2016

Methamphetamine Users and Gender Differences in their Acceptance of Long-Term Substance Abuse Treatment Programs

Kevin Garen Stepanyan
Walden University

Walden University

College of Social and Behavioral Sciences

This is to certify that the doctoral dissertation by

Kevin Stepanyan

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Joseph Grillo, Committee Chairperson, Psychology Faculty
Dr. Michael Plasay, Committee Member, Psychology Faculty
Dr. Victoria Latifses, University Reviewer, Psychology Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2016

Methamphetamine Users and Gender Differences in their Acceptance of Long-Term Substance Abuse Treatment Programs

by

Kevin G. Stepanyan

B.A., California State University, Los Angeles, 2005

M.S., California State University, Los Angeles, 2007

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Clinical Psychology

Walden University

November 2016

Abstract

Methamphetamine abuse is a problem of public health importance among men and women in the United States. The two genders are affected even though the majority treatment programs are tailored for male alcohol addicts. The gender differences are prevalent in the acceptance of long-term substance abuse treatment programs. The study focuses on gender differences in methamphetamine abuse and whether both male and female addicts benefit from treatment. Respondent's suitability, participant's abuse condition, treatment, and progress questionnaires and interviews are used to collect data from 50 male and 50 female methamphetamine users at the Impact Residential Program in Montreal, Canada. Together, the four quantitative questionnaires yield common factors leading to methamphetamine abuse as weight loss and emotional stress for females, and increased physical activity for males. Descriptive statistics of median and quartiles are used to help describe outcomes of the treatment program. Stigma is identified as a common barrier to seeking treatment for both genders. Furthermore, parenting and childcare are not identified as barriers for females seeking treatment contrary to previous research findings but pregnancy is a key motivator to seeking treatment. The median and quartile descriptions reveal that both male and female methamphetamine abusers benefit equally from treatment programs. The findings of this study add knowledge on gender-specific efforts against methamphetamine abuse. Public health officers may use identified factors leading to methamphetamine use to foster preventive measures while officers working in treatment programs may use identified motivators and barriers to treatment to enhance program effectiveness.

Methamphetamine Users and Gender Differences in their Acceptance of Long-Term Substance Abuse Treatment Programs

by

Kevin G. Stepanyan

B.A., California State University, Los Angeles, 2005

M.S., California State University, Los Angeles, 2007

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Clinical Psychology

Walden University

November 2016

Dedication

This work is dedicated to all persons working in substance abuse treatment programs in the United States and its territories for their great work in saving generations.

Acknowledgments

Completion of this thesis was made possible by invaluable support, guidance and encouragement from a number of people. Firstly, I am especially grateful to my research advisor and Chair, Professor Dr. Joseph Grillo, secondary committee member, Dr. Michael Plasay, and URR, Dr. Victoria Latifses for their availability and constructive input in developing this thesis. Secondly, I am grateful to my family for providing laughter even in difficult times. Finally, I thank everyone who contributed in data collection and analysis for my thesis.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction to the Study

Background Information

National Institute on Drug Abuse (NIDA) (2008) acknowledges that abuse of methamphetamine and amphetamines has been a problem in the US since the 1960s. Clandestine production of methamphetamine escalated in 1990s after state regulations withdrew injectable form of methamphetamine from the market and changed methamphetamine to a schedule II drug that can only be obtained on prescription and without refill (NIDA, 2008). In 2005, 1.3 million people in the United States reported use of methamphetamine during the previous 12 months (National Survey on Drug Use and Health (NSDUH, 2007). In 2004, 8% of treatment admissions from substance abuse were for the abuse or dependence on stimulants. Remarkably, methamphetamine and other amphetamines accounted for 99% of aforementioned admissions, which conforms that they are popular stimulants (Substance Abuse and Mental Health Services Administration (SAMHSA, 2007).

NSDUH (2014) reported that the 2013 national survey on drug use yielded 24.6 million Americans aged at least 12 years were current illicit drug users, defined as use within the previous 1 month, in the year 2013. Importantly, this statistic represents an estimated 9.4% of all persons aged at least 12 years, which confirms that drug use is a plague in America. The most important illicit drugs are marijuana, cocaine, heroin, inhalants, hallucinogens, and schedule II (prescription-type) drugs such as stimulants, analgesics, sedatives, and tranquilizers. Although marijuana is the leading illicit drug abused in America, methamphetamine is the leading prescription-type illicit drug used in

U.S.A (NSDUH, 2014). In fact, RAND (2009) posit that the number of amphetamine users globally approximates that of heroin and cocaine users combined estimated at 28 million and 25 million users respectively.

In fact, NSDUH (2014) reported that current methamphetamine users for 2013 and 2012 remained steady at 0.2%, though exact number rose from 440,000 to 595,000 between 2012 and 2013. Additionally, a significant rise in methamphetamine consumption between 2010 and 2013 was noted because the number of past month methamphetamine users for 2010 was 0.1%. Even more worrying is the observation that majority people start using methamphetamine at an average age of 21.6 years, which is unequivocally a fundamental age in career development and academia. This statistic shows that methamphetamine is heavily abused in the United States, which calls for a corrective measure to reduce harm on the population.

In the process of controlling the effects of the abuse of methamphetamine, professionals have noted several factors that influence the effectiveness, efficiency, and treatment engagement of the treatment services provided. NIDA (2000) determined some significant differences among men and women in the areas of drug abuse and treatment. For instance, men are more likely than women to have access and opportunity to use drugs despite the fact that both men and women are equally likely to use drugs for the first time and progress into substance dependence (Kassada, Marcon, Pargliarini, & Rossi, 2013). However, there is little comprehensive research that has been carried out about gender differences among methamphetamine users, especially in their acceptance of long-term substance abuse treatment programs (Winslow, 2007).

The Office of Substance Abuse Services (2004) posits that rates of entry to treatment, retention, and completion of substance abuse treatment are lower for women than for men. This confirmed the findings by NIDA (2000) on the differences among men and women in the areas of drug abuse and treatment. NIDA determined that women who are engaged in substance abuse treatment are less likely to have graduated from high school or to have stable employment compared to men. Besides, these women are more likely to experience problems with their physical health, attempt to commit suicide, and experience physical as well as sexual abuse (NIDA, 2000). However, probability that women abusers will have previously sought treatment for substance abuse is higher compared to men with similar problem (NIDA, 2000).

Research indicates that diverse treatment needs of women who use substances tend to be overlooked and/or are inadequately understood (Weissman & O'Boyle, 2000). In fact, the majority of studies on substance use and/or addiction focus on male respondents (Schuckit, Irwin, & Brown, 1990). This observation was supported by Kandall (2002) who noted that "most drug programs were still based on male treatment models, many did not offer gender-specific services or accept pregnant addicts, and few women held top administrative posts in the drug treatment field" (p.69). In fact, the Mental Adjustment to Cancer scale, one of the Minnesota Multiphasic Personality Inventory subscales used to assess alcoholism was originally tested on male alcoholics (Kassada et al., 2013). Kassada and colleagues (2013) also noted that there are 14 primary issues specific to women with substance abuse disorder that need to be addressed including low self-esteem, powerlessness, sexism, family of origin issues, unhealthy

relationships, violence, incest, rape, sexuality, recreation, grief and loss, parenting, vision for the future, and life plans.

Client characteristics differ between men and women in long-term substance abuse treatment programs (Piper, 2008). The differences can be grouped into common categories such as sociodemographic factors like age, educational level, employment status, and marital status. For instance, majority women who use methamphetamine are unemployed, single, less educated, and young, often below 40 years (Piper, 2008).

Notably, women often voluntarily reveal their addiction and seek treatment unlike men who rarely seek help regarding their addiction (NIDA, 2008). For instance, NIDA (2008) reported that women (19%) were more likely than men (16%) to report methamphetamine abuse. In fact, majority men (39%) in substance abuse treatment programs enter via criminal justice systems as compared to women (25%), which may be attributed to the fact that fewer men will have voluntarily sought treatment prior to drugs causing criminal behavior (NIDA, 2008). Unequivocally, these findings point toward relationship between substance abuse and crime, which is a common reason as to why men are incarcerated (NIDA, 2008).

Moreover, characteristics of men and women in treatment programs are different in terms of employment (NIDA, 2008). According to NIDA (2008), there are little chances that women who enter treatment are employed. In their report, NIDA reported that 33% and 7% of men in treatment had full time and part time jobs respectively as compared to only 17% and 8% of women who had full time jobs and part time jobs respectively. Also, women who are addicted to methamphetamine also find challenges in

seeking and remaining in treatment due to issues like child care and basic access among others (NIDA, 2008). Unequivocally, aforementioned gender differences and the different situations that women face mean that their treatment should be carried out differently to incorporate the differences in feelings, perceptions and their stigma.

