
Connectedness with Oneself	Alcohol	60	4.29	.73	.124	.309	-.475	.608
	Opioid	60	4.19	.54	-.520	.309	-.073	.608
Caring for Others	Alcohol	60	4.30	.83	.119	.309	-.024	.608
	Opioid	60	4.42	.74	.198	.309	-.231	.608
Connectedness with Transcendent	Alcohol	60	3.95	.63	.287	.309	-.389	.608
	Opioid	60	3.98	.76	-.104	.309	-.237	.608
Perceived Social Support	Alcohol	60	2.37	.36	-.437	.309	.235	.608
	Opioid	60	2.44	.35	-.340	.309	-.332	.608
Instrumental Social Support	Alcohol	60	1.80	.33	-1.434	.309	.773	.608
	Opioid	60	1.63	.46	-.526	.309	-1.619	.608

1. b. *Differences in Personality Factors, Spirituality and Social Support in the two groups of 'Type of Substance Use'* **who were currently abstinent**: *Alcohol Recovering Group versus Opioid Recovering Group*

Results of the Independent Sample *t*-test studying the differences between the two 'Type of Substance Use' Recovering Groups (Alcohol Recovering Group and Opioid Recovering Group) on Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment- Caring for Others and Connectedness with Transcendent), and Social Support (Perceived Social Support and Instrumental Social Support) may be seen in Table 2.7 The corresponding descriptive statistics comprising of Mean, *SD*, skewness, kurtosis and their standard errors for each group are given in Table 2.8 and the resultant Levene's statistics was given in Table 2.7.

Results (vide Table 2.7) indicated that there was significant difference between the Alcohol Recovering and Opioid Recovering groups on Perceived Social Support only. No other significant differences were found between the Alcohol Recovering Group and Opioid Recovering Group on the Personality factors (Resilience, Internal Locus of Control, Powerful Others Locus of Control, Adaptive Coping, Maladaptive Coping), Spirituality (Connectedness with Oneself, Connectedness with Environment- Caring for Others, Connectedness with Transcendent), and Instrumental Social Support.

The significant difference on **Perceived Social Support** between the Alcohol Recovering Group and Opioid Recovering Group ($t = 4.50$, *df*= 101.69, $p =.000$; equal variance not assumed) may be seen from the results given in Table 2.7. Mean comparisons (Table 2.8, Fig 2.3given below) indicated that the Alcohol Recovering Group (*M*=2.69, *SD*=.28) scored significantly higher than Opioid Recovering Group (*M*=2.39, *SD*=.42) in Perceived Social Support with medium effect size (Cohen's *d* =.76, CI 95% .16 to .42). This implies that the Alcohol Recovering Group tend to perceive others as providing more social support to them as compared to the Opioid

Recovering Group. Again, this finding could be in accordance with the perception that the Mizo society has towards illicit drugs like opioid as compared to alcohol consumption. Consumption of 'Zu', traditional rice beer, was accepted in *Mizo* society (McCall, 2003), and had been a part of the sociocultural ceremonies in the pre-colonial Mizo society, including sacrifice, marriage, birth, death, festival and for celebration of successful hunting and harvesting (Lalremruata, 2019). Whereas, the introduction of Opioid in the form of heroin to the *Mizo* society is relatively new and recent as the early 1970s (Panda, 2006), and much more strongly negatively viewed. Hence, the results conformed to the hypothesis stating that the Alcohol Recovering Group will score higher on Perceived social support than Opioid Recovering Group as it was also found in the comparison on tangible social support between Alcohol Recovering group and Opioid Recovering group.
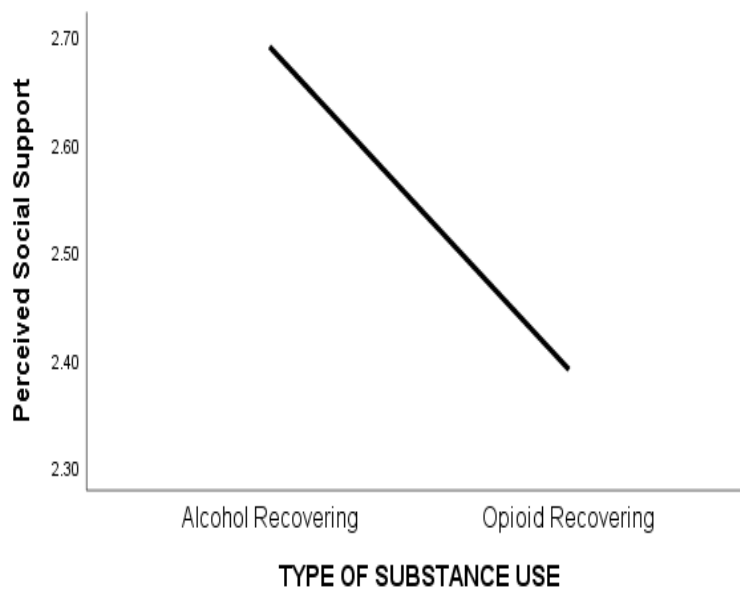
Figure 2.3: Mean Perceived Social Support for Type of Substance Use (Alcohol Recovering & Opioid Recovering Groups)

To summarize the findings of the comparison based on 'Type of Substance Use' (Alcohol or Opioid) between the Recovering Groups, we can say that Significant 'type' effect on **Perceived Social Support** was evident from the Independent Samples *t*-test results whereby the Alcohol Recovering Group scored significantly higher than Opioid Recovering Group in Perceived Social Support. Hence, the hypothesis stating that the Alcohol Recovering Group will score higher on Perceived social support than Opioid Recovering Group was supported by the results.

Table 2.7: Results of Independent Sample *t*-test on Resilience, Internal LoC, Powerful Others LoC, Adaptive Coping, Maladaptive Coping, Connectedness with Oneself, Connectedness with Environment-Caring for Others, Connectedness with Transcendent, Perceived Social Support and Instrumental Social Support in the 'Type of Substance Use' (Alcohol Recovering Group and Opioid Recovering Group)

		Levene's Test for Equality of Variances		*t*-test for Equality of Means					
		F	Sig.	*t*	*df*	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Cohen's *d*
Resilience	Equal variances assumed	.402	.527	1.378	118	.171	.205	.149	.25
Internal LoC	Equal variances assumed	2.522	.115	1.203	118	.231	.169	.140	.21
Powerful Others LoC	Equal variances assumed	.215	.644	-.346	118	.730	-.053	.153	-.06
Adaptive Coping	Equal variances assumed	.000	.991	1.904	118	.059	.181	.095	.34
Maladaptive Coping	Equal variances assumed	4.316	.040	-.947	118	.346	-.130	.137	-.17
	Equal variances not assumed			-.947	110.614	.346	-.130	.137	-.17

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	
Connectedne with Onesel	Equal variances assumed	.886	.348	-.446	118	.656	-.054	.122	-.08
Caring for Others	Equal variances assumed	4.740	.031	-.129	118	.897	-.020	.161	-.02
	Equal variances not assumed			-.129	114.288	.897	-.021	.161	-.022
Connectedne with Transcendn	Equal variances assumed	1.849	.176	-.758	118	.450	-.118	.156	-.13
Perceived Social Support	Equal variances assumed	8.241	.005	4.499	118	.000	.294	.065	.76
	Equal variances not assumed			4.499	101.698	.000	.294	.065	.76
Instrumenta Social Suppc	Equal variances assumed	2.548	.113	.818	118	.415	.042	.051	.14

Table 2.8: Descriptive statistics Mean, SD, Skewness, Kurtosis and Standard Errors for Type of Substance Use among the Recovering Groups(Alcohol Recovering and Opioid Recovering)

Type		N	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
Resilience	Alcohol	60	4.01	.75	.048	.309	.180	.608
	Opioid	60	3.81	.88	-.100	.309	.221	.608
Internal LoC	Alcohol	60	4.46	.65	.305	.309	.069	.608
	Opioid	60	4.29	.87	-1.019	.309	1.556	.608
Powerful others LoC	Alcohol	60	2.71	.82	.398	.309	.410	.608
	Opioid	60	2.77	.85	.582	.309	.669	.608
Adaptive Coping	Alcohol	60	3.12	.51	.241	.309	-.950	.608
	Opioid	60	2.94	.53	-.362	.309	.480	.608
Maladaptive Coping	Alcohol	60	2.44	.65	-.096	.309	-.482	.608
	Opioid	60	2.57	.84	.098	.309	-.865	.608
Connectedness with Oneself	Alcohol	60	4.62	.69	-.066	.309	-.671	.608
	Opioid	60	4.67	.65	-.150	.309	-.184	.608
Caring for Others	Alcohol	60	4.74	.79	-.311	.309	-.798	.608
	Opioid	60	4.76	.96	-.451	.309	-1.113	.608
Connectedness with Transcendent	Alcohol	60	4.43	.79	-.381	.309	.272	.608
	Opioid	60	4.55	.92	-.485	.309	-.321	.608
Perceived Social Support	Alcohol	60	2.69	.278	-.952	.309	.220	.608
	Opioid	60	2.39	.42	-.932	.309	.814	.608

		60	1.91	.25	-2.793	.309	7.012	.608
Instrumental Social Support	Alcohol							
	Opioid	60	1.87	.30	-2.155	.309	3.357	.608

2. Differences in Personality Factors, Spirituality and Social Support in the three groups of 'Status of Substance Use' (Dependent Group, Recovering Group and Non-user Group) among Alcohol and Opioid Groups separately.

The second objective of studying the differences based on the 'Status of Substance Use' (Dependent, Recovering, and Non-user) on Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment-Caring for Others, Connectedness with Transcendent), and Social Support (Perceived and Instrumental) separately in the Alcohol Group and Opioid Group was put forth as the measures of these dependent variables were expected to be different based on whether they are dependent users, abstaining from use, or not using substances at all, factors that may be assumed to sustain or help in the addiction or rehabilitation process among the substance users. This second objective of studying the differences on the basis of 'Status of Substance Use' on Personality Factors, Spirituality, and Social Support in both the Alcohol Groups (Dependent, Recovering and Non-user) and Opioid Groups (Dependent, Recovering and Non-user) was addressed using a One-Way ANOVA.

Results of the One-Way ANOVA studying the effect of 'Status of Substance Use' (Dependent, Recovering, Non-user) on Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment- Caring for Others, Connectedness with Transcendent), and Social Support (Perceived Social Support and Instrumental Social Support) may be seen in Table 3.2, 3.6, 3.10, 3.14, 3.18, 3.22, 3.26, 3.30, 3.34 & 3.38.The corresponding descriptive statistics comprising of Mean, *SD*, Skewness, Kurtosis and their Standard Errors for each cell of the design are given in Table 3.1, 3.5, 3.9, 3.13, 3.17, 3.21, 3.25, 3.29, 3.33 & 3.37.; and the resultant Levene's

statistics are given in Table 3.2, 3.6, 3.10, 3.14, 3.18, 3.22, 3.26, 3.30, 3.34 & 3.38.. In order to meet the requirements for parametric testing, skewness, kurtosis and homogeneity of variances (Levene's statistics) were scrutinized. The results of skewness and kurtosis hardly violated the demands for normal distribution. The assumption of homogeneity of variance also indicated some instances of violation of the assumption of homogeneity of variance; although, non-significance level of diagnostic test of parametric assumptions were set leniently at a .01 level considering the robustness of parametric methods and equal sample sizes randomly generated using *SPSS* 22 for all units of analyses (Fields, 2016). For instances where parametric assumptions were not met, equivalent non-parametric test (Kruskal Wallis Test) was used.

The results are presented for the Alcohol Group and the Opioid Group and discussed below:

2.a **Investigation of the second objective** i.e., to elucidate the differences between the three 'Status of Substance Use' (Dependent Group, Recovering Group and Non-user Group) on Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment- Caring for Others, Connectedness with Transcendent), and Social Support (Perceived Social Support and Instrumental Social Support) revealed significant status effect on Resilience, Powerful Others Locus of Control, Adaptive Coping, Maladaptive Coping, Spirituality (Connectedness with Oneself, Connectedness with Environment-Caring for Others, Connectedness with Transcendent), Perceived Social Support and Instrumental Social Support in the **Alcohol Group** can be seen in table 3.2, 3.6, 3.10, 3.14, 3.18, 3.22, 3.26, 3.30, 3.34 & 3.38. There was no significant difference in 'Status of Substance Use' on Internal Locus of Control in the **Alcohol Group** (Dependent Group, Recovering Group and Non-user Group). In other words, there was evidence of significant differences in Resilience, Powerful Others Locus of Control, Adaptive Coping, Maladaptive Coping, Connectedness with Oneself, Connectedness with Environment- Caring for Others, Connectedness with

Transcendent, Perceived Social Support and Instrumental Social Support depending on the status of being dependent or abstinent or not dependent at all.

2.b Investigation of the second objective i.e., to elucidate the differences according to 'Status of Substance Use' (Dependent, Recovering, Non-user) among the **Opioid Groups** on Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment- Caring for Others, Connectedness with Transcendent), and Social Support (Perceived Social Support and Instrumental Social Support) revealed significant 'status' effect on Resilience, Adaptive Coping, Maladaptive Coping, Spirituality (Connectedness with Oneself, Connectedness with Environment- Caring for Others, Connectedness with Transcendent), Perceived Social Support and Instrumental Social Support. However, there was no significant 'Status of Substance Use' on Internal Locus of Control and Powerful Others Locus of Control in the **Opioid** Groups of Dependents, Recovering, and Non-users. The results of One-Way ANOVA depicting these significant differences can be seen in table 3.2, 3.6, 3.10, 3.14, 3.18, 3.22, 3.26, 3.30, 3.34 & 3.38.

As may be seen in results of the Post Hoc Test (Table 3.3), the Alcohol Recovering Group (*M*=4.01, *SD*=.75) and Non-user Group (*M*=3.91, *SD*=.96) displayed significantly higher mean score than the Alcohol Dependent Group (*M*=3.40, *SD*=.64) in **Resilience** (Table 3.1). Other studies have supported this finding. Veenstra *et al*. (2007) in a study on Dutch population also found that participants with alcohol or other substance addiction had low scores on resilience. The role of resilience may also be seen in more recent studies such as Cadet (2016) who believed that resilience may buffer the effect of stress on the risk of addiction and that intervention for addiction should include means for promoting resilience in these individuals and a similar study found resilience factors to have helped in substance rehabilitation programme for a population in Kashmir (Ahmad *et al*., 2017).

In **Resilience**, the Post Hoc Test mean comparisions (Table 3.3) indicated that the Non-user Group (*M*=3.98, *SD*=.91) displayed significantly higher Mean score than the Opioid Dependent Group (*M*=3.50, *SD*=.92) while the Opioid

Recovering Group (*M*=3.81, *SD*=.88) are not significantly different from the Opioid Dependent Group (Table 3.1). Past researches have highlighted the importance of resilience in different aspects of substance use. Sutherland *et al*. (2009) findings indicate that the chemically dependent individuals scored significantly lower on measures of resilience than non-chemically dependent individuals. Resilience and adaptive motivational structure were found to be independent predictors of substance use (Fadardi *et al*., 2010), while others have found resiliency enhancement to be effective in relapse prevention in people with substance dependency (Jafari *et al*., 2010). Cadet (2016) believed that resilience may buffer the effect of stress on the risk of addiction and that intervention for addiction should include means for promoting resilience in these individuals and a similar study has found resilience factors to have helped in rehabilitation (Ahmad *et al*., 2017). And most recently it was found that there was a significant negative correlation between the tendency to addiction and resilience (Jebraeili *et al*., 2019).

To summarize the above findings of the pattern differences in the three groups of substance use under the two types of substance use, in terms of **Resilience**, the Alcohol Recovering Group and Non-user Group displayed significantly higher Mean score than the Alcohol Dependent as expected. However, in the Opioid Group, only the Non-user Group displayed significantly higher Mean score than the Opioid Dependent Group while the Opioid Recovering Group are not significantly different from the Opioid Dependent Group. In terms of Resilience (Fig. 3.4), in the Alcohol Group, the Alcohol Recovering Group and Non-user Group displayed significantly higher Mean score than the Alcohol Dependent Group in Resilience (Table 3.1) as expected. However, in the Opioid Group, only the Non-user Group displayed significantly higher Mean score in Resilience than the Opioid Dependent Group while the Opioid Recovering Group are not significantly different from the Opioid Dependent Group (Table 3.1). One explanation for this maybe that resilience or the ability to cope with problems and stress maybe effected by the perception and approach the Mizo society collectively have towards 'hard drugs' such as Opioid as compared to Alcohol as well as towards the people who are using them. The use of alcohol during festivals was a common practice in the Mizo traditional society. It

was only after the advent of Christianity in Mizoram that consumption of 'Zu' by a Mizo Christian was prohibited (MSD & RB., 2015), whereas, the introduction of Opioid in the form of heroin to the Mizo society is relatively new and recent as the early 1970s (Panda, 2006).

Table 3.1 : Mean, SD, Skewness, Kurtosis, and Std Error on the personality variable of Resilience for Alcohol and Opioid sub-groups (Dependent, Recovering, and Non-user)

Groups	Scale	Sub-Groups	N	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
Alcohol Group	Resilience	Dependent	60	3.40	.64	-.352	.309	-.634	.608
		Recovering	60	4.01	.75	.048	.309	.180	.608
		Non-user	60	3.91	.96	-.306	.309	-.508	.608
Opioid Group	Resilience	Dependent	60	3.50	.92	.411	.309	-.365	.608
		Recovering	60	3.81	.88	-.100	.309	.221	.608
		Non-user	60	3.98	.91	-.058	.309	-.441	.608

Table 3.2: Results of ANOVA and Homogeneity of Variance for the three subgroups (Dependents, Recovering, and Non-users) under Alcohol and Opioid groups on the personality factor of Resilience

Groups	Scale	Homogeneity of variance		Analysis of Variance						
		Levene's Stat	Sig.		Sum of Squares	Sum of Squares	df	Mean Square	F	Sig.
Alcohol	Resilience	3.589	.030	Between Groups	12.86	2	6.43	10.289	.000	.104
				Within Groups	110.64	177	.62			
				Total	123.51	179				
Opioid	Resilience	.470	.626	Between Groups	7.13	2	3.57	4.36	.014	.047
				Within Groups	144.83	177	.82			
				Total	151.96	179				

Table 3.3: Bonferonni test for post hoc mean comparisons in significant differences between the groups on Resilience

Groups	Dependent Variable	(I) Status of Substance Use	(J) Status of Substance Use	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Alcohol	Resilience	Dependent	Recovering	-.611[*]	.144	.000	-.959	-.262
			Non-user	-.509[*]	.144	.002	-.858	-.160
		Recovering	Dependent	.611[*]	.144	.000	.262	.959
			Non-user	.102	.144	1.000	-.247	.451
		Non-user	Dependent	.509[*]	.144	.002	.160	.858
			Recovering	-.102	.144	1.000	-.451	.247

Opioid	Resilience	Dependent	Recovering	-.307	.165	.193	-.706	.092
			Non-user	-.481*	.165	.012	-.881	-.082
		Recovering	Dependent	.307	.165	.193	-.092	.706
			Non-user	-.174	.165	.880	-.573	.225
		Non-user	Dependent	.481*	.165	.012	.082	.881
			Recovering	.174	.165	.880	-.225	.573

Table 3.4: Line graphs depicting significant Mean differences for the three subgroups (Dependents, Recovering, and Non-users) under Alcohol and Opioid groups on the personality factor of Resilience
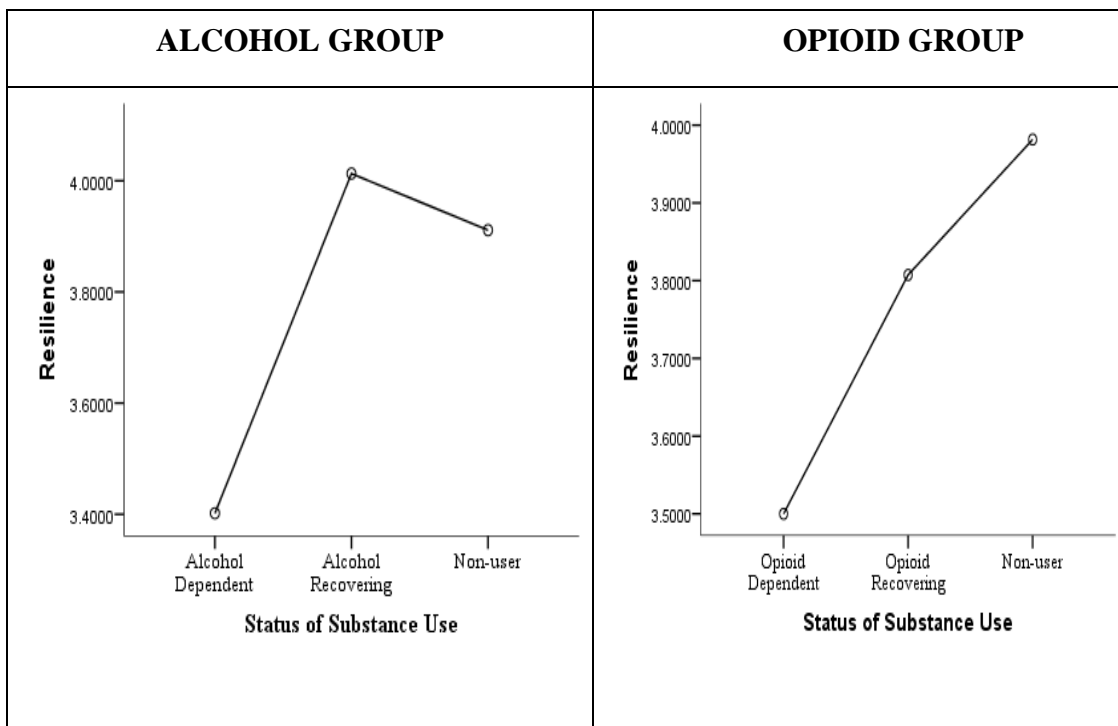
In the case of **Internal Locus of Control** (Table 3.6), there was no significant evidence of the effect of 'Status of Substance Use' in this. Hence, the hypothesis stating that the Alcohol Recovering Group and Non-user Group will score significantly higher than Alcohol Dependent Group in Internal Locus of Control is not supported. Although internal locus of control is seen as often higher in individuals with no history of substance use as compared to recovering groups and so

called 'alcoholic' groups (Huckstadt, 1987; Soravia *et al*., 2015, Prakash *et al*., 2015), these findings did not hold true for the current study. However, this current finding is not an isolated case. Ersche *et al*. (2012) administered drug-related locus of control scale (DR-LOC) on 592 individuals; approximately half of the respondents were receiving treatment in a drug treatment program for opiates, stimulants and/or alcohol dependence (n = 282), and the rest (n = 310) had no history of drug dependence. The findings indicate that the extent to which a person attributes control in situations related to drug use is significantly influenced by their own personal or professional experiences with drug addiction. Interestingly, it also showed that drug-dependent individuals have a greater internal sense of control with regard to addiction recovery or drug-taking behaviors than health professionals and/or non-dependent control volunteers. So, we can surmise from this research that an individual's locus of control is greatly influenced by their own history with drug use and that it may not be possible to generalize findings.

Similarly, in the case of **Internal Locus of Control** amongst the Opioid Groups, the Recovering Group and Non-user Group did not score significantly higher than Dependent Group (Table 3.6). There was no significant evidence of the effect of 'Status of Substance Use' in this. Hence, the hypothesis stating that the Alcohol Recovering Group and Non-user Group will score significantly higher than Alcohol Dependent Group in Internal Locus of Control is not supported. Whereas past researches have shown that substance abusers significantly scored higher on external locus of control as compared to non-abusers (Niazi *et al*., 2005). However, some studies like Dielman *et al*., (1987) in their study concerning susceptibility to peer pressure, self-esteem, and health locus of control amongst adolescents also found that external health locus of control index wasn't significantly associated with most of the substance use, misuse, and intention items. The results from the above study indicated that the self-esteem and health locus of control constructs are less central to adolescent substance use and misuse than is susceptibility to peer pressure. Hence, Locus of Control may not play a central role or may give conflicting results in the area of substance use, misuse or abstinence.

To summarize the above findings of the pattern differences in the three groups of substance use under the two types of substance use, in terms of **Internal LOC**, the Alcohol Recovering Group and Non-user Group did not display significantly higher Mean score than the Alcohol Dependent as expected. The same can be said for the findings in the Opioid Group, the Opioid Recovering Group and Non-user Group did not display significantly higher Mean score than the Opioid Dependent as expected (Table 3.5).

Table 3.5: Mean, SD, Skewness, Kurtosis, and Std Error on the personality variable of Internal LOC for Alcohol and Opioid sub-groups (Dependent, Recovering, and Non-user)

Groups	Scale	Sub-Groups	N	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
Alcohol Group	Internal LOC	Dependent	60	4.35	1.15	.118	.309	-.735	.608
		Recovering	60	4.46	.65	.305	.309	.069	.608
		Non-user	60	4.14	.75	-.251	.309	.288	.608
Opioid Group	Internal LOC	Dependent	60	4.41	.85	-.773	.309	.405	.608
		Recovering	60	4.29	.87	-1.019	.309	1.556	.608
		Non-user	60	4.14	.67	-.346	.309	-.067	.608

Table 3.6: Results of ANOVA and Homogeneity of Variance for the three subgroups (Dependents, Recovering, and Non-users) under Alcohol and Opioid groups on the personality factor of Internal LOC

| Groups | Scale | Homogeneity of variance | | | Analysis of Variance | | | | | |
		Levene's Stat	Sig.		Sum of Squares	Sum of Squares	df	Mean Square	F	Sig.
Alcohol	Internal LOC	13.847	.000	Between Groups	3.095	2	1.547	2.018	.136	.022
				Within Groups	135.697	177	.767			
				Total	138.792	179				
Opioid	Internal LOC	1.764	.174	Between Groups	2.102	2	1.051	1.625	.200	.018
				Within Groups	114.503	177	.647			
				Total	116.605	179				

Table 3.7: Bonferonni test for post hoc mean comparisons in significant differences between the groups on Internal LOC

| Groups | Dependent Variable | (I) Status of Substance Use | (J) Status of Substance Use | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
							Lower Bound	Upper Bound
Alcohol	Internal LOC	Dependent	Recovering	-.112	.159	1.000	-.498	.274
			Non-user	.205	.159	.606	-.182	.591
		Recovering	Dependent	.112	.159	1.000	-.274	.498
			Non-user	.317	.159	.147	-.069	.703
		Non-user	Dependent	-.205	.159	.606	-.591	.182
			Recovering	-.317	.159	.147	-.703	.069

Opioid	Internal LOC	Dependent	Recovering	.119	.147	1.000	-.236	.474
			Non-user	.264	.147	.221	-.091	.619
		Recovering	Dependent	-.119	.147	1.000	-.474	.236
			Non-user	.145	.147	.972	-.209	.500
		Non-user	Dependent	-.264	.147	.221	-.619	.091
			Recovering	-.145	.147	.972	-.500	.209

Table 3.8: Line graphs depicting significant Mean differences for the three subgroups (Dependents, Recovering, and Non-users) under Alcohol and Opioid groups on the personality factor of Internal LOC
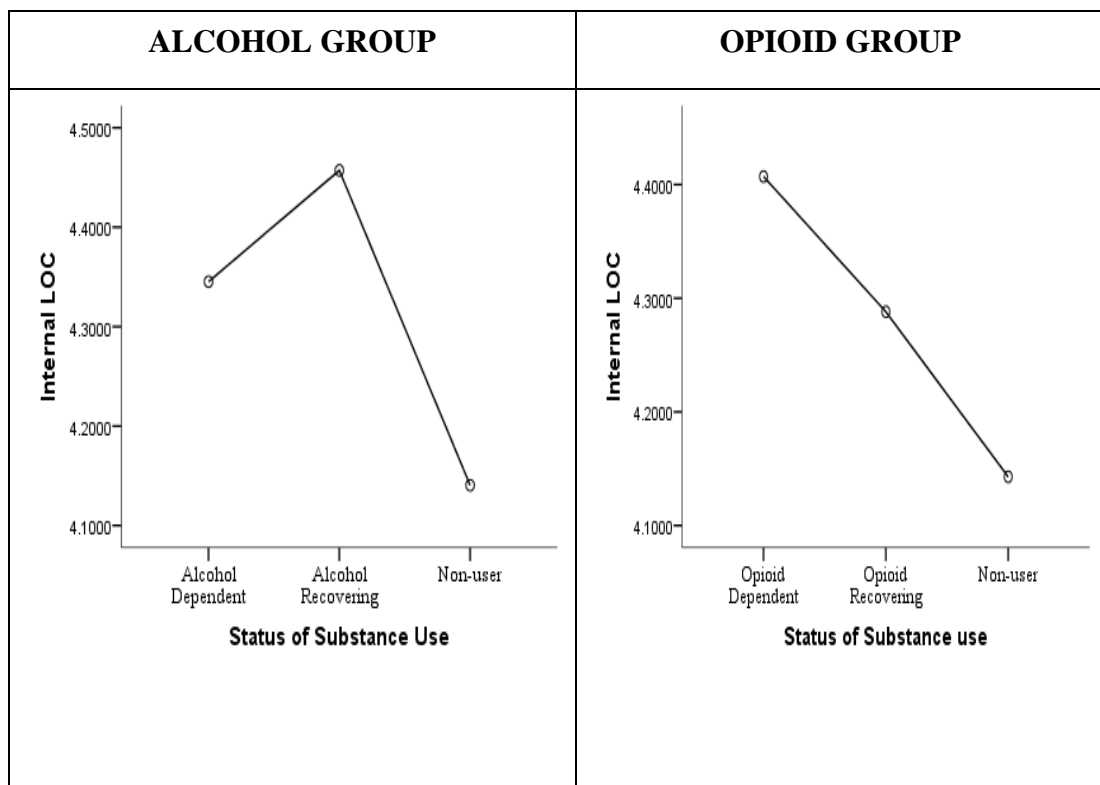
In **Powerful Others Locus of Control**, the Alcohol Recovering Group (*M*=2.71, *SD*=.82) and Non-user Group (*M*=2.44, *SD*=.89) displayed significantly lower Mean score than the Alcohol Dependent Group (*M*=3.48, *SD*=1.23) as expected. The ANOVA results may be seen in Table 3.10, with corresponding the Post Hoc Test for Mean comparisons given in Table 3.11. This finding has also been supported by past studies. In a longitudinal study done on parents and children, Lassi *et al.* (2019) found that having a more external locus of control at age 16 was associated with increased tobacco consumption by age 17 and 21 and even alcohol consumption by 17 years. Niazi *et al.* (2005) conducted a study to assess and compare personality traits and locus of control among male substance abusers and non-abusers in Pakistan and found that substance abusers significantly scored higher on external locus of control. Prakash *et al.* (2015) also carried out a study in Ranchi and nearby places to compare Locus of control (LoC) on Alcohol-dependent (AD) patients with normal controls and found that their locus of control was externally oriented.

In the **Powerful Others Locus of Control** amongst the Opioid Groups (Table 3.10). There was no significant evidence of the effect of 'Status of Substance Use' in this variable. Hence, the hypothesis stating that the Recovering Group and Non-user Group will score significantly lower than Dependent Group in Powerful Others Locus of Control is not supported by the current findings. Whereas past researches have shown that substance abusers significantly scored higher on external locus of control as compared to non-abusers (Niazi *et al.*, 2005). However, some studies like Dielman *et al.*, (1987) in their study concerning susceptibility to peer pressure, self-esteem, and health locus of control amongst adolescents also found that external health locus of control index wasn't significantly associated with most of the substance use, misuse, and intention items. The results from the above study indicated that the self-esteem and health locus of control constructs are less central to adolescent substance use and misuse than is susceptibility to peer pressure. Hence, Locus of Control may not play a central role or may give conflicting results in the area of substance use, misuse or abstinence.

To summarize the above findings of the pattern differences in the three groups of substance use under the two types of substance use, in terms of **Powerful Others LOC**, the Alcohol Recovering Group and Non-user Group displayed significantly lower Mean score than the Alcohol Dependent Group as expected. In the Powerful Others Locus of Non-user amongst the Opioid Groups, the Recovering Group and Non-user Group did not score significantly lower than Dependent Group. Powerful Others Locus of Control in individuals between these two types of Substances (alcohol and opioid) is scarce. So, with limited literature comparing this particular variable in these two groups, it may be surmised that when it comes to the Mizo society, people who are dependent on alcohol tend to view the impact of other people on their lives i.e., on Powerful Others Locus of Control as higher than those with Opioid dependent people. This may be seen as an impact of the kind of attitude Mizo Society has towards its perception of alcohol which has been a part and parcel of Mizo history versus Opioid which is considered relatively new and is not a part in its collective memory and history. And with a less favourable attitude towards illicit drugs such as heroin, opioid users may distance themselves and feel less connected towards the society as a whole as compared to individuals with Alcohol users. As Mizo population has been shown to display collectivistic characteristics (Fente & Singh, 2008, Lalkhawngaihi & Fente, 2019) where social behavior is determined by shared goals, attitudes and values with their in-groups (Hofstede, 1980; Markus &Kitayama, 1991; Triandis, 1995). Hence, we can say that, this cultural context may have an impact on the locus of control of substance users.

Table 3.9: Mean, SD, Skewness, Kurtosis, and Std Error on the personality variable of Powerful Others LOC for Alcohol and Opioid sub-groups (Dependent, Recovering, and Non-user)

Groups	Scale	Sub-Groups	N	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
Alcohol Group	Powerful Others LOC	Dependent	60	3.48	1.23	-.093	.309	-.094	.608
		Recovering	60	2.71	.82	.398	.309	.410	.608
		Non-user	60	2.44	.89	1.092	.309	1.100	.608
Opioid Group	Powerful Others LOC	Dependent	60	2.78	1.07	.087	.309	-.655	.608
		Recovering	60	2.77	.85	.582	.309	.669	.608
		Non-user	60	2.54	.95	1.047	.309	1.223	.608

Table 3.10: Results of ANOVA and Homogeneity of Variance for the three subgroups (Dependents, Recoverings, and Non-users) under Alcohol and Opioid groups on the personality factor of Powerful Others LOC

Groups	Scale	Homogeneity of variance		Analysis of Variance						
		Levene's Stat	Sig.		Sum of Squares	Sum of Squares	df	Mean Square	F	Sig.
Alcohol	Powerful Others LOC	4.265	.016	Between Groups	34.769	2	17.384	17.580	.000	.166
				Within Groups	175.029	177	.989			
				Total	209.798	179				

				Between Groups	2.291	2	1.146	1.242	.291	.014
Opioid	Powerful Others LOC	1.890	.154	Within Groups	163.200	177	.922			
				Total	165.491	179				

Table 3.11: Bonferonni test for post hoc mean comparisons in significant differences between the groups on Powerful Others LOC

Groups	Dependent Variable	(I) Status of Substance Use	(J) Status of Substance Use	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Alcohol	Powerful Others LOC	Dependent	Recovering	.764*	.181	.000	.325	1.203
			Non-user	1.039*	.181	.000	.600	1.478
		Recovering	Dependent	-.764*	.181	.000	-1.203	-.325
			Non-user	.275	.181	.395	-.164	.714
		Non-user	Dependent	-1.039*	.181	.000	-1.478	-.600
			Recovering	-.275	.181	.395	-.714	.164
Opioid	Powerful Others LOC	Dependent	Recovering	.017	.175	1.000	-.407	.440
			Non-user	.247	.175	.481	-.176	.671
		Recovering	Dependent	-.017	.175	1.000	-.440	.407
			Non-user	.230	.175	.571	-.193	.654
		Non-user	Dependent	-.247	.175	.481	-.671	.176
			Recovering	-.230	.175	.571	-.654	.193

Table 3.12: Line graphs depicting significant Mean differences for the three subgroups (Dependents, Recovering, and Non-users) under Alcohol and Opioid groups on the personality factor of Powerful Others LOC


| ALCOHOL GROUP | OPIOID GROUP |
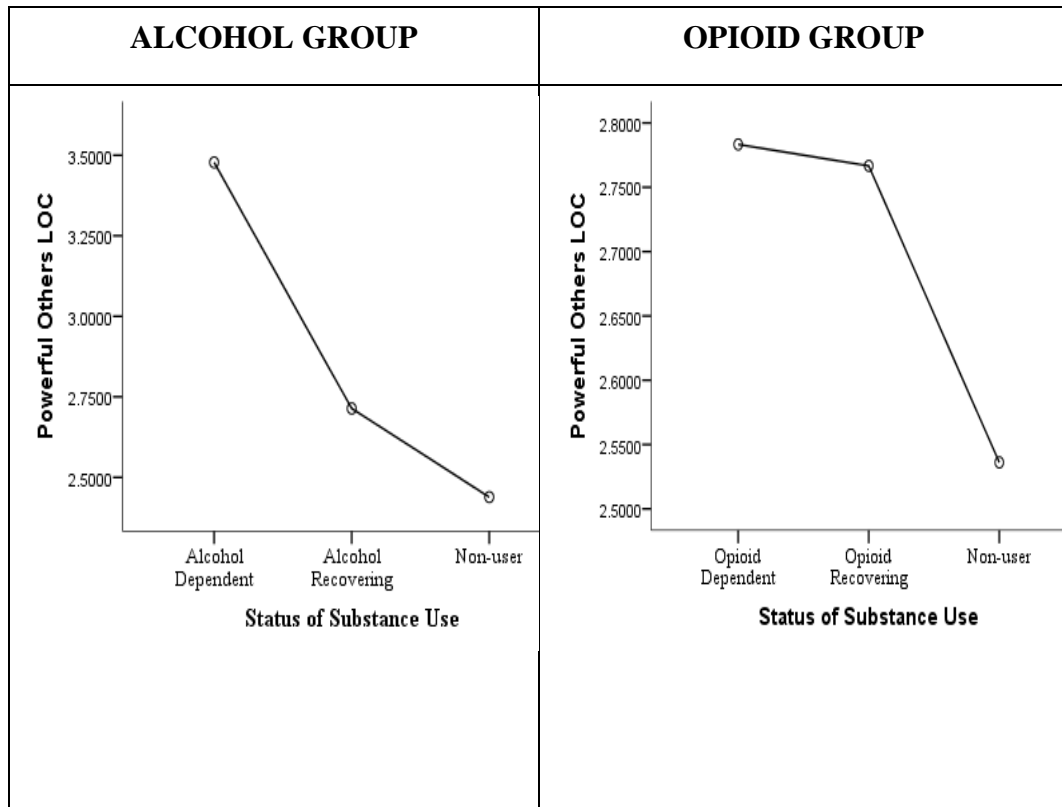
In **Adaptive Coping**, a significant difference was also seen between Alcohol Dependent, Recovering, and Non-user groups ('Status of Substance Use') as may be seen in the results of One-Way ANOVA given in Table 3.14, though Levene's statistics (Table 3.14) was found to be significant. Therefore, Kruskal Wallis Test was employed for testing differences between the groups, the results of which are given in Table 3.41. The results of Kruskal Wallis Test also confirmed significant 'status' (Dependent, Recovering, Non-user) effect on Adaptive Coping. The Mean Rank displayed in Table 3.42 was significantly greater in the Non-user Group (Mean Rank = 107.26) as compared to the Alcohol Dependent Group (Mean Rank = 76.85) but not significantly greater as compared to the Alcohol Recovering Group (Mean Rank = 87.39) which implies that in terms Adaptive Coping, the Non-user Group scored significantly higher than the Dependent group but not so much from the

Recovering Group. Previous researches have also supported the same findings. Kronenberg *et al*. (2015) in their study compared the various coping styles between SUD patients with and without ADHD or ASD and with subjects from a general population sample and found that regardless of the presence of a co-occurring disorder, SUD patients reported more palliative, avoidant and passive coping when confronted than people in the general population. Another related study by Sarada & Radharani (2017) has also compared the coping strategies among abstinent and relapsed individuals with alcohol dependence and the results showed that patients in the relapsed group tend to use more maladaptive strategies (negative thinking) and less adaptive strategies such as positive thinking as compared to the abstinent group.