Methamphetamine addicted women also face numerous gender-specific difficulties deriving from their economic, psychiatric, social, family, legal, and political status (Amaro, Blake, Schwarz,& Flichbaugh, 2001). A study by Goldstein (2009) revealed that over a 12-month period, the prevalence rate of anxiety and mood disorders among women who abuse substances was 26.2% and 29.7% respectively, with disorders of depression and phobia emerging as dominant. Additionally, addicted women experience different physiological consequences from substance abuse, especially when it comes to reproductive and sexual issues (Lex, 1994). These disparity issues still remain, since women confront inequality within the substance abuse treatment environment, and it is likely that women receive fewer benefits from a standard program. Notably, current substance abuse treatment programs are mixed-gender standard programs that were originally targeted at and designed for male substance abusers (Hser, Huang, Teruya, & Anglin, 2004). Currently, only a few gender-specific programs that address special problems faced by female substance abusers exist (Hser et al., 2004).

Statement of the Problem

The current makeup of substance abuse researchers and subjects mirror the gender discrepancies of treatment. In substance abuse treatment outcome studies between 1984 and 1993, women subjects constituted only 7.8% of the research population (Vannicelli,

1984). Furthermore, topics in most studies on substance abuse treatment have focused heavily on biological, pharmacological, behavioral, or environmental aspects (Kassada et al., 2013). These research trends disregard structural components such as gender, not to mention class, race/ethnicity, and age (Korte, Merghati-Khoie, Rimaz, & Brady, 2014). Overall, studies on gender differences in substance abuse treatment are scarce (Abadi et al., 2012; Hser et al., 2004).

Additionally, most substance abuse treatment outcome studies have used a limited number of outcome measures that often focus solely on substance use (Abadi et al., 2012; Floyd, Monahan, Finney, & Morley, 1996). Such limited measures ignore other important areas of outcomes for gender differences among substance abusers. The common outcome measure of abstinence from drugs cannot estimate the whole range of changes in male/female abusers` lives with treatment (Panchanadeswaran & Jayasundara, 2012).

Purpose of the Study

The purpose of this study was to establish the different effects that methamphetamine abuse has on the different genders, and how either gender responds to long-term treatment. This study provides basic guidelines towards the formulation of policies aimed at curbing the menace of rising number of methamphetamine abusers, and provides primary data that could be used for recommended future studies. To help establish these trends, this study assessed the patterns of abuse by participants before intervention, the different methods of treatment that are used, and the effectiveness of different treatment methods between the two genders.

With these circumstances in mind, this study sought to redress this analytical imbalance. The researcher put emphasis on gender along structural components, and developed gender-related factors as predictor variables. Gender-related factors refer to the characteristics that create a difference between men and women as a result of bias in political, economic, legal, social and psychiatric systems in the society despite campaigns for gender freedom (Panchanadeswaran & Jayasundara, 2012). Importantly, these gender-related variables were selected from previous studies on gender-specific or gender-related conditions in substance abuse, and were measured at the individual level.

Research Questions and Hypotheses

The researcher developed the following research questions:

1. What are the different treatment needs for different genders in long-term substance abuse treatment programs?
2. How can the needs of a gender-specific treatment be identified and implemented to ensure full recovery of substance abusers in treatment programs?

The respective hypotheses for the above research questions are:

$H_0$1: There are different treatment needs for the different genders in long-term substance abuse treatment programs.

$H_0$2: Different treatment programs should be implemented for men and women in long-term substance abuse treatment programs.

Study Objectives

- To use questionnaires and interviews to determine the reasons for methamphetamine abuse among men and women.

- To use continuous monitoring questionnaires and interviews to determine the effects of methamphetamine on women and men. This helped determine treatment needs.
- To use continuous monitoring questionnaires and interviews to track the progress of treatment of methamphetamine. This helped determine the impact of treatment.

Nature of the Study

This study sought to answer questions regarding the identification and implementation of different treatment needs that would eliminate the effects of substance abuse among different genders in the long-term. I addressed the research questions through collection and analysis of data from females and males who went through residential or detoxification treatment and agreed to participate in mixed-gender long-term substance abuse treatment programs in Le Virage residential treatment Centre, Montreal, Canada between 2009 and 2011. Using this data, I analyzed gender differences in utilization and differences in outcomes as a function of gender.

I applied quantitative techniques in assessing different responses to treatment by men and women. All measures of this research were based on participants' self-reports and, to some extent, existing medical and criminal records. One such quantitative technique that has been used over the years is the California Treatment Outcome Project (CalTOP) (Rawson et al., 2004). CalTOP was a study approach for treatment outcome that covered participants from different regions (Rawson et al., 2004). Among the criteria used to identify participants include their demography, geographical location, flow of patient population, and commitment to CalTOP (Rawson et al., 2004).

Finally, the study used generalized estimating equations model to examine the long-term utilization measure of programs for substance abuse treatment and measure treatment outcomes: methamphetamine use, family and social status, employment status, and gender. However, it was impossible to evaluate gender differences in the cost-effectiveness of long-term substance abuse treatment program as well as to assess the impact of client characteristics on cost-effectiveness during the study period

Significance of the Study

The study was important because it made a comparison between the different treatment needs of male and females and how these treatments should be implemented for either gender effectively in long-term substance abuse treatment programs. Clinicians benefited from the study too since they got the chance to learn about motivational and relapse avoidance issues that are influenced by gender and social adjustment, as well as other factors that influence the response of patients to treatment.

Being able to determine the treatment needs of females and males during treatment allowed providers to better meet client needs and the most appropriate setting for provide substance abuse treatment. Knight, Logan and Simpson (2001) stated that "the more engaged clients are in treatment, the more likely they are to stay in the program to reap further benefits" (p.535). In addition, alternative treatment models are capable of addressing universal issues like sexual abuse and domestic violence that affect women (Nelson-Zlupko, Dore, Kauffman, & Kaltenbach, 1996; Panchanadeswaran & Jayasundara, 2012). A demonstration that the presence of a woman's child during her treatment improves the chances that she completes the treatment successfully would call

for the creation of programs with funding aimed at meeting the childcare needs of the women. Interventions could be directed towards the mother's substance abuse treatment as well as offering her parenting skills during the recovery process. This is especially important because Hodgins, El-Guebaly and Addington (1997) discussed the reasons women seek substance abuse treatment less often than men is because women bear the greater burden of caring for the children.

Determining the gender differences in needs during treatment in different types of treatment settings, whether women-only or mixed, may assist in care from mental health professionals. Green, Polen, Dickinson, Lynch and Bennett (2002) stated that determining the uniqueness of gender as it relates to treatment would potentially improve total treatment outcomes. If treatment setting can reduce anxiety levels, greater emphasis can be placed on empowering women to address factors like depressive symptoms, physical, and emotional problems that contribute to their substance abuse (Abadi et al., 2012). As Weissman and O'Boyle (2000) posited that "services provided to women addicts must be set in a context that empowers them, improves coping skills, and helps them to develop functional support" (p.2), professionals in the field will be better equipped to advocate for women and the type of treatment setting that will best serve their recovery process and rate. Nelson-Zlupko et al. (1996) report that clinicians should become advocates for women by becoming informed of the various needs of women.

Research Assumptions

This research applied a mixed method research design entailing the use of questionnaire surveys and interviews with both the patients taken in for

methamphetamine abuse and their clinicians. Therefore, I assumed that all clients that participated in the study would respond with utmost honesty to the self-report inventories of their needs and how best these needs should be implemented in a long-term substance abuse treatment programs. Notably, participants were expected to have the ability to read the questionnaires and understand the questions. Respondents who had no ability of reading or understanding the contents of the questionnaires were guided by the researcher to ensure that they responded as required. Also, I assumed that all the clinicians interpreting the inventories were well versed with rehabilitation services and would accurately interpret each gender`s needs and would be able to provide the best treatment suggestions for implementation in a long-term substance abuse treatment program.

Study Limitations

The limitations of the study included the fact that the sample collected could not be generalized to other populations as it is from a single long-term substance abuse treatment program in an urban setting. Another limitation was the fact that the respondents may have withheld some information with the view of impressing the researcher, yet blinding was unfeasible. The fact that the study only involved 100 participants made it a limitation to conclude that all the abusers of the drug in the world have similar experiences.