In terms of **Adaptive Coping**, as expected, the Non-user Group (*M*=3.18, *SD*=.54) displayed significantly higher Mean score than the Opioid Dependent Group (*M*=2.88, SD=.58) while the Opioid Recovering Group (*M*=2.94, *SD*=.53) did not display a significantly higher Mean score from the Dependent Group. In Maladaptive Coping, also as expected, the Non-user Group (*M*=2.04, *SD*=.76) displayed significantly lower Mean score than the Opioid Dependent Group (*M*=2.79, *SD*=.74) while the Opioid Recovering Group (*M*=2.57, *SD*=.84) did not reveal a significant difference from the Dependent Group (Table 3.13) and as can be seen in results of the Post Hoc Test (Table 3.15). Although there is dearth of literature comparing the coping styles of individuals who have been able to remain abstinent from substance use for longer periods of time versus individuals who are not able to do so, its importance in the field of addiction rehabilitation has been established. According to Aldao and Nolen-Hoeksema (2012; 2010), adaptive emotion regulation strategies (e.g., acceptance or reappraisal) show weaker associations with psychopathology than maladaptive strategies (e.g., worry and rumination). Franken *et al*. (2001) examined the coping style of substance-abuse patients and found that maladaptive coping styles decreased after 3 months of inpatient-substance-abuse treatment. A qualitative study was conducted by Valtonen *et al*. (2006) among persons recovering from substance abuse from three rehabilitation facilities and found that the coping styles reported by these individuals were mainly emotion-focused coping. Kronenberg *et al*. (2015) in their study compared the various coping styles between

SUD patients showed a significant higher Mean on avoidance from a general population sample. A'zami *et al*. (2015) also found that substance-dependent individuals applied emotion-focused coping more than the healthy ones, and the latter applied problem-focused strategies more.

To summarize the above findings of the pattern differences in the three groups of substance use under the two types of substance use, in terms of **Adaptive Coping**, the Non-user Group scored significantly higher than the Dependent group but not so much from the Recovering Group as expected. This finding was found to be similar amongst the Opioid Groups, where, the Non-user Group displayed significantly higher Mean score than the Opioid Dependent Group but not from the Recovering Group.

Table 3.13: Mean, SD, Skewness, Kurtosis, and Std Error on the personality variable of **Adaptive Coping** for Alcohol and Opioid sub-groups (Dependent, Recovering, and Non-user)

Groups	Scale	Sub-Groups	N	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
Alcohol Group	Adaptive Coping	Dependent	60	2.97	.47	-.925	.309	1.577	.608
		Recovering	60	3.12	.51	.241	.309	-.950	.608
		Non-user	60	3.34	.70	-.600	.309	-.763	.608
Opioid Group	Adaptive Coping	Dependent	60	2.88	.58	-.215	.309	-.288	.608
		Recovering	60	2.94	.53	-.362	.309	.480	.608
		Non-user	60	3.18	.54	-.548	.309	-.378	.608

Table 3.14: Results of ANOVA and Homogeneity of Variance for the three subgroups (Dependents, Recovering, and Non-users) under Alcohol and Opioid groups on the personality factor of **Adaptive Coping**

Groups	Scale	Homogeneity of variance		Analysis of Variance						
		Levene's Stat	Sig.		Sum of Squares	Sum of Squares	df	Mean Square	F	Sig.
Alcohol	Adaptive Coping	12.835	.000	Between Groups	4.121	2	2.061	6.340	.002	.067
				Within Groups	57.532	177	.325			
				Total	61.653	179				
Opioid	Adaptive Coping	.118	.889	Between Groups	3.027	2	1.514	4.966	.008	.053
				Within Groups	53.950	177	.305			
				Total	56.978	179				

Table 3.15: Bonferonni test for post hoc mean comparisons in significant differences between the groups on **Adaptive Coping**

Groups	Dependent Variable	(I) Status of Substance Use	(J) Status of Substance Use	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Alcohol	Adaptive Coping	Dependent	Recovering	-.155	.104	.417	-.406	.097
			Non-user	-.369*	.104	.002	-.621	-.117
		Recovering	Dependent	.155	.104	.417	-.097	.406
			Non-user	-.214	.104	.123	-.466	.037
		Non-user	Dependent	.369*	.104	.002	.117	.621
			Recovering	.214	.104	.123	-.037	.466
Opioid	Adaptive Coping	Dependent	Recovering	-.059	.101	1.000	-.303	.184
			Non-user	-.300*	.101	.010	-.544	-.056
		Recovering	Dependent	.059	.101	1.000	-.184	.303
			Non-user	-.240	.101	.054	-.484	.003
		Non-user	Dependent	.300*	.101	.010	.056	.544
			Recovering	.240	.101	.054	-.003	.484

Table 3.16: Line graphs depicting significant Mean differences for the three subgroups (Dependents, Recovering, and Non-users) under Alcohol and Opioid groups on the personality factor of **Adaptive Coping**

ALCOHOL GROUP	OPIOID GROUP
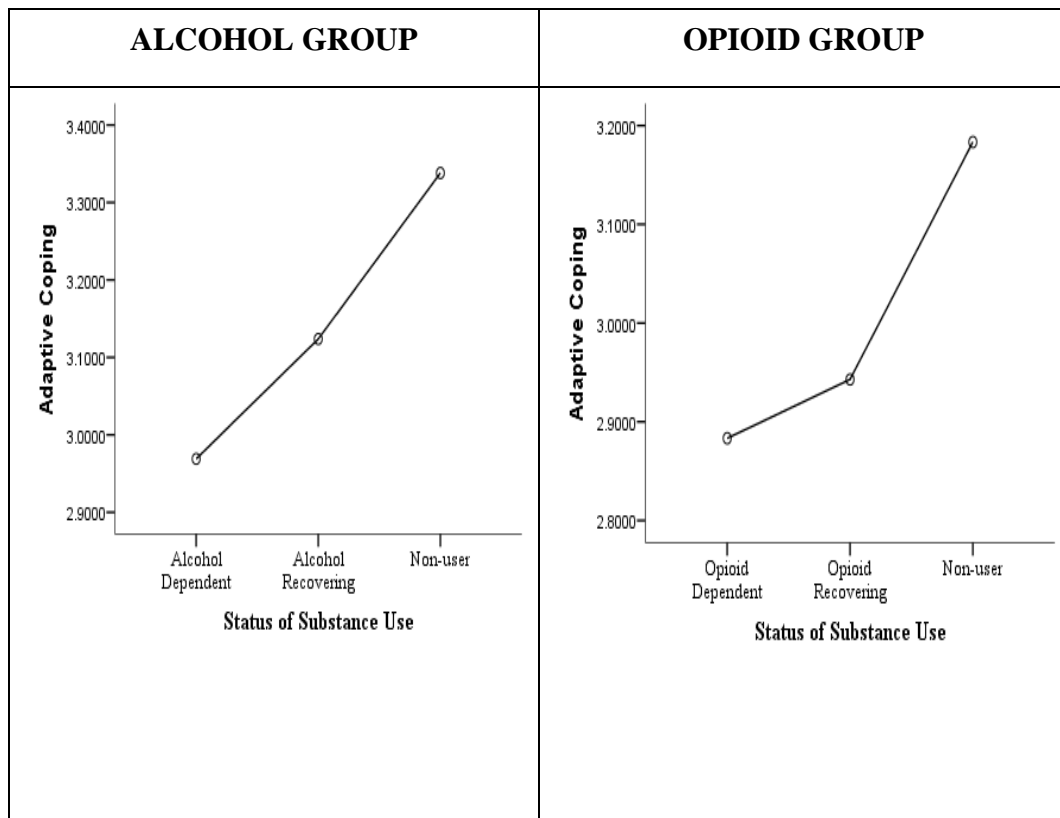
The Alcohol Dependent Group (*M*=2.84, *SD*=.61) displayed significantly higher Mean score than the Alcohol Recovering Group (*M*=2.43, *SD*=.65) and Non-user Group (*M*=2.00, *SD*=.84) in **Maladaptive Coping** (Table 3.17) and as can also be seen in results of the Post Hoc Test (Table 3.19). Although there is dearth of literature comparing the coping styles of individuals who have been able to remain abstinent from substance use for longer periods of time versus individuals who are not able to do so, its importance in the field of addiction rehabilitation has been established. Franken *et al*. (2001) examined the coping style of substance-abuse patients and found that maladaptive coping styles decreased after 3 months of inpatient-substance-abuse treatment. A study on the relationship between coping strategies and drinking behavior using regression analyses revealed that sensitivity to reward, avoidant and emotion-focused coping strategies were positively related to

drinking behavior and negatively related to problem-focused coping (Feil & Hasking, 2008). A'zami *et al*. (2015) also found that substance-dependent individuals applied emotion-focused coping more than the healthy ones, and the latter applied problem-focused strategies more. Hence, the hypothesis stating that the Recovering Group and Non-user group will score significantly higher in Adaptive Coping and significantly lower in Maladaptive Coping than Dependent Group was supported by the results.

In **Maladaptive Coping**, also as expected, the Non-user Group (*M*=2.04, *SD*=.76) displayed significantly lower Mean score than the Opioid Dependent Group (*M*=2.79, *SD*=.74) while the Opioid Recovering Group (*M*=2.57, *SD*=.84) did not reveal a significant difference from the Dependent Group (Table 3.17) and as can be seen in results of the Post Hoc Test (Table 3.19). Although there is dearth of literature comparing the coping styles of individuals who have been able to remain abstinent from substance use for longer periods of time versus individuals who are not able to do so, its importance in the field of addiction rehabilitation has been established. According to Aldao & Nolen-Hoeksema (2010), adaptive emotion regulation strategies (e.g., acceptance or reappraisal) show weaker associations with psychopathology than maladaptive strategies (e.g., worry and rumination). Franken *et al*. (2001) examined the coping style of substance-abuse patients and found that maladaptive coping styles decreased after 3 months of inpatient-substance-abuse treatment. A'zami *et al*. (2015) also found that substance-dependent individuals applied emotion-focused coping more than the healthy ones, and the latter applied problem-focused strategies more.

To summarize the above findings of the pattern differences in the three groups of substance use under the two types of substance use, in terms of **Maladaptive Coping**, the Alcohol Dependent displayed significantly higher Mean score than the Alcohol Recovering Group and Non-user Group**.** In the Opioid group, the Non-user Group displayed significantly lower Mean score than the Opioid Dependent Group. However, in this group, the Opioid Recovering Group did not reveal a significant difference from the Dependent Group. Literature has shown that both people recovering from substance abuse and SUD patients both reported

maladaptive coping behaviors. A qualitative study was conducted by Valtonen *et al*. (2006) among persons recovering from substance abuse from three rehabilitation facilities and found that the coping styles reported by these individuals were mainly emotion-focused coping. Kronenberg *et al*. (2015) in their study compared the various coping styles between SUD patients showed a significant higher Mean on avoidance from a general population sample.

Table 3.17: Mean, SD, Skewness, Kurtosis, and Std Error on the personality variable of **Maladaptive Coping** for Alcohol and Opioid sub-groups (Dependent, Recovering, and Non-user)

Groups	Scale	Sub-Groups	N	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
Alcohol Group	Maladaptive Coping	Dependent	60	2.84	.61	.396	.309	-.504	.608
		Recovering	60	2.43	.65	-.096	.309	-.482	.608
		Non-user	60	2.00	.84	.525	.309	-.271	.608
Opioid Group	Maladaptive Coping	Dependent	60	2.79	.74	-.428	.309	-.418	.608
		Recovering	60	2.57	.84	.098	.309	-.865	.608
		Non-user	60	2.04	.76	.527	.309	-.599	.608

Table 3.18: Results of ANOVA and Homogeneity of Variance for the three subgroups (Dependents, Recovering, and Non-users) under Alcohol and Opioid groups on the personality factor of **Maladaptive Coping.**

Groups	Scale	Homogeneity of variance		Analysis of Variance						
		Levene's Stat	Sig.		Sum of Squares	Sum of Squares	df	Mean Square	F	Sig.
Alcohol	Maladaptive Coping	.934	.395	Between Groups	21.014	2	10.507	21.019	.000	.192
				Within Groups	88.479	177	.500			
				Total	109.492	179				
Opioid	Maladaptive Coping	.700	.498	Between Groups	17.795	2	8.898	14.621	.000	.142
				Within Groups	107.711	177	.609			
				Total	125.506	179				

Table 3.19: Bonferonni test for post hoc mean comparisons in significant differences between the groups on **Maladaptive Coping**

Groups	Dependent Variable	(I) Status of Substance Use	(J) Status of Substance Use	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Alcohol	Maladaptive Coping	Dependent	Recovering	.400[*]	.129	.007	.088	.712
			Non-user	.837[*]	.129	.000	.525	1.149
		Recovering	Dependent	-.400[*]	.129	.007	-.712	-.088
			Non-user	.437[*]	.129	.003	.125	.749
		Non-user	Dependent	-.837[*]	.129	.000	-1.149	-.525

			Recovering	-.437*	.129	.003	-.749	-.125
Opioid	Maladaptive Coping	Dependent	Recovering	.223	.142	.356	-.121	.567
			Non-user	.750*	.142	.000	.406	1.094
		Recovering	Dependent	-.223	.142	.356	-.567	.121
			Non-user	.527*	.142	.001	.182	.871
		Non-user	Dependent	-.750*	.142	.000	-1.094	-.406
			Recovering	-.527*	.142	.001	-.871	-.182

Table 3.20: Line graphs depicting significant Mean differences for the three subgroups (Dependents, Recovering, and Non-users) under Alcohol and Opioid groups on the personality factor of **Maladaptive Coping**
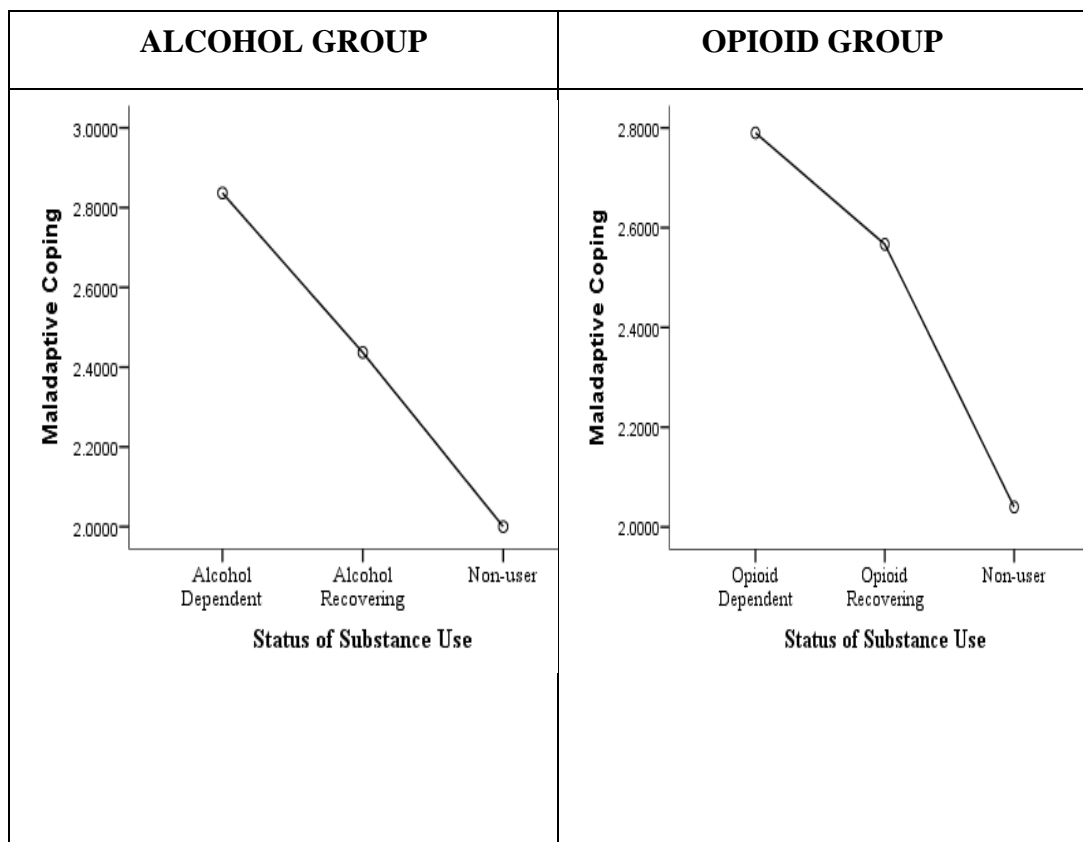
In all aspects of **Spirituality** under the current study, as expected, the Alcohol Recovering and Non-user Group had a significantly higher Mean as compared to the Alcohol Dependent Group (Table 3.22, 3.26 & 3.30) and as can be seen in results of the Post Hoc Test (Table 3.23, 3.27 & 3.31). In terms of Connectedness with Oneself, Alcohol Recovering Group (*M*=4.62, *SD*=.69) and Non-user Group (*M*=4.85, *SD*=.63) displayed significantly higher Mean score than the Alcohol Dependent Group (*M*=4.29, *SD*=.73). In Connectedness with Environment- Caring for Others, Alcohol Recovering Group (*M*=4.74, *SD*=.79) and Non-user Group (*M*=5.08, *SD*=.81) displayed significantly higher Mean score than the Alcohol Dependent Group (*M*=4.30, *SD*=.83). Connectedness with Transcendent also had similar results namely, the Recovering Group (*M*=4.43, *SD*=.79), and Non-user Group (*M*=4.76, *SD*=.59) had significantly higher Mean scores than the Alcohol Dependent Group (*M*=3.95, *SD*=.63). The importance of Spirituality has been established in the field of substance rehabilitation from past researches, for e.g., Robinson *et al*. (2011) investigated the effect of spiritual and religious (SR) change on subsequent drinking outcomes on alcohol-dependent individuals and found significant 6-month changes in different SR measures which included private SR practices, beliefs, daily spiritual experiences, measures of forgiveness, negative religious coping, and purpose in life. Apart from these, increases in private SR practices and forgiveness of self were seen as the strongest predictors of improvements in drinking outcomes. Lucchetti *et al*. (2012) found that high religious involvement was associated with less alcohol use, alcohol abuse, tobacco use, and combined alcohol/tobacco use, as well as less days drinking alcohol beverages per week, controlling for confounding factors.

In all aspects of **Spirituality** as has been studied in the current research, as expected the Recovering and Non-user Group had a significantly higher Mean as compared to the Opioid Dependent Group (Table 3.22, 3.26 & 3.30) and as can be seen in results of the Post Hoc Test (Table 3.23, 3.27 & 3.31). In terms of Connectedness with Oneself, Opioid Recovering Group (*M*=4.67, *SD*=.65) and Non-user Group (*M*=4.84, *SD*=.56) displayed significantly higher Mean score than the Opioid Dependent Group (*M*=4.19, *SD*=.54). Connectedness with Transcendent also

had similar results namely Recovering Group (*M*=4.55, *SD*=.92), Non-user Group (*M*=4.56, *SD*=.67) and Opioid Dependent Group (*M*=3.98, *SD*=.76). In Connectedness with Environment- Caring for Others, the results indicate a significant 'Status of substance use' effect from One-Way ANOVA results in Table 2.11, but Levene's statistics (Table 3.26) was found to be significant. Therefore, Kruskal Wallis Test was employed for testing differences between the groups, the results of which are given in Table 3.43. Revealing the robustness of ANOVA, results of Kruskal Wallis Test also confirmed significant 'Status of Substance' effect on Connectedness with Environment- Caring for Others. The Mean Rank displayed in Table 3.44 was significantly greater in Non-user Group (*Mean Rank* = 102.86) than in Opioid Dependent Group (*Mean Rank* = 72.25). However, the same cannot be said for the Opioid Recovering Group (*Mean Rank* = 96.39).

One aspect of Spirituality, i.e., Religiousity has been a part and parcel of the numerous faith-based rehabilitation centers for substance addiction in the state of Mizoram. A number of researches in this area have focused more on religious aspects and have found the importance of religious practices in the treatment of SUD. The role of religious practice was demonstrated in a study by Stewart *et al*. (2008) study, where it was found that participants who reported 'regular practice of one's religion or faith' were over five times as likely to achieve abstinence at 3 months. Halliday (2009) in his study evaluating the centres in Mizoram as well as the care provided for individuals with substance abuse found that these centres were mostly religious based and evangelical based camps. While this system has been helpful, he found religious interventions based only on biblical sermons to be lacking and suggested expanding the therapeutic skills of counsellors in these centres. Ralte (1994) also suggested the requirement of a more comprehensive treatment program with a multi-disciplinary approach in Mizoram. The emphasis in this research is to study Spirituality in a more holistic manner which may include a sense of meaning (Steger & Frazier, 2005) and a sense of "transcendence" as well as connection with something bigger than one's self (Steger, 2012).

To summarize the above findings of the pattern differences in the three groups of substance use under the two types of substance use, in terms of **Spirituality,** in all aspects of spirituality namely Connectedness with Oneself, Caring For Others and Connectedness with Transcendent, the Alcohol Recovering and Non-user Group had a significantly higher Mean as compared to the Alcohol Dependent Group and the same result can be found in the Opioid group where Recovering and Non-user Group had a significantly higher Mean as compared to the Dependent Group.

Table 3.21: Mean, SD, Skewness, Kurtosis, and Std Error on the Spirituality variable of Connectedness with Oneself for Alcohol and Opioid sub-groups (Dependent, Recovering, and Non-user)

Groups	Scale	Sub-Groups	N	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
Alcohol Group	Connectedness With Oneself	Dependent	60	4.29	.73	.124	.309	-.475	.608
		Recovering	60	4.62	.69	-.066	.309	-.671	.608
		Non-user	60	4.85	.63	-.702	.309	1.475	.608
Opioid Group	Connectedness With Oneself	Dependent	60	4.19	.54	-.520	.309	-.073	.608
		Recovering	60	4.67	.65	-.150	.309	-.184	.608
		Non-user	60	4.84	.56	-.283	.309	.228	.608

Table 3.22: Results of ANOVA and Homogeneity of Variance for the three subgroups (Dependents, Recovering, and Non-users) under Alcohol and Opioid groups on the Spirituality variable of Connectedness with Oneself

Groups	Scale	Homogeneity of variance			Analysis of Variance					
		Levene's Stat	Sig.		Sum of Squares	Sum of Squares	df	Mean Square	F	Sig.
Alcohol	Connectedness With Oneself	2.576	.079	Between Groups	9.362	2	4.681	9.979	.000	.101
				Within Groups	83.025	177	.469			
				Total	92.386	179				
Opioid	Connectedness With Oneself	.951	.388	Between Groups	13.239	2	6.619	19.214	.000	.178
				Within Groups	60.978	177	.345			
				Total	74.217	179				

Table 3.23: Bonferonni test for post hoc mean comparisons in significant differences between the groups on Connectedness with Oneself

Groups	Dependent Variable	(I) Status of Substance Use	(J) Status of Substance Use	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Alcohol	Connectedness With Oneself	Dependent	Recovering	-.324*	.125	.031	-.626	-.022
			Non-user	-.556*	.125	.000	-.858	-.254
		Recovering	Dependent	.324*	.125	.031	.022	.626
			Non-user	-.232	.125	.196	-.534	.070
		Non-user	Dependent	.556*	.125	.000	.254	.858
			Recovering	.232	.125	.196	-.070	.534

				-.476*	.107	.000	-.735	-.217
Opioid	Connectedness With Oneself	Dependent	Recovering	-.476*	.107	.000	-.735	-.217
			Non-user	-.639*	.107	.000	-.898	-.380
		Recovering	Dependent	.476*	.107	.000	.217	.735
			Non-user	-.164	.107	.386	-.423	.095
		Non-user	Dependent	.639*	.107	.000	.380	.898
			Recovering	.164	.107	.386	-.095	.423

Table 3.24: Line graphs depicting significant Mean differences for the three subgroups (Dependents, Recovering, and Non-users) under Alcohol and Opioid groups on the Spirituality variable of Connectedness with Oneself
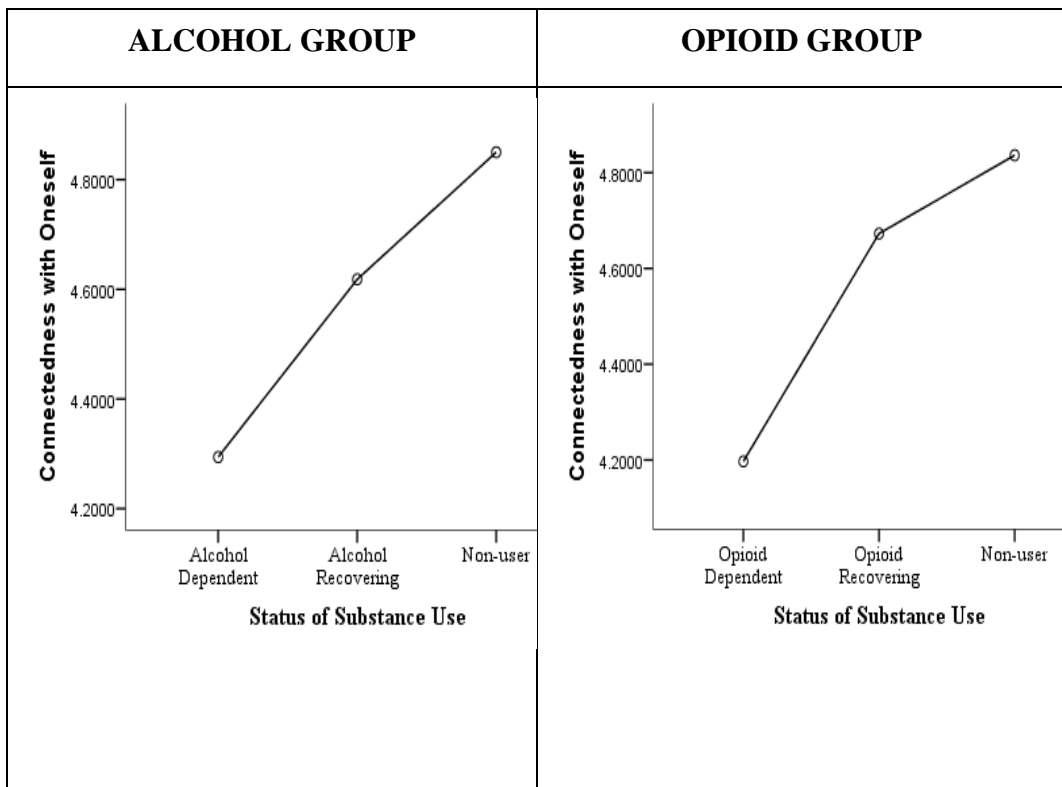
Table 3.25: Mean, SD, Skewness, Kurtosis, and Std Error on the Spirituality variable of Caring for Others for Alcohol and Opioid sub-groups (Dependent, Recovering, and Non-user)

Groups	Scale	Sub-Groups	N	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
Alcohol Group	Caring For Others	Dependent	60	4.30	.83	.119	.309	-.024	.608
		Recovering	60	4.74	.79	-.311	.309	-.798	.608
		Non-user	60	5.08	.81	-.932	.309	2.012	.608
Opioid Group	Caring For Others	Dependent	60	4.42	.74	.198	.309	-.231	.608
		Recovering	60	4.76	.96	-.451	.309	-1.113	.608
		Non-user	60	4.89	.68	-.613	.309	.147	.608

Table 3.26: Results of ANOVA and Homogeneity of Variance for the three subgroups (Dependents, Recovering, and Non-users) under Alcohol and Opioid groups on the Spirituality variable of Caring for Others.

Groups	Scale	Homogeneity of variance		Analysis of Variance						
		Levene's Stat	Sig.		Sum of Squares	Sum of Squares	df	Mean Square	F	Sig.
Alcohol	Caring For Others	.481	.619	Between Groups	18.103	2	9.051	13.649	.000	.134
				Within Groups	117.376	177	.663			
				Total	135.479	179				

					Between Groups	6.933	2	3.467	5.385	.005	.057
Opioid	Caring For Others	7.558	.001		Within Groups	113.954	177	.644			
					Total	120.888	179				

Table 3.27: Bonferonni test for post hoc mean comparisons in significant differences between the groups on Spirituality variable of Caring for Others

Groups	Dependent Variable	(I) Status of Substance Use	(J) Status of Substance Use	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Alcohol	Caring For Others	Dependent	Recovering	-.433*	.149	.012	-.793	-.074
			Non-user	-.775*	.149	.000	-1.134	-.416
		Recovering	Dependent	.433*	.149	.012	.074	.793
			Non-user	-.342	.149	.068	-.701	.018
		Non-user	Dependent	.775*	.149	.000	.416	1.134
			Recovering	.342	.149	.068	-.018	.701
Opioid	Caring For Others	Dependent	Recovering	-.333	.146	.072	-.687	.021
			Non-user	-.467*	.146	.005	-.821	-.113
		Recovering	Dependent	.333	.146	.072	-.021	.687
			Non-user	-.133	.146	1.000	-.487	.221
		Non-user	Dependent	.467*	.146	.005	.113	.821
			Recovering	.133	.146	1.000	-.221	.487

Table 3.28: Line graphs depicting significant Mean differences for the three subgroups (Dependents, Recovering, and Non-users) under Alcohol and Opioid groups on the Spirituality variable of Caring for Others
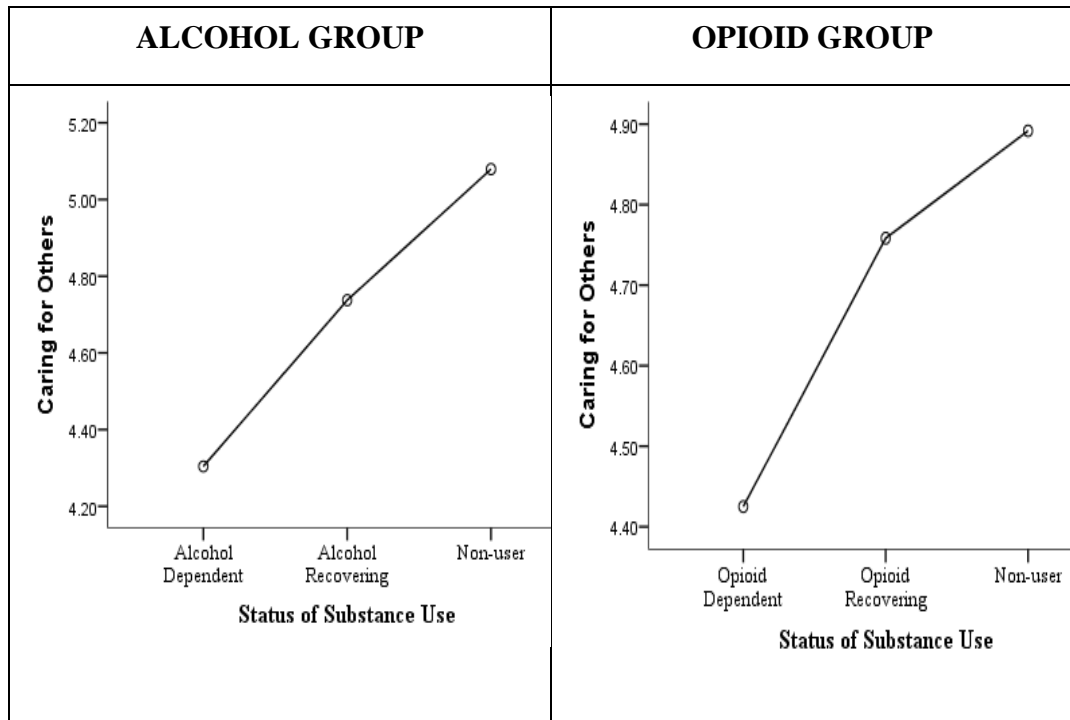

Table 3.29: Mean, SD, Skewness, Kurtosis, and Std Error on the Spirituality variable of Connectedness with Transcendent for Alcohol and Opioid sub-groups (Dependent, Recovering, and Non-user)

Groups	Scale	Sub-Groups	N	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
Alcohol Group	Connectedness with Transcendent	Dependent	60	3.95	.63	.287	.309	-.389	.608
		Recovering	60	4.43	.79	-.381	.309	.272	.608
		Non-user	60	4.76	.59	-.844	.309	1.436	.608
Opioid Gr	ness with Tran	Dependent	60	3.98	.76	-.104	.309	-.237	.608

		Recovering	60	4.55	.92	-.485	.309	-.321	.608
		Non-user	60	4.56	.67	-.506	.309	-.044	.608

Table 3.30: Results of ANOVA and Homogeneity of Variance for the three subgroups (Dependents, Recovering, and Non-users) under Alcohol and Opioid groups on the Spirituality variable of Connectedness with Transcendent

Groups	Scale	Homogeneity of variance		Analysis of Variance						
		Levene's Stat	Sig.		Sum of Squares	Sum of Squares	df	Mean Square	F	Sig.
Alcohol	Connectedness with Transcendent	2.634	.075	Between Groups	19.704	2	9.852	21.481	.000	.195
				Within Groups	81.178	177	.459			
				Total	100.881	179				
Opioid	Connectedness with Transcendent	3.624	.029	Between Groups	13.315	2	6.658	10.667	.000	.108
				Within Groups	110.471	177	.624			
				Total	123.787	179				

Table 3.31: Bonferonni test for post hoc mean comparisons in significant differences between the groups on the Spirituality variable of Connectedness with Transcendent

Groups	Dependent Variable	(I) Status of Substance Use	(J) Status of Substance Use	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Alcohol	Connectedness with Transcendent	Dependent	Recovering	-.479*	.124	.000	-.778	-.181
			Non-user	-.805*	.124	.000	-1.104	-.507
		Recovering	Dependent	.479*	.124	.000	.181	.778
			Non-user	-.326*	.124	.027	-.625	-.027
		Non-user	Dependent	.805*	.124	.000	.507	1.104
			Recovering	.326*	.124	.027	.027	.623
Opioid	Connectedness with Transcendent	Dependent	Recovering	-.570*	.144	.000	-.919	-.222
			Non-user	-.583*	.144	.000	-.932	-.235
		Recovering	Dependent	.570*	.144	.000	.222	.919
			Non-user	-.013	.144	1.000	-.361	.336
		Non-user	Dependent	.583*	.144	.000	.235	.932
			Recovering	.013	.144	1.000	-.336	.361

Table 3.32: Line graphs depicting significant Mean differences for the three subgroups (Dependents, Recovering, and Non-users) under Alcohol and Opioid groups on the Spirituality variable of Connectedness with Transcendent

ALCOHOL GROUP	OPIOID GROUP
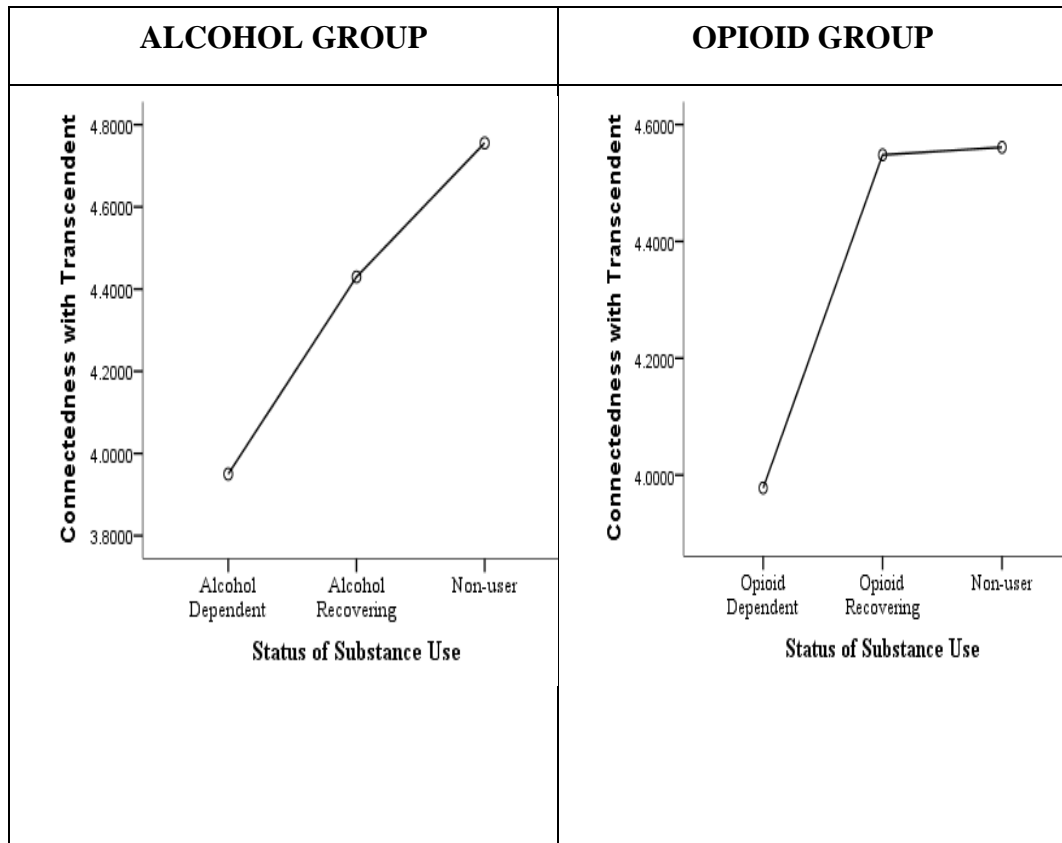
In terms of **Perceived Social Support**, Alcohol Recovering Group (*M*=2.69, *SD*=.28) and Non-user Group (*M*=2.78, *SD*=.45) displayed significantly higher Mean score than the Alcohol Dependent Group (*M*=2.37, *SD*=.36), as can be seen vide result Table 3.33 and in results of the Post Hoc Test (Table 3.35). Rapiera *et al*. (2019) in their study also found an important link between perceived social support and frequency of substance use in socially stigmatized populations. It has also been shown that there was a positive relationship between the length of drug abstinence and social support (Davis & Jason, 2005) and that perceptions regarding social support can improve the psychosocial functioning during drug abuse treatment (Chong & Lopez, 2005). Atadokht and colleagues (2015) found a positive relationship between family expressed emotions and the frequency of relapse (r = 0.26, P = 0.011) and a significant negative relationship between perceived social

support and the frequency of relapse (r = -0.34, P = 0.001). Additionally, Multiple Regression analysis also showed that perceived social support from family along with family expressed emotions significantly explained 12% of the total variance of relapse frequency (Atadokht *et al*., 2015)

Interestingly, in the case of **Perceived Social Support**, the Opioid Dependent Group (*M*=2.44, *SD*=.35) reported a higher Mean score in Perceived Social Support than the Recovering Group (*M*=2.39, *SD*=.42) though lesser than the Non-user Group (*M*=2.67, *SD*=.33) which does not support the hypothesis (Table 3.33) and as can be seen in results of the Post Hoc Test (Table 3.35). This finding is surprising in that studies have consistently shown that there is a positive relationship between the length of drug abstinence and receiving social support (Davis & Jason, 2005) and a significant negative relationship between perceived social support and the frequency of relapse (Atadokht *et al*., 2015). An explanation for this finding may be again linked with the *Mizo* society's approach to 'recovering addicts' individuals especially from what are often considered as hard drugs such as heroin. These individuals are often viewed skeptically especially if they have had a history of relapse. And studies have shown that there exists a positive relationship between family expressed emotions and the frequency of relapse (Atadokht *et al*., 2015). So, in terms of relapse prevention, the role of family and society in terms of social support especially enhancing perceived social support needs to be addressed.