Definition of Terms

Gender: According to the American Psychological Association (2011), gender refers to attitudes, feelings and behaviors that a given culture associates with a person's biological sex.

Long-term Substance Abuse Treatment: A long-term program designed to cure or to reduce the severity of a substance use disorder (Piper, 2008).

Methamphetamine: A powerful, highly addictive, stimulant that affects the central nervous system (NIDA, 2013).

Methamphetamine Addiction: Will include DSM-IV definition of substance dependence, which connotes physiological or psychological dependence on methamphetamine (Abadi et al., 2012).

Retention: The act of remaining in treatment until the whole process is complete (Green et al., 2002).

Substance Use Disorder: Problematic use of a drug of abuse including but not limited to alcohol, cocaine, marijuana, heroin, and methamphetamine that is known to cause difficulties in social functioning and medical illness (American Psychiatric Association, 2000).

Treatment Completer: A client who was found to have met all, or a sufficient amount, of the treatment goals to warrant what was considered to be successful completion as determined by his/her counselor (VandenBos, 2007).

Treatment Noncompleter: "A client who terminates treatment before it is completed" (VandenBos, 2007, p. 302), For this study, a client who left the program prematurely, either on personal decision or as a result of mandatory dismissal that may result from violation of treatment rules was referred to as treatment Noncompleter.

Summary and Transition

Methamphetamine abuse and dependence has been a long-standing problem in the United States (Whitebread, 1995). Several legislations have been implemented to control the production, distribution, and use of these illicit drugs (Clinton, 1993; Drug Enforcement Administration, 2012; McWilliams, 1990; Whitebread, 1995). Several treatment modalities have been developed to help treat current users (Hunt, Kuck, & Truitt, 2006). Despite these efforts that problem remains steady (SAMHSA, 2008). Similarly, legislative, research, and treatment efforts have been made to curb the abuse and dependence on methamphetamine (SAMHSA, 2008). However, the number of individuals, males and females reporting abuse of and dependence on methamphetamine continue to rise (SAMHSA, 2004).

Research efforts need to be continued in order to improve the efficacy and efficiency of treatment modalities for persons who report methamphetamine abuse and dependence. Little research exists regarding the gender differences in their acceptance of long-term substance abuse treatment programs in treating methamphetamine abuse and dependence (Hser et al., 2004). Current substance abuse research indicates that positive treatment outcomes are associated with high levels of needs-matching and treatment engagement (Fiorentin, Nakashima, & Anglin, 1999; Hser, Maglione, Polinsky, & Anglin, 1999). Therefore, it is important to identify the needs of each gender with methamphetamine abuse or dependence in order to increase the effectiveness of long-term treatment.

Chapter 2: Literature Review

Synopsis

There have been many studies regarding effects of addiction to drugs among women and men. A number of the studies have revealed that treatment is able to make the addicted patients avoid relapse, stop the use of drugs, and completely overcome the effects of addiction. Some of the key principles that have emerged regarding the basis of an effective treatment program include the following:

- The treatment needs being readily available (2008; Kassada et al., 2013).).
- No single treatment considered appropriate for everyone Drug Rehabs, 2008; Kassada et al., 2013).
- Addiction being a complex but treatable disorder affecting both the behavior and brain function (Kassada et al., 2013).
- Remaining in treatment for long and adequate period considered critical in the success of the treatment program (Drug Rehabs, 2008; Kassada et al., 2013).

Specifically, comprehensive cognitive-behavioral interventions, contingency management interventions, residential rehabilitation, medications, mutual support or self-help groups, and stimulant treatment programs are examples of programs or treatment options considered effective in treating methamphetamine addiction (Korte et al., 2014). As earlier outlined, the circumstances surrounding drug abuse or use vary greatly based on gender differences (Kassada et al., 2013).

This chapter is a literature review on the effects of addiction to methamphetamine on different genders, and the reactions of the addicts of these genders to long-term treatment. These are achieved by reviewing literature on reasons for abuse and addiction by different genders, treatment response based on gender, factors affecting the different genders in responding to the long-term treatment programs, diverse treatment needs meant for the different genders in long-term substance abuse treatment programs, relapse during and after treatment, treatment outcomes and a conclusion for the chapter.

Effects of Methamphetamine Use

Methamphetamine is an odorless, white, bitter, crystalline drug that easily dissolves in water or alcohol (Piper, 2008). Thus, the drug can be consumed through intravenous injection, oral consumption, smoking, or snorting the powder through the nose (NIDA, 2010; Piper, 2008). Immediately after intravenous injection or smoking, the methamphetamine user experiences a strong sensation referred to as a "flash" or "rush" (NIDA, 2010) The flash is then followed by a soaring that can last for as long as 6 to 8 hours (Piper, 2008). Nasal or oral use produces a similar lasting high, but lacks the powerful or strong rush (NIDA, 2010).

According to NIDA (2013), some pleasurable short-term and long-term effects drive methamphetamine use. However, methamphetamine has a plethora of short-term and long-term effects, majority of which are harmful to the body. Short-term effects include euphoria, increased attention and wakefulness, increased physical performance, decreased fatigue, and decreased appetite (NIDA, 2013). Notably, these are the very reasons majority people consume methamphetamine. Additional short-term effects of

methamphetamine include rapid heart rate (tachycardia), increased respiration (tachypnea) and hyperthermia (NIDA, 2013). Importantly, tachycardia and tachypnea are methamphetamine-induced physiologic changes that help sustain its other effects related to increased physical performance with little fatigue (NIDA, 2013).

Conversely, methamphetamine use produces various long-term effects, some of which are desirable to the user, but majority are the very reason methamphetamine abuse requires treatment. Specifically, methamphetamine causes mood disturbances, aggressive behavior, psychosis including paranoia, repetitive motor activity, hallucinations, memory loss, impaired cognition, and deficits in motor skills (Nordahl, Salo, & Leamon, 2003; Otero, Boles, & Young, 2006). Additionally, methamphetamine use may cause changes in brain anatomy and function, dental problems, and weight loss (Nordahl, Salo, & Leamon, 2003). Unfortunately, methamphetamine use also causes addiction, which complicates the situation because the user will henceforth be incapable of quitting despite experiencing all the undesirable effects. This explains why tackling the issue of methamphetamine abuse requires change of tactics from sentencing to treatment (NIDA, 2013).

Unequivocally, weight loss is the only long-term effect that may be termed desirable albeit at high risk of developing other long-term effects. Additionally, combination of memory loss, reduced motor skills, and aggression affect important domains of life, especially related to work, social interactions, and academia, which together inflate the economic burden of methamphetamine use (Homer et al., 2008; NIDA, 2013). In fact, RAND (2009) estimates that the economic burden of

methamphetamine use for 2005 for the United States was $23.4 billion, which was inclusive of treatment cost, lost productivity, child endangerment, production harms, criminal justice costs, and premature death.

Research indicates that the proportion of female methamphetamine users is significant and almost similar to that of men (Piper, 2008). Importantly, methamphetamine may also adversely affect pregnancy outcomes and the developing fetus (NIDA, 2013). According to NIDA (2013), placental abruption (placenta separating from uterus before term) and premature labor have been documented. Besides, prenatal exposure to methamphetamine is associated with small for gestation, brain and heart abnormalities, decreased arousal, increased stress, and lethargy (NIDA, 2013). Hence, failure to control methamphetamine abuse in women increases risk for health implications to children, which in turn increases national health expenditure, perhaps far beyond cost of rehabilitating the female addicts in the first place.

Methamphetamine use also increase risk for Human Immunodeficiency Virus (HIV) infection via route of administration and psychological effects (Weissman & O'Boyle, 2000). Precisely, intravenous route of methamphetamine use is popular among users because of high intensity of euphoria it produces (NIDA, 2013). Unfortunately, users tend to share needles, which increase risk for HIV, hepatitis B and hepatitis C transmission (Weissman & O'Boyle, 2000). Also, methamphetamine increases sexual functioning, which increases risky sexual behavior including unprotected sex perhaps with multiple partners (NIDA, 2013).

Characteristics of People Who Use Methamphetamine

Hunt, Kuck, and Truitt (2006) reported that methamphetamine users in the United States are predominantly Whites in their 20s-30s, with majority falling within the under 34-years group. According to the authors, methamphetamine-use menace affects both men and women almost equally, estimated at 45% of women and 55% of men, but Piper (2008) reported 47% women and 53% men. Piper further analyzed characteristics of women who use methamphetamine users and reported that an estimated 15% are single parents, which is four times the proportion of single parent male methamphetamine users.

Although Hunt, Kuck, and Truitee (2006) argued that meth users were historically college students and white-collar job employees, Piper (2008) reported that up to 40% of women who use methamphetamine are unemployed vis-à-vis 10% of men. Additionally, Piper observed that female methamphetamine users who seek treatment have an averagely higher frequency of use compared to men. Moreover, women in treatment programs for methamphetamine have a significant history of physical abuse, sexual abuse, and psychological trauma (Piper, 2008). In fact, the women have a four-fold risk for sexual abuse within 1 month prior to entering treatment (Piper, 2008). Therefore, it is unequivocal that methamphetamine users form a heterogeneous population when focusing on both intragender and intergender characteristics.

Gender Differences in Reasons for Abuse and Addiction

Initial consumption of drugs plays a significant role in addiction and their abuse, especially due to users' experience (Korte et al., 2014). Effects such as the reduction of fatigue, wakefulness, increased attention, and increased body activity influence the

consistency that the users consume the drugs (Piper, 2008). Some individuals start using methamphetamine to lessen fatigue and maintain a certain level of productivity especially for repetitive, tedious, or physically demanding tasks or when working for long hours (Piper, 2008). This explains why meth was originally popular among soldiers serving active combat (Piper, 2008). Some users also believe the drug improves sexual desire and activity, and others abuse the drug with the hopes of losing body weight (National Clearing House for Alcohol and Drug Information (NCHADI), 2011). However, when considering gender differences, a variety of reasons arise based on gender as to why either men or women use methamphetamine.

Researchers have pointed out different reasons that make different gender groups abuse drugs. According to a research conducted by Brecht, Anglin, Mayrhauser, and O'Brien (2004), the most common causes of drug abuse among men include having better sex, working for more hours, or to have a good or enjoyable time. These are contrary to the reasons that these researchers cited for women abusing drugs. Women in most cases abuse drugs to escape the poignant or emotional distress that is caused by the occurrence of victimization or sexual abuse (Brecht et al., 2004). Additionally, women use drugs as a result of influence from their partners (Brecht et al., 2004). In fact, Brecht et al. demonstrated that women were increasingly likely to be initiated to methamphetamine use and continually gain access to it via their male partners than were the men. Therefore, patterns of use of substance among married women mirror that of their spouse.

Notably, gender differences postulated in the study by Brecht et al. (2004) are consistent with findings by Korte et al., (2014), who argued that in general, men abuse drugs in order to get high while women take drugs to relieve stress. Korte and colleagues concluded that men in most cases use drugs as an adventure while women use them for self-medication.

Additionally, Abadi et al. (2012) postulated that gender differences in drug addiction rather than use also exist. According to the authors, drug-dependent men are more likely to use drugs for socialization and externalization of childhood problems while the drug-dependent women are likely to use substance in coping with a negative mood and when in need of help for an emotional problem at a tender age as opposed to men. Abadi and colleagues also reported that a high likelihood exists that drug-dependent women have attempted suicide and have an internalized problem that affected them in their childhood. Hence, treatment efforts may be futile if gender differences pertaining to drug addiction are not considered

Specific to methamphetamine use, Piper (2006) reported that 37% and 8% of Californian women and men respectively use methamphetamine to lose weight. Additionally, the Piper reported that proportion of men and women who use meth to relieve depression is equal. Therefore, it is naïve to continue running treatment programs that are primarily founded on behaviors and/or characteristics of male users only.

Treatment Response Based on Gender

In relation to long-term treatment programs, a variety of studies have indicated that differences exist pertaining to the response of drug abusers to treatment. Drug

abusers have been found to respond differently to long-term treatment programs based on gender (Hser, Evans & Huang, 2005). Importantly, these differences among individual men and women found in the drug/substance abuse and treatment areas further inform the purpose of the current study. Focusing on these differences, and owing to the biological make-up of women, in most cases women tend to visit their healthcare providers more often than their male counterparts. This implies that a female substance abuser is more likely to be identified by a healthcare professional owing to emotional and behavioral effects of a drug, which may increase propensity to enrolment in treatment program.

According to Hernandez-Avila (2004), women undergoing treatment will have repeated psychiatric problems as opposed to men. The response that women drug abusers exhibit is also influenced largely by their biological makeup (Hser, Evans & Huang, 2005). The biology of a woman enables her to experience a similar level of addiction and intoxication while using less amount of substance than the one used by a man. Unequivocally, methamphetamine abuse can cause health problems that can be detected from physical appearance of the patient. Within this particular population, Brecht et al. (2004) argued that females are actually more likely to experience a skin problem and report it as opposed to the males who are likely to experience and report the effects that influence their performance at work. Rowan-Szal et al. (2009) conducted another study that focused on the female gender treatment. The study, which examined the characteristics of the female offenders having a substance abuse history of a major impairment related to methamphetamine use, was aimed at comparing the traditional outpatient (OTP) treatments and a therapeutic community program called clean lifestyle

(CLIFF-TC) (Yun et al., 2012).The study paid close attention to female methamphetamine-use offenders who were treated either in a modified CLIFF-TC program developed for the nonviolent offenders with a major impairment from the use of methamphetamine, or standard OTP treatment. All the participants in the study were assessed on social and psychological functioning, motivation, and treatment engagement during and after treatment (Rowan-Szal et al., 2009). Both OTP and CLIFF-TC were shown to improve psychological functioning with major changes being reported on measures of depression, self-esteem, decision-making, anxiety, risk taking, hostility, and errors of criminal thinking (Rowan-Szal et al., 2009). Both groups of participants rated treatment engagement measures of satisfaction, participation, and counselor rapport to be extremely high (Rowan-Szal et al., 2009). The results obtained in this study had a positive implication in the improvement and management of treatment of female methamphetamine-use offenders given that psychological improvement during the treatment had been associated with better release outcome (Rowan-Szal et al., 2009).

Hartman, Listwan and Shaffer (2007) examined women and men who used methamphetamine in a community based drug court to find out if gender influences treatment outcomes. According to the study, treatment of female drug users was a salient issue due to concerns of recidivism and relapse (Hartman, Listwan & Shaffer, 2007). The study examined the impacts of the drug court based on gender of high-risk/high need users of methamphetamine. Multivariate analysis indicated that men had a higher failure probability over a period of 18-months (Hartman, Listwan & Shaffer, 2007). The results further suggested that a comprehensive drug court could be an effective strategy for the

women methamphetamine users having a variety or an assortment of needs (Hartman, Listwan & Shaffer, 2007).

Factors Affecting Different Genders in Responding to Long-Term Treatment Programs

It is very vital to comprehend issues that are related to gender differences among methamphetamine users particularly, in their acceptance of long-term programs of treatment regarding drug abuse. The understanding of these issues is dependent on the factors that influence or affect the entry to treatment, retention, and completion of substance abuse treatment facilities. A number of factors can influence the level of treatment engagement, effectiveness, and efficiency of substance abuse treatment services. Some of the factors that influence different genders and their response to long-term treatment programs are family and society factors, and social stigma (Westermeyer & Boedicker, 2000). The society and family in most cases usually puts more pressure on the drug-abusing woman than man to seek for treatment. This implies that women in most cases will be having a higher propensity to enter treatment sooner after substance abuse onset than men. This, coupled with the biological fact that women require a lesser amount of substance to feel a similar intoxication level as men, contributes largely to the response of women seeking treatment earlier than men (Harnandez-Avila, Rounsaville, & Kranzer, 2004). The probability of a woman becoming pregnant or having a baby also forms a huge motivator for women entering treatment early. The American society does not accept women using drugs when pregnant and therefore, this societal pressure usually

becomes the momentum for several women to abandon using drugs and register themselves into a rehabilitation program for the wellbeing of the unborn child.

Women who use methamphetamine face unique barriers to treatment and recovery including the fact that majority women are the primary caretakers of their children. Unequivocally, pregnant, breastfeeding, and female users with dependent children may hesitate entering residential rehabilitation programs if childcare services are absent. Similarly, keeping appointments including punctuality is an issue for the same cohort of female patients who enter outpatient treatment services. Besides, women who use methamphetamine enter treatment with additional need for psychological treatment given that majority will have had physical abuse, sexual abuse, and psychological trauma (Piper, 2006). Very few facilities in U.S are equipped to handle diverse treatment needs of women. According to Piper (2008), only 32% had programs tailored for women substance users, with only 14% suiting pregnant and breastfeeding women. In fact, the author reported that an estimated two-thirds of women who use methamphetamine who seek treatment have minor children yet less than 8% of all U.S programs offer childcare services and less than 5% offer residential child services.