To summarize the above findings of the pattern differences in the three groups of substance use under the two types of substance use, in terms **Perceived Social Support**, Alcohol Recovering Group and Non-user Group displayed significantly higher Mean score than the Alcohol Dependent Group as expected. Interestingly, in the case of the Opioid Group, the Opioid Dependent Group reported a higher Mean score in Perceived Social Support than the Recovering Group though lesser than the Non-user Group.

Table 3.33: Mean, SD, Skewness, Kurtosis, and Std Error on the Social Support variable of Perceived Social Support for Alcohol and Opioid sub-groups (Dependent, Recovering, and Non-user)

Groups	Scale	Sub-Groups	N	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
Alcohol Group	Perceived Social Support	Dependent	60	2.37	.36	-.437	.309	.235	.608
		Recovering	60	2.69	.28	-.952	.309	.220	.608
		Non-user	60	2.78	.45	-1.929	.309	3.095	.608
Opioid Group	Perceived Social Support	Dependent	60	2.44	.35	-.340	.309	-.332	.608
		Recovering	60	2.39	.42	-.932	.309	.814	.608
		Non-user	60	2.67	.33	-.940	.309	.061	.608

Table 3.34: Results of ANOVA and Homogeneity of Variance for the three subgroups (Dependents, Recovering, and Non-users) under Alcohol and Opioid groups on the Social Support variable of Perceived Social Support

Groups	Scale	Levene's Stat	Sig.		Sum of Squares	Sum of Squares	df	Mean Square	F	Sig.
Alcohol	Perceived Social Support	4.882	.009	Between Groups	5.641	2	2.821	20.550	.000	.188
				Within Groups	24.294	177	.137			
				Total	29.935	179				
Opioid	Perceived Social Support	2.069	.129	Between Groups	2.545	2	1.273	9.296	.000	.095
				Within Groups	24.232	177	.137			
				Total	26.778	179				

Table 3.35: Bonferonni test for post hoc mean comparisons in significant differences between the groups on the Social Support variable of Perceived Social Support

Groups	Dependent Variable	(I) Status of Substance Use	(J) Status of Substance Use	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Alcohol	Perceived Social Support	Dependent	Recovering	-.325*	.068	.000	-.488	-.161
			Non-user	-.411*	.068	.000	-.574	-.248
		Recovering	Dependent	.325*	.068	.000	.161	.488
			Non-user	-.086	.068	.614	-.249	.077
		Non-user	Dependent	.411*	.068	.000	.248	.574
			Recovering	.086	.068	.614	-.077	.249
Opioid	Perceived Social Support	Dependent	Recovering	.039	.067	1.000	-.124	.202
			Non-user	-.230*	.067	.002	-.394	-.067
		Recovering	Dependent	-.039	.067	1.000	-.202	.124
			Non-user	-.269*	.067	.000	-.433	-.106
		Non-user	Dependent	.230*	.067	.002	.067	.394
			Recovering	.269*	.067	.000	.106	.433

Table 3.36: Line graphs depicting significant Mean differences for the three subgroups (Dependents, Recovering, and Non-users) under Alcohol and Opioid groups on the Social Support variable of Perceived Social Support
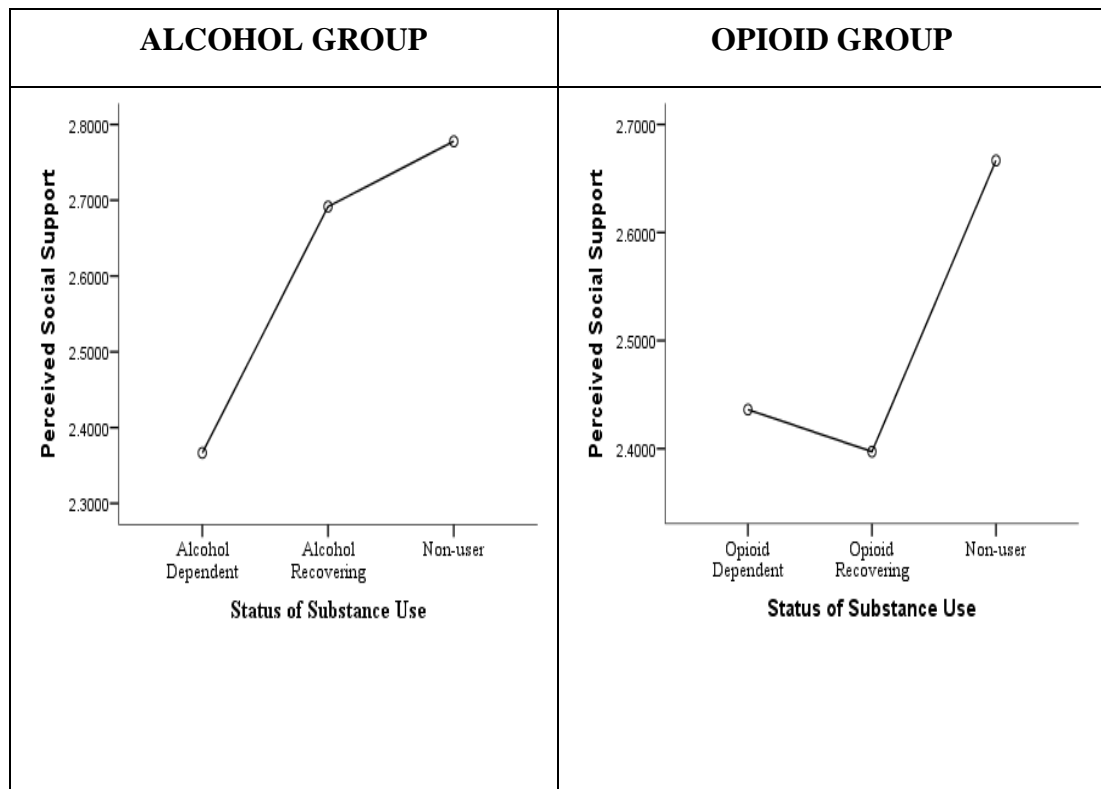

A significant difference according to 'Status of Substance Use' (Dependent, Recovering, Non-user) was also seen on **Instrumental Social Support** from the One-Way ANOVA results in Table 3.38, but Levene's statistics (Table 3.38) was found to be significant. Therefore, Kruskal Wallis Test was employed for testing differences between the groups, the results of which are given in Table 3.41. The results also confirmed significant status effect on Instrumental Social Support. The Mean Rank displayed in Table 3.42 was significantly greater in Non-user Group (*Mean Rank* = 102.36) as compared to the Alcohol Dependent Group (*Mean Rank* =77.15). However, the same cannot be said for the Alcohol Recovering Group (*Mean Rank* =91.99) with the Dependent Group. Previous results have highlighted the importance of social support in the treatment programme of substance use but there is lack of research specifying on the role of instrumental support or tangible aid. Rychtarik and colleagues (1987) found the evidence of lower consumption of

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alcohol in alcoholics when they were in contact with some social support or connection (for example their spouse, children, or a housing community). The existence of supportive structures and networks, as well as supportive interventions such as spiritual and familial support have been suggested to play a major role in the acquisition of treatment goals among drug users and prevention of relapse (Spoth & Raymond, 1994; Blume *et al.*, 1994). It has also been shown that there was a positive relationship between receiving social support and the length of drug abstinence (Davis & Jason, 2005).

A significant 'Status of Substance Use' (Dependent, Recovering, Non-user) effect was also seen on **Instrumental Social Support in the Opioid Group** as may be seen from the One-Way ANOVA results in Table 3.38, but Levene's statistics (Table 3.38) was found to be significant. Therefore, Kruskal Wallis Test was employed for testing differences between the groups, the results of which are given in Table 3.43. The results also confirmed significant status effect on Instrumental Social Support. The Mean Rank displayed in Table 3.44 was significantly greater in Opioid Recovering Group (*Mean Rank* = 94.72) and Non-user Group (*Mean Rank* = 105.98) than in Opioid Dependent Group (*Mean Rank* = 70.80). Regardless of what theoretical model is being studied, empirical evidence has shown the importance of social support in the dynamic of substance abuse and recovery. Previous results have highlighted the importance of social support in the treatment programme of substance use but there is lack of research specifying on the role of instrumental support or tangible aid. For instance, studies have also shown that social support lowers the chances of relapsing (Havassy *et al.*, 1995). Davis and Jason (2005) indicated social support as one of the factors that have a special role in maintaining the withdrawal of drug-dependent people.

To summarize the above findings of the pattern differences in the three groups of substance use under the two types of substance use, in terms of **Instrumental Social Support** in the Alcohol Group, the Mean of the Non-user Group was significantly higher as compared to the Alcohol Dependent Group. And

similarly in the Opioid Group, the Mean of the Opioid Recovering Group and Non-user Group was significantly greater than the Opioid Dependent Group.

Table 3.37: Mean, SD, Skewness, Kurtosis, and Std Error on the Social Support variable of Instrumental Social Support for Alcohol and Opioid sub-groups (Dependent, Recovering, and Non-user)

Groups	Scale	Sub-Groups	N	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
Alcohol Group	Instrumental Social Support	Dependent	60	1.80	.33	-1.434	.309	.773	.608
		Recovering	60	1.91	.25	-2.793	.309	7.012	.608
		Non-user	60	1.98	.13	-7.746	.309	60.000	.608
Opioid Group	Instrumental Social Support	Dependent	60	1.63	.46	-.526	.309	-1.619	.608
		Recovering	60	1.87	.30	-2.155	.309	3.357	.608
		Non-user	60	1.96	.19	-4.683	.309	21.399	.608

Table 3.38: Results of ANOVA and Homogeneity of Variance for the three subgroups (Dependents, Recovering, and Non-users) under Alcohol and Opioid groups on the Social Support variable of Instrumental Social Support

Groups	Scale	Homogeneity of variance		Analysis of Variance						
		Levene's Stat	Sig.		Sum of Squares	Sum of Squares	df	Mean Square	F	Sig.
Alcohol	Instrumental Social Support	32.163	.000	Between Groups	1.019	2	.510	7.964	.000	.083
				Within Groups	11.329	177	.064			
				Total	12.349	179				

			Between Groups	3.558	2	1.779	15.831	.000	.152
Opioid	Instrumental Social Support	55.158 / .000	Within Groups	19.892	177	.112			
			Total	23.450	179				

Table 3.39: Bonferonni test for post hoc mean comparisons in significant differences between the groups on the Social Support variable of Instrumental Social Support

Groups	Dependent Variable	(I) Status of Substance Use	(J) Status of Substance Use	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Alcohol	Instrumental Social Support	Dependent	Recovering	-.108	.046	.060	-.220	.003
			Non-user	-.183*	.046	.000	-.295	-.072
		Recovering	Dependent	.108	.046	.060	-.003	.220
			Non-user	-.075	.046	.319	-.187	.037
		Non-user	Dependent	.183*	.046	.000	.072	.295
			Recovering	.075	.046	.319	-.037	.187
Opioid	Instrumental Social Support	Dependent	Recovering	-.242*	.061	.000	-.390	-.094
			Non-user	-.333*	.061	.000	-.481	-.185
		Recovering	Dependent	.242*	.061	.000	.094	.390
			Non-user	-.092	.061	.408	-.240	.056
		Non-user	Dependent	.333*	.061	.000	.185	.481
			Recovering	.092	.061	.408	-.056	.240

Table 3.40: Line graphs depicting significant Mean differences for the three subgroups (Dependents, Recovering, and Non-users) under Alcohol and Opioid groups on the Social Support variable of Instrumental Social Support

ALCOHOL GROUP	OPIOID GROUP
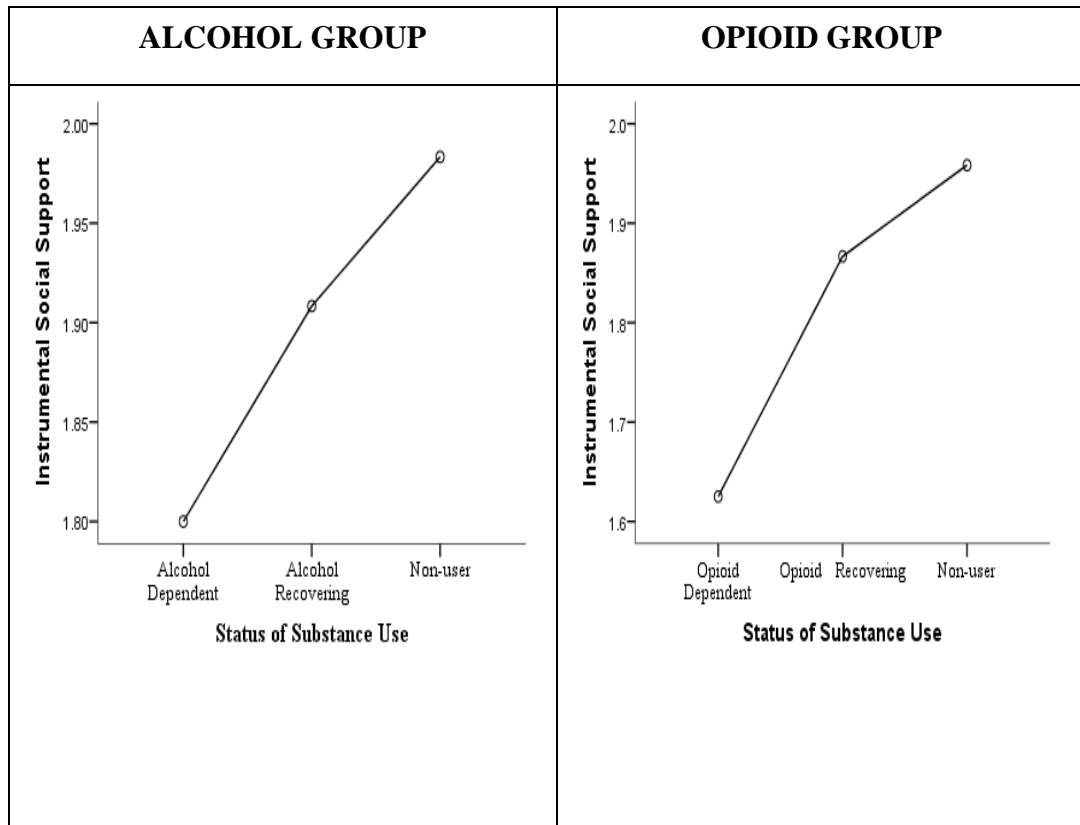
Table 3.41: Results of Kruskal Wallis Test for Status of Substance Use (Dependent, Recovering and Non-user Groups) differences in Internal LoC, Adaptive Coping, Perceived Social Support and Instrumental Social Support for Alcohol Group

	Internal LOC	Adaptive Coping	Perceived Social Support	Instrumental Social Support
Chi-Square	4.109	10.773	49.631	18.436
df	2	2	2	2
Asymp. Sig.	.128	.005	.000	.000

a. Kruskal Wallis Test

b. Grouping Variable: Status

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Table 3.42: Mean Ranks of Status of Substance Use (Dependent, Recovering and Non-user) in Internal LoC, Adaptive Coping, Perceived Social Support and Instrumental Social Support for Alcohol Group

	STATUS	N	Mean Rank
Internal LoC	Dependent	60	86.03
	Recovering	60	101.48
	Non-user	60	83.99
	Total	180	
Adaptive Coping	Dependent	60	76.85
	Recovering	60	87.39
	Non-user	60	107.26
	Total	180	
Perceived Social Support	Dependent	60	56.32
	Recovering	60	93.86
	Non-user	60	121.33
	Total	180	
Instrumental Social Support	Dependent	60	77.15
	Recovering	60	91.99
	Non-user	60	102.36
	Total	180	

Table 3.43: Results of Kruskal Wallis Test for Status of Substance Use (Dependent, Recovering and Non-user Groups) differences in Connectedness with Environment-Caring for Others and Instrumental Social Support for Opioid Group

	Connectedness with Others	Instrumental Social Support
Chi-Square	11.610	27.123
df	2	2
Asymp. Sig.	.003	.000

a. Kruskal Wallis Test

b. Grouping Variable: Status

Table 3.44: Mean Ranks of Status of Substance Use (Dependent, Recovering and Non-user Groups) in the Opioid Group in Maladaptive Coping, Connectedness with Environment-Caring for Others and Instrumental Social Support

	STATUS	N	Mean Rank
Caring for Others	Dependent	60	72.25
	Recovering	60	96.39
	Non-user	60	102.86
	Total	180	
Instrumental Social Support	Dependent	60	70.80
	Recovering	60	94.72
	Non-user	60	105.98
	Total	180	

To conclude, in the Alcohol group, the findings support the second hypothesis stating that the Recovering Group and Non-user Group will score significantly higher in Adaptive Coping Style, Spirituality and Perceived Social Support whereas they are expected to score significantly lower on Powerful Others Locus of Control and Maladaptive Coping than the Dependent Group. In terms of Resilience and Instrumental Social Support, only the Non-user Group scored

significantly higher than the Dependent Group while the Recovering Group did not do so in the Alcohol Group. In the case of Internal Locus of Control, there was no significant evidence of the effect of 'Status of Substance Use' in this. Hence, the hypothesis stating that the Alcohol Recovering Group and Non-user Group will score significantly higher than Alcohol Dependent Group in Internal Locus of Control is not supported.

In the Opioid Group, some of the above-mentioned findings support the second hypothesis stating that the Recovering Group and Non-user Group will score significantly higher in Spirituality, and Instrumental Social Support than the Dependent Group. However, in terms of Resilience, Adaptive Coping and Perceived Social Support, only the Non-user Group scored significantly higher than the Dependent Group as also in the case of Maladaptive Coping, where only the Non-user Group scored significantly lower as compared to the Dependent Group. However, the same cannot be said in the case of Internal Locus of Control and Powerful Others Locus of Control amongst the Opioid Groups. There was no significant evidence of the effect of 'Status of Substance Use' in these two variables. Hence, the hypothesis stating that the Recovering Group and Non-user Group will score significantly higher than Dependent Group in Internal Locus of Control and significantly lower in Powerful Others Locus of Control is not supported by the current findings. Whereas past researches have shown that substance abusers significantly scored higher on external locus of control as compared to non-abusers (Niazi *et al*., 2005). However, some studies like Dielman *et al*., (1987) in their study concerning susceptibility to peer pressure, self-esteem, and health locus of control amongst adolescents also found that external health locus of control index wasn't significantly associated with most of the substance use, misuse, and intention items. The results from the above study indicated that the self-esteem and health locus of control constructs are less central to adolescent substance use and misuse than is susceptibility to peer pressure. Hence, Locus of Control may not play a central role or may give conflicting results in the area of substance use, misuse or abstinence.

4. Pattern of Differences in Personality, Spirituality, and Social Support in three 'Status of Substance Use '(Dependent, Recovering, Non-user) between the two 'Type of Substance Use '(Alcohol and Opioid)

The third objective of comparing the patterns of differences based on the 'Status of Substance Use' (Dependent, Recovering and Non-user) in the two 'Type of Substance Use' (Opioid or Alcohol) on Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment-Caring for Others and Connectedness with Transcendent), and Social Support (Perceived Social Support and Instrumental Social Support) was put forth as these variables were expected to differ based on the 'Status of Substance Use' under the two 'Type of Substance Use' used. However, the ways in which the differences emerge is exploratory.

In this part of the study, the patterns of differences in three Status of Substance Use (Dependent, Recovering, Non-user) between the two types of Substance Use (Alcohol and Opioid) as already analysed by the Two - way Factorial 2X3 (2 Type X 3 Status) MANOVA for the Dependent Variables of Personality, Spirituality and Social Support (Table 2.1, 2.2, 2.3 & 2.4) may be interpreted. It may be reiterated that the interaction effects were found to be significant only in the personality variable of **Powerful Others Locus of Control** and the **Perceived Social Support** variable. Post-Hoc multiple comparisons (TUKEY HSD) and graph depicting the interaction effects are given below.

In the **Powerful Others Locus of Control**, the results indicate that in the Opioid Group, there was no significant difference between Recovering Group (*M*=2.77, *SD*=.85), Dependent Group (*M*=2.78, *SD*=1.07) and Non-user Group (*M*=2.54, *SD*=.95) in Powerful Others Locus of Control, whereas in the Alcohol Group, the Dependent Group (*M*=3.48, *SD*=1.23) scored significantly higher than the Recovering Group (*M*=2.71, *SD*=.82) and the Non-user Group (*M*=2.44, *SD*=.89) in Powerful Others Locus of Control (Figure 3.1). Although, past researches have shown that substance abusers significantly scored higher on external locus of control

as compared to non-abusers (Niazi *et al*., 2005, Prakash *et al*., 2015). Internally oriented individuals tend to believe that outcomes are primarily related to internal factors (e.g., their own actions), whereas externally oriented individuals believe outcomes are influenced mostly by external factors (e.g., powerful others or chance factors). Research on Powerful Others Locus of Control comparing individuals between these two types of Substances (alcohol and opioid) is scarce. So, with limited literature comparing this particular variable in these two groups, it may be surmised that when it comes to the *Mizo* society, people who are dependent on alcohol tend to view the impact of other people on their lives i.e., on Powerful Others Locus of Control as higher than those with Opioid dependent people. This may be seen as an impact of the kind of attitude *Mizo* Society has towards its perception of alcohol which has been a part and parcel of *Mizo* history versus Opioid which is considered relatively new and is not a part in its collective memory and history. And with a less favourable attitude towards illicit drugs such as heroin, opioid users may distance themselves and feel less connected towards the society as a whole as compared to individuals with Alcohol users. As *Mizo* population has been shown to display collectivistic characteristics (Fente & Singh, 2008, Lalkhawngaihi & Fente, 2019) where social behavior is determined by shared goals, attitudes and values with their in-groups (Hofstede, 1980; Markus & Kitayama, 1991; Triandis, 1995). Hence, we can say that, this cultural context may have an impact on the locus of control of substance users.

Figures 3.1 Depicting pattern differences in Powerful Others Locus of Control in the three Status of Substance Use (Dependent, Recovering, Non-user) between the two Types of Substance Use (Alcohol and Opioid) (2X3 Interaction Effect on Powerful Others LOC)
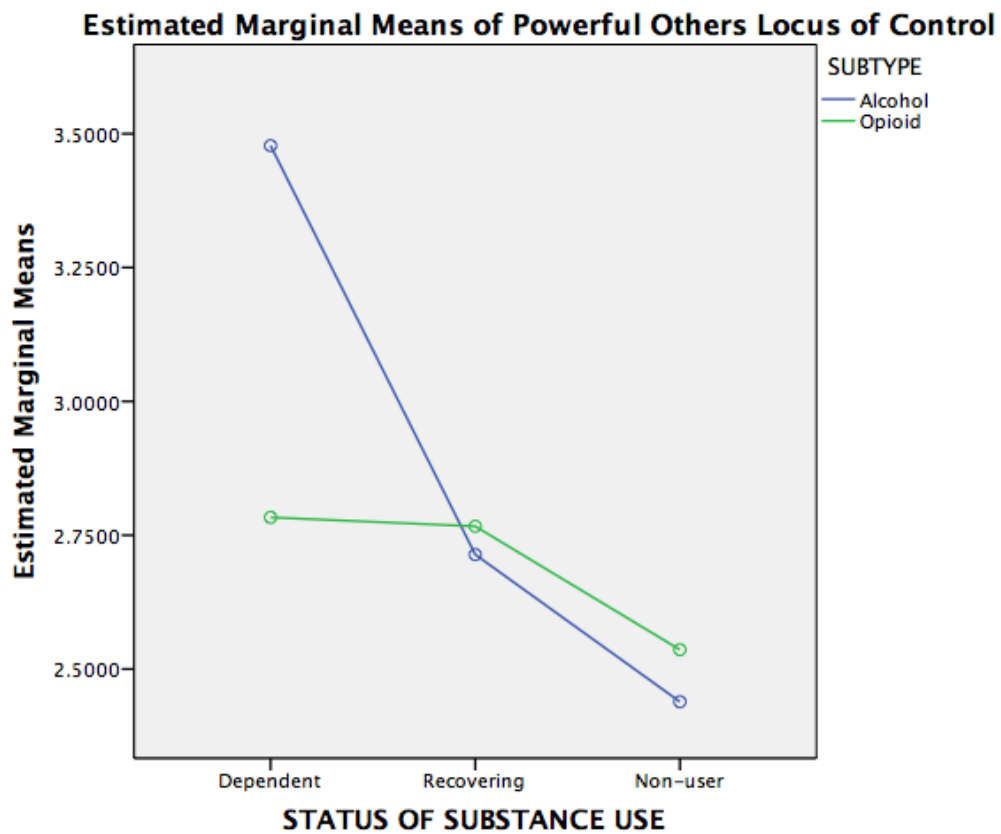
In terms of Perceived Social Support (Fig. 3.2), Alcohol Recovering Group (M=2.69, SD=.28) and Non-user Group (M=2.78, SD=.45) displayed significantly

higher Mean score than the Alcohol Dependent Group (M=2.37, SD=.36) as expected (Table 3.45). Interestingly, in the case of the Opioid Group (Table 3.46), the Opioid Dependent Group (M=2.44, SD=.35) reported a higher Mean score in Perceived Social Support than the Recovering Group (M=2.39, SD=.42) though lesser than the Non-user Group (M=2.67, SD=.33). An explanation for this finding may be again linked with the Mizo society's approach to 'recovering addicts' individuals especially from what are often considered as hard drugs such as heroin. Hard drug or Opioid users who are considered to be in recovery may see themselves as receiving much less social support as compared to their counterparts who are recovering from or 'in recovery' from a less stigmatized substance like alcohol. The use of alcohol during festivals was a common practice in the *Mizo* traditional society. It was only after the advent of Christianity in Mizoram that consumption of '*Zu*' by a *Mizo* Christian was prohibited (MSD & RB., 2015), whereas, the introduction of Opioid in the form of heroin to the *Mizo* society is relatively new and recent as the early 1970s (Panda, 2006). These individuals are often viewed skeptically especially if they have had a history of relapse. And studies have shown that there exists a positive relationship between family expressed emotions and the frequency of relapse (Atadokht *et al*., 2015).

Figures 3.2 Depicting pattern differences in Perceived Social Support in the three
Status of Substance Use (Dependent, Recovering, Non-user) between the two Type
of Substance Use (Alcohol and Opioid)

To summarize the above findings of the pattern differences in the three
groups of substance use under the two types of substance use, in terms of **Powerful
Others LOC**, the Alcohol Recovering Group and Non-user Group displayed
significantly lower mean score than the Alcohol Dependent Group as expected. In
the Powerful Others Locus of Control amongst the Opioid Groups, the Recovering
Group and Non-user Group did not score significantly lower than Dependent Group.
In terms of **Perceived Social Support**, Alcohol Recovering Group and Non-user
Group displayed significantly higher Mean score than the Alcohol Dependent Group
as expected. Interestingly, in the case of the Opioid Group, the Opioid Dependent
Group reported a higher Mean score in Perceived Social Support than the Recovering
Group though lesser than the Non-user Group.

Table 3.45 Showing pattern differences in Resilience, Internal Locus of Control, Powerful Others Locus of Control, Adaptive Coping, Maladaptive Coping, Connectedness with Oneself, Connectedness with Environment-Caring for Others, Connectedness with transcendent, Perceived Social Support and Instrumental Social Support in the three 'Status of Substance Use' (Dependent, Recovering, Non-user) between the two 'Type of Substance Use' (Alcohol and Opioid)

SUBTYPE * STATUS OF SUBSTANCE USE

Dependent Variable	SUBTYPE	STATUS OF SUBSTANCE USE	Mean	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
Resilience	Alcohol	Dependent	3.402	.110	3.186	3.618
		Recovering	4.013	.110	3.797	4.229
		Non-user	3.911	.110	3.695	4.127
	Opioid	Dependent	3.500	.110	3.284	3.716
		Recovering	3.807	.110	3.592	4.023
		Non-user	3.981	.110	3.766	4.197
Internal LOC	Alcohol	Dependent	4.345	.109	4.132	4.559
		Recovering	4.457	.109	4.244	4.671
		Non-user	4.140	.109	3.927	4.354
	Opioid	Dependent	4.407	.109	4.194	4.621
		Recovering	4.288	.109	4.075	4.502
		Non-user	4.143	.109	3.929	4.356
Powerful Others LOC	Alcohol	Dependent	3.478	.126	3.230	3.726
		Recovering	2.714	.126	2.466	2.962
		Non-user	2.439	.126	2.191	2.687
	Opioid	Dependent	2.783	.126	2.535	3.032
		Recovering	2.767	.126	2.518	3.015

		Non-user	2.536	.126	2.288	2.784
	Alcohol	Dependent	2.969	.072	2.827	3.112
		Recovering	3.124	.072	2.981	3.266
Adaptive Coping		Non-user	3.338	.072	3.196	3.481
	Opioid	Dependent	2.883	.072	2.741	3.026
		Recovering	2.943	.072	2.800	3.085
		Non-user	3.183	.072	3.041	3.326
	Alcohol	Dependent	2.837	.096	2.648	3.026
		Recovering	2.437	.096	2.248	2.626
Maladaptive Coping		Non-user	2.000	.096	1.811	2.189
	Opioid	Dependent	2.790	.096	2.601	2.979
		Recovering	2.567	.096	2.378	2.756
		Non-user	2.040	.096	1.851	2.229
	Alcohol	Dependent	4.294	.082	4.132	4.456
		Recovering	4.618	.082	4.456	4.780
Connect with Oneself		Non-user	4.850	.082	4.688	5.012
	Opioid	Dependent	4.197	.082	4.035	4.359
		Recovering	4.673	.082	4.511	4.835
		Non-user	4.836	.082	4.674	4.998
	Alcohol	Dependent	4.304	.104	4.099	4.509
		Recovering	4.738	.104	4.532	4.943
Caring for Others		Non-user	5.079	.104	4.874	5.284
	Opioid	Dependent	4.425	.104	4.220	4.630
		Recovering	4.758	.104	4.553	4.964
		Non-user	4.892	.104	4.686	5.097

		Dependent	3.950	.095	3.763	4.137
	Alcohol	Recovering	4.430	.095	4.243	4.616
Connect with		Non-user	4.756	.095	4.569	4.942
Transcendent		Dependent	3.978	.095	3.791	4.165
	Opioid	Recovering	4.548	.095	4.361	4.735
		Non-user	4.561	.095	4.374	4.748
		Dependent	2.367	.048	2.273	2.461
	Alcohol	Recovering	2.692	.048	2.598	2.786
Perceived		Non-user	2.778	.048	2.684	2.872
Social Support		Dependent	2.436	.048	2.342	2.530
	Opioid	Recovering	2.397	.048	2.303	2.491
		Non-user	2.667	.048	2.573	2.761
		Dependent	1.800	.038	1.725	1.875
	Alcohol	Recovering	1.908	.038	1.833	1.984
		Non-user	1.983	.038	1.908	2.059
Instrumental		Dependent	1.625	.038	1.550	1.700
Social Support	Opioid	Recovering	1.867	.038	1.791	1.942
		Non-user	1.958	.038	1.883	2.034

Table 3.46 Showing Post-Hoc multiple comparisons (TUKEY HSD) in Resilience, Internal Locus of Control, Powerful Others Locus of Control, Adaptive Coping, Maladaptive Coping, Connectedness with Oneself, Connectedness with Environment-Caring for Others, Connectedness with transcendent, Perceived Social Support and Instrumental Social Support in the three 'Status of Substance Use' (Dependent, Recovering, Non-user) between the two 'Type of Substance Use' (Alcohol and Opioid)

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) STATUS OF SUBSTANCE USE	(J) STATUS OF SUBSTANCE USE	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Resilience	Dependent	Recovering	-.459*	.109	.000	-.717	-.201
		Non-user	-.495*	.109	.000	-.753	-.237
	Recovering	Dependent	.459*	.109	.000	.201	.717
		Non-user	-.036	.109	.942	-.294	.222
	Non-user	Dependent	.495*	.109	.000	.237	.753
		Recovering	.036	.109	.942	-.222	.294
Internal LOC	Dependent	Recovering	.003	.108	.999	-.251	.259
		Non-user	.234	.108	.079	-.020	.489
	Recovering	Dependent	-.003	.108	.999	-.259	.251
		Non-user	.230	.108	.086	-.024	.486
	Non-user	Dependent	-.234	.108	.079	-.489	.020
		Recovering	-.230	.108	.086	-.486	.024
Powerful Others LOC	Dependent	Recovering	.390*	.126	.006	.093	.687
		Non-user	.643*	.126	.000	.346	.940

			Mean Difference	Std. Error	Sig.	Lower Bound	Upper Bound
	Recovering	Dependent	-.390*	.126	.006	-.687	-.093
		Non-user	.252	.126	.113	-.044	.549
	Non-user	Dependent	-.643*	.126	.000	-.940	-.346
		Recovering	-.252	.126	.113	-.549	.044
Adaptive Coping	Dependent	Recovering	-.107	.072	.302	-.277	.063
		Non-user	-.334*	.072	.000	-.505	-.164
	Recovering	Dependent	.107	.072	.302	-.063	.277
		Non-user	-.227*	.072	.005	-.397	-.056
	Non-user	Dependent	.334*	.072	.000	.164	.505
		Recovering	.227*	.072	.005	.056	.397
Maladaptive Coping	Dependent	Recovering	.311*	.096	.004	.085	.537
		Non-user	.793*	.096	.000	.567	1.019
	Recovering	Dependent	-.311*	.096	.004	-.537	-.085
		Non-user	.481*	.096	.000	.255	.707
	Non-user	Dependent	-.793*	.096	.000	-1.019	-.567
		Recovering	-.481*	.096	.000	-.707	-.255
Connect with Oneself	Dependent	Recovering	-.400*	.082	.000	-.593	-.206
		Non-user	-.597*	.082	.000	-.791	-.403
	Recovering	Dependent	.400*	.082	.000	.206	.593
		Non-user	-.197*	.082	.044	-.391	-.003
	Non-user	Dependent	.597*	.082	.000	.403	.791

		Recovering	.197*	.082	.044	.003	.391
Caring for Others	Dependent	Recovering	-.383*	.104	.001	-.629	-.137
		Non-user	-.620*	.104	.000	-.866	-.375
	Recovering	Dependent	.383*	.104	.001	.137	.629
		Non-user	-.237	.104	.061	-.483	.008
	Non-user	Dependent	.620*	.104	.000	.375	.866
		Recovering	.237	.104	.061	-.008	.483
Connect with Transcendent	Dependent	Recovering	-.525*	.094	.000	-.748	-.301
		Non-user	-.694*	.094	.000	-.918	-.470
	Recovering	Dependent	.525*	.094	.000	.301	.748
		Non-user	-.169	.094	.176	-.393	.054
	Non-user	Dependent	.694*	.094	.000	.470	.918
		Recovering	.169	.094	.176	-.054	.393
Perceived Social Support	Dependent	Recovering	-.143*	.047	.008	-.255	-.030
		Non-user	-.320*	.047	.000	-.433	-.208
	Recovering	Dependent	.143*	.047	.008	.030	.255
		Non-user	-.177*	.047	.001	-.290	-.065
	Non-user	Dependent	.320*	.047	.000	.208	.433
		Recovering	.177*	.047	.001	.065	.290
Perceived Social Support	Dependent	Recovering	-.175*	.038	.000	-.265	-.085
		Non-user	-.258*	.038	.000	-.349	-.168
	Recovering	Dependent	.175*	.038	.000	.085	.265

	Non-user	-.083	.038	.077	-.174	.007
Non-user	Dependent	.258*	.038	.000	.168	.349
	Recovering	.083	.038	.077	-.007	.174

Based on observed means.

 The error term is Mean Square(Error) = .088.

*. The mean difference is significant at the 0.05 level

Relationships between Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Caring for Others & Connectedness with Transcendent) and Social Support (Perceived Social Support & Instrumental Social Support)

In order to address the fourth objective of highlighting the relationships between Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment-Caring for Others and Connectedness with Transcendent) and Social Support (Perceived Social Support and Instrumental Social Support), the following hypothesis was formulated: there will be significant relationship between the variables of Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment-Caring for Others and Connectedness with Transcendent) and Social Support (Perceived Social Support and Instrumental Social Support) in the 'Status of Substance Use' (Dependent Group, Recovering Group and Non-user Group) under the 'Type of Substance Use' (Alcohol Group & Opioid Group).

Using Pearson's Correlation Coefficient, Bivariate Correlations between the scores on all the ten variables of Personality Factors (Resilience, Locus of Control and its two subscales- Internal Scale and Powerful Others Scale and Coping Styles and its two subscales- Adaptive Coping and Maladaptive Coping), Spirituality and its three subscales-Connectedness with Oneself, Connectedness with Environment-Caring for Others and Connectedness with Transcendent and Social Support and its two subscales- Perceived Social Support and Instrumental Social Support were determined for all units of analyses. Table 4.1, 4.2 and Table 4.3 depict the testing of the fourth hypothesis for correlations between the variables over all units of analyses.

For the Alcohol Dependent Group (shown in Table 4.1, above the diagonal), Resilience was significantly positively correlated with Internal LOC ($r = .32$, p < .05). Internal LOC was significantly positively correlated with Maladaptive Coping

($r = .27$, p < .05) and Connectedness with Oneself ($r = .26$, p < .05). Powerful Others LOC was significantly positively correlated to Adaptive Coping ($r = .26$, p < .05) and significantly negatively correlated with Perceived Social Support ($r = -.28$, p < .05). Adaptive Coping was significantly positively correlated with Connectedness with Oneself ($r = .48$, p < .01). Connectedness with Oneself was significantly positively correlated with Connectedness with Environment-Caring for Others ($r = .55$, p < .01), Connectedness with Transcendent ($r = .47$, p < .01) and Perceived Social Support ($r = .31$, p < .05). Connectedness with Environment- Caring for Others was significantly positively correlated with Connectedness with Transcendent ($r = .29$, p < .05). Connectedness with Transcendent was significantly positively correlated with Perceived Social Support ($r = .34$, p < .01). And finally, Perceived Social Support was significantly positively correlated with Instrumental Social Support ($r = .26$, p < .05).

From significant results displayed in Table 4.2 (below the diagonal),it is evident that for the Opioid Dependent Group, Resilience was significantly positively correlated with Internal LOC ($r = .27$, p < .05), Connectedness with Oneself ($r = .36$, p < .01), Connectedness with Environment- Caring for Others ($r = .30$, p < .05) but significantly negatively correlated with Maladaptive Coping ($r = -.43$, p < .01). Internal LOC was significantly positively correlated with Connectedness with Environment- Caring for Others ($r = .41$, p < .01) while it is significantly negatively correlated with Adaptive Coping ($r = -.26$, p < .05). Powerful Others LOC was significantly negatively correlated with Adaptive Coping ($r = -.28$, p < .05) and Connectedness with Oneself ($r = -.25$, p < .05). Adaptive Coping was significantly positively correlated with Connectedness with Transcendent ($r = .26$, p < .05) while Maladaptive Coping was significantly negatively correlated with Connectedness with Environment- Caring for Others ($r = -.30$, p < .05). Connectedness with Oneself was significantly positively correlated with Connectedness with Environment- Caring for Others ($r = .66$, p < .01) and Connectedness with Transcendent ($r = .69$, p < .01). Connectedness with Environment- Caring for Others was significantly positively correlated with Connectedness with Transcendent ($r = .44$, p < .01) and Perceived

Social Support (r = .33, p < .05). And finally, Perceived Social Support was significantly positively correlated with Instrumental Social Support (r = .31, p < .05).