The steady rise in the use of methamphetamine necessitates understanding of the factors that influences decision of an individual to enter a methamphetamine treatment program in order to address use of methamphetamine effectively. Apart from the family and society pressure that seems to affect women more than men, and the biological reasons encompassing pregnancy and women's biological make-up, a factor that affects both genders in more of an equal measure is social stigma. Based on a number of studies,

social stigma forms one factor that has been indicated to impact the long-term treatment benefits among the drug users. A study conducted by Semple, Grant, and Patterson (2005) examined the relationship found between drug-use stigma and the use of drug treatment services in a sample of 292 heterosexual users of methamphetamine. The participants, who had been in treatment for use of methamphetamine, were compared with their counterparts who had never been in any treatment. A total of three stigma dimensions were examined. According to univariate analysis, participants who had never been in any treatment for using methamphetamine reported significantly more rejection expectation and endorsed more stigma-coping mechanisms or strategies contrary to the participants who had been in a methamphetamine use treatment. The findings of the study indicated that stigma was a potential barrier to drug use treatment. Specifically, implications of the study findings were two-fold: Drug use stigma may be a potential barrier to seeking treatment among methamphetamine users, and the stigma (drug-use stigma) may play a significant role in the non-completion of the treatment programs (Semple, Grant, & Patterson, 2005).

Diverse Treatment Needs Meant for the Different Genders in Long-Term Substance/ Drug Abuse Treatment Programs

Several studies on the treatment needs of women have belabored need for gender-specific programs if women who use drugs are to be supported (Kassada et al., 2013; Weissner & O'Boyle, 2000). Various studies are concerned with the etiology and epidemiology of drug abuse among women as well as development of strategies that have the ability of addressing the gender specific needs of women (Yun et al., 2012).

Treatments needs vary from the type of service needed to the program style, and other yet to be addressed issues. Comprehensive, multisystem models of treatment have been selected as the standard of care for female substance abusers (King, Aliata, Cloak, & Chang, 2010). For the community-based programs, the most notable needs for women are perceived to include training in parenting and childcare, help with transportation, vocational or educational training, medical care, and help with housing. Piper (2008) and Wang et al. (2012) posit that women's treatment programs should have different styles of delivery that have the ability of improving the women's empowerment levels, building of skills, support, and identification of strengths.

Treatment models that have been developed particularly for the treatment needs of women comprise of the models that focus on women's relational orientation and empowerment, and feminist models that seek to comprehend the behavior of the substance-using or drug abusing women within the context of dominant culture. The models for the specialized populations of women have also been identified, including programs that are meant for the female offenders including pregnant women who use substances (Pelissier & Jones, 2005). Some individuals believe that women can actually do better in an all-female setting due to the fact that the atmosphere created in such a setting is more supportive and nurturing and may provide a safer surrounding for women to talk about personal experiences and feelings related to sexual and physical abuse (Pelissier & Jones, 2005). Female-only programs have been recognized to give an increased number of ancillary services required by women, which are able to facilitate the enrolment and retention in a treatment program (Luo, et al., 2015).

Besides women-only participants, staff members who are all female and can serve as role models are perceived as providing a positive influence on the environment of treatment. Pelissier and Jones (2005) further argued that drug treatment programs with female participants should consider the comprehensive range of problems in women a vital issue. Besides, treatment programs dealing with female substance abusers have also been perceived as requiring special attention to relationship issues including those that women have with their partners as well as with other family members. Various studies on program needs for women who abuse drugs claim that the programs that are mostly used in drug abuse treatment have been subjective towards the male gender needs (Wang et al., 2012). Because of this, there has been an increasing body of conceptual research on developing or designing programs that actually advocate for and include strategies to handle needs of women who abuse drugs such as methamphetamine (Luo, et al., 2015).

The single-gender treatment programs need to discuss and explore different substances that are abused and the reasons as to why they are abused (Jenner & Lee, 2008). For the female gender, prescription drugs are usually the substance that is abused (Heseltine, 2006). Common labeled indications for some prescription drugs that end up being abused are anxiety disorders, mood disorders, and pain. Conversely, some women tend to consume these drugs with the aim of addressing other issues such as weight loss, only to get addicted after repeated use (Wang et al., 2012). In fact, Jenner and Lee (2008) argued that attitude of the society on weight of women is important factor that pushes women to abuse some prescription drugs as a method of shedding off a few pounds. Besides, some women illegally take some prescription drugs for stimulant effects

(Heseltine, 2006). The idea of some women having a low self-regard is a key motivation for women to try drugs. A treatment program that is gender sensitive would provide methods of boosting the confidence and self-esteem of women. This is because the single-gender programs always foster an empowerment sense in a supportive and safe environment, which in turn goes a long way in building confidence in women (Panchanadeswaran & Jayasundara, 2012). Importantly, researchers have noted that allowing patients to manipulate the message of the program in order to fit their individual needs ensures that confidence is fostered.

Unequivocally, differences found between women and men in substance or drug abuse programs are vital and thus need to be considered in-depth (Hser, Teruya, Huang, & Anglin 2004). A number of aspects of drug abuser lifestyle are distinct between genders. Importantly, these differences may not be addressed completely in programs involving mixed genders, yet single-gender programs present therapy needed for women to attain a lifelong and full recovery. In a gender-sensitive group, single-gender discussion will provide individual members with a comprehensive understanding of what exactly the other members are actually tackling (Abadi et al., 2012). Moreover, it will give a safe environment to address the social and family issues including topics that are specific to the biological make-up of women (Bride, 2001; NeSmith et al, 2000). Hence, gender-specific treatments currently need to be designed and studied to put in what is already known and to increase the understanding of treatment program developers on strategies of ensuring long-term sobriety.

Relapse During and After Treatment

Relapse is an important challenge in management of substance-use disorders that can be used to measure success rates. A recent study conducted by Jenner and Lee (2008) in Australia examined the long-term use of methamphetamine in three categories or groups: Methamphetamine-users treated in in-patient (residential) rehabilitation center, methamphetamine users treated via a short-term detoxification program and methamphetamine users who underwent no form of treatment. The authors reported that most of the methamphetamine addicts actually relapse within a period of three years upon seeking treatment (Jenner & Lee, 2008). The study also indicated that relapse rate of individuals who go for rehabilitation is about 88%. Individuals who go for rehabilitation have quicker success, estimated to be about twice that of those individuals who undergo normal detoxification program (Jenner & Lee, 2008).

The residential rehabilitation program, which normally integrates recreational activities and counseling as part of in-patient treatment, reported an elevated short-term rate of success with 48% reported to have overcome addiction in a period of three months. The individuals who went through the short-term detoxification, which takes place for a shorter duration at the facility, had high chances of relapse almost similar to the controls, who received no treatment. Specifically, only about 15% of these people were able to gain full recovery from the treatment. However, even the individuals who had gone to the rehabilitation center had a very low success rate considering the extended duration of treatment: Only 12% reported no relapse after a period of three years as opposed to the 5% who never went to the rehabilitation center (Jenner & Lee, 2008).

Treatment Outcomes

Regarding the subject of treatment outcomes among methamphetamine abusers, which is associated with the acceptance of treatment programs by abusers, literature is based on short and small sample-size clinical trials that test specific medications. However, a few longitudinal studies on treatment outcomes regarding methamphetamine abusing patients have provided promising results. Hser, Evans, and Huang (2005) conducted a longitudinal study to examine treatment outcomes among methamphetamine abusing patients of both genders using a sample of 1,073 participants comprising of 567 women and 506 men drawn from 32 community-based residential and outpatient programs in 13 counties in California. The study aimed at addressing the drug use patterns among meth-abusing patients prior to entering a treatment program, changes in patient behaviors after treatment, and gender differences among the drug abusers in various phases. Data was collected at the stages of entry and after three months and nine months from entry into treatment. With a single exception, enhancements from baseline record were observed in all areas measured using the Addiction Severity Index (ASI) for both men and women in either modality. As opposed to the men, the women showed greater advancement in medical problems and family relationships, and the same advancement in all the other areas despite the fact that most of them were unemployed, had responsibilities of childcare, were staying with someone who also used drugs or alcohol, had been abused sexually or physically, and reported increased psychiatric symptoms. The study results confirmed that methamphetamine abusers formed a category with multiple problems in key life areas. The most noticeable problems were legal

problems, employment problems, psychological distress, and parenting (Hser, Evans, and Huang, 2005).