Table 4.1:Correlation coefficients (Pearson *r*) between Resilience, Internal LOC, Powerful Others LOC, Adaptive Coping, Maladaptive Coping, Connectedness with Oneself, Connectedness with Environment (Caring for Others), Connectedness with transcendent, Perceived Social Support & Instrumental Social Support for Alcohol Dependent Group (n=60) and Opioid Dependent Group (n=60)

	Resilience	Internal LOC	Powerful Others LOC	Adaptive Coping	Maladaptive Coping	Connect with Oneself	Caring for Others	Connect with transcendent	Perceived Social Support	Instrumental Social Support
Resilience	1	**.32***	-.03	-.04	.01	.23	.06	.13	.13	-.04
Internal LOC	**.27***	1	.14	.25	**.27***	**.26***	.21	.16	-.01	.09
Powerful Others LOC	-.02	.18	1	**.26***	.19	.09	.06	.23	**-.28***	-.14
Adaptive Coping	.19	**-.26***	**-.28***	1	.22	**.48****	.23	.24	-.07	.02
Maladaptive Coping	**-.43****	-.19	.13	-.16	1	-.05	-.11	.02	-.08	-.01
Connect with Oneself	**.36****	.19	**-.25***	.19	-.23	1	**.55****	**.47****	**.31***	.24
Caring for Others	**.30***	**.41****	-.09	.11	**-.30***	**.66****	1	**.29***	.25	.18
Connect with transcendent	.24	.21	-.21	**.26***	-.13	**.69****	**.44****	1	**.34****	.15
Perceived Social Support	.01	.12	-.11	-.05	-.24	.19	**.33***	.14	1	**.26***
Instrumental Social Support	.16	.00	-.09	.17	-.15	.03	.04	-.01	**.31***	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).
Note: Alcohol Dependent Group (above diagonal), Opioid Dependent Group (below diagonal).

For the Alcohol Recovering Group (shown in Table 4.2, above the diagonal),Resilience was significantly positively correlated with Internal LOC (*r* =

.58, p < .01), Adaptive Coping (r = .53, p < .01), Connectedness with Oneself (r = .43, p < .01), Connectedness with Environment- Caring for Others (r = .43, p < .01) and Connectedness with Transcendent (r = .41, p < .01) but significantly negatively correlated with Maladaptive Coping (r = -.37, p < .01). Internal LOC was significantly positively correlated with Adaptive Coping (r = .31, p < .01), Connectedness with Oneself (r = .45, p < .01) and Connectedness with Environment- Caring for Others (r = .36, p < .01), but significantly negatively correlated with Maladaptive Coping (r = -.43, p < .01). Powerful Others LOC was significantly positively correlated with Maladaptive Coping (r = .32, p < .05), and significantly negatively correlated with Connectedness with Oneself (r = -.31, p < .05). Adaptive Coping was significantly positively correlated with Connectedness with Oneself (r = .44, p < .01), Connectedness with Environment- Caring for Others (r = .39, p < .01) and Connectedness with Transcendent (r = .36, p < .01). Maladaptive Coping was significantly negatively correlated with Connectedness with Oneself (r = -.40, p < .01) and Connectedness with Others (r = -.33, p < .05). Connectedness with Oneself was significantly positively correlated with Connectedness with Environment- Caring for Others (r = .69, p < .01) and Connectedness with Transcendent (r = .68, p < .01). Connectedness with Environment- Caring for Others was significantly positively correlated with Connectedness with Transcendent (r = .77, p < .01) and Perceived Social Support (r = .36, p < .01). Finally, Connectedness with Transcendent was significantly positively correlated with Perceived Social Support (r = .26, p < .05).

As seen from Table4.2 (below the diagonal), for the Opioid Recovering Group, Resilience was significantly positively correlated with Internal LOC (r=.36, p < .01), Adaptive Coping (r = .57, p < .01), Connectedness with Oneself (r = .52, p < .01), Connectedness with Environment- Caring for Others (r = .40, p < .01) and Connectedness with Transcendent (r = .52, p < .01) but significantly negatively correlated with Powerful Others LOC (r = -.39, p < .01) and Maladaptive Coping (r = -.39, p < .01). Internal LOC was significantly positively correlated with Resilience (r = .58, p < .01), Adaptive Coping (r = .28, p < .05), Connectedness with Environment- Caring for Others (r = .36, p < .05) and Connectedness with

Transcendent ($r = .36$, p $< .05$) while it is significantly negatively correlated with Powerful Others LOC ($r = -.31$, p $< .05$). Powerful Others LOC was significantly positively related to Maladaptive Coping ($r = .26$, p $< .05$) while significantly negatively correlated to Adaptive Coping ($r = -.29$, p $< .05$), Connectedness with Environment- Caring for Others ($r = -.38$, p $< .01$), and Connectedness with Transcendent ($r = -.28$, p $<.05$).Adaptive Coping was significantly positively correlated to Connectedness with Oneself ($r = .42$, p $< .01$),Connectedness with Environment- Caring for Others($r = .42$, p $< .01$), Connectedness with Transcendent ($r = .42$, p $< .01$), and Instrumental Social Support ($r = .34$, p $< .01$), while Maladaptive Coping was significantly negatively correlated to Perceived Social Support ($r = -.29$, p $< .05$). Connectedness with Oneself was significantly positively correlated to Connectedness with Environment- Caring for Others ($r = .71$, p $< .01$), and Connectedness with Transcendent ($r = .77$, p $< .01$). And finally, Connectedness with Environment- Caring for Others was significantly positively correlated Connectedness with Transcendent($r = .62$, p $< .01$) and Instrumental Social Support ($r = .32$, p $< .05$).

Table 4.2:Correlation coefficients (Pearson *r*) between Resilience, Internal LOC, Powerful Others LOC, Adaptive Coping, Maladaptive Coping, Connectedness with Oneself, Connectedness with Environment (Caring for Others), Connectedness with transcendent, Perceived Social Support & Instrumental Social Support for Alcohol Recovering Group (n=60) and Opioid Recovering Group (n=60)

	Resilience	Internal LOC	Powerful Others LOC	Adaptive Coping	Maladaptive Coping	Connect with Oneself	Caring for Others	Connect with transcendent	Perceived Social Support	Instrumental Social Support
Resilience	1	**.58****	-.15	**.53****	**-.37****	**.43****	**.43****	**.41****	.05	-.03
Internal LOC	**.36****	1	-.19	**.31***	**-.43****	**.45****	**.36****	.24	.09	.07
Powerful Others LOC	**-.39****	**-.31***	1	-.01	**.32***	**-.31***	-.20	-.24	.02	-.16
Adaptive Coping	**.57****	**.28***	**-.29***	1	-.24	**.44****	**.39****	**.36****	.13	-.24
Maladaptive Coping	**-.39****	.06	**.26***	-.05	1	**-.40****	**-.33***	-.17	-.07	-.14
Connect with Oneself	**.52****	.25	-.19	**.42****	-.22	1	**.69****	**.68****	.25	.08
Caring for Others	**.40****	**.27***	**-.38****	**.42****	-.09	**.71****	1	**.77****	**.36****	.03
Connect with transcendent	**.52****	**.33***	**-.28***	**.42****	-.23	**.77****	**.62****	1	**.26***	-.01
Perceived Social Support	.23	.24	-.19	.13	**-.29***	.23	.16	.20	1	.07
Instrumental Social Support	.25	.21	-.14	**.34****	-.05	.21	**.32***	.07	.02	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Note: Alcohol Recovering Group (above diagonal), Opioid Recovering Group (below diagonal).

As for the Alcohol Non-user Group(shown in Table 4.3, above the diagonal), Resilience was significantly positively correlated with Internal LOC (*r* = .40, p < .01), Adaptive Coping (*r* = .48, p < .01), Connectedness with Oneself (*r* = .48, p < .01) and Perceived Social Support (*r* = .26, p < .05) and significantly negatively correlated with Powerful Others LOC (*r* = -.37, p < .01) and Maladaptive Coping (*r*

= -.58, p < .01). Internal LOC was significantly positively correlated with Connectedness with Oneself ($r = .33$, p < .01), Connectedness with Environment-Caring for Others ($r = .39$, p < .01), Connectedness with Transcendent ($r = .33$, p < .01) and Perceived Social Support ($r = .34$, p < .01) but was significantly negatively correlated with Maladaptive Coping ($r = -.31$, p < .05). Powerful Others LOC was significantly negatively correlated to Adaptive Coping ($r = -.29$, p < .05), Perceived Social Support ($r = -.35$, p < .01) and Instrumental Social Support ($r = -.38$, p < .01). Adaptive Coping was significantly positively correlated to Connectedness with Oneself ($r = .31$, p < .05), Connectedness with Environment- Caring for Others ($r = .28$, p < .05), Connectedness with Transcendent ($r = .27$, p < .05), and Perceived Social Support ($r = .34$, p < .01), but was significantly negatively correlated to Maladaptive Coping ($r = -.44$, p < .01). Maladaptive Coping was significantly negatively correlated to Connectedness with Oneself ($r = -.41$, p < .01) and Connectedness with Environment- Caring for Others ($r = -.34$, p < .05). Connectedness with Oneself was significantly positively correlated to Connectedness with Environment- Caring for Others ($r = .65$, p < .01) and Connectedness with Transcendent ($r = .39$, p < .01). Finally, Connectedness with Environment- Caring for Others was significantly positively correlated with Connectedness with Transcendent ($r = .47$, p < .01).

As for the Opioid Non-user Group (shown in Table4.3, below the diagonal), Resilience was significantly positively correlated with Internal LOC ($r = .45$, p < .01), Adaptive Coping ($r = .57$, p < .01), Connectedness with Oneself ($r = .29$, p < .05) and Perceived Social Support ($r = .39$, p < .01) and significantly negatively correlated with Maladaptive Coping ($r = -.56$, p < .01). Internal LOC was significantly positively correlated with Adaptive Coping ($r = .26$, p < .05) and Connectedness with Oneself ($r = .29$, p < .05) but was significantly negatively correlated with Maladaptive Coping ($r = -.30$, p < .05). Powerful Others LOC was significantly positively related to Maladaptive Coping ($r = .26$, p < .05) while significantly negatively correlated to Instrumental Social Support ($r = -.31$, p < .05). Adaptive Coping was significantly positively correlated to Connectedness with Oneself ($r = .48$, p < .01), Connectedness with Environment- Caring for Others ($r =$

.39, p < .01), and Perceived Social Support (r = .47, p < .01), but was significantly negatively correlated to Maladaptive Coping (r = -.39, p < .01). Maladaptive Coping was significantly negatively correlated to Perceived Social Support(r = -.38, p < .01). Connectedness with Oneself was significantly positively correlated to Connectedness with Environment- Caring for Others (r = .58, p < .01), Connectedness with Transcendent (r = .50, p < .01), Perceived Social Support (r = .34, p < .01), but was significantly negatively correlated to Instrumental Social Support (r = -.30, p < .05).Connectedness with Environment- Caring for Others was significantly positively correlated Connectedness with Transcendent (r = .55, p <.01) and Perceived Social Support (r = .35, p < .05). And finally, Connectedness with Transcendent was significantly negatively correlated to Instrumental Social Support (r = -.25, p < .05).

Table 4.3:Correlation coefficients (Pearson *r*) between Resilience, Internal LOC, Powerful Others LOC, Adaptive Coping, Maladaptive Coping, Connectedness with Oneself, Connectedness with Environment (Caring for Others), Connectedness with transcendent, Perceived Social Support & Instrumental Social Support for Alcohol Non-user Group (n=60) and Opioid Non-user Group (n=60)

	Resilience	Internal LOC	Powerful Others LOC	Adaptive Coping	Maladaptive Coping	Connect with Oneself	Caring for Others	Connect with transcendent	Perceived Social Support	Instrumental Social Support
Resilience	1	**.40****	**-.37****	**.48****	**-.58****	**.48****	**.38****	.25	**.26***	-.15
Internal LOC	**.45****	1	-.09	.23	**-.31***	**.33****	**.39****	**.33****	**.34****	-.15
Powerful Others LOC	-.25	-.06	1	**-.29***	.19	-.24	-.19	-.09	**-.35****	**-.38****
Adaptive Coping	**.57****	**.26***	-.22	1	**-.44****	**.31***	**.28***	**.27***	**.34****	-.12
Maladaptive Coping	**-.56****	**-.30***	**.26***	**-.39****	1	**-.41****	**-.34****	-.04	-.12	.16
Connect with Oneself	**.29***	**.29***	-.25	**.48****	-.24	1	**.65****	**.39****	.24	-.24
Caring for Others	.12	.23	-.10	**.39****	-.07	**.58****	1	**.47****	.24	-.15
Connect with transcendent	-.12	.22	.07	.14	.21	**.50****	**.55****	1	.19	-.05
Perceived Social Support	**.39****	.21	-.21	**.47****	**-.38****	**.34****	**.35****	.24	1	-.06
Instrumental Social Support	-.03	-.17	**-.31***	-.09	-.01	**-.30***	-.23	**-.25***	.04	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Note: Alcohol Non-user Group (above diagonal), Opioid Non-user Group (below diagonal).

In the investigation of the fourth objective of this study, the hypothesis that envisaged a significant relationship between the variables of Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment-Caring for Others and Connectedness with Transcendent) and Social Support (Perceived Social Support and Instrumental Social Support) was found to be true in most of the groups. Thus, the hypothesis was supported by the findings in most of the groups i.e., in the status of Substance Use

(Dependent Group, Recovering Group and Non-user Group) under the types of Substance Use (Alcohol Group & Opioid Group). However, in regard to Alcohol Dependent Group, Opioid Dependent Group and Alcohol Recovering Group, there was no significant relationship between Instrumental Social Support and any of the other variables namely Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment-Caring for Others and Connectedness with Transcendent). Hence, the hypothesis could not be supported in this instance.

Resilience was found to be significantly positively correlated to Internal Locus of Control across all the groups (Table 4.1, 4.2 &4.3).Thus, all the groups irrespective of history of substance use or not, abstinence or not, agree that the more tendency people believe their outcomes are primarily related to internal factors (e.g., their own actions), the more able they are able to cope with stress. Feldmen (2011) resilient people have control over their destiny and they make the best of whatever situation they are in. Masten (2013) observes that resilience is the basic system that supports human development especially in dealing with difficulties. Resilient people will be able to turn the disruptive changes and conflict into growth opportunities (Maddi & Khoshaba, 2005). According to Kobassa & Puccetti (1980), internal LOC individuals possess a lasting feeling of confidence that one's internal and external environments are predictable and that depending on the efforts that they give, there is a good chance that all things will work out as well as can be expected.

Resilience was found to be significantly negatively correlated to Powerful Others Locus of Control in the Opioid Recovering Group (Table 4.2, below the diagonal) and the Non-user groups (Table 4.3)which suggest that people who tend to believe outcomes are influenced mostly by external factors (such as the role of powerful others) have a lower ability to cope with stress. External LOC individuals believe their life outcomes are under the control of powerful others, luck, or fate (Rotter, 1966). Fogas and colleagues (1992) found that an external locus of control orientation was significantly related to higher stress and lower achievement. A review by Cohen and Edwards (1989) established that locus of control is the

personality characteristic that provides the strongest and the most reliable evidence of stress-moderation. This may be the reason why individuals with substance use and dependence tend to have an external locus of control as can be seen in past researches. Niazi *et al.*, (2005) in their study compared personality traits and locus of control among male substance abusers and non-abusers (majority using heroin and poly drugs) in Pakistan and found that substance abusers significantly scored higher on external locus of control. Prakash *et al.*, (2015) carried out a study in Ranchi among Alcohol-dependent (AD) patients and compared them with normal controls. As compared to their matched-group, alcohol-dependent patients 'locus of control was externally oriented.

Resilience and Adaptive Coping were significantly positively correlated in both the Recovering Groups (Table 4.2) and Non-user Groups (Table 4.3). Similar results can be found in Maladaptive Coping which was found to be significantly negatively correlated to Resilience in both the Recovering Groups (Table 4.2) and Non-user Groups (Table 4.3),which suggests that in the Recovering Groups and Non-user Groups, the more they engage in adaptive coping strategies (like acceptance, reappraisal etc.), the more they are able to cope with stress and in contrast, the more they engage in maladaptive coping strategies (like rumination, overreaction, catastrophizing etc.), the less they are able to cope effectively with stress. A positive relationship between resilience and adaptive coping in the form of problem solving has also been observed in several researches. In other words, individuals who scored high on resilience also scored high on problem solving ability while individuals with substance addiction who scored low on resilience also scored low on problem solving (Veenstra *et al.*, 2007; Howe *et al.*, 2012; Faye *et al.*, 2018). In a study in 5 southeastern U.S. states with a focus on psychosocial predictors of substance use, in terms of coping it was found that stronger adaptive coping strategies were the most consistent predictor of less frequent alcohol and drug use, specifically, coping through action and coping through relying on religion. It was also found that stronger maladaptive coping strategies predicted greater frequency of drinking to intoxication (Pence *et al.*, 2008). Coping skills have also been found to be effective in relapse

prevention and resiliency enhancement in people with substance dependency (Jafari *et al*., 2010).

Spirituality in the form of Connectedness with Oneself was significantly positively correlated with Resilience in the Non-user Groups (Table 4.3), Recovering Groups (Table 4.2) and Opioid Dependent Group (Table 4.1. below the diagonal)which suggests that the more connectedness one has with oneself in terms of meaningfulness, trust and self-acceptance, the more the ability to cope with stress. Another aspect of Spirituality i.e., Connectedness with Environment-Caring for Others was significantly positively correlated in the Alcohol Non-user Group (Table 4.3, above the diagonal), Opioid Dependent Group (Table 4.1, below the diagonal) and in both the Recovering Groups (Table 4.2) suggesting that the more is connected with others by being compassionate and caring, the more their ability to cope with stress. Resilience and Spirituality in the form of Connectedness with Transcendent were significantly positively correlated only in the Recovering Groups (Table 4.2) which implies that having transcendent experiences and participating in spiritual activities increases one's ability to cope with stress. Whether one becomes a member of the addicts and non-addicts 'groups could be predicted by the factors such as personality, identity style, spirituality, and resilience (Hosseini-Almadani *et al*., 2010). Ramezani *et al*. (2015) also compared resilience with spirituality among addicted and non- addicted women and found that the non- addicted women acquired higher scores in variables of resilience and spirituality as compared to the addicted women.

Resilience was found to be significantly positively correlated with Perceived Social Support only in the Non-user Groups (Table 4.3) which implies that in groups that have never had a history of substance dependence, the greater the perception of emotional and appraisal support, the greater is the ability to cope with stress. In another study similar results were found where medical students having addiction of any sort had significantly low score on resilience and problem-solving coping as well as a poor relationship with their family, colleagues and teachers (Faye *et al*., 2018). Studies have also found that people with high resilience have better health, higher self-esteem, more social support and are less prone to substance use (Buckner *et al*.,

2003). A study by Nikmanesh & Honalzehi (2016) examined perceived social support, positive affection, and spirituality, as resilience factors, between two groups of drug dependent and nondependent males, who had drug dependent fathers. The findings indicated that the mean score of perceived social support of the group with high resilience was higher than that of the group with low resilience.

Internal Locus of Control was found to be significantly negatively correlated to Powerful Others Locus of Control amongst the Opioid Recovering Group (Table 4.2, below the diagonal) which implies that the more tendency to believe outcomes are primarily related to internal factors (e.g., their own actions), the lesser the tendency to believe outcomes are influenced mostly by external factors such as the role of powerful others. This finding is not surprising considering that the concept of locus of control (Rotter, 1966) tries to understand the degree to which an individual perceives that he/she has control over the functions that impact his/her life. These belief orientations can be either internalized or externalized understanding of the world such as being either self-reliant and independent of others or, on the other side, being communal and dependent of others (e.g., Teste, 2017; Levenson, 1981; Rotter, 1966).

Internal Locus of Control was significantly positively correlated with Adaptive Coping while it was significantly negatively correlated Maladaptive Coping in the Non-user (Table 4.3) and Alcohol Recovering Group (Table 4.2, above the diagonal)which implies that the more tendency to believe outcomes are primarily related to internal factors (e.g. their own actions), the more they are likely to engage in adaptive coping strategies while the lower internal locus of control implies the more tendency to engage in maladaptive coping strategies. Sandler and Lakey (1982) found that LOC beliefs play an important role in moderating the effects of stress on well-being, where internals reported experiencing less depression and anxiety in response to stress than externals. These authors suggested that under conditions of high stress, internals are able to acquire and use information more effectively than externals and that internals are more task-oriented in their coping behaviors.

Internal Locus of Control was significantly positively correlated to Connectedness with Oneself in the Non-user Groups (Table 4.3) and Alcohol Recovering Groups (Table 4.2, above the diagonal) suggesting that the more tendency to believe outcomes are primarily related to internal factors (e.g., their own actions), the more one becomes connected to oneself in terms of meaningfulness, trust and self-acceptance. Internal LOC individuals possess an enduring and pervasive feeling of confidence that one's internal and external environments are predictable and that there is a good chance that all things will work out as well as can be expected depending on their own efforts (Kobassa & Puccetti, 1983). The concept of spirituality is often linked with a sense of meaning (Steger & Frazier, 2005). Apart from promoting a sense of meaning, spirituality may be considered to be a helpful resource while dealing with highly stressful situations (Park *et al*., 2013). This relationship can be observed in a cross-sectional survey done on over 450,000 individuals from 154 nations as part of the Gallup World Poll where it was found that spirituality was related to greater meaning (Diener *et al*., 2011). In relation to this finding, Powerful Others Locus of Control was significantly negatively correlated with Connectedness with Oneself in the Alcohol Recovering Group (Table 4.2, above the diagonal) and Opioid Dependent Group (Table 4.1, below the diagonal).

Internal Locus of Control and Connectedness with Transcendent were found to be significantly positively correlated in the Alcohol Non-user Group (Table 4.3, above the diagonal) and Opioid Recovering Group (Table 4.2, below the diagonal). And in the Opioid Recovering Group (Table 4.2, below the diagonal), Powerful Others Locus of Control was found to be significantly negatively correlated with Connectedness with Transcendent. Steger (2012) believed that since spirituality involves a sense of "transcendence" as well as connection with something bigger than one's self, it may promote meaning in one's life. Studies have found that external locus of control and spiritual beliefs were not related when it came to drug use. They instead found that there was a relationship between spiritual beliefs and the tendency for internal attribution or acceptance of personal responsibility for any future lapse in drug use. To support this claim, Bradley *et al*. (1992) found that amongst treated addicts, individuals who took responsibility for negative outcomes

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tend to engage in less drug use. In a related study by Christo *et al*. (1995), they found no evidence to suggest that clinicians should discourage spiritual beliefs in their patients for fear that these might create a sense of helplessness as well as being 'victims of circumstance 'in drug use.

Internal Locus of Control and Connectedness with Environment- Caring for Others were found to be significantly positively correlated in the Recovering Groups (Table 4.2), Alcohol Non-user Group (Table 4.3, above the diagonal) and Opioid Dependent Group (Table 4.1, below the diagonal) which implies that the more tendency one believes outcomes are primarily related to internal factors (e.g. their own actions), the more the tendency to experience connectedness with others by being compassionate and caring. Kurtz (1996) highlighted the importance of finding meaning in the lives of individuals recovering from addiction as well as learning how to experience a new life in recovery. He believed that this could be achieved by connecting with others in recovery, connecting with the self, and with a power greater than oneself, which is often described as Spiritual. And in relation to this, in the Opioid Recovering Groups (Table 4.2, below the diagonal), Powerful Others Locus of Control was found to be significantly negatively correlated with Connectedness with Others. So, we can say that for individuals in recovery from substance use, the need to connect with others experiencing the same recovery as well as tendency to believe one is responsible for one's own action is relatively higher.

Powerful Others Locus of Control and Adaptive Coping were significantly negatively correlated in the Alcohol Non-user Group (Table 4.3, above the diagonal), Opioid Recovering Group (Table 4.2, below the diagonal) and Opioid Dependent Group (Table 4.1, below the diagonal). Thus, for these groups the more a person believes their outcomes are influenced mostly by external factors such as the role of powerful others, the lesser their tendency to engage in adaptive coping strategies such as acceptance, reappraisal etc. On a related note, Powerful Others Locus of Control and Maladaptive Coping were significantly positively correlated in Opioid Non-user Group (Table 4.3, below the diagonal) and both the Recovering Groups

(Table 4.2) which implies that the more a person believes their outcomes are influenced mostly by external factors such as the role of powerful others, the more their tendency to engage in maladaptive coping strategies such as rumination, over-reaction, catastrophizing etc. Sandler and Lakey (1982) found that LOC beliefs play an important role in moderating the effects of stress on well-being, where internals reported experiencing less depression and anxiety in response to stress than externals. These authors suggested that under conditions of high stress, internals are able to acquire and use information more effectively than externals and that they are more task oriented in their coping behaviors as compared to externals. This finding may be due to externals 'increased feelings of helplessness when dealing with problems (Hiroto, 1974). Fogas and colleagues (1992) have also found that an external locus of control orientation was significantly related to higher stress and lower achievement. A review by Cohen and Edwards (1989) established that locus of control is the personality characteristic that provides the strongest and the most reliable evidence of stress-moderation.

Powerful Others Locus of Control was significantly negatively correlated to Perceived Social Support in the two Non-user Groups (Table 4.3) and also significantly negatively correlated to Instrumental Social Support in the Alcohol Non-user Group (Table 4.3, above the diagonal) whereas Internal Locus of Control and Perceived Social Support were significantly positively correlated in the Alcohol Non-user Group (Table 4.3, above the diagonal). All these findings suggest that the Control groups tend to believe that the more outcomes are influenced by external factors (such as the role of powerful others), the lesser is the perception of emotional and appraisal support as well as the lesser the presence of instrumental support in the form of tangible aid. However, the more the tendency to believe outcomes are primarily related to internal factors such as their own actions, the more likely is the perception of emotional and appraisal support particularly amongst the Alcohol Non-user Group. Unfortunately, there is lack of research comparing these variables in this particular population. However, this finding is not surprising in that the studies investigating locus of control in substance use disorders often find the incidence of

high external locus of control (Niazi *et al*., 2005; Prakash *et al*., 2015; Lassi *et al*., 2019).

Adaptive Coping was significantly positively correlated to Connectedness with Oneself, Connectedness with Environment- Caring for Others and Connectedness with Transcendent in both the Recovering groups (Table 4.2) and Non-user Groups (Table 4.3) whereas in the Opioid Dependent Group (Table 4.1, below the diagonal), Adaptive Coping was significantly positively correlated to only Connectedness with transcendent which means that in the abstinent and control groups, the more they engage in adaptive coping strategies, the more they are they have trust, self-acceptance and sense of meaningfulness, the more caring they are compassionate and caring of others, the more they have transcendent experiences and participate in spiritual activities. Pence *et al*., (2008) examined the distribution and predictors of alcohol and drug use with a focus on psychosocial predictors of use. In terms of coping, it was found that stronger adaptive coping strategies were the most consistent predictor of less frequent alcohol and drug use, specifically, coping through action and coping through relying on religion. It was also found that stronger maladaptive coping strategies predicted greater frequency of drinking to intoxication.

Adaptive Coping was significantly positively correlated to Perceived Social Support in the two Non-user Groups (Table 4.3) and to Instrumental Social Support in the Opioid Recovering Group (Table 4.2, below the diagonal).This suggests that the more they have the tendency to engage in adaptive coping strategies, the more likely they will have a good perception of emotional and appraisal support. A study by Wynn (2017) examined the relationship between perceived stress, functional coping strategies, dysfunctional coping strategies, and perceived social support to see if these variables may contribute to higher levels of alcohol consumption among undergraduate students of University of Denver (aged 18-25). The findings of a hierarchical regression analysis indicated that utilization of functional coping strategies is a statistically significant predictor of lower levels of alcohol consumption.

Maladaptive Coping was significantly negatively correlated to Perceived Social Support in Opioid Recovering Group (Table 4.2, below the diagonal) and Opioid Non-user Group (Table 4.3,below the diagonal).A similar result can be seen where perceived social support from the family was a strong protective factor against alcohol use while avoidance coping strategy (which is considered to be one of the most commonly used maladaptive coping strategies used in substance abuse) was seen as a strong risk factor of alcohol use amongst male and female high school students (average age 16 years) recruited from four rural high schools in the US (Hamdan-Mansour *et al.*, 2006).

Maladaptive Coping was significantly negatively correlated with Connectedness with Oneself and Connectedness with Environment- Caring for Others in the Alcohol Recovering Group (Table 5.1, above the diagonal) and Alcohol Non-user Group (Table 4.3, above the diagonal) which implies that in these groups the more tendency to engage in maladaptive coping strategies, the lesser the connectedness with oneself (in terms of meaningfulness, trust and self-acceptance) as well as lesser connectedness with others (by being caring and compassionate of others). Maladaptive Coping was significantly negatively correlated to Connectedness with Environment- Caring for Others in Opioid Dependent Group (Table 4.1, below the diagonal).Past researches have highlighted the importance of all aspects of spirituality in coping with stress. Scholarly articles that focused on the relationship between religion and mental health that were published from 2000 to 2002 were reviewed and these studies report that religious people are less depressed, less anxious, and less suicidal than nonreligious people, and that they are better able to cope with traumatic events such as illness, divorce, and bereavement (Paul, 2005). They also reveal that the more a believer incorporates religion into daily living - reading Scripture, attending services and praying - the more they report frequency of positive emotions and overall sense of satisfaction with life (Waters & Shafer, 2005).

Connectedness with Oneself is significantly positively correlated with Perceived Social Support in Opioid Non-user Group (Table 4.3, below the diagonal) and Alcohol Dependent Group (Table 4.1, above the diagonal). This implies that

having meaningfulness, trust and self-acceptance is a good indicator of perception of emotional and appraisal support. The importance of linking social support and spiritual activities has been highlighted by other researches. Chen (2006) compared personal and emotional changes that could be found in inmates who were recovering addicts and who participated in therapeutic intervention programs which lasted for over two years, one including social support and experiential spiritual program components (e.g., Narcotics Anonymous). The findings supported the hypothesis that inmates participating in the 12-step program showed a higher sense of coherence and meaning in life and a gradual reduction in negative emotions such as anxiety, depression, and hostility than those participating in NA meetings without the 12-step program.

Connectedness with Transcendent is significantly positively correlated to Perceived Social Support in Alcohol Recovering Group (Table 4.2, above the diagonal) and Alcohol Dependent Group (Table 4.1, above the diagonal). Roland and Kaskutas (2002) who found that the presence of both involvement in the church activities and Alcoholics Anonymous activities were important and significant predictors of 30-day sobriety on their study subjects as compared to church attendance by itself. A study by Robinson, *et al*. (2003) compared people in treatment for alcohol use problems with non-alcoholic individuals on various aspects of spirituality, such as feeling God's presence, finding comfort in religion, the desire to be closer to God, and the feeling of being touched by the beauty of creation. They found that these aspects of spirituality were scored higher by the treatment population. It has been suggested that the presence of supportive networks, as well as supportive interventions such as spiritual and familial support, plays a major role in achieving treatment goals in drug abusers and prevention of relapse (Spoth & Redmond, 1994; Blume *et al*., 1994).

Instrumental Social Support is significantly negatively correlated to both Connectedness with Oneself and Transcendent in the Opioid Control Group (Table 4.3, below the diagonal). Although we can see that based on the majority of study findings on social support and substance abuse recovery, social support often acts as

a buffer against variables that lead to relapse. This relationship is not always one way. Interestingly, research has also suggested that relationships can serve as a risk-factor if it is conflict-filled (Cummings, *et al*., 1980) and when there is drug use in the social network especially within the family (Hawkins & Catalano, 1992). So, one can say that social networks and connections not only serve as protective factors, it can also serve as risk factors especially in the field of substance addiction. Chadda (1995) has mentioned that the relationship between social support and psychological dysfunction appears complex because certain elements of social support have a healthy relationship while others can have an unhealthy relationship. So, we can say that having a good instrumental social support is not always pivotal in having a drug-free life. It may or may not be important depending on who and when it is given and received.

Perceived Social Support is significantly positively correlated to Instrumental Social Support only in the Dependent Groups (Table 4.1). For the people who were substance dependent users, it appears that a good perception of emotional and appraisal support is also a good indication of the presence of instrumental support (tangible aid) from others. Social support is an important determinant that affects addiction and the role of perceived social support in the prevention and treatment of drug abuse and relapse has been studied comprehensively. Davis and Jason (2005) indicated social support as one of the factors that have a special role in maintaining the withdrawal of drug-dependent people. It has also been shown that there was a positive relationship between the length of drug abstinence and receiving social support (Davis & Jason, 2005) and that perceptions regarding social support can enhance the psychosocial functioning during drug abuse treatment (Chong & Lopez, 2005). A study by Stevens *et al*. (2015) found that a significant positive relationship was evident between general social support and abstinence-specific self-efficacy. Additionally, they also found that general social support was also significantly associated with the specific social support measures of sense of community and Alcoholics Anonymous (AA) affiliation.

Prediction of Status of Substance Use (Dependent, Recovering and Non-user Group) from Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Caring for Others & Connectedness with Transcendent) and Social Support (Perceived Social Support & Instrumental Social Support)

To examine the fifth hypothesis of elucidating the predictability of 'Status of Substance Use' (Dependent, Recovering and Non-user Group) from Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Caring for Others & Connectedness with Transcendent) and Social Support (Perceived Social Support & Instrumental Social Support), Multinomial Logistic Regression were executed for all units of the sample (Alcohol Dependent Group, Alcohol Recovering Group, Non-user Group, Opioid Dependent Group, Opioid Recovering Group and Non-user Group).

Results of the Multinomial Logistic Regression analyses executed for Alcohol Dependent Group, Alcohol Recovering Group, Non-user Group, Opioid Dependent Group, Opioid Recovering Group and Non-user Group separately will be reported in the following order of sections followed by a summarized discussion in the last segment of this chapter: -

5.1 Prediction of 'Status of Substance Use' in the Alcohol Group (Alcohol Dependent Group, Alcohol Recovering Group, Non-user Group) by Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Caring for Others & Connectedness with Transcendent) and Social Support (Perceived Social Support & Instrumental Social Support) .

5.2 Prediction of 'Status of Substance Use' in the Opioid Group (Opioid Dependent Group, Opioid Recovering Group and Non-user Group) by Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with

Oneself, Caring for Others & Connectedness with Transcendent) and Social Support (Perceived Social Support & Instrumental Social Support).

5.1 Prediction of 'Status of Substance Use' in the Alcohol Group (Alcohol Dependent Group, Alcohol Recovering Group, Non-user Group) by Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Caring for Others & Connectedness with Transcendent) and Social Support (Perceived Social Support & Instrumental Social Support).

To examine the predictability of 'Status of Substance Use' (Dependent, Recovering and Non-user Group) from Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Caring for Others & Connectedness with Transcendent) and Social Support (Perceived Social Support & Instrumental Social Support), Multinomial Logistic Regression was employed. Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Caring for Others & Connectedness with Transcendent) and Social Support (Perceived Social Support & Instrumental Social Support) were entered as predictor variables while 'Status of Substance Use' (Dependent, Recovering and Non-user Group) were entered as criterion or outcome variables.

The Likelihood Ratio Chi-Square Test (given in Table 5.1) tests the fit of the model. As may be seen in the Table 5.1, this test is statistically significant which indicates that there is significant improvement in fit of the model relative to a baseline model with no predictors. The Likelihood Ratio Test (given in Table 5.4) showed that predictors such as Resilience, Internal LOC, Maladaptive Coping, Connectedness with Transcendent, Perceived Social Support and Instrumental Social Support contribute significantly to the final model. The Goodness-of-fit model (given in Table 5.2) also provide additional information regarding the overall fit of the model, and as can be seen, the findings are non-significant indicating good model fit. The Pseudo R-Square measure (given in Table 5.3) accounts for 54% to 30% of the variance and represents relatively decent-sized effects.

Table 5.1: Table showing Model Fitting Information for the Alcohol Group

Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	395.500			
Final	275.416	120.084	20	.000

Table 5.2: Table showing Goodness-of-Fit for the Alcohol Group

	Chi-Square	df	Sig.
Pearson	296.035	328	.897
Deviance	275.416	328	.984

Table 5.3: Table showing Pseudo R-Squarefor the Alcohol Group

Pseudo R-Square	
Cox and Snell	.487
Nagelkerke	.548
McFadden	.304

Table 5.4: Table showing Likelihood Ratio Testsfor the Alcohol Group

Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	283.339	7.922	2	.019
Resilience	284.665	9.248	2	.010
Internal LOC	285.017	9.601	2	.008
Powerful Others Loc	279.421	4.005	2	.135
Adaptive Coping	276.684	1.268	2	.530
Maladaptive Coping	294.967	19.551	2	.000
Connectedness With Oneself	276.567	1.151	2	.563
Caring For Others	275.774	.358	2	.836
Connectedness With Transcendent	291.761	16.345	2	.000
Perceived Social Support	282.259	6.843	2	.033
Instrumental Social Support	282.993	7.576	2	.023

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

The results of Multinomial Logistic Regression analysis given in Table 5.5 indicated the significant main effect of **Resilience** on 'Status of Substance Use' (B=.81; p=.03) with its Odds ratio of 2.25 which is greater than 1 which indicates an increasing likelihood of falling into the Recovering Group as compared to the Dependent Group with increase in Resilience.

In terms of the predictability of **Connectedness with Transcendent**, there was significant main effect of Connectedness with Transcendent on 'Status of Substance Use' (B=.88; *p*=.03) with its Odds ratio of 2.21 which is greater than 1 which indicates an increasing likelihood of falling into the **Recovering Group as compared to the Dependent** Group with increase in Connectedness with Transcendent.

There is also a significant main effect of **Perceived Social Support** on 'Status of Substance Use' (B=1.34; *p*=.04) with its Odds ratio of 3.84 which is greater than 1 which indicates an increasing likelihood of falling into the **Recovering Group as compared to the Dependent Group** with increase in Perceived Social Support.

The results also highlighted significant main effect of **Internal Locus of Control** on 'Status of Substance Use' (B=-.91; *p*=.01) with its Odds ratio of .402 which is lesser than 1 which indicates that with an increase in Internal Locus of Control there is a decreasing likelihood of falling into the **Non-user Group as compared to the Dependent Group**.

There is also a significant main effect of **Maladaptive Coping** on 'Status of Substance Use' (B=-.1.73; *p*=.000) with its Odds ratio of .177 which is lesser than 1 which indicates that with an increase in Maladaptive Coping there is a decreasing likelihood of falling into the **Non-user Group as compared to the Dependent Group**.

In terms of the predictability of **Connectedness with Transcendent**, there was significant main effect of Connectedness with Transcendent on 'Status of Substance Use' (B=1.78; *p*=.000) with its Odds ratio of 5.96 which is greater than 1 which indicates an increasing likelihood of falling into the **Non-user Group as compared to the Dependent Group** with increase in Connectedness with Transcendent.

In terms of the predictability of **Perceived Social Support** on 'Status of Substance Use' (B=1.62; *p*=.03) with its Odds ratio of 5.06 which is greater than 1

which indicates an increasing likelihood of falling into the **Non-user Group as compared to the Dependent Group** with increase in Perceived Social Support.

And finally, the results also highlighted significant main effect of **Instrumental Social Support** on 'Status of Substance Use' (B=1.62; *p*=.03) with its Odds ratio of 5.06 which is greater than 1 which indicates an increasing likelihood of falling into the **Non-user Group as compared to the Dependent Group** with increase in Instrumental Social Support.

No further significant predictions of the 'Status of Substance Use' from the predictor variables were found for the Alcohol Group.