Services that were provided during treatment were focused largely on drug and alcohol problems and to a lesser extent on the domain of mental health. Whereas it is understandable that drug and alcohol services need to form the basis of treatment programs, the severity and complexity of the related family, legal, and employment problems of drug abusers are considerable impediments to unrelenting reductions in drug use. Improved strategies of intervention need to target both substance abuse and the other related needs that are required for a successful rehabilitation.

According to the findings of the study by Hser, Evans, and Huang (2005), women participants, most of whom had children or were of child bearing age, showed more severe problems than the men. This accounts for the reasons as to why the females seek treatment earlier than the males. Most of the women in the sample were unemployed, depended on the assistance by the public, and suffered from extreme or severe psychiatric conditions or problems. Therefore, the development and delivery of adequate services to address or handle the needs and problems of women undoubtedly will improve the outcomes of the treatment programs and thus affect the acceptance of the programs by the meth abusers.

Additionally, the study by Hser, Evans, and Huang (2005) demonstrated that women seemed to have increased problem severity, but at the same time appeared to show superior improvement in several areas. Women in the sample who were treated in the outpatient programs reported to have received greater services intensity than men.

Therefore, greater improvement of women may be attributed partially to the services provided. Conversely, these individual women may be more aggravated than men for recuperation from using methamphetamine owing to their key responsibilities in their families, or due to the fact that they are actually more responsive to the treatment programs and thus have better outcomes overall.

Methamphetamine-Related Morbidity

Office of National Drug Control Policy (2014) reported that the number of drug-induced deaths (DIDs) in the United States for 2010 alone was 40, 393, and that DIDs increased significantly in the period between 1999 and 2010. Specifically, the authors report that the rate increased from 6.8 per100, 000 persons to 12.9 per 100, 000 persons between 1999 and 2010. Notably, these are deaths related to accidental poisoning and overdose only, without including other drug-related deaths such as accidents, homicides, and infectious diseases.

Conversely, Calcaterra and Binswanger (2013) observed that the trend of psychostimulant-related deaths in U.S is equally alarming. According to the authors, psychostimulant-related deaths, which are largely attributed to methamphetamine and amphetamines, increased threefold between 1999 and 2005. Although these deaths are reported to have reduced between 2006 and 2008, the authors reported a rebound henceforth. Precisely, increase between 1999 and 2005 was 0.37/100, 000 to 1.05/100, 000 while the 2009 rate stood at 0.97/100, 000 (Calcaterra & Binswanger, 2013). Importantly, the researchers used a nationwide database, which gives credibility to the figures given. Unequivocally, adding other methamphetamine-related deaths such as

HIV/AIDS related, accidents, and homicide may increase the figures grossly, which affirms that methamphetamine is a leading killer in U.S that cannot be ignored.

Conclusion

In order to inform and quantify the purpose for this study, this chapter reviewed several studies that are related to or contrary to the subject of the study. The issues that are addressed by most of the studies comprised of the different reasons for drug or substance abuse. The studies were based on gender, the gender differences in responses to treatment of the methamphetamine abusers, the factors affecting the different genders in responding to the long-term treatment programs, and the diverse treatment needs required by the different genders in long-term drug abuse treatment programs. This chapter further reviewed literature on relapse during and after treatment, and treatment outcomes all of which provided important insight in to the subject and purpose of the current study. Additionally, the literature review further provided a broader understanding of the research study subject and the various research works that are related to this study.

Chapter 3: Research Method

Introduction

Usually, research methodology is taken to signify a plan that directs an inquiry or an investigation. It can also be defined as a scientific and systematic probe to establish a remedy to a problem or develop entirely new knowledge (Kumar, 2005). Creswell (2009) posited that a comprehensive and precise methodology is essential for a valid and acceptable research. According to the authors, such a methodology is a product of the researcher's stance of philosophy and an understanding of the question under study (2009). This can be explained from the perspective that different researchers belong to different schools of thought regarding validity, reliability, accuracy and acceptability of research methods, which in turn influence processes involved in undertaking a research. As such, it is clear that philosophy intersects research methods at the point where it criticizes the techniques adopted. Specifically, philosophy answers the following questions: What is the validity of the problem under study? What is valid and/or reliable data? And how is reliable data collected, analyzed and reported?

Therefore, this chapter outlines the philosophy articulated by the researcher in undertaking feasibility study and describes the research design, research strategies, and variables of the study, instruments used in the study, sampling technique, data collection and data analysis.

Research Philosophy

Philosophy in research is stratified in multifold categories that include social constructivist, pragmatic, positivist, and participatory (Wu, 2014). Considering the nature

of the subject, which mostly focused on human health and liberty from methamphetamine abuse, the research methodology aligned on reality, practicality, comprehension of research subjects, and evidence. In that context, the school of epistemology recognized as realism, pragmatism, and ontology of positivist empiricism formed the philosophical framework directing this study. This philosophical framework requires that reality should be observed from a direct and objective manner. At no expense, should the truth be inferred through human subjectivity (Wu, 2014). Subsequently, this study was delivered based on truth supported by acceptably acquired and analyzed evidence.

From the ideology of ontology encompassed in positivist ontology, Angen (2002) posited that the environment of a phenomenon is essential in understanding. Also, Hays and Singh (2011) stated that a researcher's perception on the subject of investigation is influenced by his knowledge on the subject. Explicitly, this kind of phenomenon is common in daily activities as can be shown by an example. People from different ethnic and cultural backgrounds have traits, beliefs, and traditions that are unique to their cultures. As such, it implies that men and women, due to their biological and social differences, exhibit different behaviors under abusive use of methamphetamine and corresponding treatments. Therefore, comprehending this perspective significantly contributed to a realistic and practical study.

Nevertheless, realism is embodied in the opinion that knowledge is essential in acknowledging the truth attached to a phenomenon (Hay & Singh, 2011). This has the implication that the level of truth is determined by the extent of knowledge available about the subject. This ideology was used in establishing the truth behind the abuse and

treatment of methamphetamine through mining knowledge from sets of empirical process.

Research Design

According to Hussey and Hussey (1997) and Mouton (2001), designing a social research study is an in-depth process that requires a researcher to map out the strategies effectively and systematically s they will employ. Mouton (2001) defines research design as a "logical plan for getting from *here* to *there*, where *here* is the initial set of questions to be answered by the participants and *there* is some set of conclusions derived from the findings" (p. 47). Therefore, research design serves as a basis of obtaining relevant data from which a researcher can effectively draw his or her conclusions. This kind of logical plan was articulated from the research philosophies governing the researcher's understanding of the appropriate method. From the philosophy of realism (epistemology), pragmatism and ontology (positivist empiricism), I settled on mixed method research entailing both quantitative and qualitative research methods.

Quantitative research methods comprised of questionnaire surveys while qualitative methods involved interviews and archival methods. The questionnaire survey involved use of participant's progressive self-reports that were administered using questionnaires B, C, D, and E as predefined in the appendix. Conversely, self-reports were complemented with the doctor's report on progress to arrive at a more comprehensive and all-inclusive measurement. Notably, differences that arose between patients' self-report and doctors' reports were significant, which prompted a closer and

critical monitoring of the patients to establish the exact situation. Monitoring was made possible by organization of the study that incorporated a period of 6 months follow up.

A prominent type of quantitative technique that has been employed in the past with outstanding results is California treatment Outcome Project (CalTOP) (Grella, Hser, Teruya, & Evans, 2005; Rawson, 2004). The technique involved identifying and categorizing the participants according to their counties of origin and other parameters such as gender, and commitment to CalTOP (Grella, Hser, Teruya, & Evans, 2005). In other words, CalTOP entailed provision of treatment in a focused group set up within various treatment sites identified prior to commencement of a study. In relation to this, the current study was constrained to gender as the main determinant of reporting the findings.

I scheduled periodical interviews with patients to discuss their progress. It is also important to note that the patients were provided with verbal or dialogue support when responding to the questionnaire survey. This did not only assist the participants in understanding the questions and clearly responding to them, but also provided an opportunity that enabled them to express their feelings through body gestures and movements.

It is imperative to note that mixed method research is an effective research methodology based on the principle of triangulation (Cresswell, 2009). Cresswell (2009) asserted that integration of multiple methods provides an opportunity for individual methods to counteract weaknesses of each other. For example, the questionnaires are suitable for obtaining information from a large population and thus act as good basis to

generalize the representative findings on the entire population. However, interviews are not suitable for large populations owing to the challenges of identifying willing participants, scheduling meetings, recording information, and analyzing collected data. Importantly, interviews provide an informed background to develop proper questionnaires and seek clarity that cannot otherwise be expressed through the questionnaires. Additionally, questionnaires are prone to be inaccurate and biased (produce tailored results) whereas interviews have high propensity of providing authentic data due to direct contact (Anglin, 2000). Succinctly, this rationalizes the need for triangulation. Moreover, scholars agree triangulation avails most reliable research results (Anglin, 2000).

Reliability and validity are key concepts that dictate worth, authenticity and acceptability of a study (Anglin, 2000). According to Anglin (2000), validity is defined as the propensity of reporting the real data. Creswell (2009) defined reliability as the tendency of different researchers settling at the same results for the same phenomenon regardless of the methods used. Reliability has also raised concerns in qualitative research because it is difficult to establish the level of similarity between unstructured studies. This may influence the methods used and thus cause inconsistencies in the research process. I ensured reliability in this study through providing evidence and concrete description of events and settings in the research.

Furthermore, the design is also descriptive and exploratory in terms of output. Explorative studies are characterized by limited information regarding the subjects under study and in most cases, involve study of new or enhanced aspect of a phenomenon

(Hays & Singh, 2011). This study was considered explorative as it involved a critical concept that is not exhausted in research- the significance of gender differences in methamphetamine abuse and treatment of its addiction. Conversely, Hays and Singh (2011) labeled descriptive research as one that uses qualities to define a subject without necessarily giving explanations on the nature of some variables. As well, this study was descriptive since it targeted to define circumstances surrounding gender differences in treatment of patients who are addicted to methamphetamine.

Research Strategies

According to Cresswell (2009), research strategies refer to measures undertaken to ensure the study is successful. This study was an integration of multiple stages and methods of data collection and analysis. Institutional Review Board (IRB) approval was granted prior to any data collection process. IRB approval number: 05-31-16-0081195. It was thus essential to organize an extensive plan and strategize to ensure all details were covered and that the correct data was acquired, analyzed, and reported. Importantly, the current study was carried out in three phases and over 6-months involving extensive follow-up activities and data collection.

This study applied a method similar to California treatment Outcome Project (CalTOP) in meeting the research objectives, especially determining gender disparities in abuse and treatment of addiction from methamphetamine. Originally, the principle objective of CalTOP was to institute, implement, and pilot a system intended to monitor the outcome of treatment efforts and to improve the existing management system in Alcohol and Drug Programs (ADP). In the context of this study, CalTOP was employed

to engender information from participants drawn from diverse areas in Montreal, Canada. Specifically, I anticipated a wide inclusion of participants from several geographical locations, ranging from central, northern, and southern regions of California.

The Impact residential program was identified as the case study rehabilitation institution that provided the list of monitored patients. The provider sites were equipped with treatment facilities and staff to minimize cost and maximize efficiency in conducting the focus groups. Within 1 week following admission into the rehabilitation center, I approached the patients and informed them about the research project.

Before the collection of data, I completed a suitability assessment on the respondents to determine their ability to understand the questions and give honest responses. Qualified respondents signed a consent form that indicated their acceptance in taking part in provision of data for the research. Elaborate details on objectives and methodology of the study were explained in the consent form in which the principle of voluntary participation with guaranteed exit-at-will with no consequences was emphasized. In undertaking the study, I had to abide by certain ethical issues. First, the participants were assured that their privacy would be respected and that any information collected in the process would be kept confidential. The patients' names or personal identification details were not included in the series of records collected. I assigned unique codes to the participants that were used for follow up on the patients. With each participant's anonymity safeguarded, the participants' background information collected served as a basis for knowing the unique needs of each participant and helped to promote

the ethical mandate of causing no physical or psychological harm to the respondent (Farley, 2014).

Treatment modality entailed a multimodal treatment orientation that focused on increased awareness of the negative consequences of substance abuse, improved social adjustment, personal autonomy from methamphetamine addiction, and aftercare involvement. Importantly, participants received standard aftercare provided by the rehabilitation center, which involved three treatment modalities provided in three phases: intake, midprogram, and towards the successful completion of the program. In addition to the normal aftercare programs offered at the rehabilitation center, the participants were further randomized to participate in either a 10-step facilitation aftercare program or in a structured program for the prevention of relapse.

These two aftercare programs had certain common features. Firstly, they were both administered in a 12-week, 60-minute closed group format, with participants forming groups of five to 10 participants. Secondly, a manualized format was employed by highly trained counselors to administer both interventions to the participants. The group meetings, provided in the standard aftercare environment took 12 to 14 weeks and were held at Impact residential programs. In the group set-up environment, either one or two therapists were involved in administering psychosocial support to patients with social reintegration (for example, family and employment), relapse, and craving problems. The counselors also coordinated issues concerning health, access to ancillary services as well as psychological adjustment. These services, although voluntary, were recommended for all participants.

The analysis process was done using both qualitative and quantitative techniques with the aim of assessing how different genders responded to treatment. Information engendered in the focus group discussion was used in the data analysis process using a list of primary codes and subcodes derived from the topic and themes that emerged from the focus groups. Transcripts were then coded and organized in order to analyze their content using a qualitative software program, the ATLAS.ti (Klenke, 2008). Detailed information regarding the specific processes of the research methodology is detailed under the following sections: data collection, sampling methods, research variables and the data analysis.

Research Variables and Instrument

Research variables are termed as those factors that investigators think will be affected in the study and can be measured (Craighead & Nemeroff, 2002). I relied on research variables coined from the researcher's professional experience in substance abuse, reconnaissance interviews with the specialists and literature review. It is important to note that they were aligned to the research questions and objectives to facilitate the achievement of the study objectives. The variables were intended to offer information that could be used to formulate effective approaches to the treatment of female methamphetamine addicts. Usually, research variables are categorized into 3 categories, namely the dependent, independent variables and status variables.

The independent variables are those factors that are varied in an experiment or research to see whether the outcomes are significantly changing. Conversely, the outcomes that change as a result of changes in independent variables are referred to as the

dependent variables (Creswell, 2009). The variables that cannot be varied by the researcher are identified as status variables and they are majorly composed of demographic variables. Variables used in this study are listed Table 1 below.

Table 1
Research Variables

Category	Variables	Questionnaire	Authors
Respondent assessment	age-group, self-definition or expression, responsibility, social or psychological functioning	**A**	
Demographics	Gender, Age, Marital status, education level	**B**	
Reasons for use of methamphetamine	Reduced fatigue (B-Q8-a), Increased attention (B-Q8-b), Wakefulness (B-Q8-c), increased activity (B-Q8-d), Better Sex (B-Q8-e), to escape the poignant or emotional distress that is caused by the occurrence of victimization or sexual abuse (B-Q8-f), Married couples Influenced by their partners (B-Q8-g), Reduce stress (B-Q8-h), Self-medication (B-Q8-i), Socialize (B-Q8-j), Emotional problems (B-Q8-k) and Weight loss (B-Q8-l).	**B**	

(Table continues)

Category	Variables	Questionnaire	Authors
Socio-logical functioning	Other effects were categorized as psychological functioning and included Depression (B-Q12-a), decision making (B-Q12-b), risk taking (B-Q12-c) and criminal thinking (B-Q12-d).	**B**	
Pattern of Drug Abuse	Advice from Friends Medical office (anxiety, mood disorders, and pain) Incitement from the first use, Incitement from your partner (for the married or engaged or dating), consumption rate	**B**	
Patient's condition	Current health/ continue with treatment		
Evaluation of progress, support team, the institution	Facilities, support team	**C, D**	
Perception on Treatment	Out-patient, In-patient Rehabilitation,	**C**	
Treatment types	traditional outpatient (OTP) treatments therapeutic, community program called clean lifestyle (CLIFF-TC Medication, Stimulant treatment		

(Table continues)

Category	Variables	Questionnaire	Authors
Engagement in treatment (Motivation)	family and society factor, The need for pregnancy for women into seeking treatment? , Work , Awareness / support from the society	**C**	Rowan-Szal et al., 2009).
Engagement in treatment (Deterents)	Stigma, Parenting and childcare e.g. the lack of surrogates to carry out their responsibilities, Medical Conditions , vocational or educational training/ Work	**C**	

Instrumentation and Materials

Factors such as treatment retention, patient intake and follow up, addiction severity index (ASI), and treatment service review (TSR) need to be taken into consideration in order to ascertain pertinent factors that are likely to cause addiction to methamphetamine. Such factors may help in the determination of the ideal treatment approaches that match the needs of the either genders (Rawson, 2004). The study used various instruments to collect information from participants in different stages of treatment. Some of these instruments include: Respondent's suitability guide, participant's methamphetamine abuse condition, treatment, progress, and summative evaluation.

Questionnaire A: Respondent's suitability assessment guide.