Table 5.5: Multinomial Logistic Regression analyses testing the predictability of 'Status of Substance Use' (Dependent, Recovering and Non-user Group) from Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality and Social Support in Alcohol Group

Status of Subatance Use		B	Std. Error	Wald	df	Sig.	Exp(B)
Recovering	Intercept	-7.034	2.977	5.584	1	.018	
	Resilience	.813	.356	5.213	1	**.022**	2.254
	Internal LOC	-.129	.271	.226	1	.634	.879
	Powerful Others LOC	-.386	.215	3.217	1	.073	.679
	Adaptive Coping	.163	.459	.126	1	.722	1.177

	Maladaptive Coping	-.535	.366	2.134	1	.144	.586
	Connectedness with Oneself	-.493	.464	1.124	1	.289	.611
	Caring for Others	.024	.355	.004	1	.947	1.024
	Connectedness with Transcendent	.879	.403	4.754	1	**.029**	2.407
	Perceived Social Support	1.344	.627	4.590	1	**.032**	3.835
	Instrumental Social Support	.937	.783	1.435	1	.231	2.553
Non-user	Intercept	-9.602	4.249	5.107	1	.024	
	Resilience	-.080	.406	.039	1	.843	.923
	Internal LOC	-.911	.339	7.206	1	**.007**	.402
	Powerful Others LOC	-.436	.271	2.580	1	.108	.647
	Adaptive Coping	.528	.500	1.114	1	.291	1.696
	Maladaptive Coping	-1.729	.442	15.289	1	**.000**	.177
	Connectedness with Oneself	-.374	.536	.486	1	.486	.688
	Caring for Others	.220	.410	.289	1	.591	1.247
	Connectedness with Transcendent	1.785	.472	14.305	1	**.000**	5.960
	Perceived Social Support	1.621	.717	5.108	1	**.024**	5.057

Instrumental Social Support	3.275	1.418	5.336	1	**.021**	26.441

a. The reference category is: Alcohol Dependent Group

5.2 Prediction of 'Status of Substance Use' in the Opioid Group(Opioid Dependent Group, Opioid Recovering Group and Non-user Group) by Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Caring for Others and Connectedness with Transcendent) and Social Support (Perceived Social Support and Instrumental Social Support).

To examine the predictability of 'Status of Substance Use' (Dependent, Recovering and Non-user Group) from Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Caring for Others & Connectedness with Transcendent) and Social Support (Perceived Social Support & Instrumental Social Support), Multinomial Logistic Regression was employed. Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Caring for Others & Connectedness with Transcendent) and Social Support (Perceived Social Support & Instrumental Social Support) were entered as predictor variables while 'Status of Substance Use' (Dependent, Recovering and Non-user Group) were entered as criterion or outcome variables for the Opioid Group.

The Likelihood Ratio Chi-Square Test (given in Table 5.6) tests the fit of the model and as can be seen in the table, this test is statistically significant which indicates that there is significant improvement in fit of the model relative to a baseline model with no predictors. The Likelihood Ratio Test (given in Table 5.9) showed that predictors such as Internal LOC, Maladaptive Coping, Connectedness with Oneself, Perceived Social Support and Instrumental Social Support contribute significantly to the final model. The Goodness-of-fit model (given in Table 5.7) also provide additional information regarding the overall fit of the model, and as can be seen, the findings are non-significant indicating good model fit. The Pseudo R-

Square measure (given in Table 5.8) accounts for 46% to 24% of the variance and represents relatively decent-sized effects.

Table 5.6: Table showing Model Fitting Information for the Opioid Group

Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	395.500			
Final	298.803	96.698	20	.000

Table 5.7: Table showing Goodness-of-Fit for the Opioid Group

	Chi-Square	df	Sig.
Pearson	312.740	338	.834
Deviance	298.803	338	.939

Table 5.8: Table showing Pseudo R-Squarefor the Opioid Group

Pseudo R-Square	
Cox and Snell	.416
Nagelkerke	.468
McFadden	.244

Table 5.9: Table showing Likelihood Ratio Testsfor the Opioid Group

Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	305.765	6.963	2	.031
Resilience	300.300	1.498	2	.473
Internal LOC	306.789	7.986	2	.018
Powerful Others Loc	300.266	1.463	2	.481
Adaptive Coping	301.675	2.873	2	.238
Maladaptive Coping	306.911	8.108	2	.017
Connectedness With Oneself	307.003	8.200	2	.017
Caring For Others	299.860	1.057	2	.589
Connectedness With Transcendent	301.850	3.048	2	.218
Perceived Social Support	306.632	7.830	2	.020
Instrumental Social Support	319.653	20.850	2	.000
The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.				

The results of Multinomial Logistic Regression analysis given in Table 5.10 indicated the significant main effect of **Connectedness with Oneself** on 'Status of Substance Use' (B=1.36; p=.04) with its Odds ratio of 3.88 which is greater than 1, which indicates an increasing likelihood of falling into the **Recovering Group as compared to the Dependent Group** with increase in Connectedness with Oneself.

There is also a significant main effect of **Instrumental Social Support** on 'Status of Substance Use' (B=2.02; p=.01) with its Odds ratio of 7.51 which is greater than 1, which indicates an increasing likelihood of falling into the **Recovering Group as compared to the Dependent Group** with increase in Instrumental Social Support.

In terms of the predictability of **Internal Locus of Control**, there was significant main effect of Internal Locus of Control on 'Status of Substance Use' (B=-.91; p=.01) with its Odds ratio of .40 which is lesser than 1, which indicates a decreasing likelihood of falling into the Non-user **Group as compared to the Dependent Group** with increase in Internal Locus of Control.

The results also highlighted significant main effect of **Maladaptive Coping** on 'Status of Substance Use' (B=-.94; p=.01) with its Odds ratio of .39 which is lesser than 1, which indicates that with an increase in Maladaptive Coping there is a decreasing likelihood of falling into the **Non-user Group as compared to the Dependent Group**.

In terms of the significant main effect of **Connectedness with Oneself** on 'Status of Substance Use' (B=1.36; p=.04) with its Odds ratio of 5.77 which is greater than 1, which indicates an increasing likelihood of falling into the **Non-user Group as compared to the Dependent Group** with increase in Connectedness with Oneself.

And finally, there was significant main effect of **Instrumental Social Support** on 'Status of Substance Use' (B=3.22; p=.01) with its Odds ratio of 25.08 which is greater than 1, which indicates an increasing likelihood of falling into the **Non-user Group as compared to the Dependent Group** with increase in Instrumental Social Support.

No further significant predictions of the 'Status of Substance Use' from the predictor variables were found for the Opioid Group.

Table 5.10: Multinomial Logistic Regression analyses testing the predictability of 'Status of Substance Use' (Dependent, Recovering and Non-user Group) from Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality and Social Support in Opioid Group

Status of Subatance Use		B	Std. Error	Wald	df	Sig.	Exp(B)
Recovering	Intercept	-5.184	3.038	2.911	1	.088	
	Resilience	.235	.312	.566	1	.452	1.265
	Internal LOC	-.485	.296	2.682	1	.101	.616
	Powerful Others LOC	.242	.233	1.082	1	.298	1.274
	Adaptive Coping	-.625	.445	1.975	1	.160	.535
	Maladaptive Coping	-.226	.309	.539	1	.463	.797
	Connectedness with Oneself	1.356	.635	4.553	1	**.033**	3.880
	Caring for Others	-.271	.369	.540	1	.462	.763
	Connectedness with Transcendent	.676	.395	2.936	1	.087	1.966
	Perceived Social Support	-1.235	.664	3.454	1	.063	.291
	Instrumental	2.016	.616	10.693	1	**.001**	7.505

		B	Std. Error	Wald	df	Sig.	Exp(B)
	Social Support						
Non-user	Intercept	-9.142	3.656	6.253	1	.012	
	Resilience	-.139	.360	.148	1	.700	.871
	Internal LOC	-.913	.334	7.474	1	**.006**	.401
	Powerful Others LOC	.279	.262	1.132	1	.287	1.322
	Adaptive Coping	.031	.519	.004	1	.952	1.032
	Maladaptive Coping	-.939	.360	6.791	1	**.009**	.391
	Connectedness with Oneself	1.752	.665	6.950	1	**.008**	5.767
	Caring for Others	-.423	.424	.995	1	.319	.655
	Connectedness with Transcendent	.488	.414	1.388	1	.239	1.628
	Perceived Social Support	.385	.802	.231	1	.631	1.470
	Instrumental Social Support	3.222	.954	11.412	1	**.001**	25.076

a. The reference category is: Opioid Dependent Group

To recapitulate, the results of the Multinomial Logistic Regression analyses employed to examine the fifth hypothesis of elucidating the predictability of 'Status of Substance Use' (Dependent, Recovering and Non-user Group) from Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Caring for Others & Connectedness with Transcendent) and Social Support (Perceived Social Support & Instrumental Social

Support) for all units of the sample i.e., Alcohol Dependent Group, Alcohol Recovering Group, Non-user Group, Opioid Dependent Group, Opioid Recovering Group and Non-user Group, certain significant predictions were found.

Resilience significantly predicted 'Status of Substance Use' in the **Alcohol Group** i.e., whether they belong to the Recovering Group or Dependent Group where the higher the Resilience, the higher the chances of falling in the Recovering Group as compared to the Dependent Group. This finding has been supported by past researches where they have consistently found the importance of resilience as both a predictor of substance use and as playing an important role in the recovery process. Fadardi *et al.* (2010) on their study of substance use among university students have studied resilience as independent predictor of substance use. Another previous study has also established an increase in resiliency in clients who have undergone treatment in rehabilitation programs and centres in a study by National Anti-Drug Agency (NADA) in Malaysia (Zamani *et al*., 2014). Another study also examined and found that coping skills training in substance dependency led to increase in relapse prevention and resiliency enhancement (Jafari *et al*., 2010).

Internal Locus of Control significantly predicted 'Status of Substance Use' i.e., whether the Opioid Group would belong to the Dependent Group or Non-user Group as the result showed that an increase in Internal Locus of Control decreased the likelihood of falling under the Non-user Group as compared to the Dependent Group. The same can be said of the **Alcohol Group** whereby Internal Locus of Control also significantly predicted Status of Substance Use i.e., whether the Alcohol Group would belong to the Dependent Group or Non-user Group as the result showed that the higher the Internal Locus of Control, the lower the chances of falling in the Non-user Group as compared to the Dependent Group.

Contrastingly, previous studies have shown that individuals with Substance Use Disorder (including heroin, poly drugs and alcohol) tend to score higher on external locus of control as compared to non-users (Niazi *et al*., 2005; Chaudhury *et al*., 2015). However, a finding by Ersche *et al*. (2012) indicate that the extent to which a person attributes control in situations related to drug use is significantly

influenced by their own personal or professional experiences with drug addiction. Their results also showed that drug-dependent individuals have a greater internal sense of control with regard to addiction recovery or drug-taking behaviors than health professionals and/or non-dependent control volunteers. A study by Dean & Edwards (1990) on individuals receiving treatment for alcohol use showed that the majority had stronger belief that their health status is more under their own control than under the control of chance or powerful others. These findings seem to be more in tune with the current research finding wherein even in the Mizo society, an individual's locus of control is greatly influenced by their own history with drug use. Another explanation for this current finding in regard to Internal Locus of Control predicting belongingness to the Substance Use Groups whether it be the Dependent Groups or Non-user Groups may be understood in the context of Mizo Society. Mizo population has been shown to display collectivistic characteristics (Fente & Singh, 2008, Lalkhawngaihi & Fente, 2019) where social behavior is determined by shared goals, attitudes and values with their in-groups (Hofstede, 1980; Markus & Kitayama, 1991; Triandis, 1995). Participation in community activities organised by community-based organizations (CBOs) like Young Mizo Association (YMA), *Mizo Hmeichhe Insuihkhawm Pawl* - the women's organization and *Mizoram Upa Pawl* - the senior citizen's organization) are accepted as unwritten norms by every Mizo members especially in times of deaths and crises (Lalmuanpuii, 2004). Patnaik (2008) pointed out the enormous influence of CBOs upon the lives of the Mizo. He also highlighted the collective effort exerted by Mizos to meet their needs and objectives. Hence, we can say that, this cultural context may have an impact on the locus or control or the extent to which people believe they can control their general life outcomes (Rotter, 1990) whereby being internally oriented or externally oriented determine substance use amongst Mizo people.

Maladaptive Coping significantly predicted 'Status of Substance Use' i.e., whether they would belong to the Dependent Group or Non-user Group under the Opioid Group as the results indicated that an increase in Maladaptive Coping decreased the likelihood of falling under the Non-user Group as compared to the Dependent Group. The same can be said of the Alcohol Group wherein Maladaptive

Coping significantly predicted Status of Substance Use i.e., whether they belong to the Dependent Group or Non-user Group as the results showed that the higher the Maladaptive Coping, the lower the chances of falling in the Non-user Group as compared to the Dependent Group.

These findings are not surprising when looking at past researches that study substance use itself as a maladaptive coping mechanism. Other studies have also established that individuals with poor adaptive coping methods are more likely to engage in substance use including alcohol-related problems and heavy drinking behavior in the absence of more effective and adaptive coping strategies (Hasking *et al*., 2011; Corbin *et al*., 2012). Individuals with opioid dependence entering naltrexone treatment have been found to report less use of adaptive coping strategies when compared with controls (Hyman *et al*., 2009). In a study examining predictors of alcohol and drug use, it was found that stronger adaptive coping strategies were the most consistent predictor of less frequent alcohol and drug use, specifically, coping through action and coping through relying on religion. It was also found that stronger maladaptive coping strategies predicted greater frequency of drinking to intoxication but not other measures of alcohol and drug use (Pence *et al*., 2008). The findings of a hierarchical regression analysis indicated that utilization of functional coping strategies is a statistically significant predictor of lower levels of alcohol consumption among undergraduate students (Wynn, 2017).

In the Opioid Group, Connectedness with Oneself significantly predicted 'Status of Substance Use' i.e., whether they belong to the Dependent Group or Non-user Group as the results showed that the greater the Connectedness with Oneself, the higher the chances of falling in the Non-user Group as compared to the Dependent Group. The same was true for the Recovering Group where the greater the Connectedness with Oneself, the higher the chances of falling in the Recovering Group as compared to the Dependent Group. The importance of connectedness with oneself and finding meaning in one's life has been reflected in a study by Kurtz & White (2015) who highlighted the importance of finding meaning in the lives of individuals recovering from substance use. He observed that this could be achieved

by connecting with others who are also in recovery, connecting with the self, and with a power greater than oneself which is often described as Spiritual.

In the Alcohol Group, Connectedness with Transcendent significantly predicted 'Status of Substance Use' i.e., whether they belong to the Recovering Group or Dependent Group as the results indicated that the higher the Connectedness with Transcendent, the higher the chances of falling in the Recovering Group as compared to the Dependent Group. Connectedness with Transcendent also significantly predicted "Status of Substance Use" i.e., whether they belong to the Dependent Group or Non-user Group where the higher the Connectedness with Transcendent, the higher the chances of falling in the Non-user Group as compared to the Dependent Group. This finding has been supported by previous researches by the likes of Koenig *et al.* (2001) and Chitwood *et al.* (2008) who found that an inverse relationship occurs between involvement in religion (e.g., attending services, considering religious beliefs significant) and likelihood of substance use across different life stages. A related study in a meta-analysis done by Yeung *et al.* (2009) found that religiosity (regardless of the definitions or religiosity) was consistently associated with less youth substance use on four types of substance use namely alcohol, cigarette, marijuana and other illicit drugs. Based on the findings of a study, spiritual awakening reported over a period of time (with a person who has been discharged) were also reported to maintain abstinence for a longer period of time (Kaskutas *et al.*, 2003). In a more recent study, Lucchetti *et al.* (2012) also found that high religious involvement and participation was associated with less alcohol use, alcohol abuse, tobacco use, and combined alcohol/tobacco use and less days drinking alcohol beverages per week. Additionally, they also found that high non-organizational religious behavior was associated with less tobacco and combined alcohol/tobacco use in a Brazilian town.

In the Alcohol Group, Perceived Social Support significantly predicted 'Status of Substance Use' i.e., whether they belong to the Dependent Group or Non-user Group as the results showed that the higher the Perceived Social Support, the higher the chances of falling in the Non-user Group as compared to the Dependent Group. The same can be said for the Recovering Group where the higher the

Perceived Social Support, the higher the chances of falling in the Recovering Group as compared to the Dependent Group. The importance of social support in individuals recovering from substance use has been established in previous studies as well as its role in preventing relapse. It also plays a major role in the promotion of treatment goals in drug abusers and prevention of relapse (Spoth & Redmond, 1994). Atadokht *et al*. (2015) have also found that perceived social support from family and the family expressed emotions significantly explained 12% of the total variance of relapse frequency. Shahzad *et al*. (2014) examined the predictive relationship of Multi-dimensional Perceived Social Support (MPSS) with wellbeing in people with Substance Use Disorder (SUD). A simple regression analysis was used and overall finding indicated social support as a significant predictor of wellbeing in people with SUD. Rapiera *et al.* (2019) found significant negative correlations between perceived social support and lifetime use of alcohol, tobacco, and cannabis and that perceptions regarding social support can enhance the psychosocial functioning during drug abuse treatment (Chong & Lopez, 2005).

Instrumental Social Support significantly predicted 'Status of Substance Use' i.e., whether they belong to the Dependent Group or Non-user Group as the results indicated that the higher the Instrumental Social Support, the higher the chances of falling in the Non-user Group as compared to the Dependent Group. This predictability can be seen in both the Alcohol and Opioid Groups. Additionally in the Opioid Group, it was also true for the Recovering Group where the higher the Instrumental Social Support, the higher the chances of falling in the Recovering Group as compared to the Dependent Group. Although there is paucity of research studying specifically the predicting role of instrumental social support in substance use, it has been consistently found that people with higher levels of social support have been found to be less likely to use drugs and alcohol (Nikmanesh & Honakzehi*, 2016; Laudet *et al*., 2006). Social support is seen as one of the factors that have a special role in maintaining the withdrawal of drug-dependent people as well as having a positive relationship between the length of drug abstinence and receiving social support (Davis and Jason, 2005).

Hence, as envisaged, the results of this study indicated that Personality factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Caring for Others & Connectedness with Transcendent) and Social Support (Perceived Social Support & Instrumental Social Support) are indeed important psychological variables that may render a person to maintain or sustain their substance use or recovery.

Chapter – V

SUMMARY AND CONCLUSIONS

Substance Use Disorder is a multifaceted problem, which has far reaching impact on the family, friends, and the society in which the individual lives, with variations across different communities and cultures in the way it is managed and treated. It is, therefore, imperative to study the psychological and social factors surrounding this phenomenon, especially personality factors, spirituality, and social support. While, past studies have focused on the effects of these factors independently of substance use problem, studying these factors together will help in giving a more comprehensive understanding of the differences between people who are currently actively using substances, individuals who have remained abstinent, and individuals who have never met the criteria for substance dependence. It will also give some understanding as to why relapse occurs in the context of the factors to be studied; and further help in understanding what sets these three groups apart as well as throw light upon how to intervene in these regards.

The first objective of this study was to examine the differences in Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with the Environment, including Caring for Others and Connectedness with Nature, and Connectedness with the Transcendent), and Social Support (Perceived Social Support , Negative Social Support , Instrumental Social Support , and Cultural Social Support) in the two 'Type of Substance Use' groups (Alcohol or Opioid Dependent and Recovering groups separately). The second objective was to examine the differences based on the 'Status of Substance Use' (Dependent, Recovering & Non-user) on the selected Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with the Environment, including Caring for Others and Connectedness with Nature, and Connectedness with the Transcendent), and Social Support (Perceived Social Support , Negative Social Support , Instrumental Social Support , and Cultural Social Support) separately in the Alcohol Groups and Opioid Groups. The third objective was to compare the patterns of the dependent variables (2 Types of Substances x 3 Status of Substance Use) based on the 'Status of Substance Use' (Dependent, Recovering and Non-user) in the two 'Type of Substance Use' (Opioid or Alcohol) on all the factors of Personality

(Resilience, Locus of Control and Coping Styles) , Spirituality (Connectedness with Oneself, Connectedness with the Environment, including Caring for Others and Connectedness with Nature, and Connectedness with the Transcendent), and Social Support (Perceived Social Support , Negative Social Support , Instrumental Social Support , and Cultural Social Support). The fourth objective was to study the relationships between the said factors of Personality (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with the Environment, including Caring for Others and Connectedness with Nature, and Connectedness with the Transcendent) and Social Support (Perceived Social Support , Negative Social Support , Instrumental Social Support , and Cultural Social Support) in the 'Status of Substance Use' (Dependent Group, Recovering Group and Non-user Group) under the 'Type of Substance Use' (Alcohol Group & Opioid Group). And finally, the fifth and principal objective was to determine the predictability of 'Status of Substance Use' (Dependent, Recovering & Non-user Groups) from Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with the Environment, including Caring for Others and Connectedness with Nature, and Connectedness with the Transcendent) and Social Support (Perceived Social Support , Negative Social Support , Instrumental Social Support , and Cultural Social Support).

The sample consisted of 360 participants comprising of 180 participants in Alcohol Group (60 Dependent, 60 Recovering and 60 Non-user sub-groups) and 180 participants in the Opioid Group (60 Dependent, 60 Recovering and 60 Non-user sub-groups) in equal proportion of gender as far as possible. The Alcohol And Opioid Dependent participants were selected randomly using convenient sampling from the rehabilitation centres and among the patients of hospitals, rehabilitation camps and centres such as Psychiatric Ward, Kulikawn Hospital, Synod Hospital, *Tawngtai* Bethel Camping Centre (TBCC), Agape Centre, Blessing Home Rehabilitation Centre within Aizawl city, who met the criteria for Substance Dependence Syndrome under the ICD-10 Classification of Mental and Behavioural Disorders. The Recovering group was drawn from the community through snowball sampling, inclusive of only those who have abstained from substance use for more

than one year. Finally, the Non-user matched group in terms of age and gender was drawn randomly from the general population. The age of the participants ranged between 19-58 years.

As parametric statistics were envisaged to be used, data were first screened, extreme outliers were deleted, mild outliers were winsorized to maintain equal sample size in each cell of the design (2 Type of Substance x 3 Status of Substance Use). The following diagnostic tests of assumptions that underlie the application of parametric tests were first checked and were found generally acceptable: linearity, normality (skewness/kurtosis, Kolmogorov-Smirnov test and Shapiro-Wilk test), homogeneity of variance (Levene's statistic, Box's test)/ homoscedasticity, and independence of errors as applicable for the groups, viz. Alcohol Dependent group, Alcohol Recovering group, Opioid Dependent group, Opioid Recovering group, and two Non-user groups. In instances where parametric assumptions were violated, appropriate non-parametric methods were resorted to. However, given the robustness of the parametric methods used, and considering the equal sample sizes randomly generated using SPSS 22 for each cell of the design, non-significant level of diagnostic test of parametric assumptions were set at a lenient .01 level and interpreted with caution, following Fields (2016). These exercises in data screening yielded a total sample size of 360 with 60 participants in each cell of the design (2 'Type of Substance 'x 3 'Status of Substance Use').

Five psychological tools were used to measure the behavior of interest in this study. To measure resilience, Resiliency Scale (Siu, O.-L., Hui, C. H., Phillips, D. R., Lin, L., Wong, T.-w., & Shi, K, 2009) was used. Multidimensional Locus of Control Scales (Levenson, H., 1974) was used to measure Locus of Control (Internal, Powerful Others and Chance). For measurement of coping styles, Maladaptive and Adaptive Coping Style Questionnaire (Moritz, S., Jahns, A. K., Schröder, J., Berger, T., Lincoln, T. M., Klein, J. P., & Göritz, A. S., 2016) was used. Spiritual Attitude and Involvement List (de JagerMeezenbroek, E.,Garssen, B., van den Berg, M.,Tuytel, G., van Dierendonck, D., Visser, A., & Schaufeli, W. B., 2012) was used to measure Spirituality (Connectedness with Oneself, Connectedness with the Environment (including Caring for Others and Connectedness with Nature), and

Connectedness with the Transcendent), and finally Social Support Scales (Duran, B., Oetzel, J., Lucero, J., Jiang, Y., Novins, D. K., Manson, S., Beals, J., 2005) was used to assess Social Support (Perceived Social Support , Negative Social Support ,Instrumental Social Support , and Cultural Social Support), for the different groups of participants.Psychometric adequacy of each of the behavioural measures were first ascertained which included (i) item-total coefficients of correlation (ii) inter-scale relationships, and (i) reliability coefficients (Cronbach's Alpha) over all the different groups namely Alcohol Dependent group, Alcohol Recovering group, Opioid Dependent group, Opioid Recovering group, and two Non-user groups. Descriptive statistics comprising of Mean, SD, Skewness, Kurtosis and Standard Errors were also included for comparison of the test scores between the groups and to check the data distributions for further statistical analyses (Miles & Shevlin, 2004). This was followed by statistical analyses of the data using SPSS 22 to address each of the objectives and hypotheses set forth for the study.

Results of psychometric analyses of the applicability of the **Resiliency Scale** indicated that except for a less than perfect reliability coefficient in the Alcohol Dependent Group, Cronbach's Alpha for all the other groups were found to be acceptable. Item-total coefficients of correlations of **Multidimensional Locus of Control Scales indicated** inadequate loadings resulting in low alpha reliabilities. The reliability coefficients (Cronbach's Alpha) after item reduction were acceptable for Internal Scale and Powerful Others scale over all the groups. However, the Cronbach's Alpha for the Chance Scale was still low and therefore was rejected for use in this study. Item-total coefficients of correlations of the **Maladaptive and Adaptive Coping Style Questionnaire (MAX)** subscales indicated inadequate loadings resulting in low alpha reliabilities. This necessitated elimination of 2 items in Adaptive Coping and Maladaptive Coping. The reliability coefficients (Cronbach's Alpha) after item reduction for **Maladaptive and Adaptive Coping Style Questionnaire (MAX)** were acceptable for all the six groups. However, Avoidance subscale was low in the Alcohol Groups and therefore could not be used for further analysis. In the measure of **Spiritual Attitude and Involvement List (SAIL)** the reliability coefficients showed acceptable Cronbach's Alpha ranges for

Connectedness with Oneself, Connectedness with Environment (Caring for others) and Connectedness with the Transcendent across all the groups. Connectedness with Nature subscale which was a part of the Connectedness with the Environment dimension had a low Cronbach's Alpha in some of the groups and so it could not be used for further analysis. In **Social Support Scales,** the reliability coefficients (Cronbach's Alpha) in the subscales of Perceived Social Support and in Instrumental Social Support were acceptable in all the six groups. However, the Cronbach's Alpha for the Negative Social Support and Cultural Social Support were low and could not be used for further analysis.

Given the soundness of the psychometric properties of the final psychological measures used in this study, the first three objectives of delineating the differences in the dependent variables of Personality, (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment-Caring for Others and Connectedness with Transcendent), and Social Support (Perceived and Instrumental) together according to the 'Type of Substance used' (Alcohol and Opioid), the 'Status of Substance Use' (Dependent, Recovering, Non-user), and their interaction effects were first looked into using 2 x 3 (2 Type of Substances x 3 Status of Substance Use) factorial Multivariate Analysis of variance (MANOVA). As Box's Test revealed a significant unequal covariance matrices of the dependent variables, Pillai's Trace in significant Multivariate Test was interpreted (instead of Wilk's Lambda), which indicated significant main effects of 'Type of Substance Use', 'Status of Substance Use', and their interaction effects. Levene's test of Homogeneity of Variance indicated instances of significance in measures of Internal Locus of Control and Instrumental Social Support at a liberal cut off set at .001 level for significance of diagnostic tests of parametric assumptions. A cautious interpretation of the results of Tests of Between-Subjects Effects indicated significant differences in Adaptive Coping, Perceived Social Support, and Instrumental Social Support according to 'Type of Substance Use'. Significant effect of 'Status of Substance Use' is also seen in all the dependent variables of Personality, Spirituality, and Social Support. Further, interaction effects were also

evident in measures of Powerful Others Locus of Control and Instrumental Social Support.

However, it may be noted that the factorial 2 x 3 (2 Type of Substances x 3 Status of Substance Use) MANOVA calculated the 'Type' effect from the combined scores of the groups under the Alcohol Type together, including the Non-user group; likewise for the main effects of Opioid Type, that is irrespective of 'Status'. Similarly, the 'Status' main effect is also based on the combination of the scores of 'Status' (Dependent, Recovering, Non-user) irrespective of the 'Type' (Alcohol or Opioid) of substance use. Therefore, in order to refine and clarify the significant differences in the 'Type' and the 'Status' sub-groups separately on each of the dependent variables, Independent Sample *t*-test was used to clarify differences on the dependent variables according to 'Type' (Alcohol Dependent versus Opioid Dependent, Alcohol Recovering versus Opioid Recovering). A One-Way Analysis of Variance (ANOVA) for 'Status of Substance Use' (Dependent, Recovering, Non-user) difference in Alcohol and Opioid groups separately on the dependent variables was employed in order to more specifically address main effects of 'Type' and 'Status' of Substance Use.

As mentioned above, the **first objective** of studying the differences in Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment-Caring for Others and Connectedness with Transcendent), and Social Support (Perceived and Instrumental) between the two 'Type of Substance'(Opioid or Alcohol Dependent and Recovering groups) was addressed using Independent Sample *t*-test. In order to meet the requirements for use of parametric statistics, skewness, kurtosis and homogeneity of variances (Levene's statistics) were scrutinized. The results of skewness and kurtosis hardly violated the demands for normal distribution. In instances where the assumption of homogeneity of variance were violated, equal variance was not assumed. And Welch- Satterthwaite's Statistic was used, though the criterion for non-significance level of diagnostic test of parametric assumptions were set leniently at a .01 level considering the robustness of parametric methods and

equal sample sizes randomly generated using SPSS 22 for all units of analyses (Fields, 2016).

Results of the Independent Sample t-test indicated that there were significant differences between the Alcohol Dependent and Opioid Dependent Group on Powerful Others Locus of Control as well as on Instrumental Social Support. In the Powerful Others Locus of Control, the Alcohol Dependent Group scored significantly higher than Opioid Dependent Group. This particular result contradicted the first hypothesis stating that Alcohol Dependent Group will score significantly lower in Powerful Others Locus of Control than Opioid Dependent Group. So, with limited literature comparing this particular variable in these two groups, it may be said that when it comes to the Mizo society, people who are dependent on alcohol tend to view the impact of other people on their lives i.e., on Powerful Others Locus of Control as higher than those with Opioid dependent people. This may be seen as an impact of the kind of attitude Mizo Society has towards alcohol use which has been a part and parcel of Mizo history versus Opioid which is considered relatively new and is not a part in its collective memory and history. And with strongly unfavorable attitude towards illicit drugs such as heroin, opioid users may distance themselves and feel less connected towards the society as a whole as compared to individuals with Alcohol users. As Mizo population has been shown to display collectivistic characteristics (Fente & Singh, 2008) where social behavior is determined by shared goals, attitudes and values with their in-groups (Hofstede, 1980; Markus & Kitayama, 1991; Triandis, 1995). Hence, it may be said thatthis cultural context may have an impact on the locus of control of substance users.

Further, results of the Independent Sample t-test also showed that the Alcohol Dependent Group scored significantly higher than Opioid Dependent Group in Instrumental Social Support. The hypothesis stating that the Alcohol Dependent Group will score higher on Instrumental Social Support than Opioid Dependent Group was supported. Although social support has been found to play an important role in recovery from addiction in numerous studies (Schmitt, 2003; Pettersen *et al*., 2019) and it has also been found to reduce the risk for substance use (Gázquez *et al*., 2016), there is lack of research comparing the social support received by individuals

with various types of substance dependence especially in terms of tangible aid. From this particular finding, we can infer that people with alcohol dependence receive more support in terms of tangible aid than do people with opioid dependence. It may be to do with the perception the Mizo society has towards illicit drugs like opioid as compared to the complicated history it has had towards alcohol sale and production. Consumption of 'Zu', traditional rice beer, was a common phenomenon in Mizo society (McCall, 2003). It was an essential component of all the sociocultural and religious ceremonies in the pre-colonial Mizo society, including sacrifice, marriage, birth, death, festival and for celebration of successful hunting and harvesting included 'Zu '(Lalremruata, T., 2019). Hence, keeping this history in mind, Mizo people may view alcoholism as more acceptable than addiction to other 'hard 'drugs like opioid, making it more likely to provide tangible aid to the former than the latter.

However, no significant differences were found between the Alcohol Dependent and Opioid Dependent Group on Resilience, Internal Locus of Control, Adaptive Coping, Maladaptive Coping, Spirituality (Connectedness with Oneself, Connectedness with Environment- Caring for Others, Connectedness with Transcendent) and Perceived Social Support in the Alcohol Dependent and Opioid Dependent Group. This may indicate that the 'Type of substance use', whether it be Alcohol or Opioid the individuals are currently dependent on, does not make a significant difference in terms of the factors mentioned above, except for Powerful Others LOC and Instrumental Social Support.

Results of the Independent Sample *t*-test indicated that there was significant difference between the Alcohol Recovering and Opioid Recovering Groups on Perceived Social Support. Hence, the results conformed to the hypothesis stating that the Alcohol Recovering Group will score higher on Perceived social support than Opioid Recovering Group. This implies that the Alcohol Recovering Group tend to perceive others as providing more social support to them as compared to the Opioid Recovering Group. As mentioned above, this finding may be in tune with the perception that the Mizo society has towards illicit drugs like opioid as compared to alcohol consumption. while the Consumption of 'Zu' or the traditional rice beer has been a part and parcel of the Mizo society as it was used in sociocultural ceremonies

such as sacrifice, marriage, birth, death, festival and for celebration of successful hunting and harvesting (Lalremruata, 2019) before colonialism and Christianity led to changes in many of the sociocultural practices. Hence, its use was a common phenomenon in Mizo society (McCall, 2003). Whereas the introduction of Opioid in the form of heroin to the Mizo society is relatively new and recent as the early 1970s (Panda, 2006). Hence, the individuals with opioid use problem are much more unfavourably and negatively viewed by the society as a whole.

However, no significant differences were found between the Alcohol Recovering Group and Opioid Recovering Group on Resilience, Internal Locus of Control, Powerful Others Locus of Control, Adaptive Coping, Maladaptive Coping, Spirituality (Connectedness with Oneself, Connectedness with Environment- Caring for Others, Connectedness with Transcendent) and Instrumental Social Support in the Alcohol Recovering and Opioid Recovering Group. This may indicate that the 'Type of substance use' or in other words, irrespective of what substance they were once dependent on (amongst the Recovering Group from both the Alcohol Group and Opioid Group), this does not make a significant difference in terms of the factors mentioned above.

The **second objective** was to study the differences based on the 'Status of Substance Use '(Dependent, Recovering, and Non-user) on Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment-Caring for Others, Connectedness with Transcendent), and Social Support (Perceived and Instrumental) separately in the Alcohol Group and Opioid Group. This hypothesis was put forth as the measures of these dependent variables were expected to be different based on whether they are dependent users, abstaining from use, or never being dependent on substance use. This objective was addressed using a One-Way ANOVA. The parametric assumptions were taken care of, and for instances where parametric assumptions were not met, equivalent non-parametric test (Kruskal Wallis Test) was used.

In the **Alcohol group**, investigation of the second objective revealed significant status effect on Resilience, Powerful Others Locus of Control, Adaptive Coping, Maladaptive Coping, Spirituality (Connectedness with Oneself, Connectedness with Environment- Caring for Others, Connectedness with Transcendent) Perceived Social Support and Instrumental Social Support. In other words, there was evidence of significant differences in these factors depending on the status of being dependent or abstinent or not dependent at all. However, there was no significant difference in 'Status of Substance Use' on Internal Locus of Control in the Alcohol Group (Dependent Group, Recovering Group and Non-user Group).

In the **Opioid group**, investigation of the second objective revealed significant status effect on Resilience, Adaptive Coping, Maladaptive Coping, Spirituality (Connectedness with Oneself, Connectedness with Environment- Caring for Others, Connectedness with Transcendent), Perceived Social Support and Instrumental Social Support. In other words, there was evidence of significant differences in these factors depending on the status of being dependent or abstinent or not dependent at all. However, there was no significant 'Status of Substance Use' on Internal Locus of Control and Powerful Others Locus of Control in the Opioid Group (Dependent Group, Recovering Group and Non-user Group).

To summarize the findings of the differences in **Resilience** acrossthe three groups of substance use under the two types of substance use, the Alcohol Recovering Group and Non-user Group displayed significantly higher Mean scores than the Alcohol Dependent as expected. However, in the Opioid Group, only the Non-user Group displayed significantly higher Mean score than the Opioid Dependent Group while the Opioid Recovering Group are not significantly different from the Opioid Dependent Group. In terms of Resilience, in the Alcohol Group, the Alcohol Recovering Group and Non-user Group displayed significantly higher mean score than the Alcohol Dependent Group in Resilience as expected. However, in the Opioid Group, only the Non-user Group displayed significantly higher Mean score in Resilience than the Opioid Dependent Group while the Opioid Recovering Group are not significantly different from the Opioid Dependent Group. One explanation for this maybe that resilience or the ability to cope with problems and stress maybe

effected by the perception and approach the Mizo society collectively have towards 'hard drugs' such as Opioid as compared to Alcohol as well as towards the people who are using them. The use of alcohol during festivals was a common practice in the Mizo traditional society. It was only after the advent of Christianity in Mizoram that consumption of '*Zu*' by a Mizo Christian was prohibited (MSD & RB., 2015), whereas, the introduction of Opioid in the form of heroin to the Mizo society is relatively new and recent as the early 1970s (Panda, 2006).

Internal LOC acrossthe three groups of substance use under the two types of substance use, the Alcohol Recovering Group and Non-user Group did not display significantly higher Mean score than the Alcohol Dependent as expected. The same can be said for the findings in the Opioid Group, the Opioid Recovering Group and Non-user Group did not display significantly higher Mean score than the Opioid Dependent as expected. In the case of **Internal Locus of Control**, there was no significant evidence of the effect of 'Status of Substance Use' in this. Although internal locus of control is seen as often higher in individuals with no history of substance use as compared to recovering groups and so called 'alcoholic' groups (Huckstadt, 1987; Soravia *et al*., 2015, Prakash *et al*., 2015), these findings did not hold true for the current study. However, this current finding is not an isolated case. Ersche *et al*. (2012) also showed found that drug-dependent individuals have a greater internal sense of control with regard to addiction recovery or drug-taking behaviors than health professionals and/or non-dependent control volunteers. So, we can surmise from this research that an individual's locus of control is greatly influenced by their own history with drug use and particular findings may not be totally generalizable.

In terms of **Powerful Others LOC**, the Alcohol Recovering Group and Non-user Group displayed significantly lower mean score than the Alcohol Dependent Group as expected. In the Powerful Others Locus of Non-user amongst the Opioid Groups, the Recovering Group and Non-user Group did not score significantly lower than Dependent Group. Powerful Others Locus of Control in

individuals between these two types of Substances (Alcohol and Opioid) is scarce. So, with limited literature comparing this particular variable in these two groups, it may be surmised that when it comes to the Mizo society, people who are dependent on alcohol tend to view the impact of other people on their lives i.e., on Powerful Others Locus of Control as higher than those with Opioid dependent people. This may be seen as an impact of the kind of attitude Mizo Society has towards its perception of alcohol which has been a part and parcel of Mizo history versus Opioid which is considered relatively new and is not a part in its collective memory and history. And with a less favourable attitude towards illicit drugs such as heroin, opioid users may distance themselves and feel less connected towards the society as a whole as compared to individuals with Alcohol users. As Mizo population has been shown to display collectivistic characteristics (Fente & Singh, 2008, Lalkhawngaihi & Fente, 2019) where social behavior is determined by shared goals, attitudes and values with their in-groups (Hofstede, 1980; Markus & Kitayama, 1991; Triandis, 1995). Hence, we can say that, this cultural context may have an impact on the locus of control of substance users.

With regard to **Adaptive Coping** acrossthe three groups of substance use under the two types of substance use, the Non-user Group scored significantly higher than the Dependent group but not so much from the Recovering Group as expected in the Alcohol Group. This finding was found to be similar amongst the Opioid Groups, where, the Non-user Group displayed significantly higher Mean score than the Opioid Dependent Group but not from the Recovering Group. Previous researches have also supported the same findings. Kronenberg *et al.* (2015) SUD patients reported more palliative, avoidant and passive coping when confronted than people in the general population. Another related study by Sarada & Radharani (2017) has also compared the coping strategies among abstinent and relapsed individuals with alcohol dependence and the results showed that patients in the relapsed group tend to use more maladaptive strategies (negative thinking) and less adaptive strategies such as positive thinking as compared to the abstinent group.

Thefindings of the pattern differences in **Maladaptive Coping** acrossthe three groups of substance use under the two types of substance use indicated that the Alcohol Dependent displayed significantly higher Mean score than the Alcohol Recovering Group and Non-user Group. According to Aldao and Nolen-Hoeksema (2012; 2010), adaptive emotion regulation strategies (e.g., acceptance or reappraisal) show weaker associations with psychopathology than maladaptive strategies (e.g., worry and rumination). Kronenberg *et al*. (2015) in their study compared the various coping styles between SUD patients showed a significant higher Mean on avoidance from a general population sample. A'zami *et al*. (2015) also found that substance-dependent individuals applied emotion-focused coping more than the healthy ones, and the latter applied problem-focused strategies more. In the Opioid group, the Non-user Group displayed significantly lower Mean score than the Opioid Dependent Group. However, in this group, the Opioid Recovering Group did not reveal a significant difference from the Dependent Group. Literature has shown that both people recovering from substance abuse and SUD patients both reported maladaptive coping behaviors.

In terms of **Spirituality,** in all aspects of spirituality namely Connectedness with Oneself, Caring for Others and Connectedness with Transcendent, the Alcohol Recovering and Non-user Group had a significantly higher Mean scores as compared to the Alcohol Dependent Group and the same result can be found in the Opioid group where Recovering and Non-user Group had a significantly higher Mean as compared to the Dependent Group. The importance of Spirituality has been established in the field of substance rehabilitation from past researches, for e.g., Robinson *et al*. (2011) investigated the effect of spiritual and religious (SR) change on subsequent drinking outcomes on alcohol-dependent individuals and found significant 6-month changes in different SR measures. Lucchetti *et al*. (2012) found that high religious involvement was associated with less alcohol use, alcohol abuse, tobacco use, and combined alcohol/tobacco use, as well as less days drinking alcohol beverages per week, controlling for confounding factors.

The findings pertaining to the differences in **Perceived Social Support** acrossthe three groups of substance use under the two types of substance use, Alcohol Recovering Group and Non-user Group displayed significantly higher Mean score than the Alcohol Dependent Group as expected. Rapiera *et al*. (2019) in their study also found an important link between perceived social support and frequency of substance use in socially stigmatized populations. It has also been shown that perceptions regarding social support can improve the psychosocial functioning during drug abuse treatment (Chong & Lopez, 2005). Interestingly, in the case of the Opioid Group, the Opioid Dependent Group reported a higher Mean score in Perceived Social Support than the Recovering Group though lesser than the Non-user Group. Interestingly, in the case of **Perceived Social Support**, the Opioid Dependent Group reported a higher Mean score in Perceived Social Support than the Recovering Group though lesser than the Non-user Group which does not support the hypothesis. This finding is surprising in that studies have consistently shown that there is a positive relationship between the length of drug abstinence and receiving social support (Davis & Jason, 2005) and a significant negative relationship between perceived social support and the frequency of relapse (Atadokht *et al*., 2015). An explanation for this finding may be again linked with the *Mizo* society's approach to 'recovering addicts' individuals especially from what are often considered as hard drugs such as heroin. These individuals are often viewed skeptically especially if they have had a history of relapse. So, in terms of relapse prevention, the role of family and society in terms of social support especially enhancing perceived social support needs to be addressed.

Further,**Instrumental Social Support across** the three groups of substance use under the two types of substance use, in the Alcohol Group, the Mean of the Non-user Group was significantly higher as compared to the Alcohol Dependent Group. However, the same cannot be said for the Alcohol Recovering Group with the Dependent Group. And similarly in the Opioid Group, the Mean of the Opioid Recovering Group and Non-user Group was significantly greater than the Opioid Dependent Group. Previous results have highlighted the importance of social support in the treatment programme of substance use but there is lack of research specifying

on the role of instrumental support or tangible aid. Rychtarik and colleagues (1987) found the evidence of lower consumption of alcohol in alcoholics when they were in contact with some social support or connection (for example their spouse, children, or a housing community). The existence of supportive structures and networks, as well as supportive interventions such as spiritual and familial support have been suggested to play a major role in the acquisition of treatment goals among drug users and prevention of relapse (Spoth & Raymond, 1994; Blume *et al*., 1994). It has also been shown that there was a positive relationship between receiving social support and the length of drug abstinence (Davis & Jason, 2005). Studies have also shown that social support lowers the chances of relapsing (Havassy, Wasserman, & Hall, 1995).

To conclude, in the **Alcohol group**, the findings support the second hypothesis stating that the Recovering Group and Non-user Group will score significantly higher in Adaptive Coping Style, Spirituality and Perceived Social Support whereas they were expected to score significantly lower on Powerful Others Locus of Control and Maladaptive Coping than the Dependent Group. In terms of Resilience and Instrumental Social Support, only the Non-user Group scored significantly higher than the Dependent Group while the Recovering Group did not do so in the Alcohol Group. In the case of Internal Locus of Control, there was no significant evidence of the effect of 'Status of Substance Use' in this. Hence, the hypothesis stating that the Alcohol Recovering Group and Non-user Group will score significantly higher than Alcohol Dependent Group in Internal Locus of Control is not supported

In the **Opioid** Group, some of the above-mentioned findings support the second hypothesis stating that the Recovering Group and Non-user Group will score significantly higher in Spirituality, and Instrumental Social Support than the Dependent Group. However, in terms of Resilience, Adaptive Coping and Perceived Social Support, only the Non-user Group scored significantly higher than the Dependent Group as also in the case of Maladaptive Coping, where only the Non-user Group scored significantly lower as compared to the Dependent Group.

However, the same cannot be said in the case of Internal Locus of Control and Powerful Others Locus of Control amongst the Opioid Groups. There was no significant evidence of the effect of 'Status of Substance Use' in these two variables. Hence, the hypothesis stating that the Recovering Group and Non-user Group will score significantly higher than Dependent Group in Internal Locus of Control and significantly lower in Powerful Others Locus of Control is not supported by the current findings.

The **third objective** of comparing the patterns of the dependent variables (2 Types of Substances x 3 Status of Substance Use) based on the 'Status of Substance Use' (Dependent, Recovering and Non-user) in the two 'Type of Substance Use' (Opioid or Alcohol) on Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment-Caring for Others and Connectedness with Transcendent), Social Support (Perceived Social Support and Instrumental Social Support) was put forth as these variables were expected to differ based on the 'Status of Substance Use' under the two 'Type of Substance Use' used. However, the ways in which the differences emerge is exploratory. In this part of the study, the patterns of differences in three Status of Substance Use (Dependent, Recovering, Non-user) between the two types of Substance Use (Alcohol and Opioid) as already analysed by the Two - way Factorial 2X3 (2 Type X 3 Status) MANOVA on the Dependent Variables of Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment-Caring for Others, Connectedness with Transcendent), and Social Support (Perceived and Instrumental) are interpreted. It may be reiterated that the interaction effects were found to be significant only in the personality variable of **Powerful Others Locus of Control** and the **Perceived Social Support** variable.

In the **Powerful Others Locus of Control**, the results indicated that in the Opioid Group, there was no significant difference between Recovering Group, Dependent Group and Non-user Group, whereas in the Alcohol Group, the

Dependent Group scored significantly higher than the Recovering Group and the Non-user Group. Although, past researches have shown that substance abusers significantly scored higher on external locus of control as compared to non-abusers (Niazi *et al*., 2005, Prakash *et al*., 2015) , research on Powerful Others Locus of Control comparing individuals between these two types of Substances (alcohol and opioid) is scarce. So, with limited literature comparing this particular variable in these two groups, it may be surmised that when it comes to the *Mizo* society, people who are dependent on alcohol tend to view the impact of other people on their lives i.e., on Powerful Others Locus of Control, as higher than those with Opioid dependent people. This may be seen as an impact of the kind of attitude *Mizo* Society has towards its perception of alcohol which has been a part and parcel of *Mizo* history versus Opioid which is considered relatively new and is not a part in its collective memory and history. And with a less favourable attitude towards illicit drugs such as heroin, opioid users may distance themselves and feel less connected towards the society as a whole as compared to individuals with Alcohol users. As *Mizo* population has been shown to display collectivistic characteristics (Fente & Singh, 2008, Lalkhawngaihi & Fente, 2019) where social behavior is determined by shared goals, attitudes and values with their in-groups (Hofstede, 1980; Markus & Kitayama, 1991; Triandis, 1995). Hence, we can say that, this cultural context may have an impact on the locus of control of substance users.

In terms of **Perceived Social Support**, Alcohol Recovering Group and Non-user Group displayed significantly higher Mean scores than the Alcohol Dependent Group as expected. Interestingly, in the case of the Opioid Group, the Opioid Dependent Group reported a higher mean score in Perceived Social Support than the Recovering Group though lesser than the Non-user Group. An explanation for this finding may be again linked with the *Mizo* society's approach to 'recovering addicts' individuals especially from what are often considered as hard drugs such as heroin. These individuals are often viewed skeptically especially if they have had a history of relapse. Hard drug or Opioid users who are considered to be in recovery may see themselves as receiving much less social support as compared to their counterparts who are recovering from or 'in recovery' from a less stigmatized substance like

alcohol. The use of alcohol during festivals was a common practice in the *Mizo* traditional society. It was only after the advent of Christianity in Mizoram that consumption of '*Zu*' by a *Mizo* Christian was prohibited (MSD & RB., 2015), whereas, the introduction of Opioid in the form of heroin to the *Mizo* society is relatively new and recent as the early 1970s (Panda, 2006). These individuals are often viewed skeptically especially if they have had a history of relapse. And studies have shown that there exists a positive relationship between family expressed emotions and the frequency of relapse (Atadokht *et al*., 2015).

To summarize the above findings of the pattern differences in the three groups of substance use under the two types of substance use, in terms of **Powerful Others LOC**, the Alcohol Recovering Group and Non-user Group displayed significantly lower Mean score than the Alcohol Dependent Group as expected. In the Powerful Others Locus of Control amongst the Opioid Groups, the Recovering Group and Non-user Group did not score significantly lower than Dependent Group. In terms of **Perceived Social Support**, Alcohol Recovering Group and Non-user Group displayed significantly higher Mean score than the Alcohol Dependent Group as expected. Interestingly, in the case of the Opioid Group, the Opioid Dependent Group reported a higher Mean score in Perceived Social Support than the Recovering Group though lesser than the Non-user Group.

In order to address the **fourth objective** of highlighting the relationships between Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment-Caring for Others and Connectedness with Transcendent) and Social Support (Perceived Social Support and Instrumental Social Support), using Pearson's Correlation Coefficient, Bivariate Correlations between the scores on all the variables of Personality Factors (Resilience, Locus of Control and its two subscales- Internal Scale and Powerful Others Scale and Coping Styles and its two subscales- Adaptive Coping and Maladaptive Coping), Spirituality and its three subscales-Connectedness with Oneself, Connectedness with Environment-Caring for Others and Connectedness with Transcendent, and Social Support and its two subscales-

Perceived Social Support and Instrumental Social Support, were determined for all units of analyses. The hypothesis that envisaged a significant relationship between the ten variables was found to be supported in most of the groups.

Generally, in the **Alcohol Group**, Resilience and Adaptive Coping were positively correlated. In previous researches, individuals who scored high on resilience also scored high on problem solving ability (Veenstra *et al*., 2007; Howe *et al*., 2012; Faye *et al*., 2018). Personality (Resilience and Adaptive Coping) was positively correlated with Spirituality (Connectedness with Oneself & Caring for Others).Whether one becomes a member of the addicts and non-addicts 'groups could be predicted by the factors such as personality, identity style, spirituality, and resilience (Hosseini-Almadani *et al*., 2010). Ramezani *et al*. (2015) also found that the non- addicted women acquired higher scores in variables of resilience and spirituality as compared to the addicted women. Resilience was found to be positively correlated with Internal LOC. Feldmen (2011) resilient people have control over their destiny and they make the best of whatever situation they are in. Internal Locus of Control was significantly positively correlated with Adaptive Coping while it was significantly negatively correlated Maladaptive Coping. Sandler and Lakey (1982) found that LOC beliefs play an important role in moderating the effects of stress on well-being and they suggested that under conditions of high stress, internals are able to acquire and use information more effectively than externals. Internal Locus of Control was significantly positively correlated to Connectedness with Oneself. The concept of spirituality is often linked with a sense of meaning (Steger & Frazier, 2005). Apart from promoting a sense of meaning, spirituality may be considered to be a helpful resource while dealing with highly stressful situations (Diener *et al*., 2011; Park *et al*., 2013).

Maladaptive Coping was significantly negatively correlated with Connectedness with Oneself and Connectedness with Environment- Caring for Others. Scholarly articles report that religious people are less depressed, less anxious, and less suicidal than nonreligious people, and that they are better able to cope with traumatic events (Paul, 2005). The more a believer incorporates religion into daily living, the more they report frequency of positive emotions (Waters & Shafer,

2005).Spirituality subscales such as Connectedness with Oneself, Caring for Others & Connectedness with Transcendent were found to be positively correlated with one another and Perceived Social Support was found to be positively correlated with Connectedness with Transcendent. Chen (2006) found that amongst inmates (recovering addicts) who participated in therapeutic intervention programs including social support and experiential spiritual program components, there was a higher sense of coherence and meaning in life than those not participating in such programmes. Studies have suggested that the presence of supportive networks, as well as supportive interventions such as spiritual and familial support, plays a major role in achieving treatment goals in drug abusers and prevention of relapse (Spoth & Redmond, 1994; Blume *et al.*, 1994)

In the **Opioid Group**, Resilience was generally found to be positively correlated with Internal LOC. Internal LOC individuals believe that one's internal and external environments are predictable and that depending on the efforts that they give, there is a good chance that all things will work out (Kobassa & Puccetti, 1980). Resilience was found to be significantly negatively correlated to Powerful Others Locus of Control. Niazi *et al.*, (2005) in their study in Pakistan and found that substance abusers significantly scored higher on external locus of control. Internal Locus of Control and Connectedness with Environment- Caring for Others were found to be significantly positively correlated. Kurtz (1996) highlighted the importance of finding meaning in the lives of individuals recovering from addiction and believed that this could be achieved by connecting with others in recovery, connecting with the self, and with a power greater than oneself. Resilience and Adaptive Coping were significantly positively correlated while Maladaptive Coping was found to be negatively correlated with Resilience. In previous researches, individuals who scored high on resilience also scored high on problem solving ability while individuals with substance addiction who scored low on resilience also scored low on problem solving (Veenstra *et al.*, 2007; Howe *et al.*, 2012; Faye *et al.*, 2018).

Powerful Others Locus of Control and Adaptive Coping were significantly negatively correlated and on a related note, Powerful Others Locus of Control and Maladaptive Coping were significantly positively correlated. Internals are able to

acquire and use information more effectively than externals and that they are more task oriented in their coping behaviors as compared to externals (Sandler & Lakey, 1982; Cohen & Edwards, 1989). This finding may be due to externals 'increased feelings of helplessness when dealing with problems (Hiroto, 1974; Fogas *et al*., 1992). Personality (Resilience and Adaptive Coping) was positively correlated with Spirituality (Connectedness with Oneself & Caring for Others). Ramezani *et al*. (2015) also found that the non- addicted women acquired higher scores in variables of resilience and spirituality as compared to the addicted women. Spirituality subscales such as Connectedness with Oneself, Caring for Others & Connectedness with Transcendent were found to be positively correlated with one another. Whether one becomes a member of the addicts and non-addicts 'groups could be predicted by the factors such as personality, identity style, spirituality, and resilience (Hosseini-Almadani *et al*., 2010). Adaptive Coping was significantly positively correlated to Perceived Social Support while Maladaptive Coping was significantly negatively correlated to Perceived Social Support. A related finding can be seen where perceived social support from the family was a strong protective factor against alcohol use while avoidance coping strategy (which is considered to be one of the most commonly used maladaptive coping strategies used in substance abuse) was seen as a strong risk factor of alcohol use (Hamdan-Mansour *et al*., 2006).

The **fifth hypothesis** was addressed using Multinomial Logistic Regression analyses to elucidate the predictability of 'Status of Substance Use' (Dependent, Recovering and Non-user Group) from Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Caring for Others & Connectedness with Transcendent) and Social Support (Perceived Social Support & Instrumental Social Support). Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Caring for Others & Connectedness with Transcendent) and Social Support (Perceived Social Support & Instrumental Social Support) were entered as predictor variables while 'Status of Substance Use' (Dependent, Recovering and Non-user Group) were entered as criterion or outcome variables.

In the **Alcohol Group**, the results indicated the significant predictability of 'Status of Substance Use' (Dependent, Recovering and Non-user Group) from Resilience, Internal Locus of Control, Connectedness with Transcendent, Perceived Social Support and Instrumental Social Support as expected. No further significant predictions of the 'Status of Substance Use' from the predictor variables were found for the Alcohol Group.

The Likelihood Ratio Chi-Square Test indicated that this test is statistically significant which indicates that there is significant improvement in fit of the model relative to a baseline model with no predictors. The Likelihood Ratio Test showed that predictors such as Resilience, Internal LOC, Maladaptive Coping, Connectedness with Transcendent, Perceived Social Support and Instrumental Social Support contribute significantly to the final model. The Goodness-of-fit model also indicated that the findings are non-significant indicating good model fit. The Pseudo R-Square measure accounted for 54% to 30% of the variance and represented relatively decent-sized effects.

The results of Multinomial Logistic Regression analysis indicated the significant main effect of Resilience on 'Status of Substance Use'. Resilience significantly predicted 'Status of Substance Use' in the Alcohol Group i.e., whether they belong to the Recovering Group or Dependent Group where the higher the Resilience, the higher the chances of falling in the Recovering Group as compared to the Dependent Group. This finding has been supported by past researches where they have consistently found the importance of resilience as both a predictor of substance use and as playing an important role in the recovery process. Fadardi *et al.* (2010) on their study of substance use among university students have found resilience as independent predictor of substance use. Another previous study has also established an increase in resiliency in clients who have undergone treatment in rehabilitation programs and centres (Zamani *et al.*, 2014).

Internal Locus of Control significantly predicted 'Status of Substance Use' i.e., whether they belong to the Dependent Group or Non-user Group where the higher the Internal Locus of Control, the lower the chances of falling in the Non-user

Group as compared to the Dependent Group. A study by Dean & Edwards (1990) on individuals receiving treatment for alcohol use show that the majority had higher belief that their health status is more under their own control than under the control of chance or powerful others. These findings seem to be more in line with current research finding wherein in the Mizo society individuals with drug use due to their own experiences with drug use tend to have a greater internal locus of control as compared to non-users. Another explanation for this current finding may be understood in the context of *Mizo* Society, where *Mizo* population has been shown to display collectivistic characteristics (Fente & Singh, 2008, Lalkhawngaihi & Fente, 2019). Participation in community activities organised by community-based organizations (CBOs) are accepted as unwritten norms by every *Mizo* members especially in times of deaths and crises (Lalmuanpuii, 2004). Hence, we can say that, this cultural context may have an impact on the locus or control or the extent to which people believe they can control their general life outcomes (Rotter, 1990) whereby being internally oriented or externally oriented determine substance use amongst *Mizo* people.

Maladaptive Coping significantly predicted 'Status of Substance Use' i.e., whether they belong to the Dependent Group or Non-user Group under the Alcohol Group where an increase in Maladaptive Coping decreased the likelihood of falling under the Non-user Group as compared to the Dependent Group. These findings are not surprising when looking at studies that have also established that individuals with poor adaptive coping methods are more likely to engage in substance use including alcohol-related problems and heavy drinking behavior in the absence of more effective and adaptive coping strategies (Hasking *et al*., 2011; Corbin *et al*., 2012). In another study, it was found that maladaptive coping strategies predicted greater frequency of drinking to intoxication (Pence *et al*., 2008). In yet another study, the utilization of functional coping strategies is a statistically significant predictor of lower levels of alcohol consumption among undergraduate students (Wynn, 2017).

In terms of the predictability of Connectedness with Transcendent, there was significant main effect of Connectedness with Transcendent on 'Status of Substance Use' which indicates an increasing likelihood of falling into the Non-user Group and

Recovering Group as compared to the Dependent Group with increase in Connectedness with Transcendent. This finding has been supported by previous researches by the likes of Koenig *et al*. (2001) and Chitwood *et al*. (2008) who found that an inverse relationship occurs between involvement in religion (e.g., attending services, considering religious beliefs significant) and likelihood of substance use across different life stages. A related study in a meta-analysis done by Yeung *et al*. (2009) found that religiosity (regardless of the definitions or religiosity) was consistently associated with less youth substance use. Based on the findings of a study, spiritual awakening reported over a period of time (with a person who has been discharged) were also reported to maintain abstinence for a longer period of time (Kaskutas *et al*., 2003).

Perceived Social Support significantly predicted 'Status of Substance Use' i.e., whether they belong to the Dependent Group, Recovering Group or Non-user Group where the higher the Perceived Social Support, the higher the chances of falling in the Recovering Group or Non-user Group as compared to the Dependent Group. The importance of social support in individuals recovering from substance use has been established in previous studies as well as its role in preventing relapse. It also plays a major role in the promotion of treatment goals in drug abusers and prevention of relapse (Spoth & Redmond, 1994). Atadokht *et al*. (2015) have also found that perceived social support from family and the family expressed emotions significantly explained 12% of the total variance of relapse frequency. Shahzad *et al*. (2014) in a simple regression analysis found social support as a significant predictor of wellbeing in people with SUD. Rapiera *et al.* (2019) found significant negative correlations between perceived social support and lifetime use of alcohol, tobacco, and cannabis and that perceptions regarding social support can enhance the psychosocial functioning during drug abuse treatment (Chong & Lopez, 2005).

And finally, Instrumental Social Support significantly predicted Status of Substance Use i.e., whether they belong to the Dependent Group or Non-user Group where the higher the Instrumental Social Support, the higher the chances of falling in the Non-user Group as compared to the Dependent Group. Although there is paucity of research studying specifically the predicting role of instrumental social support in

substance use, it has been consistently found that people with higher levels of social support have been found to be less likely to use drugs and alcohol (Nikmanesh & Honakzehi, 2016; Laudet *et al.*, 2006). Social support is seen as one of the factors that have a special role in maintaining the withdrawal of drug-dependent people as well as having a positive relationship between the length of drug abstinence and receiving social support (Davis and Jason, 2005).

In the **Opioid Group**, the results indicated the predictability of 'Status of Substance Use' (Dependent, Recovering and Non-user Group) from Internal Locus of Control, Maladaptive Coping, Connectedness with Oneself and Instrumental Social Support as expected. No further significant predictions of the 'Status of Substance Use' from the other predictor variables were found for the Opioid Group.

The Likelihood Ratio Chi-Square Test indicated that this test is statistically significant which indicates that there is significant improvement in fit of the model relative to a baseline model with no predictors. The Likelihood Ratio Test showed that predictors such as Internal LOC, Maladaptive Coping, Connectedness with Oneself, Perceived Social Support and Instrumental Social Support contribute significantly to the final model. The Goodness-of-fit model also shows that the findings are non-significant indicating good model fit. The Pseudo R-Square measure accounted for 46% to 24% of the variance and represented relatively decent-sized effects.

Connectedness with Oneself significantly predicted 'Status of Substance Use' i.e., whether they belong to the Dependent Group or Non-user Group where the greater the Connectedness with Oneself, the higher the chances of falling in the Non-user Group as compared to the Dependent Group. The same was true for the Recovering Group where the greater the Connectedness with Oneself, the higher the chances of falling in the Recovering Group as compared to the Dependent Group. The importance of connectedness with oneself and finding meaning in one's life has been reflected in a study by Kurtz & White (2015) who highlighted the importance of finding meaning in the lives of individuals recovering from substance use. He observed that this could be achieved by connecting with others who are also in

recovery, connecting with the self, and with a power greater than oneself which is often described as Spiritual.

Instrumental Social Support significantly predicted 'Status of Substance Use' i.e., whether they belong to the Dependent Group or Non-user Group where the higher the Instrumental Social Support, the higher the chances of falling in the Non-user Group as compared to the Dependent Group. This was also true for the Recovering Group where the higher the Instrumental Social Support, the higher the chances of falling in the Recovering Group as compared to the Dependent Group. Although there is paucity of research studying specifically the predicting role of instrumental social support in substance use, it has been consistently found that people with higher levels of social support have been found to be less likely to use drugs and alcohol (Nikmanesh & Honakzehi, 2016; Laudet *et al*., 2006). Social support is seen as one of the factors that have a special role in maintaining the withdrawal of drug-dependent people as well as having a positive relationship between the length of drug abstinence and receiving social support (Davis and Jason, 2005).

Internal Locus of Control significantly predicted 'Status of Substance Use' i.e., whether they belong to the Dependent Group or Non-user Group under the Opioid Group where an increase in Internal Locus of Control decreased the likelihood of falling under the Non-user Group as compared to the Dependent Group. The explanation for this finding has been given for the alcohol group wherein, Ersche *et al*. (2012) found that drug-dependent individuals have a greater internal sense of control with regard to addiction recovery or drug-taking behaviors than health professionals and/or non-dependent control volunteers. These findings seem to be more in line with current research finding wherein in the *Mizo* society individuals with drug use due to their own experiences with drug use tend to have a greater internal locus of control as compared to non-users. Another explanation for this current finding may be understood in the context of *Mizo* Society. *Mizo* population has been shown to display collectivistic characteristics (Fente & Singh, 2008) where social behavior is determined by shared goals, attitudes and values with their in-groups (Hofstede, 1980; Markus & Kitayama, 1991; Triandis, 1995). Hence, we can

say that, this cultural context may have an impact on the locus or control or the extent to which people believe they can control their general life outcomes (Rotter, 1990) whereby being internally oriented or externally oriented determine substance use amongst *Mizo* people.

The results also highlighted significant main effect of Maladaptive Coping on 'Status of Substance Use' which indicates that with an increase in Maladaptive Coping there is a decreasing likelihood of falling into the Non-user Group as compared to the Dependent Group. Maladaptive Coping significantly predicted 'Status of Substance Use' i.e., whether they belong to the Dependent Group or Non-user Group under the Opioid Group where an increase in Maladaptive Coping decreased the likelihood of falling under the Non-user Group as compared to the Dependent Group. These findings are not surprising when looking at past researches that study substance use itself as a maladaptive coping mechanism. Individuals with opioid dependence entering naltrexone treatment have been found to report less use of adaptive coping strategies when compared with controls (Hyman *et al*., 2009). In a study examining predictors of alcohol and drug use, it was found that stronger adaptive coping strategies were the most consistent predictor of less frequent alcohol and drug use (Pence *et al*., 2008).

Hence, as envisaged, the results of this study indicated that personality factors, spirituality, and social support are indeed important psychological variables that may render a person to maintain or sustain their substance use or recovery.

A few notable **implications** of this study was that it laid special emphasis on people who have managed to remain abstinent from drug use over a period of time and tries to understand how they may be different from individuals who are not able to remain abstinent for longer periods of time by studying the role these psychological factors including personality factors, spirituality and social factors such as social support may play. This study also attempted to compare individuals who have never had a problem with substance use with individuals who have had a substance use problem as well as those who currently have a problem with it. It has supported and enhanced previous researches that have focused on the importance of

involving various psychological factors in the process of treatment of individuals with substance use disorders such as building resilience to deal with stressful situations more effectively (Maddi & Khoshaba, 2005; Cadet, 2016), building coping skills (McConnell *et al.,* 2014; Wynn, 2017) and helping these individuals navigate their locus of control where it was found that in this study amongst the Mizo population, an increase in Internal Locus of Control decreased the chance that an individual will not have a substance use problem as compared to one who has. It has highlighted the importance of a holistic spiritual experience; not just emphasizing on religious context in Mizo Society but other aspects of spirituality such as building meaningfulness, acceptance and trust within a person, helping individuals become connected with other people through expressing care and concern for others(Steger & Frazier, 2005; Kurtz & White, 2015). The importance of having a strong support system whether it be in the perceived emotional or appraisal support or with the help of providing tangible aid has also been highlighted again in this study (Atadokht *et al*., 2015; Rapiera *et al*., 2019).

To highlight few **limitations** in this present study, a larger sample size could have further strengthened the statistical power for interpretation in this study. Incorporation of gender as a variable would have enriched the study. However, this could not be done due to limited opportunity for female sample because there are a smaller number of female cases of substance abuse. Some of the participants had a prior history of other substance use and it would have been ideal to tease out these effects. A qualitative approach of data collection would help give a broader understanding of the other psychological factors playing a role in substance dependence as well as substance abstinence. It would be interesting to extend this area of research and tap other psychological (other personality traits such as impulsivity) and social factors (such as family dynamics, parenting styles) that may play a role while ultimately opening more avenues for intervention.

The findings of this study highlighted that the different variables such as personality (resilience, locus of control and coping styles), spirituality (trust, meaningfulness, acceptance, caring for others, connectedness with transcendent) and

social support (perceived and instrumental) irrespective of the different groups (such as whether they are dependent on substance or not or are currently not) are related to one another indicating that these variables can be used in tandem and incorporated as a part of prevention or intervention programmes in the Mizo population.

From this study, it was also evident that the recovering group and non-user group scored consistently higher that the dependent group in both the alcohol and opioid group especially in the area of spirituality. This finding is quite significant and may be an untapped area of intervention. One aspect of Spirituality, i.e., Religiousity has been a part and parcel of the numerous faith-based rehabilitation centers for substance addiction in the state of Mizoram. Halliday (2009) in his study evaluating the centres in Mizoram as well as the care provided for individuals with substance abuse found that these centres were mostly religious based and evangelical based camps. Ralte (1994) also suggested the requirement of a more comprehensive treatment program with a multi-disciplinary approach in Mizoram.

Other areas that may be pointed out as well are the findings related to coping styles, perceived and instrumental social support. This study has highlighted the importance of expanding the current system of intervention by including spirituality enhancement, improving one's adaptive coping styles and focusing more on social support. As Mizo population has been shown to display collectivistic characteristics (Fente & Singh, 2008) where social behavior is determined by shared goals, attitudes and values with their in-groups (Hofstede, 1980; Markus & Kitayama, 1991; Triandis, 1995). Hence, it may be said that this cultural context may have an impact on the personality factors of substance users participating/not participating in socio-cultural programmes as well as how they perceive to be supported by the society as a whole and ultimately have an impact on the trajectory of their future substance use.

Across the groups, factors such as resilience, internal locus of control, connectedness with oneself, connectedness with transcendent, perceived social support and instrumental social support were found to be especially helpful in predicting whether an individual belonged to the dependent group or are currently in

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recovery from substance use or have never had a problem with substance use before. Therefore, it may be helpful to develop tasks and exercises to especially focus on these factors that can be used either or both as a preventive or intervention measure that will also suit the cultural background of the Mizo people.

To finally conclude, substance use problem is a significant public health concern and burden to the Mizo society as a whole. Dealing with it has to be done in a systematic manner with the help of empirical evidence to see what else needs to be done in handling this escalating crisis. This current study aimed to play a part in understanding this phenomenon by studying psychological and social factors surrounding this phenomenon namely Personality factors like- Resilience, Locus of Control and Coping Styles and social aspect in the form of Social Support and a relatively new concept of including Spirituality in the intervention process (as opposed to the past focus on religious-based interventions). And with the help of its finding may contribute to the scientific community in the Mizo context and tap various aspects and ultimately open up avenues to deal with it.

APPENDICES

RS

Heng a hnuaia thu te hi miin dinhmun harsa, hrehawm leh tawhkhirh awm an hmachhawn changte a an awm dan a ni a. Nangman hetiang dinhmun harsa, hrehawm leh tawhkhirh awm I hmachhawn ve changa I awm dan a nasat/zin zawng number 1 leh 6 inkarah hian han thai bial teh le.

	Items	1=dik lo lutuk lutuk (very inaccurate)				6 =dik (very accurate)
1	Tunah leh nakin huna pawh ka harsatna tawh ang te leh thil lian tham deuh relfel turin theihna ka neiin ka hria) *(I feel capable of overcoming my present or any future difficulties and problems I might face such as resolving dilemmas or making difficult decisions)*	1 2 3 4 5 6 diklo lutuk (very inaccurate) — dik lutuk (very accurate)				
2	Ka harsatna te tuar chhuak turin theihna ka nei. *(I have high capacity for facing adversity)*	1 2 3 4 5 6 diklo lutuk (very inaccurate) — dik lutuk (very accurate)				
3	Ka chungah mawhphurna nasa taka awm mahse, ka chiai ngai lo. *(When there is a great deal of pressure being placed on me, I remain calm)*	1 2 3 4 5 6 diklo lutuk (very inaccurate) — dik lutuk (very accurate)				
4	Hun harsa tak ka pal tlang laiin, thlaphanna ka nei ngai lo. *(During stressful circumstances, I never experience anxiety)*	1 2 3 4 5 6 diklo lutuk (very inaccurate) — dik lutuk (very accurate)				
5	Hun harsa tak ka tawhlaia thil ka tihsual palh pawhin, ka in dem lo. *(When I have made a mistake during a stressful situation, I*	1 2 3 4 5 6 diklo lutuk (very — dik lutuk (very				

	Items	1=pawm lo hul hual / dik lo hul hual	6 =pawm hlawmhlak/
	continue to like myself)	inaccurate)	accurate)
6	Mahni hmasial tlat a ngaih ve hunah chuan awlsam te in ka ti thei. *(When I need to stand up for myself, I can do it easily)*	1 2 3 4 5 6 diklo lutuk (very inaccurate)	dik lutuk (very accurate)
7	Dinhmun harsa taka ka awmin, a eng zawngin thil ka thlir thei thin. *(In really difficult situations, I feel able to respond in positive ways)*	1 2 3 4 5 6 diklo lutuk (very inaccurate)	dik lutuk (very accurate)
8	Hun harsa tak tawn mek laia ka chawlh lawk duhin, hahdamna-ngaihtuahna hreawm tello ka chang thei. *(I experience peacefulness- free of thoughts and worries, when I need to relax during stressful times)*	1 2 3 4 5 6 diklo lutuk (very inaccurate)	dik lutuk (very accurate)
9	Dinhmun hlauhthawn awma ka awm chang pawhin ka chi ai ngailo. *(I remain calm, when I am in a frightening situation)*	1 2 3 4 5 6 diklo lutuk (very inaccurate)	dik lutuk (very accurate)

Appendix-2

MLOC

A hnuaiah hian thu chi hrang hrang 24 a awm a. Fimkhur deuhin chhiar la, I ngaihdan nena inhnaih berah hian thai ang che. Thu pakhat zelah pakhat chauh thai la. A vaia chhang vekin, a indawt te tein I chhang dawn nia.

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		(strongly disagree)					dik hulhual) (strongly agree)
1.	Hotu/Hruaitu ka nih leh nihloh chu ka theihna ah a innghat*(Whether or not I get to be a leader depends mostly on my ability)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
2.	Ka nun min vawngtu thil tam tak hi tihpalh thila thleng an ni.*(To a great extent my life is controlled by accidental happenings)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
3.	Ka nuna thil thleng te hi mi thil ti thei te chungah a innghat.*(I feel like what happens in my life is mostly determined by powerful people)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
4.	Motor khalh thiam ni ta ila, ka chetsual leh sual loh chu ka thiam leh thiamloh ah a innghat ang. *(Whether or not I get into a car accident depends mostly on how good a driver I am)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
5.	Thil tihtur duanlawk ka neih hi chu ka hlen thei tlangpui.*(When I make plans, I am almost certain to make them work)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
6.	Ka thil ngaih pawimawh te hi vanduaina lakah a ven theih loh chawk.*(Often there is no chance of protecting my personal interest from bad luck happenings)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
7.	Thil ka duh anga a kal chuan ka vanneih vang ani tlangpui.*(When I get what I want, it's usually because I'm lucky)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
8.	Keimahin theihna tha tak nei mah ila, mi thenkhat thil ti theite ti lawm lo chuan, hruaitu ah min dah chuang lovang.*(Although I might have good ability, I will not be given leadership responsibility without appealing to those in positions of power)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**

9.	Thian ka neih zat chu ka fel leh fel loh ah a innghat.*(How many friends I have depends on how nice a person I am)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
10.	Thil thleng tur ang ang hichu a thleng dawn tho tho.*(I have often found that what is going to happen will happen)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
11.	Ka nun hi mi thiltithei deuh te thuhnuai ah a awm.*(My life is chiefly controlled by powerful others)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
12.	Motor aka chetsual leh chetsual loh chu ka vanneih leh vanneih lovah a in nghat.*(Whether or not I get into a car accident is mostly a matter of luck)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
13.	Mi thil ti thei leh nek chak te nen a thil tih tum a inrem loh chuan, keini ang tan hi chuan duhzawng tih puitlin theihloh ang ani.*(People like myself have very little chance of protecting our personal interests when they conflict with those of strong pressure groups)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
14.	Thil lo inpuahchah lawk thin hi ka tan a finthlak ber lo, achhan chu thil tam tak hi vanneih leh vanduai inkar ani tho tho.*(It's not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
15.	Ka thil duh ang thlentir tur chuan, ka chunga mite ka tlawn angai. *(Getting what I want requires pleasing those people above me)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
16.	Hotu ka nih leh nihloh chu vanneihna avanga a hun leh hmun dik tak a ka awm leh awmloh ah a innghat.*(Whether or not I get to be a leader depends on whether I'm lucky*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**

	enough to be in the right place at the right time)	
17.	Mi pawimawh tak ten min ngaina lo ta se , thian siam ka harsat ka ring.*(If important people were to decide they didn't like me, I probably wouldn't make many friends)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
18.	Ka nuna thleng tur hi ka chungah a innghat.*(I can pretty much determine what will happen in my life)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
19.	Ka tana tha tur hi chu ka hum thei tlangpui.*(I am usually able to protect my personal interests)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
20.	Ka motor khalh ka chetsual pui leh puiloh chu motor dang khalhtu kutah a inghat.*(Whether or not I get into a car accident depends mostly on the other driver)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
21.	Ka duhzawng ka hlen chuan, ka thawh hah vang ani tlangpui. *(When I get what I want, it's usually because I worked hard for it)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
22.	Ka thil tum ti hlawhtling tur chuan, ka chung a thunei tute duhdan mil turin ka siam rem thin *(In order to have my plans work, I make sure that they fit in with the desires of people who have power over me)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
23.	Ka nun hi ka thiltih in a kaihruai. *(My life is determined by my own actions)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**
24.	Thian ka ngah leh ngah loh chu ka tan a ruat an nih leh nihloh ah a innghat.*(It's chiefly a matter of fate whether or not I have a few friends or many friend)*	1 2 3 4 5 6 **diklo hulhual** **dikhulhual**

MAX

Mihringte hi harsatna kan dawn dan a inang lova. Mi thenkhat te tana harsatna lian tham tak kha midangte tan chuan a lian tham ve kher lo thei. Nangmana heng harsatna hrang hrang te I hmachhawn thin dan kan hre duh a. Chumi atan chuan a hnuai mi te khu I hmachhawn thin dan dik tak a number zawnah khuan i tick (√) dawn nia.

Items				
AC	**Diklo (not true)**	**Diklo tlangpui (rather not true)**	**Dik tlangpui (rather true)**	**Dik (true)**
1 Ka harsatna te hi phur taka hmachhawnin siamthat ka tum thin.*(I actively address a problem and try to resolve it)*	1	2	3	4
2 Eng dinhmun atang pawhin a hlawkpui/tha thei ang bera chhuah ka tum thin.*(I accept a situation and try to make the best of it)*	1	2	3	4
3 Ka chunga harsatna thlengte hi inzirnan leh than nan hman hram ka tum thin. *(I strive to view problems as an opportunity and to grow with the challenge)*	1	2	3	4
4 Hahdam taka awm ka tum thin.*(I try to stay relaxed)*	1	2	3	4
5 Awmze nei lova thil ngaihtuah tlut tlut hi tih tawp vat ka tum thin.*(I try to quickly stop fruitless ruminations)*	1	2	3	4
6 Thil reng reng ah a tawpah hlimna thleng tur in ka suangtuah thin.*(I try to imagine a happy ending)*	1	2	3	4
7 Buaina/harsatna lo awm chhan ka hrethiam viau thin.*(I can understand well the cause of a problem)*	1	2	3	4
8 Ngaihtuahna tha lo te hi 'chhum dum' ang maiin kian tir ka tum thin.*(I try to let negative thoughts simply pass by like 'dark clouds')*	1	2	3	4
9 Harsatna ka tawn te avang hian ka inngaihhlutna a tlakhniam nghal phah chuang lo. *(Stress or problems do not immediately nag at my self-esteem)*	1	2	3	4
MC	**Diklo**	**Diklo**	**Dik**	**Dik**

		(not true)	tlangpui (rather not true)	tlangpui (rather true)	(true)
1	Thil thalo ngaihtuah tlut tlut ka ching thin.*(I am prone to rumination)*	1	2	3	4
2	Thil reng reng hi ka la na rang bik (entirnan: thil hlauhawm te, rilru ti hah chi te, in puh na te)*(I emotionally overreact quickly (e.g., with worries, fear, accusations)*	1	2	3	4
3	Thil rapthlak ber thleng turin ka ngaihtuah vat thin.*(I quickly imagine the worst)*	1	2	3	4
4	Harsatna te hi a aia nasa in ka ti pung thin.*(I tend to make problems even bigger than they are)*	1	2	3	4
5	Mi hlawhtling lovah ka inngai zung zung thin.*(I easily come to feel like I am a failure*)	1	2	3	4
6	Mi in min en ringawt pawh hian engemawni tak tuar niin ka lang thin.*(It is easy to tell by looking at me that I am suffering in a certain situation)*	1	2	3	4
7	Thil tum anga a kal dik loh in, keimah ka inpuh tlangpui. *(When something goes wrong, I usually blame myself)*	1	2	3	4
A		Diklo (not true)	Diklo tlangpui (rather not true)	Dik tlangpui (rather true)	Dik (true)
1	Ka harsatna te tumah hrilh lo in ka tuar thin.*(I always keep my problems to myself and do not share them with others)*	1	2	3	4
2	Pangngai ang taka langin ka rilru chhungril ka thup thin.*(I put on "a good face" and hide my true feelings)*	1	2	3	4
3	Harsatna ka peh hel thin.*(I avoid problems)*	1	2	3	4

SAIL

A hnuaiah hian thu chi hrang hrang 26 a awm a. Fimkhur deuhin chhiar la,a sir a number I ngaihdan nena inhnaih berah hian thai ang che. I ngaihtuahna a rawn lang hmasa SA,a tlangpuia i tana dik kha thlang ang che.

Thu pakhat zelah pakhat chauh thai la. A vaia chhang vekin, a indawt te tein I chhang dawn nia.

	Items	Ngai Miahlo (not at all)	Ngai Mang lo (hardly at all)	Achang changin (some what)	Eng emaw chen chu (to a reasonable degree)	Nasa ve takin (to a high degree)	Nasa em em in (to a very high degree)
1	He khawvel hi rinna nen ka hmachhawn*(I approach the world with trust)*	1	2	3	4	5	6
2	Mi dangte tan a thil ka tihsak theih hi ka tan a pawimawh.*(It is important to me that I can do things for others)*	1	2	3	4	5	6
3	Hun harsa ah pawh chhungrilah muanna ka nei.*(In difficult times, I maintain my inner peace)*	1	2	3	4	5	6
4	Ka nunah hian eng dinhmun ah nge ka din ka inhria.*(I know what my position is in life)*	1	2	3	4	5	6
5	He lei mawina hian ka thinlung chhung a khawih. *(The beauty of nature moves me)*	1	2	3	4	5	6
6	Ka nun pumpui mai hi ka thunun thei vek lo tih hi ka pawm. *(I accept that I am not in full control of the course of my life)*	1	2	3	4	5	6
7	Mi dangte tuarna te ngaithla turin ka inhawng. *(I am receptive to other people's suffering)*	1	2	3	4	5	6
8	Mi zawng zawng ka hneh thei veklo tih hi ka pawm. *(I accept that I am not able to influence*	1	2	3	4	5	6

	everything)						
9	Ka nuna thil engpawh lo thleng hi ka pawm thei a ni.*(Whatever happens, I am able to cope with life)*	1	2	3	4	5	6
10	Ka nun kaihruaitu Pathian a awm a ni.*(There is a God or higher power in my life that gives me guidance)*	1	2	3	4	5	6
11	Nun hian vanduaina tawpkhawk a keng tel a ni tih ka hria.*(I am aware that each life has its own tragedy)*	1	2	3	4	5	6
12	Ka thiltih thin in awmze thuk tak a nei tih ka hria.*(I experience the things I do as meaningful)*	1	2	3	4	5	6
13	Ka nuna thil lo thleng a piang hi pawm thiam ka tum.*(I try to take life as it comes)*	1	2	3	4	5	6
14	Thing leh nungchate zing a ka awm hian, inkungkaihna thuk tak kan neihzia ka hre thin. *(When I am in nature, I feel a strong sense of connection)*	1	2	3	4	5	6
15	Nun hian a chang chuan natna te pawh a keng tel ang tih hi ka pawm*(I accept that life will inevitably sometimes bring me pain)*	1	2	3	4	5	6
		Ngai Miahlo (not at all)	**Ngai Mang lo (hardly at all)**	**Achang changin (some what)**	**Eng emaw chen chu (to a reasonable degree)**	**Nasa ve takin (to a high degree)**	**Nasa em em in (to a very high degree)**
16	Vantlang/khawtlang tana thil tangkai tih ka tum a ni.*(I try to make a meaningful contribution to society)*	1	2	3	4	5	6
17	Ka nun hian awmzia leh thiltum a nei a ni.*(My life has meaning and purpose)*	1	2	3	4	5	6

18	Midangte tan a tangkai nih ka duh a ni.*(I want to mean something to others)*	1	2	3	4	5	6
19	Thil awmzia tak tak hre turin tawn hriat ka nei tawh a ni.*(I have had experiences during which the nature of reality became apparent to me)*	1	2	3	4	5	6
20	Pathian nena inpumkhatna ril tak hi a takin ka tawng thin tawh*(I have had experiences in which I seemed to merge with a power or force greater than myself)*	1	2	3	4	5	6
21	Engkim mai hi thil ropui zawk peng mai ani tih hi a takin ka hre thin tawh *(I have had experiences in which all things seemed to be part of a greater whole)*	1	2	3	4	5	6
22	Thlarau lam thilte, thihna, nunna, leh sakhuana te ang, hi midangte ka titi pui thin.*(I talk about spiritual themes with others (themes such as the meaning in life, death or religion)*	1	2	3	4	5	6
23	Engkim mai hi a famkim thlap ani tih hi a takin ka hre thin tawh.*(I have had experiences where everything seemed perfect)*	1	2	3	4	5	6
24	Nun chhungrila hahchawlhna/muanna zawng in ka tawngtai in thil ka ti thin.*(I meditate or pray, or take time in other ways to find inner peace)*	1	2	3	4	5	6
25	Ka nunah keimah aia chungnung zawk awmin thlarau lam thilah hian tawn hriat ka nei. *(I have had experiences where I seemed to rise above myself)*	1	2	3	4	5	6
26	Thlarau lam thil leh sakhuana lam hawia inhmuhkhawmna ang chi ah te hian ka tel ve thin. *(I attend session, workshops, etc. that are focused on spirituality or religion)*	1	2	3	4	5	6

SS Scales

A hnuaiah hian thu chi hrang hrang 20 a awm a. Fimkhur deuhin chhiar la, I ngaihdan nena inhnaih berah hian thai ang che.Thu pakhat zelah pakhat chauh thai la. A vaia chhang vekin, a indawt te tein I chhang dawn nia.

	PSS **I chhungte leh I thianten**	**Ti fo mai = 3 (often)**	**A chang chang in = 2 (some times)**	**Ngai miahlo = 1 (never)**
1	I **chhungte leh thianten** eng ang takin nge an ngaihsak che? *(How much do your friends or relatives really care about you?)*	3	2	1
2	I rilru puthmang eng angin nge an hriatthiam pui che? *(How much do they understand the way you feel about things?)*	3	2	1
3	An ngai hlu che in I hria em? *(How much do they appreciate you?)*	3	2	1
4	Harsatna lian tham deuh i neih in innghahna tlak an ni em? *(How much can you rely on them for help if you have a serious problem?)*	3	2	1
5	I rilru hahna te i sawipui thei em? *(How much can you talk to them about your worries?)*	3	2	1
6	An bulah thlamuang leh thawveng takin i awm thei em? *(How much can you relax and be yourself around them?)*	3	2	1
	NSS	**Ti fo mai = 3 (often)**	**A chang chang in = 2 (some times)**	**Ngai miahlo = 1 (never)**
1	I **chhung leh thianten** eng anga zingin nge i hnen atangin thil beiseina sang tak an neih? *(How often do your friends or relatives make too many demands on you?)*	3	2	1
2	Engtia zingin nge in intih thiam loh?*(How often do they argue with you?)*	3	2	1
3	Engtia zingin nge an sawisel che?*(How often do they criticize you?)*	3	2	1

4	Engtia zingin nge an chunga innghat i ni tih an hriattir che? *(How often do they let you know when you are counting on them?)*	3	2	1
5	Engtia zingin nge an tih thinrim che?*(How often do they get on your nerves?)*	3	2	1
6	Zu leh ruihtheih thil dang engtia zingin nge an khawih thin? *(How often do they drink or use drugs too much?)*	3	2	1

	ISS			
	I hmelhriat te zingah... *(Among the people you know, is there someone)*			
1	Thiltih pui tur, lehkha den te, inkhawm te, hnatlannaah te kalpui tur che I nei em? *(You can go with to play cards, or go to bingo, a powwow, or a community meeting?)*	**Aw (Yes)**		**Aih (No)**
2	Pawisa i mamawh thut hunah puk tir tu tur che i nei angem? *(Who would lend you money if you needed it in an emergency?)*	**Aw (Yes)**		**Aih (No)**
3	Khawiah emaw kal i mamawh viauna ah anmahni motor hawh tir emaw, hruai thei che an awm em? *(Who would lend you a car or drive you somewhere else if you really needed it?)*	**Aw (Yes)**		**Aih (No)**
4	Jail ah lo tang ta la, bail a chhuah tir tur che i nei em? *(You could call who would bail you out if you were arrested and put in jail?)*	**Aw (Yes)**		**Aih (No)**
5	A khat tawka i chungchang zawt thin che an awm em? *(You could count on to check in on you regularly?)*	**Aw (Yes)**		**Aih (No)**

	CSS			
1	Mal deuhin i inhria em?*(How isolated do you feel?)*	**Mal lutuk (very isolated)**	**Mal ve tho (some what isolated)**	**Mal miahlo (not very isolated at all)**
2	Vawi engzatnge chhungkaw inhmuhkhawm hunah i telloh luih thin? *(How often do you purposely avoid family gatherings?)*	**Tello zing mai (a lot)**	**A chang chang in tello (sometimes)**	**Tello khat hle (not very much at all)**

3	Heng chhungkaw inhmuhkhawm i tel ve na zingah hian, haw hma i ching em? *(Of those family gatherings you go to, how likely are you to leave early?)*	A zing mai (very)	A chang in (some what)	Ching ngai miahlo (not at all)

Tunlaia Mizorama kan buaipui ber leh chhungkaw tin deuhthaw ina harsatna kan tawh chhan pakhat chu ruihtheih thil hi a ni a. Chuvang chuanin ruihtheih thil hian eng angin nge min tih buai a, a lak a damna chungchang zir chian a ngai tak meuh a. He booklet pawh hi chumi lam zirchian nana buatsaih a ni a.

A chhunga awm zawhna chi hrang hrang te hi zep awm miah lova min chhan sak turin ka ngen che a. Research atan chauha hman tur anih avangin, mingziah pawh a ngai lova, I mimal chhanna hi **CONFIDENTIAL** vek a nitih hre reng chungin research zawhna te hi uluk tak a min chhansak theih chuan ka lawm ngawt ang.

SIGNATURE:

....

Socio Demographic & Clinical Data Sheet

1. Age:...................... 2. Gender: Mipa/Hmeichhia/others
3. Education: Literate (Class..........thleng)/Illiterate (lehkha zirlo hrim hrim)
4. Occupation (Hnathawh):...
5. Marital Status: Never Married/ Married/Separated/Divorced/Widow(er)
6. Family Type: Nuclear/Joint/Single/Others.................. 7.Socio-Economic Status: APL/BPL
8. Income per month: Less than 5000/5000-10000/10000-30000/30000-50000/Above 50000
9. Religious Affiliation: Christian/Hindu/Muslim/Sikh/Buddhist/Others....................
10. Denomination: Presbyterian/Baptist/Salvation Army/UPC/Seventh Day/ Catholic/Adventist/others...................
11. Address(Veng):i)Pianna Khua..................................
     ii)Tuna chenna veng...............................

12. History of Substance(s) dependence syndrome: Y / N

Type of substance:...Duration of current use..............

Age at initiation......................Reason for initiation...

Currently Abstinent: Yes/No   Current Length of Abstinence:...............................

Longest abstinence in the past: ....

Reason for abstinence:...

Currently abstinent but in a protected environment: Y / N

Currently on a supervised maintenance or replacement regime: Y / N

Currently abstinent but receiving treatment with aversive or blocking drugs: Y / N

13. History of Substance Abuse in the family: Y / N

14. Any other relevant information:

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BIO-DATA

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8. Educational Qualification

Grade	Year of Passing	Board
High School Leaving Certificate Examination	2004	MBSE
Indian School Certificate Examination	2006	CISCE
Bachelor of Arts (Honours)	2009	Delhi university
Master of Arts- Psychology	2011	Delhi university
M.Phil in Clinical Psychology	2014	NIMHANS

9. Qualification on NET

Qualification on NET	Date of Qualifying	Subject
NET-JRF	June 2013	Psychology

10. Work experience

Institution	Designation	Duration
District Mental Health Programme	Clinical Psychologist	05-11-2014 till 30th June 2019
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ABSTRACT

PERSONALITY FACTORS, SPIRITUALITY, AND SOCIAL SUPPORT IN SUBSTANCE USE DISORDER

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DEPARTMENT OF PSYCHOLOGY

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ABSTRACT

PERSONALITY FACTORS, SPIRITUALITY, AND SOCIAL SUPPORT IN SUBSTANCE USE DISORDER

BY

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Submitted

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The excessive and unregulated use of drugs has presented and continued to present a significant public health concern and burden to the society. It affects individuals, their families and the society as a whole (Sussman and Ames, 2001). The last National Mental Health Survey of India (2015-16) indicated that Substance Use Disorders (SUDs), including alcohol use disorder, moderate to severe use of tobacco and use of other drugs (illicit and prescription drugs) was prevalent in 22.4% of the population above 18 years in all the 12 surveyed states. Ambekar *et al*. (2019) also found that after Alcohol, Cannabis and Opioids were the next commonly used substances in India. About 2.1% of the country's population use opioids which includes Opium (or its variants like poppy husk known as doda/phukki), Heroin (or its impure form – smack or brown sugar) and a variety of pharmaceutical opioids. Nationally, the most common opioid used is Heroin (1.14%) followed by pharmaceutical opioids (0.96%) and Opium (0.52%). Sikkim, Arunachal Pradesh, Nagaland, Manipur and Mizoram have the highest prevalence of opioid use in the general population (more than 10%). Hence, substance use problem is an escalating phenomenon in Mizoram. The State Excise and Narcotics Department reported (2016)that there had been considerable increase in drug trafficking particularly heroin through the Mizoram-Myanmar border during the last couple of years and the cost of heroin in the local market has decreased over the years, escalating the problems ofSubstance Use Disorderin the state.According to data available with the state Excise and Narcotics Department, at least 67 people have died due to drug use during 2020 against 55 in 2019 and that allthe victims died due to heroin.There is a reported increase in smuggling activities in Mizoram following the military coup in bordering Myanmar (Sood, 2022) an subsequently, the amount of heroin recovered by the Excise Department and the state police increased from 20.36 kg in 2020 to 34.52kg in 2021.

The nature and extent of drugs and substance use, the people involved and the circumstances vary from person to person, community to community, and from culture to culture. It is a multifaceted problem which has to be tackled in a comprehensive manner, and one of the ways to do this is by highlighting and studying the factors that may be related to such behaviors.It would be especially important to study the psychological and social factors surrounding this phenomenon, such personality factors like Resilience, Locus of Control and Coping Styles, social aspect in the form of Social Support, and Spirituality, as these variables

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are envisaged to be the mechanisms by which people tend to sustain abstinence from their addiction, and therefore the main variables that would differentiate SUDs from non- SUDs depending on the strength of these variables people have attained in themselves.

Personality traits continue to hold a central place among the etiological factors of substance use disorders (Sher *et al*., 2000). People with certain personality traits may be at increased risk for developing drug use problems, and studying personality may help researchers better understand and treat these problems. The focus in terms of personality factors for this particular study wason 3 factors namely: Resilience, Locus of Control and Coping Styles.

Daily difficulties and stress faced are a part of life. How we perceive those difficulties often influence our life. People differ in the ways they deal with these adversities and hardships. Some people cannot cope efficiently with those situations, thus making them unproductive and dissatisfied with their life. However, many people are able to deal with those situations successfully. As the root for the English word 'resilience 'is 'resile 'which is described as a means 'to bounce or spring back' '(Agnes, 2005), **Resilience** is a term that is often used to describe the ability to bounce back or recover from stress, and also adapt to stressful circumstances (Smith *et al*., 2008,2013). The American Psychological Association defines resilience as the process of adapting well in the face of adversity, trauma, tragedy, threats, or even significant sources of stress (APA, 2014). Evidence has suggested that resilient people tend to have an overall better mental health status including better problem-solving skills, more efficient self-regulatory skills, higher self-esteem and are also less likely to get involved in high-risk behaviors such as drug abuse (Bonanno *et al*., 2007; Buckner *et al*., 2003). Cadet (2016) suggested that resilience may buffer the effect of stress on the risk of addiction, and most recently it was found that there was a significant negative correlation between the tendency to addiction and resilience (Jebraeili *et al*., 2019).

Locus of control (LOC) refers to the extent to which people believe they can control their general life outcomes (Rotter, 1990). It refers to a subjective appraisal of factors that account for the occurrence of events, situations and outcomes. Specifically, internally oriented

individuals believe outcomes are mainly determined by internal factors (e.g., their own actions), whereas externally oriented individuals believe their outcomes are influenced mostly by external factors (e.g., powerful others, chance) (e.g., Teste, 2017; Levenson, 1981; Rotter, 1966). Internal–external LOC refers to an individual's beliefs that she or he has control over events (Rotter, 1975; Terborg, 1985). Internal LOC individuals believe they are mainly responsible for and in control of what happens to them while externals typically believe mainly other people or forces beyond themselves determine major events in their lives. In other words, External LOC individuals believe their life outcomes and events are under the control of powerful others, luck, or fate (Rotter, 1966). Although locus of control (LOC) is one of the most extensively studied constructs in the field of psychology and social science, its use by substance abuse researchers has been limited (Hall, 2001). Past researches have revealed significant correlation between internal locus of control (ILOC) and greater motivation to receive treatment (Murphy & Bentall, 1992) and significant tendency to shift towards a more internal locus of control during treatment amongst alcoholics (Abbott, 1984). Studies have also found that Substance abusers significantly scored higher on external locus of control in comparison to their normal counterparts (Niazi *et al*., 2005; Prakash *et al*., 2015).

Coping is defined as the set of cognitive and behavioral strategies used by an individual to manage the internal and external demands of stressful situations (Carmona *et al*., 2006). Coping is generally referred to as the cognitive and behavioral efforts used to master, tolerate, and reduce demands that tax or exceed a person's resources (Cohen & Lazarus, 1979). **Coping styles** are methods of coping that characterize an individuals 'reactions to stress, either over a period of time or across different situations (Frydenberg & Lewis, 2009). According to the transactional model of coping (Lazarus, 1993), there are two global coping styles namely, emotion-focused coping (distancing, avoidance, escape), which is directed at regulating emotional distress; and problem-focused coping, which directly deals with the problem that is causing the distress and changing the problematic situation. Most coping strategies are broadly grouped as either adaptive responses that solve or remove the source of stress or maladaptive responses that give temporary escape or avoidance from the stressor (Lazarus and Folkman, 1984; Roth and Cohen 1986; Suls and Fletcher, 1985).Some authors have also suggested that maladaptive coping is related to the development of a substance use disorder- (Labouvie,

1986). Substances use is usually seen as a form of short-term coping strategy that provides temporary relief from distress/problems but leaves the main source of the distress unchanged; thus, it is considered to be maladaptive (Lazarus and Folkman, 1984; Timmer *et al*., 1985). Although **social support** seems a clear concept, it actually is an umbrella term that covers a variety of phenomena (Sarason *et al*., 1995). Researchers have therefore emphasized on the importance to distinguish the different aspects of social support conceptually and empirically. The first conceptualization focuses social support in terms of the number and strength of social relationships the individual establishes and maintains with others in his or her social environment. (i.e., quantitative properties). For example, marital status, participation in community organizations etc. Secondly, the perceived availability of social support (i.e., perceived support) and finally, received support focuses on the actual receipt of the different types of support during a given time period, i.e., it focuses on what people actually get from others and what kind of actions others perform to assist the person in need. For example, by helping to find a solution to a problem etc. (Rook, 1984).

Spirituality is often conceptualized as a factor that provides individuals with a sense of meaning (Steger & Frazier, 2005). The term spirituality also generally refers to the human need and longing for a sense of meaning and fulfilment through morally satisfying relationships between individuals, families, communities, cultures, and religions (Canda and Furman, 1999). Spirituality is a broad term which emphasizes being attentive to what is considered sacred and connected to a belief, power, or a concept greater than oneself as well as includes a transcendent relationship with what is considered as being sacred or divine. (Pargament *et al*., 2013; Plante, 2010). Although often viewed in a religious context, spirituality is not necessarily about being religious. The term spirituality includes but has evolved beyond its religious moorings to include experiences that bring about a heightened sense of meaning and purpose in one's life while religion refers to organized structures that revolve around particular beliefs, ceremonies, behaviors, rituals, and traditions (Canda & Furman, 1999).

The lack of a consensual definition of spirituality in the addictions field (Cook, 2004) has resulted in both theistic (belief in God) and non-theistic (moral values, inner strength) interpretations of spirituality (Kaskutas *et al*., 2003). Pargament *et al*. (2013) defined religion

as "an organized system of beliefs and rituals associated with an institutional structure". In contrast, spirituality is based on "thoughts, feelings, and behaviors an individual engages in while in search of a relationship with the sacred". Spiritual issues (a belief in things metaphysical or unexplainable) have been reported as an important, but neglected area in drug and alcohol treatment research (Miller, 2003). Prezioso (1987) has suggested that spiritual concepts like 'powerlessness' and 'relationship to a higher power' were at the heart of addiction and recovery. There have been studies that state that individuals with higher degrees of religiosity and spirituality are less likely to consume alcohol and other drugs and to consume less of such substances when they do use them (Brizer, 1993; Miller, 2003). Spirituality has been shown by studies to be a significant and independent predictor of recovery and/or improvement indicator of treatment outcome (Avants *et al*., 2004).

Although the criteria for diagnosing Alcohol Dependence and Opioid Dependence may be similar, their effects may be different from a pharmacological stand point, and also the characteristic behaviour sequelae of intoxication and withdrawal syndrome for alcohol may be different from that of Opioid use. Therefore, the psychosocial factors such as Personality factors, Spirituality and Social Support that may play a role in the use of each of these substances need to be studied separately and in comparison to one another as there is lack of research in this regard. It is especially important to understand these factors in the context of Mizo society as the use of these two substances - alcohol and opioids, account for majority of the cases found in the population. As observed above there is still a lacuna in the studies that have been done accounting these psychological constructs. A new study in these constructs in relation to substance use disorder will give a better understanding in filling the gaps and reducing anonymity in the various researches as stated above. Further, studying these factors together will help in giving a more comprehensive understanding of the differences between people who are currently actively using substances, individuals who have remained abstinent and individuals who have never met the criteria for substance dependence. It will also give some understanding as to why relapse occurs in the context of the factors to be studied; and help in understanding what sets these three groups apart as well as throw light upon how to intervene in these regards.

One important focus in this study is on spirituality as a whole which also includes religiosity factor. And as mentioned above, it is an important but often neglected area of research, and needs to be studied in the context of other personality and social factors. Spirituality and religiosity have played a pivotal role in the Mizo society and its impact can be seen in the way substance use problem is dealt with by various religious organizations within the community. Aspects such as rehabilitation homes run by religious institutions and use of spiritual counseling play centre role in terms of recovery and rehabilitation in Mizoram. Hence including this important factor will create more avenues to approach this ever-increasing problem within the Mizo Society.

In the state of Mizoram, various efforts have been made by the Government, NGO's, and Church Organizations in terms of opening rehabilitations centres for people with substance use problems. Mizoram Social Defence & Rehabilitation Board was established by the Government of Mizoram in 1999, and some of its functions included taking measures for prevention, treatment and rehabilitation of individuals with substance use problem as well as to establish essential Institutions and Centres for the purpose of prevention, treatment and rehabilitation for these individuals. Some notable rehabilitation centres recognized by them include Agape Moral Reformation Organization (AMRO), Blessing Home, *Damna In,* Faith Home Society, Jeriko *Khualbuk*, *Thutak Nunpuitu* Team (TNT), amongst others.Jordan Centre previously known as De-Addiction–cum-Rehabilitation Centre which was established 1990 under the Health & Family Welfare Department, Govt. of Mizoram for the treatment of victims of drug abuse and alcoholism recently opened admission. The focus of this centre isto provide after care services for recovering addicts.It has been recognized as a centre which provides comprehensive drug treatment services which include detoxification, rehabilitation and after care services.

Apart from the Government, several churches in Mizoram are also actively engaging in the rehabilitation of substance use problems. One of the biggest churches in Mizoram, the Mizoram Presbyterian Church Synod constituted a commission called the Synod Social Front as it felt the need to strengthen and widen the Ministry of the Church especially in the Society. A major project of the Social Front, is establishing rehabilitation centre for substance abusers popularly known as the Synod Rescue Home, providing Detoxification Unit, rehabilitation and

after care services.Apart from opening rehabilitation centres, the various churches in Mizoram have been responsible for organizing evangelical camping, centering on individuals with various substance use problems.

Other non- government organizations such as the Young *Mizo* Association (Central YMA), the largest NGO in the state have also actively participated in the effort to combat substance use problems in the state. Supply Reduction Service (SRS), the anti-drug squad of the central YMA has also been responsible in seizing illicit drugs being smuggled through the state border.

Inspite of the various efforts given by governmental and non-governmental sectors in this area, and although there is no proper record of the relapse rates across the various centres mentioned above, the population of substance users is rapidly increasing as can be seen in the National Survey on Extent and Pattern of Substance Use in India (2019) in the context of Mizoram. Hence, it can be seen that whatever efforts have been made in the State isstill not enough to deal with this rampaging social problem.

Amidst this backdrop of literature, this study attempted to examine Personality Factors (namely Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment and Connectedness with Transcendent) and Social Support (Perceived Social Support, Negative Social Support, Instrumental Social Support and Cultural Social Support) in substance Dependent Group, substance Recovering Group and Non-user Group separately under alcohol and opioid substances. The sample consisted of 360 participants comprising of 180 participants in Alcohol Group (60 Dependent, 60 Recovering and 60 Non-user sub-groups) and 180 participants in the Opioid Group (60 Dependent, 60 Recovering and 60 Non-user sub-groups) in equal proportion of gender as far as possible. The Alcohol And Opioid Dependent participants were selected randomly using convenient sampling fromthe rehabilitation centres and among the patients of hospitals, rehabilitation camps and centres such as Psychiatric Ward, Kulikawn Hospital, Synod Hospital, *Tawngtai* Bethel Camping Centre (TBCC), Agape Centre, Blessing Home Rehabilitation Centre within Aizawl city, who met the criteria for Substance Dependence Syndrome under the ICD-10 Classification of Mental and Behavioural Disorders. The Recovering group was drawn from

the community through snowball sampling, inclusive of only those who have abstained from substance use for more than one year. Finally, the Non-user matched group in terms of age and gender was drawn randomly from the general population.

The demographic characteristics of the participants such as age, sex, family structure (joint/nuclear), marital status (single/married/separated/divorced/widowed), educational qualification/occupational status/ history, socioeconomic status, religious affiliation, denomination, substance use history (which included abstinence history, reason for abstinence), and family history of substance use were recorded to equate/match the participants in order to maintain comparability of the samples for the study. The demographic information depicting the sample characteristics is presented below.

In terms of the **distribution of age,** the Alcohol Dependent Group had the highest Mean (Mean=38.20, 9.08) while the Opioid Dependent Group had the lowest Mean (Mean=29.92, SD=5.14) while the rest of the other groups were located in between. In the **educational qualification** of the different groups it was found that amongst the Alcohol Dependent Group, majority of the participants (28.3%) completed up to High School with (8.3%) completing till postgraduate level. The highest percentage (33.3%) of participants in the Alcohol Recovering Group studied up to Middle School and a very low percentage (1.7%) study up to Post graduate level. Amongst the Opioid Dependent Group, it was found that a majority (35%) of the participants studied up to High and Higher Secondary level. However, none of the participants in this group had a post graduate degree. In the Opioid Recovering Group, the highest percentage of participants study upto High School and a very low percentage (1.7%) studied upto postgraduate levels. Finally, both Alcohol and Opioid Non-user Group, it was found that majority of the participants studied till Graduate level followed closely by Post Graduate level.

In the **employment status**, the number of unemployed was the highest (38.3%) amongst the Opioid Dependent Group, followed by Alcohol Recovering Group (28.3%) and Opioid Recovering Group (23%). The Alcohol Recovering Group reported higher employment (28.3%). Unsurprisingly, the number of employments in an organised sector was the highest (47% and 35%) in the Alcohol and Opioid Non-User Group respectively while being lowest in the Opioid Recovering Group (10%) and Alcohol Recovering Group (13.3%)

followed closely by the Opioid Dependent Group (15%). In terms of **marital status** both the Non-User Group had the highest percentage of Never married status compared to the other groups. The percentage of Married status was the highest (43.3%) in the Alcohol Dependent Group followed by the two Non-user Groups (36.7% and 38.3% respectively). Separation rate was particularly high amongst the Alcohol Recovering Group (26.7%). However, the Opioid Dependent Group (26.7%) and Alcohol Dependent Group (21.7%) had the highest divorce rate. For the **Family Type**, a nuclear family set up was the most popular in the other groups as well except for the Opioid Dependent Group where majority of the participants belong to a joint family type (50%). It was also found that quite a number of participants in the Alcohol Recovering Group (20%) and Opioid Recovering Group (13.3%) were staying with distant relatives, community-based shared homes etc. **Socio-Economic Status** in the both the Non-user Groups namely the Alcohol Non-user Group and Opioid Non-user Group, majority of the participants (96.7% & 93.3% respectively) reported themselves to be above poverty line. While in the rest of the other groups, there is quite an even distribution of participants belonging to both above poverty line. In the Opioid Dependent Group (66.7%) and Alcohol Dependent Group (65%) were from above poverty line. In terms of **religious affiliation**, most of the participants (98%) across the different groups identified themselves as Christians, only a small percentage, chose not to identify their religious affiliations. Amongst the Christians, the **denomination** the participants belong to in the different groups differed. However, across all the groups, majority of the participants (66-81.7%) belong to the Presbyterian Church, followed by much fewer participants from Baptist Church, Salvation Army, United Pentecostal Church amongst others. Across all the groups, majority of the participants were based in an Urban setting, while very few participants (6.8%) Alcohol Dependent Group, (10%) Alcohol Recovering Group, (3.4%) Opioid Dependent Group and Opioid Recovering Group were based in a rural setting.

The Mean **age of initiation** was the highest amongst the Opioid Recovering Group (M=23.88, SD=5.70) and lowest amongst the Alcohol Dependent Group (M=20.57, SD=5.90). The **reasons for initiation** of substance use given by the participants in all the groups were quite similar. The participants reported initiating drug use due to peer influence, due to

recreational purposes and due to stress. Some also reported having started due to curiosity/interest.

In both the Non-user Groups, majority of the participants report not having any **history of family substance abuse**. However, in most of the other groups namely the Alcohol Dependent Group, Opioid Dependent Group and Opioid Recovering Group there was a higher distribution of participants with family history of substance abuse as compared to the Non-user Groups. In the Alcohol Recovering Group, only one participant reported having a history of Proxyvon abuse and none of the participants from the Alcohol Dependent Group reported any other history of substance abuse other than alcohol. In the Opioid Recovering Group, a majority (41.7%) had never had a history of substance use other than Heroin, 15.1% had a history of proxyvon abuse, whereas 30.2% of the participants had a history of alcohol abuse. In the Opioid Dependent Group, 73.4% had no history of other substance abuse while 11.6% reported having a history of Alcohol use, 10.1% reported history of cannabis use as well as 8.5% reported occasional sedative abuse namely, alprazolam, nitrazepam.

In terms of **length of current abstinence**, majority of the participants (71.7%) in the Alcohol Recovering Group and (66.8%) in the Opioid Recovering Group have been abstinent for the past 1-5 years, 20% in the Alcohol Recovering Group and 18.3% in the Opioid Recovering Group for the past 6-10 years. 6.8% from the Alcohol Recovering Group and 5.1% from the Opioid Recovering Group have been abstinent for the past 11-15 years and finally 1.7% from the Alcohol Recovering Group and 10.1% from the Opioid Recovering Group have been abstinent for more than 15 years. As for **reason for abstinence**, in the Alcohol Recovering Group, majority of the participants (33.4%) reported being 'fed up' of addiction life, 23.4% cited religious reasons and another significant amount (15.1%) reported pressure from the family as reasons for abstinence. Similarly, majority of the participants (33.5%) from the Opioid Recovering Group reported being 'fed up' of addiction life, withdrawal symptoms and health problems associated to it and a considerable number of participants (20%) cited religious reasons.

As parametric statistics were envisaged to be used, data were first screened, extreme outliers were deleted, mild outliers were winsorized to maintain equal sample size in each cell of the design (2 Type of Substance x 3 Status of Substance Use). The following diagnostic tests of assumptions that underlie the application of parametric tests were first checked and were found generally acceptable: linearity, normality (skewness/kurtosis, Kolmogorov-Smirnov test and Shapiro-Wilk test), homogeneity of variance (Levene's statistic, Box's test)/ homoscedasticity, and independence of errors as applicable for the groups, viz. Alcohol Dependent group, Alcohol Recovering group, Opioid Dependent group, Opioid Recovering group, and two Non-user groups. In instances where parametric assumptions were violated, appropriate non-parametric methods were resorted to. However, given the robustness of the parametric methods used, and considering the equal sample sizes randomly generated using SPSS 22 for each cell of the design, non-significant level of diagnostic test of parametric assumptions were set at a lenient .01 level and interpreted with caution, following Fields (2016).These exercises in data screening yielded a total sample size of 360 with 60 participants in each cell of the design (2 'Type of Substance 'x 3 'Status of Substance Use').

Five psychological tools were used to measure the behavior of interest in this study. To measure resilience, Resiliency Scale (Siu, O.-L., Hui, C. H., Phillips, D. R., Lin, L., Wong, T.-w., & Shi, K, 2009) was used. Multidimensional Locus of Control Scales (Levenson, H., 1974) was used to measure Locus of Control (Internal, Powerful Others and Chance). For measurement of coping styles, Maladaptive and Adaptive Coping Style Questionnaire (Moritz, S., Jahns, A. K., Schröder, J., Berger, T., Lincoln, T. M., Klein, J. P., & Göritz, A. S., 2016) was used. Spiritual Attitude and Involvement List (de JagerMeezenbroek, E.,Garssen, B., van den Berg, M.,Tuytel, G., van Dierendonck, D., Visser, A., &Schaufeli, W. B.,2012) was used to measure Spirituality (Connectedness with Oneself, Connectedness with the Environment (including Caring for Others and Connectedness with Nature, and Connectedness with the Transcendent), and finally Social Support Scales (Duran, B., Oetzel, J., Lucero, J., Jiang, Y., Novins, D. K., Manson, S., Beals, J., 2005) was used to assess Social Support (Perceived Social Support , Negative Social Support ,Instrumental Social Support , and Cultural Social Support), for the different groups of participants.

Psychometric adequacy of each of the behavioural measures were first ascertained which included (i) item-total coefficients of correlation (ii) inter-scale relationships, and (i) reliability coefficients (Cronbach's Alpha) over all the different groups namely, Alcohol Dependent group, Alcohol Recovering group, Opioid Dependent group, Opioid Recovering group, and two Non-user groups. Descriptive statistics comprising of Mean, SD, Skewness, Kurtosis and Standard Errors were also included for comparison of the test scores between the groups and to check the data distributions for further statistical analyses (Miles & Shevlin, 2004). This was followed by statistical analyses of the data using SPSS 22 to address each of the objectives and hypotheses set forth for the study.

Results of psychometric analyses of the applicability of the **Resiliency Scale** indicated that except for a less than perfect reliability coefficient in the Alcohol Dependent Group, Cronbach's Alpha for all the other groups were found to be acceptable. Item-total coefficients of correlations of **Multidimensional Locus of Control Scales** indicated inadequate loadings resulting in low alpha reliabilities. The reliability coefficients (Cronbach's Alpha) after item reduction were acceptable for Internal Scale and Powerful others scale over all the groups. However, the Cronbach's Alpha for the Chance Scale was still low and therefore was rejected for use in this study. Item-total coefficients of correlations of the **Maladaptive and Adaptive Coping Style Questionnaire (MAX)** subscales indicated inadequate loadings resulting in low alpha reliabilities. This necessitated elimination of 2 items in Adaptive Coping and Maladaptive Coping. The reliability coefficients (Cronbach's Alpha) after item reduction for **Maladaptive and Adaptive Coping Style Questionnaire (MAX)** were acceptable for all the six groups. However, Avoidance subscale was low in the Alcohol Groups and therefore could not be used for further analysis. In the measure of **Spiritual Attitude and Involvement List (SAIL),** the reliability coefficients showed acceptable Cronbach's Alpha ranges for Connectedness with Oneself, Connectedness with Environment (Caring for others) and Connectedness with the Transcendent across all the groups. Connectedness with Nature subscale which was a part of the Connectedness with the Environment dimension had a low Cronbach's Alpha in some of the groups and so it could not be used for further analysis. In **Social Support Scales,** the reliability coefficients (Cronbach's Alpha) in the subscales of Perceived Social Support and in Instrumental Social Support were acceptable in all the six

groups. However, the Cronbach's Alpha for the Negative Social Support and Cultural Social Support were low and could not be used for further analysis.

Given the soundness of the psychometric properties of the final psychological measures used in this study, the first three objectives of delineating the differences in the dependent variables of Personality, Spirituality, and Social Support together according to the 'Type of Substance used' (Alcohol and Opioid), the 'Status of Substance Use' (Dependent, Recovering, Non-user), and their interaction effects were looked intousing 2 x 3 (2 Type of Substances x 3 Status of Substance Use) factorial Multivariate Analysis of variance (MANOVA). As Box's Test revealed a significant unequal covariance matrices of the dependent variables, Pillai's Trace in significant Multivariate Test was interpreted (instead of Wilk's Lambda), which indicated significant main effects of 'Type of Substance Use', 'Status of Substance Use', and their interaction effects. Levene's test of Homogeneity of Variance indicated instances of significance in measures of Internal Locus of Control and Instrumental Social Support at a liberal cut off set at .001 level for significance of diagnostic tests of parametric assumptions. A cautious interpretation of the results of Tests of Between-Subjects Effects indicated significant differences in Adaptive Coping, Perceived Social Support, and Instrumental Social Support according to 'Type of Substance Use'. Significant effect of 'Status of Substance Use' is also seen in all the dependent variables of Personality, Spirituality, and Social Support. Further, interaction effects were also evident in measures of Powerful Others Locus of Control and Instrumental Social Support.

However, it may be noted that the factorial 2 x 3 (2 Type of Substances x 3 Status of Substance Use) MANOVA calculated the 'Type' effect from the combined scores of the groups under the Alcohol Type together, including the Non-user group; likewise for the main effects of Opioid Type, that is irrespective of 'Status'. Similarly, the 'Status' main effect is also based on the combination of the scores of 'Status' (Dependent, Recovering, Non-user) irrespective of the 'Type' (Alcohol or Opioid) of substance use. Therefore, in order to refine and clarify the significant differences in the 'Type' and the 'Status' sub-groups separately on each of the dependent variables, Independent Sample*t*-test was used to clarify differences on the dependent variables according to 'Type' (Alcohol Dependent versus Opioid Dependent,

Alcohol Recovering versus Opioid Recovering). A One-Way Analysis of Variance (ANOVA) for 'Status of Substance Use' (Dependent, Recovering, Non-user) difference in Alcohol and Opioid groups separately on the dependent variables was employed in order to more specifically address the main effects of 'Type' and 'Status' of Substance Use.

The **first objective** was to study the differences in Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment-Caring for Others and Connectedness with Transcendent), and Social Support (Perceived and Instrumental) between the two 'Type of Substance'(Opioid or Alcohol Dependent and Recovering groups) and was specifically addressed using Independent Sample *t*-test.

Results of the Independent Sample *t*-test indicated that there were significant differences between the Alcohol Dependent and Opioid Dependent Group on Powerful Others Locus of Control as well as on Instrumental Social Support. In the Powerful Others Locus of Control, the Alcohol Dependent Group scored significantly higher than Opioid Dependent Group. This particular result contradicted the first hypothesis stating that Alcohol Dependent Group will score significantly lower in Powerful Others Locus of Control than Opioid Dependent Group. So, with limited literature comparing this particular variable in these two groups, it may be said that when it comes to the Mizo society, people who are dependent on alcohol tend to view the impact of other people on their lives i.e., on Powerful Others Locus of Control as higher than those with Opioid dependent people. This may be seen as an impact of the kind of attitude Mizo Society has towards alcohol use which has been a part and parcel of Mizo history versus Opioid which is considered relatively new and is not a part in its collective memory and history. And with strongly unfavorable attitude towards illicit drugs such as heroin, opioid users may distance themselves and feel less connected towards the society as a whole as compared to individuals with Alcohol users. As Mizo population has been shown to display collectivistic characteristics (Fente & Singh, 2008) where social behavior is determined by shared goals, attitudes and values with their in-groups (Hofstede, 1980; Markus & Kitayama, 1991; Triandis, 1995). Hence, it may be said that this cultural context may have an impact on the locus of control of substance users.

Further, results of the Independent Sample *t*-test also showed that the Alcohol Dependent Group scored significantly higher than Opioid Dependent Group in Instrumental Social Support. The hypothesis stating that the Alcohol Dependent Group will score higher on Instrumental Social Support than Opioid Dependent Group was supported. Although social support has been found to play an important role in recovery from addiction in numerous studies (Schmitt, 2003; Pettersen *et al*., 2019) and has also been found to reduce the risk for substance use (Gázquez *et al*., 2016), there is lack of research comparing the social support received by individuals with various types of substance dependence especially in terms of tangible aid. From this particular finding, we can infer than people with alcohol dependence receive more support in terms of tangible aid than do people with opioid dependence. It may be to do with the perception the Mizo society has towards illicit drugs like opioid as compared to the complicated history it has had towards alcohol sale and production. Consumption of '*Zu*', traditional rice beer, was a common phenomenon in Mizo society (McCall, 2003). It was an essential component of all the sociocultural and religious ceremonies in the pre-colonial Mizo society (Lalremruata, T., 2019). Hence, keeping this history in mind, Mizo people may view alcoholism as more acceptable than addiction to other 'hard 'drugs like opioid, making it more likely to provide tangible aid to the former than the latter.

However, no significant differences were found between the Alcohol Dependent and Opioid Dependent Group on Resilience, Internal Locus of Control, Adaptive Coping, Maladaptive Coping, Spirituality (Connectedness with Oneself, Connectedness with Environment- Caring for Others, Connectedness with Transcendent) and Perceived Social Support in the Alcohol Dependent and Opioid Dependent Group. This may indicate that the 'Type of substance use', whether it be Alcohol or Opioid the individuals are currently dependent on, does not make a significant difference in terms of the factors mentioned above, except forPowerful Others LOC and Instrumental Social Support.

Results of the Independent Sample *t*-test indicated that there was significant difference between the Alcohol Recovering and Opioid Recovering Groups on Perceived Social Support. Hence, the results conformed to the hypothesis stating that the Alcohol Recovering Group will score higher on Perceived social support than Opioid Recovering Group. This implies that the

Alcohol Recovering Group tend to perceive others as providing more social support to them as compared to the Opioid Recovering Group. As mentioned above, this finding may be in tune with the perception that the Mizo society has towards illicit drugs like opioid as compared to alcohol consumption. while the Consumption of '*Zu*' or the traditional rice beer has been a part and parcel of the Mizo society as it was used in sociocultural ceremonies such as sacrifice, marriage, birth, death, festival and for celebration of successful hunting and harvesting (Lalremruata, 2019) before colonialism and Christianity led to changes in many of the sociocultural practices. Hence, it's use was a common phenomenon in Mizo society (McCall, 2003). Whereas, the introduction of Opioid in the form of heroin to the Mizo society is relatively new and recent as the early 1970s (Panda, 2006). Hence, the individuals with opioid use problem are much more unfavourably and negatively viewed by the society as a whole.

However, no significant differences were found between the Alcohol Recovering Group and Opioid Recovering Group on Resilience, Internal Locus of Control, Powerful Others Locus of Control, Adaptive Coping, Maladaptive Coping, Spirituality (Connectedness with Oneself, Connectedness with Environment- Caring for Others, Connectedness with Transcendent) and Instrumental Social Support in the Alcohol Recovering and Opioid Recovering Group. This may indicate that the 'Type of substance use' or in other words, irrespective of what substance they were once dependent on(amongst the Recovering Group from both the Alcohol Group and Opioid Group), this does not make a significant difference in terms of the factors mentioned above.

The **second objective** was to study the differences based on the 'Status of Substance Use '(Dependent, Recovering, and Non-user) on Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment-Caring for Others, Connectedness with Transcendent), and Social Support (Perceived and Instrumental) separately in the Alcohol Group and Opioid Group. This hypothesis was put forth as the measures of these dependent variables were expected to be different based on whether they are dependent users, abstaining from use, or never being dependent on substance use. This objective was addressed using a One-Way ANOVA. The

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parametric assumptions were taken care of, and for instances where parametric assumptions were not met, equivalent non-parametric test (Kruskal Wallis Test) was used.

To summarize the findings of the differences in **Resilience across** the three groups of substance use under the two types of substance use, the Alcohol Recovering Group and Non-user Group displayed significantly higher Mean scores than the Alcohol Dependent as expected. However, in the Opioid Group, only the Non-user Group displayed significantly higher Mean score than the Opioid Dependent Group while the Opioid Recovering Group are not significantly different from the Opioid Dependent Group. In terms of Resilience, in the Alcohol Group, the Alcohol Recovering Group and Non-user Group displayed significantly higher Mean score than the Alcohol Dependent Group in Resilience as expected. However, in the Opioid Group, only the Non-user Group displayed significantly higher Mean score in Resilience than the Opioid Dependent Group while the Opioid Recovering Group are not significantly different from the Opioid Dependent Group. One explanation for this maybe that resilience or the ability to cope with problems and stress maybe effected by the perception and approach the Mizo society collectively have towards 'hard drugs' such as Opioid as compared to Alcohol as well as towards the people who are using them. The use of alcohol during festivals was a common practice in the Mizo traditional society. It was only after the advent of Christianity in Mizoram that consumption of '*Zu*' by a Mizo Christian was prohibited (MSD & RB., 2015), whereas, the introduction of Opioid in the form of heroin to the Mizo society is relatively new and recent as the early 1970s (Panda, 2006).

Internal LOC across the three groups of substance use under the two types of substance use, the Alcohol Recovering Group and Non-user Group did not display significantly higher Mean score than the Alcohol Dependent as expected. The same can be said for the findings in the Opioid Group, the Opioid Recovering Group and Non-user Group did not display significantly higher Mean score than the Opioid Dependent as expected. In the case of **Internal Locus of Control**, there was no significant evidence of the effect of 'Status of Substance Use' in this. Although internal locus of control is seen as often higher in individuals with no history of substance use as compared to recovering groups and so called 'alcoholic' groups (Huckstadt, 1987; Soravia *et al*., 2015, Prakash *et al*., 2015), these findings did not hold true for the current study. However, this current finding is not an isolated case.

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Ersche *et al*. (2012) also found that drug-dependent individuals have a greater internal sense of control with regard to addiction recovery or drug-taking behaviors than health professionals and/or non-dependent control volunteers. So, we can surmise from this research that an individual's locus of control is greatly influenced by their own history with drug use and particular findings may not be totallygeneralizable.

In terms of **Powerful Others LOC**, the Alcohol Recovering Group and Non-user Group displayed significantly lower Mean score than the Alcohol Dependent Group as expected. In the Powerful Others Locus of Non-user amongst the Opioid Groups, the Recovering Group and Non-user Group did not score significantly lower than Dependent Group. Powerful Others Locus of Control in individuals between these two types of Substances (Alcohol and Opioid) is scarce. So, with limited literature comparing this particular variable in these two groups, it may be surmised that when it comes to the Mizo society, people who are dependent on alcohol tend to view the impact of other people on their lives i.e., on Powerful Others Locus of Control as higher than those with Opioid dependent people. This may be seen as an impact of the kind of attitude Mizo Society has towards its perception of alcohol which has been a part and parcel of Mizo history versus Opioid which is considered relatively new and is not a part in its collective memory and history. And with a less favourable attitude towards illicit drugs such as heroin, opioid users may distance themselves and feel less connected towards the society as a whole as compared to individuals with Alcohol users. As Mizo population has been shown to display collectivistic characteristics (Fente & Singh, 2008, Lalkhawngaihi & Fente, 2019) where social behavior is determined by shared goals, attitudes and values with their in-groups (Hofstede, 1980; Markus & Kitayama, 1991; Triandis, 1995). Hence, we can say that, this cultural context may have an impact on the locus of control of substance users.

With regard to **Adaptive Coping** acrossthe three groups of substance use under the two types of substance use, the Non-user Group scored significantly higher than the Dependent group but not so much from the Recovering Group as expected in the Alcohol Group. This finding was found to be similar amongst the Opioid Groups, where, the Non-user Group displayed significantly higher Mean score than the Opioid Dependent Group but not from the Recovering Group. Previous researches have also supported the same findings.

Kronenberg *et al*. (2015) SUD patients reported more palliative, avoidant and passive coping when confronted than people in the general population. Another related study by Sarada & Radharani (2017) also showed that patients in the relapsed group tend to use more maladaptive strategies (negative thinking) and less adaptive strategies such as positive thinking as compared to the abstinent group.

The findings of the pattern differences in **Maladaptive Coping** acrossthe three groups of substance use under the two types of substance use indicated that the Alcohol Dependent displayed significantly higher Mean score than the Alcohol Recovering Group and Non-user Group. According to Aldao and Nolen-Hoeksema (2012; 2010), adaptive emotion regulation strategies (e.g., acceptance or reappraisal) show weaker associations with psychopathology than maladaptive strategies (e.g., worry and rumination). Kronenberg *et al*. (2015) in their study compared the various coping styles between SUD patients showed a significant higher Mean on avoidance from a general population sample. A'zami *et al*. (2015) also found that substance-dependent individuals applied emotion-focused coping more than the healthy ones, and the latter applied problem-focused strategies more. In the Opioid group, the Non-user Group displayed significantly lower Mean score than the Opioid Dependent Group. However, in this group, the Opioid Recovering Group did not reveal a significant difference from the Dependent Group. Literature has shown that both people recovering from substance abuse and SUD patients both reported maladaptive coping behaviors.

In terms of **Spirituality,** in all aspects of spirituality, namely - Connectedness With Oneself, Caring For Others And Connectedness With Transcendent, the Alcohol Recovering and Non-user Group had a significantly higher Mean scores as compared to the Alcohol Dependent Group and the same result can be found in the Opioid group where Recovering and Non-user Group had a significantly higher Mean as compared to the Dependent Group. The importance of Spirituality has been established in the field of substance rehabilitation from past researches, for e.g., Robinson *et al*. (2011) investigated the effect of spiritual and religious (SR) change on subsequent drinking outcomes on alcohol-dependent individuals and found significant 6-month changes in different SR measures. Lucchetti *et al*. (2012) found that high religious involvement was associated with less alcohol use, alcohol abuse, tobacco use,

and combined alcohol/tobacco use, as well as less days drinking alcohol beverages per week, controlling for confounding factors.

The findings pertaining to the differences in **Perceived Social Support across** the three groups of substance use under the two types of substance use, Alcohol Recovering Group and Non-user Group displayed significantly higher Mean score than the Alcohol Dependent Group as expected. Studies have found an important link between perceived social support and frequency of substance use (Rapiera *et al*., 2019; Chong & Lopez, 2005). Interestingly, in the case of the Opioid Group, the Opioid Dependent Group reported a higher Mean score in Perceived Social Support than the Recovering Group though lesser than the Non-user Group. Interestingly, in the case of **Perceived Social Support**, the Opioid Dependent Group reported a higher Mean score in Perceived Social Support than the Recovering Group though lesser than the Non-user Group which does not support the hypothesis. This finding is surprising in that studies have consistently shown that there is a positive relationship between the length of drug abstinence and receiving social support (Davis & Jason, 2005) and a significant negative relationship between perceived social support and the frequency of relapse (Atadokht *et al*., 2015).

Further,**Instrumental Social Support across** the three groups of substance use under the two types of substance use indicated that in the Alcohol Group, the Mean of the Non-user Group was significantly higher as compared to the Alcohol Dependent Group. However, the same cannot be said for the Alcohol Recovering Group with the Dependent Group. And similarly in the Opioid Group, the mean of the Opioid Recovering Group and Non-user Group was significantly greater than the Opioid Dependent Group. Previous results have highlighted the importance of social support in the treatment programme of substance use but there is lack of research specifying on the role of instrumental support or tangible aid. Rychtarik and colleagues (1987) found the evidence of lower consumption of alcohol in alcoholics when they were in contact with some social support or connection (for example their spouse, children, or a housing community). The existence of supportive structures and networks, as well as supportive interventions such as spiritual and familial support have been suggested to play a major role in the acquisition of treatment goals among drug users and prevention of

relapse (Spoth & Raymond, 1994; Blume *et al*., 1994). It has also been shown that there was a positive relationship between receiving social support and the length of drug abstinence (Davis & Jason, 2005). Studies have also shown that social support lowers the chances of relapsing (Havassy, Wasserman, & Hall, 1995).

To conclude, in the **Alcohol group**, the findings support the second hypothesis stating that the Recovering Group and Non-user Group will score significantly higher in Adaptive Coping Style, Spirituality and Perceived Social Support whereas they were expected to score significantly lower on Powerful Others Locus of Control and Maladaptive Coping than the Dependent Group. In terms of Resilience and Instrumental Social Support, only the Non-user Group scored significantly higher than the Dependent Group while the Recovering Group did not do so in the Alcohol Group. In the case of Internal Locus of Control, there was no significant evidence of the effect of 'Status of Substance Use' in this. Hence, the hypothesis stating that the Alcohol Recovering Group and Non-user Group will score significantly higher than Alcohol Dependent Group in Internal Locus of Control is not supported

In the **Opioid** Group, some of the above-mentioned findings support the second hypothesis stating that the Recovering Group and Non-user Group will score significantly higher in Spirituality, and Instrumental Social Support than the Dependent Group. However, in terms of Resilience, Adaptive Coping and Perceived Social Support, only the Non-user Group scored significantly higher than the Dependent Group as also in the case of Maladaptive Coping, where only the Non-user Group scored significantly lower as compared to the Dependent Group. However, the same cannot be said in the case of Internal Locus of Control and Powerful Others Locus of Control amongst the Opioid Groups. There was no significant evidence of the effect of 'Status of Substance Use' in these two variables. Hence, the hypothesis stating that the Recovering Group and Non-user Group will score significantly higher than Dependent Group in Internal Locus of Control and significantly lower in Powerful Others Locus of Control is not supported by the current findings.

The **third objective** of comparing the patterns of the dependent variables (2 Types of Substances x 3 Status of Substance Use) based on the 'Status of Substance Use' (Dependent,

Recovering and Non-user) in the two 'Type of Substance Use' (Opioid or Alcohol) on Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality(Connectedness with Oneself, Connectedness with Environment-Caring for Others and Connectedness with Transcendent), and Social Support (Perceived Social Support and Instrumental Social Support) was put forth as these variables were expected to differ based on the 'Status of Substance Use' under the two 'Type of Substance Use' used. However, the ways in which the differences emerge was exploratory. In this part of the study, the patterns of differences in three Status of Substance Use (Dependent, Recovering, Non-user) between the two types of Substance Use (Alcohol and Opioid) as already analysed by the Two - way Factorial 2X3 (2 Type X 3 Status) MANOVA on the Dependent Variables of Personality (Resilience, Locus of Control and Coping Styles), Spirituality(Connectedness with Oneself, Connectedness with Environment-Caring for Others and Connectedness with Transcendent) and Social Support (Perceived Social Support and Instrumental Social Support) are interpreted. It may be reiterated that the interaction effects were found to be significant only in the personality variable of **Powerful Others Locus of Control** and the **Perceived Social Support** variable.

In the **Powerful Others Locus of Control**, the results indicated that in the Opioid Group, there was no significant difference between Recovering Group, Dependent Group and Non-user Group, whereas in the Alcohol Group, the Dependent Group scored significantly higher than the Recovering Group and the Non-user Group. Although, past researches have shown that substance abusers significantly scored higher on external locus of control as compared to non-abusers (Niazi *et al*., 2005, Prakash *et al*., 2015). So, with limited literature comparing this particular variable in these two groups, it may be surmised that when it comes to the *Mizo* society, people who are dependent on alcohol tend to view the impact of other people on their lives i.e., on Powerful Others Locus of Control, as higher than those with Opioid dependent people. This may be seen as an impact of the kind of attitude *Mizo* Society has towards its perception of alcohol which has been a part and parcel of *Mizo* history versus Opioid which is considered relatively new and is not a part in its collective memory and history. And with a less favourable attitude towards illicit drugs such as heroin, opioid users may distance themselves and feel less connected towards the society as a whole as compared to individuals with Alcohol users. As *Mizo* population has been shown to display collectivistic

characteristics (Fente & Singh, 2008, Lalkhawngaihi & Fente, 2019) where social behavior is determined by shared goals, attitudes and values with their in-groups (Hofstede, 1980; Markus & Kitayama, 1991; Triandis, 1995). Hence, we can say that, this cultural context may have an impact on the locus of control of substance users.

In terms of **Perceived Social Support**, Alcohol Recovering Group and Non-user Group displayed significantly higher Mean scores than the Alcohol Dependent Group as expected. Interestingly, in the case of the Opioid Group, the Opioid Dependent Group reported a higher Mean score in Perceived Social Support than the Recovering Group though lesser than the Non-user Group. An explanation for this finding may be again linked with the *Mizo* society's approach to 'recovering addicts' individuals especially from what are often considered as hard drugs such as heroin. These individuals are often viewed skeptically especially if they have had a history of relapse. Hard drug or Opioid users who are considered to be in recovery may see themselves as receiving much less social support as compared to their counterparts who are recovering from or 'in recovery' from a less stigmatized substance like alcohol. The use of alcohol during festivals was a common practice in the *Mizo* traditional society. It was only after the advent of Christianity in Mizoram that consumption of '*Zu*' by a *Mizo* Christian was prohibited (MSD & RB., 2015), whereas, the introduction of Opioid in the form of heroin to the *Mizo* society is relatively new and recent as the early 1970s (Panda, 2006). These individuals are often viewed skeptically especially if they have had a history of relapse.

To summarize the findings of the pattern differences in the three groups of substance use under the two types of substance use, in terms of **Powerful Others LOC**, the Alcohol Recovering Group and Non-user Group displayed significantly lower Mean score than the Alcohol Dependent Group as expected. In the Powerful Others Locus of Control amongst the Opioid Groups, the Recovering Group and Non-user Group did not score significantly lower than Dependent Group. In terms of **Perceived Social Support**, Alcohol Recovering Group and Non-user Group displayed significantly higher Mean score than the Alcohol Dependent Group as expected. Interestingly, in the case of the Opioid Group, the Opioid Dependent Group reported a higher Mean score in Perceived Social Support than the Recovering Group though lesser than the Non-user Group.

In order to address the **fourth objective** of highlighting the relationships between Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Connectedness with Environment-Caring for Others and Connectedness with Transcendent) and Social Support (Perceived Social Support and Instrumental Social Support), using Pearson's Correlation Coefficient, Bivariate Correlations between the scores on all the variables of Personality Factors (Resilience, Locus of Control and its two subscales- Internal Scale and Powerful Others Scale and Coping Styles and its two subscales- Adaptive Coping and Maladaptive Coping), Spirituality and its three subscales- Connectedness with Oneself, Connectedness with Environment-Caring for Others and Connectedness with Transcendent, and Social Support and its two subscales- Perceived Social Support and Instrumental Social Support, were determined for all units of analyses. The hypothesis that envisaged a significant relationship between the ten variables was found to be supported in most of the groups.

Generally, in the **Alcohol Group**, Resilience and Adaptive Coping were positively correlated. In previous researches, individuals who scored high on resilience also scored high on problem solving ability (Veenstra *et al*., 2007; Howe *et al*., 2012; Faye *et al*., 2018). Personality (Resilience and Adaptive Coping) was positively correlated with Spirituality (Connectedness with Oneself & Caring for Others).Whether one becomes a member of the addicts and non-addicts 'groups could be predicted by the factors such as personality, identity style, spirituality, and resilience (Hosseini-Almadani *et al*., 2010). Resilience was found to be positively correlated with Internal LOC. Feldmen (2011) resilient people have control over their destiny and they make the best of whatever situation they are in. Internal Locus of Control was significantly positively correlated with Adaptive Coping while it was significantly negatively correlated Maladaptive Coping. Sandler and Lakey (1982) found that LOC beliefs play an important role in moderating the effects of stress on well-being and they suggested that under conditions of high stress, internals are able to acquire and use information more effectively than externals. Internal Locus of Control was significantly positively correlated to Connectedness with Oneself. The concept of spirituality is often linked with a sense of meaning (Steger & Frazier, 2005). Apart from promoting a sense of meaning,

spirituality may be considered to be a helpful resource while dealing with highly stressful situations (Diener *et al*., 2011; Park *et al*., 2013).

Maladaptive Coping was significantly negatively correlated with Connectedness with Oneself and Connectedness with Environment- Caring for Others. Scholarly articles report that religious people are less depressed, less anxious, and less suicidal than nonreligious people, and that they are better able to cope with traumatic events (Paul, 2005). The more a believer incorporates religion into daily living, the more they report frequency of positive emotions (Waters & Shafer, 2005).Spirituality subscales such as Connectedness with Oneself, Caring for Others & Connectedness with Transcendent were found to be positively correlated with one another and Perceived Social Support was found to be positively correlated with Connectedness with Transcendent. Chen (2006) found that amongst inmates (recovering addicts) who participated in therapeutic intervention programs including social support and experiential spiritual program components, there was a higher sense of coherence and meaning in life than those not participating in such programmes. Studies have suggested that the presence of supportive networks, as well as supportive interventions such as spiritual and familial support, plays a major role in achieving treatment goals in drug abusers and prevention of relapse (Spoth & Redmond, 1994; Blume *et al*., 1994)

In the **Opioid Group**, Resilience was generally found to be positively correlated with Internal LOC. Internal LOC individuals believe that one's internal and external environments are predictable and that depending on the efforts that they give, there is a good chance that all things will work out (Kobassa & Puccetti, 1980). Resilience was found to be significantly negatively correlated to Powerful Others Locus of Control. Niazi *et al*., (2005) in their study in Pakistan and found that substance abusers significantly scored higher on external locus of control. Internal Locus of Control and Connectedness with Environment- Caring for Others were found to be significantly positively correlated. Kurtz (1996) highlighted the importance of finding meaning in the lives of individuals recovering from addiction and believed that this could be achieved by connecting with others in recovery, connecting with the self, and with a power greater than oneself. Resilience and Adaptive Coping were significantly positively correlated while Maladaptive Coping was found to be negatively correlated with Resilience. In

previous researches, individuals who scored high on resilience also scored high on problem solving ability while individuals with substance addiction who scored low on resilience also scored low on problem solving (Veenstra *et al.*, 2007; Howe *et al.*, 2012; Faye *et al.*, 2018).

Powerful Others Locus of Control and Adaptive Coping were significantly negatively correlated and on a related note, Powerful Others Locus of Control and Maladaptive Coping were significantly positively correlated. Internals are able to acquire and use information more effectively than externals and that they are more task oriented in their coping behaviors as compared to externals (Sandler & Lakey, 1982; Cohen & Edwards, 1989). This finding may be due to externals 'increased feelings of helplessness when dealing with problems (Hiroto, 1974; Fogas *et al.*, 1992). Personality (Resilience and Adaptive Coping) was positively correlated with Spirituality (Connectedness with Oneself & Caring for Others). Ramezani *et al.* (2015) also found that the non- addicted women acquired higher scores in variables of resilience and spirituality as compared to the addicted women. Spirituality subscales such as Connectedness with Oneself, Caring for Others & Connectedness with Transcendent were found to be positively correlated with one another. Whether one becomes a member of the addicts and non-addicts 'groups could be predicted by the factors such as personality, identity style, spirituality, and resilience (Hosseini-Almadani *et al.*, 2010). Adaptive Coping was significantly positively correlated to Perceived Social Support while Maladaptive Coping was significantly negatively correlated to Perceived Social Support. A related finding can be seen where perceived social support from the family was a strong protective factor against alcohol use while avoidance coping strategy (which is considered to be one of the most commonly used maladaptive coping strategies used in substance abuse) was seen as a strong risk factor of alcohol use (Hamdan-Mansour *et al.*, 2006).

The **fifth hypothesis** was addressed using Multinomial Logistic Regression analyses to elucidate the predictability of 'Status of Substance Use' (Dependent, Recovering and Non-user Group) from Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality (Connectedness with Oneself, Caring for Others & Connectedness with Transcendent) and Social Support (Perceived Social Support & Instrumental Social Support). Personality Factors (Resilience, Locus of Control and Coping Styles), Spirituality

(Connectedness with Oneself, Caring for Others & Connectedness with Transcendent) and Social Support (Perceived Social Support & Instrumental Social Support) were entered as predictor variables while 'Status of Substance Use' (Dependent, Recovering and Non-user Group) were entered as criterion or outcome variables.

In the **Alcohol Group**, the results indicated significant predictability of 'Status of Substance Use' (Dependent, Recovering and Non-user Group) from Resilience, Internal Locus of Control, Connectedness with Transcendent, Perceived Social Support and Instrumental Social Support as expected. No further significant predictions of the 'Status of Substance Use' from the predictor variables were found for the Alcohol Group.

The results of Multinomial Logistic Regression analysis indicated the significant main effect of Resilience on 'Status of Substance Use'. Resilience significantly predicted 'Status of Substance Use' in the Alcohol Group i.e., whether they belong to the Recovering Group or Dependent Group where the higher the Resilience, the higher the chances of falling in the Recovering Group as compared to the Dependent Group. This finding has been supported by past researches where they have consistently found the importance of resilience as both a predictor of substance use and as playing an important role in the recovery process. Fadardi *et al.* (2010) on their study of substance use among university students have found resilience as independent predictor of substance use. Another previous study has also established an increase in resiliency in clients who have undergone treatment in rehabilitation programs and centres (Zamani *et al.*, 2014).

Internal Locus of Control significantly predicted 'Status of Substance Use' i.e., whether they belong to the Dependent Group or Non-user Group where the higher the Internal Locus of Control, the lower the chances of falling in the Non-user Group as compared to the Dependent Group. A study by Dean & Edwards (1990) on individuals receiving treatment for alcohol use show that the majority had higher belief that their health status is more under their own control than under the control of chance or powerful others. These findings seem to be more in line with current research finding wherein in the Mizo society individuals with drug use due to their own experiences with drug use tend to have a greater internal locus of control as compared to non-users. Another explanation for this current finding may be understood in

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the context of *Mizo* Society, where *Mizo* population has been shown to display collectivistic characteristics (Fente & Singh, 2008, Lalkhawngaihi & Fente, 2019). Participation in community activities organised by community-based organizations (CBOs) are accepted as unwritten norms by every *Mizo* members especially in times of deaths and crises (Lalmuanpuii, 2004). Hence, we can say that, this cultural context may have an impact on the locus or control or the extent to which people believe they can control their general life outcomes (Rotter, 1990) whereby being internally oriented or externally oriented determine substance use amongst *Mizo* people.

Maladaptive Coping significantly predicted 'Status of Substance Use' i.e., whether they belong to the Dependent Group or Non-user Group under the Alcohol Group where an increase in Maladaptive Coping decreased the likelihood of falling under the Non-user Group as compared to the Dependent Group. These findings are not surprising when looking at studies that have also established that individuals with poor adaptive coping methods are more likely to engage in substance use including alcohol-related problems and heavy drinking behavior in the absence of more effective and adaptive coping strategies (Hasking *et al*., 2011; Corbin *et al*., 2012).

In terms of the predictability of Connectedness with Transcendent, there was significant main effect of Connectedness with Transcendent on 'Status of Substance Use' which indicates an increasing likelihood of falling into the Non-user Group and Recovering Group as compared to the Dependent Group with increase in Connectedness with Transcendent. This finding has been supported by previous researches by the likes of Koenig *et al*. (2001) and Chitwood *et al*. (2008) who found that an inverse relationship occurs between involvement in religion (e.g., attending services, considering religious beliefs significant) and likelihood of substance use across different life stages.

Perceived Social Support significantly predicted 'Status of Substance Use' i.e., whether they belong to the Dependent Group, Recovering Group or Non-user Group where the higher the Perceived Social Support, the higher the chances of falling in the Recovering Group or Non-user Group as compared to the Dependent Group. The importance of social support in

individuals recovering from substance use has been established in previous studies as well as its role in preventing relapse. It also plays a major role in the promotion of treatment goals in drug abusers and prevention of relapse (Spoth & Redmond, 1994). Atadokht *et al*. (2015) have also found that perceived social support from family and the family expressed emotions significantly explained 12% of the total variance of relapse frequency.

And finally, Instrumental Social Support significantly predicted Status of Substance Use i.e., whether they belong to the Dependent Group or Non-user Group where the higher the Instrumental Social Support, the higher the chances of falling in the Non-user Group as compared to the Dependent Group. Although there is paucity of research studying specifically the predicting role of instrumental social support in substance use, it has been consistently found that people with higher levels of social support have been found to be less likely to use drugs and alcohol (Nikmanesh & Honakzehi*,* 2016; Laudet *et al*., 2006).

In the **Opioid Group**, the results indicated the predictability of 'Status of Substance Use' (Dependent, Recovering and Non-user Group) from Internal Locus of Control, Maladaptive Coping, Connectedness with Oneself and Instrumental Social Support as expected. No further significant predictions of the 'Status of Substance Use' from the other predictor variables were found for the Opioid Group.

Connectedness with Oneself significantly predicted 'Status of Substance Use' i.e., whether they belong to the Dependent Group or Non-user Group where the greater the Connectedness with Oneself, the higher the chances of falling in the Non-user Group as compared to the Dependent Group. The same was true for the Recovering Group where the greater the Connectedness with Oneself, the higher the chances of falling in the Recovering Group as compared to the Dependent Group. The importance of connectedness with oneself and finding meaning in one's life has been reflected in a study by Kurtz & White (2015) who highlighted the importance of finding meaning in the lives of individuals recovering from substance use.

Instrumental Social Support significantly predicted 'Status of Substance Use' i.e., whether they belong to the Dependent Group or Non-user Group where the higher the Instrumental Social Support, the higher the chances of falling in the Non-user Group as compared to the Dependent Group. This was also true for the Recovering Group where the higher the Instrumental Social Support, the higher the chances of falling in the Recovering Group as compared to the Dependent Group. Although there is paucity of research studying specifically the predicting role of instrumental social support in substance use, it has been consistently found that people with higher levels of social support have been found to be less likely to use drugs and alcohol (Nikmanesh & Honakzehi, 2016; Laudet *et al*., 2006).

Internal Locus of Control significantly predicted 'Status of Substance Use' i.e., whether they belong to the Dependent Group or Non-user Group under the Opioid Group where an increase in Internal Locus of Control decreased the likelihood of falling under the Non-user Group as compared to the Dependent Group. The explanation for this finding has been given for the alcohol group wherein, Ersche *et al*. (2012) found that drug-dependent individuals have a greater internal sense of control with regard to addiction recovery or drug-taking behaviors than health professionals and/or non-dependent control volunteers. These findings seem to be more in line with current research finding wherein in the *Mizo* society individuals with drug use due to their own experiences with drug use tend to have a greater internal locus of control as compared to non-users. Another explanation for this current finding may be understood in the context of *Mizo* Society. *Mizo* population has been shown to display collectivistic characteristics (Fente & Singh, 2008) where social behavior is determined by shared goals, attitudes and values with their in-groups (Hofstede, 1980; Markus & Kitayama, 1991; Triandis, 1995). Hence, we can say that, this cultural context may have an impact on the locus or control or the extent to which people believe they can control their general life outcomes (Rotter, 1990) whereby being internally oriented or externally oriented determine substance use amongst *Mizo* people.

The results also highlighted significant main effect of Maladaptive Coping on 'Status of Substance Use' which indicates that with an increase in Maladaptive Coping there is a decreasing likelihood of falling into the Non-user Group as compared to the Dependent Group.

Maladaptive Coping significantly predicted 'Status of Substance Use' i.e., whether they belong to the Dependent Group or Non-user Group under the Opioid Group where an increase in Maladaptive Coping decreased the likelihood of falling under the Non-user Group as compared to the Dependent Group. These findings are not surprising when looking at past researches that study substance use itself as a maladaptive coping mechanism. Individuals with opioid dependence entering naltrexone treatment have been found to report less use of adaptive coping strategies when compared with controls (Hyman *et al*., 2009). In a study examining predictors of alcohol and drug use, it was found that stronger adaptive coping strategies were the most consistent predictor of less frequent alcohol and drug use (Pence *et al*., 2008).

Hence, as envisaged, the results of this study indicated that personality factors, spirituality, and social support are indeed important psychological variables that may render a person to maintain or sustain their substance use or recovery.

A few notable **implications** of this study was that it laid special emphasis on people who have managed to remain abstinent from drug use over a period of time and tries to understand how they may be different from individuals who are not able to remain abstinent for longer periods of time by studying the role these psychological factors including personality factors, spirituality and social factors such as social support may play. This study also attempted to compare individuals who have never had a problem with substance use with individuals who have had a substance use problem as well as those who currently have a problem with it. It has supported and enhanced previous researches that have focused on the importance of involving various psychological factors in the process of treatment of individuals with substance use disorders such as building resilience to deal with stressful situations more effectively (Maddi & Khoshaba, 2005; Cadet, 2016), building coping skills (McConnell *et al.,* 2014; Wynn, 2017) and helping these individuals navigate their locus of control. It has highlighted the importance of a holistic spiritual experience; not just emphasizing on religious context in Mizo Society but other aspects of spirituality such as building meaningfulness, acceptance and trust within a person, helping individuals become connected with other people through expressing care and concern for others (Steger & Frazier,

2005; Kurtz & White, 2015). Halliday (2009) in his study evaluating the centres in Mizoram as well as the care provided for individuals with substance abuse found that these centres were mostly religious based and evangelical based camps. Ralte (1994) also suggested the requirement of a more comprehensive treatment program with a multi-disciplinary approach in Mizoram.

The importance of having a strong support system whether it be in the perceived emotional or appraisal support or with the help of providing tangible aid has also been highlighted again in this study (Atadokht *et al*., 2015; Rapiera *et al*., 2019). As Mizo population has been shown to display collectivistic characteristics (Fente & Singh, 2008) where social behavior is determined by shared goals, attitudes and values with their in-groups (Hofstede, 1980; Markus & Kitayama, 1991; Triandis, 1995). Hence, it may be said that this cultural context may have an impact on the personality factors of substance users participating/not participating in socio-cultural programmes as well as how they perceive to be supported by the society as a whole and ultimately have an impact on the trajectory of their future substance use.

To highlight few **limitations** in this present study, a larger sample size could have further strengthened the statistical power for interpretation in this study. Incorporation of gender as a variable would have enriched the study. However, this could not be done due to limited opportunity for female sample because there are a smaller number of female cases of substance abuse. Some of the participants had a prior history of other substance use and it would have been ideal to tease out these effects. A qualitative approach of data collection would help give a broader understanding of the other psychological factors playing a role in substance dependence as well as substance abstinence. It would be interesting to extend this area of research and tap other psychological (other personality traits such as impulsivity) and social factors (such as family dynamics, parenting styles) that may play a role while ultimately opening more avenues for intervention.

To finally conclude, substance use problem is a significant public health concern and burden to the Mizo society as a whole. Dealing with it has to be done in a systematic manner

with the help of empirical evidence to see what else needs to be done in handling this escalating crisis. This current study aimed to play a part in understanding this phenomenon by studying psychological and social factors surrounding this phenomenon namely Personality factors like- Resilience, Locus of Control and Coping Styles and social aspect in the form of Social Support and a relatively new concept of including Spirituality in the intervention process (as opposed to the past focus on religious-based interventions). Across the groups, factors such as resilience, internal locus of control, connectedness with oneself, connectedness with transcendent, perceived social support and instrumental social support were found to be especially helpful in predicting whether an individual belonged to the dependent group or are currently in recovery from substance use or have never had a problem with substance use before. Therefore, it may be helpful to develop tasks and exercises to especially focus on these factors that can be used either or both as a preventive or intervention measure that will also suit the cultural background of the Mizo people. This study has also highlighted and contributed to scientific literature, of the various psychological and social aspects needed to be tapped in culture specific and cross-cultural perspectives in the attempt to prevent, reduce, and treat substance use disorders.