This was the first research instrument to be administered. This questionnaire guide was meant to allow the research facilitator to establish the suitability of the respondent in making informed consent regarding the study. As such, the study conformed to the standard research ethics in protecting participants from unintended harm from the research due to mental instability related to drugs or otherwise. In achieving this, the research designed a criterion upon which each potential participant was screened. The factors incorporated were gender, age-group, self-definition or expression, responsibility, social functioning, psychological functioning, and period of stay at the rehabilitation which corresponds to the level of detoxification.

Specifically, all participants were either above the age of 18 years or represented by a parent or guardian if underage. Besides, mature participants were required to clearly represent themselves; to be occupied with responsibilities such as family, education or work; and to have no mental illness. Importantly, participants must have taken more than 1 week at the rehabilitation center, ostensibly to have been oriented to the treatment program and perhaps attained some basic stabilization. From the list of participants matching the predefined criterion, a sample of 50 males and 50 females, which needed to be done by convenient sampling was expected.

Questionnaire B: Participant's abuse condition assessment.

This questionnaire was intended to report the participant's abuse condition on such areas as operational state of health, reasons for abusing methamphetamine, patterns of drug abuse, and consumption rate and its effects. Specifically, questionnaire B

incorporated the Addiction Severity index (ASI) to collect pertinent information such as participants' socio-demographic background, employment, age, education, and marital status. Originally, ASI is essentially a semi-structured interview protocol that is employed in the assessment of a wide range of addiction related behaviors and consequences (Caetano & Raspberry, 2000). The ASI was used to compute composite scores related to severity of methamphetamine use by the participants over the past 60 days. The instrument was also used to derive five other psychological functioning subscales pertaining to employment, family, medical, legal and psychiatric severity.

Additionally, the study questionnaire incorporated the Checklist-90 (SCL-90), which is a viable instrument used to assess the participants' psychological symptoms. SCL-90 has been employed successfully as a screening device in identifying and assessing psychological problems in previous treatment studies involving drug and alcohol abusers (Weissner, McCarty & Schmidt, 1999). The instrument is self-administered and provides three general symptom severity indices and 9 clinical scales. The aggregate scores computed in the nine clinical scales of SCL-90 were then computed in a Global Severity Index (GSI), which served as a dependent variable in successive analysis.

Another important aspect that was used in the study questionnaire is the Timeline Follow-Back (TFLB), which functions as an aid to recall and will assist the participants in recalling instances of methamphetamine use on a daily basis for a period of 60 days. Given the quantity and frequency data that TFLB yields, the instrument is effective in minimizing incidences of underreporting use of substance (Young, Gardner & Dennis,

1998). The study drew dependent variables from the number of days the participants engaged in substance use and the number of days he or she abstained from the drug before the first relapse.

Questionnaire C: Treatment.

This tool reported on the status of treatment methods or types as perceived by the client and the experience acquired at the impact residential facility. Besides, motivators of seeking the treatment as well as the deterrents were presented in the questionnaire. This questionnaire was administered to patients who had undergone treatment sessions.

Questionnaire D: Progress.

This questionnaire was meant to track the progress of the participants as they underwent treatment. Factors considered here included rating of the operational treatment, and the willingness to continue with treatment at different stages, that is, at the beginning, after 3 months, and after six months.

Another structured interview protocol that formed an appropriate component in diagnosing methamphetamine abuse is the non-patient version of the Structured Clinical interview for DSM-III-R (SCID-NP) (Klenke, 2008). A major component of this structured interview protocol is the diagnostic features for psychiatric conditions contained in DSM-IV- TR. However, this study focused on the sections of the protocol that have a diagnostic classification of substance dependence or abuse disorders. This criterion is on Axis I of the structured interview protocol.

Questionnaire E: Summative evaluation.

This questionnaire was intended to report the overall progress of the treatment program. The participant's opinion on satisfaction of the institution and its attendants was sought through this tool. The participants were also requested to list the strengths they noted, the challenges they experienced and the recommendation they would make to improve the entire experience.

Setting and Sample Size Determination

Sampling is the process of selecting participants (Craighead & Nemeroff, 2002). Table 2 below adapted from Corbetta (2003) indicate appropriate sample size for different populations. However, there are exceptions to selecting the recommended sample size. According to Monette, Sullivan, and Dejong (2010), a researcher should report both the appropriate sample sizes along with the sample sizes actually used in the study in the event that the researcher faces constraints dictating use of inadequate sample sizes due to practical and/or statistical reasons. Possible constraints according to the authors are budget, time, personnel and other resource limitation.

Table 2

Sample Size Determination Table as Per Corbetta (2003)

Population Size	**Sample Size** Continuous data (margin of error=0.03) alpha=0.10 t= 1.65	alpha=0.05 t=1.96	alpha=0.01 t=2.58
100	46	55	68
200	59	75	102
300	65	85	123
400	69	92	137
500	72	96	147
600	73	100	155

700	75	102	161
800	76	104	166
900	76	105	166
1,000	77	106	173
1,500	79	110	183
2,000	83	112	189
4,000	83	119	198
6,000	83	119	209
8,000	83	119	209
10,000	83	119	209

In this study, the researcher used a sample size of 50 male and 50 female participants who were drawn randomly from Impact residential Programs. Random sampling was used in this study to select the 50 male and 50 female participants from the two treatment and rehabilitation centers.

Inclusion Criteria

The following inclusion criteria were mandatory for all patients who were willing to participate. Firstly, they had to attain the requisite criteria for abuse or dependence on psychoactive substance, particularly methamphetamine. This was ascertained from a structured interview for DSM-IV-TR (SCID). Secondly, they had to be able to read and write in English. This eased the process of responding to the research instruments such as questionnaires with minimal assistance from the facilitator. Thirdly, they had to be residing within 60 kilometer radius of Montreal for easy monitoring and check-ups especially in after-care programs.

Importantly, inclusion also adhered to tenets of ethics for research involving human respondents including availability and willingness to participate. All participants' rehabilitation counselors and program directors were informed about the general aspects

of this study and permission was granted to recruit volunteer participants. Participants were drawn from three phases of the treatment: Intake, mid-program and towards the successful completion of the program. Informed consent was obtained from each participant prior to any form of exposure to the study, which protected their autonomy. Besides, confidentiality was assured and observed throughout the study.

Data Collection

The collection of data from the participants and the doctors was intended to last a period of six months divided into three phases. The first phase of the data collection process involved assessing the condition of the patients in order to provide a basis for evaluating their progress after some time. In that regard, Questionnaire B (Respondents' condition assessment) attached at as the Appendix B was administered with the help of a facilitator. The facilitator's role was to provide clarity and explanation on the aspects of the questions that were challenging to the respondents. The data collected in this phase included: Demographics (B-Q1, B-Q2, B-Q3, B-Q4), health (Q5, Q6, Q7), reasons for using methamphetamine (Q8), pattern of drug abuse (Q9, Q10), and effects of methamphetamine (Q11, Q12).

The second phase of the data collection process involved collecting information on the perception of the drug abuse victims on suitability of different treatment methods and impact of the administered treatment on their conditions. In question C-Q1, the participants were asked whether they had sought any treatment before and thereafter asked to rate the current treatment (C-Q2). Additional information collected included motivations that lead to seeking of medical attention (C-Q4) and deterrents from seeking

medical attention (C-Q5). Importantly, assessment of all participants on a multidimensional basis occurred periodically 3 times: Immediately upon initial admission for intensive treatment (D-Q1-a), after successful completion of 3 months in intensive treatment (D-Q1-b), and after completion of the entire six months intensive treatment (D-Q1-c). At the different designated periods, the participant was asked whether they were willing to continue with the program (D-Q2) in order to determine their recovery and relapse rate. The facilities at the institution were evaluated through question D-Q3.

Lastly, the third phase entailed summative evaluation of the participant's satisfaction with the treatment (E-Q1) and satisfaction with the support (E-Q2). Moreover, the participants were requested to provide the strengths they noted, the challenges they faced and the recommendations that would help improve the entire experience.

Data Analysis

The data analysis was undertaken in accordance with the research questions. In analyzing the results of the study, the researcher used quantitative data analysis method. Quantitative research focuses on analysis of numerical data (Klenke, 2008). Specifically, the investigators employ positivist claims in an attempt to infer behavior and establish comparisons between cause and effect, development of questions and hypotheses, observation and measurement of variables, and testing of various theories (Weissner, McCarty, & Schmidt, 1999). In quantitative study, the magnitude of a variable on another one is established through isolation and verification of the causal relation between them. Quantitative research also provides researchers with a viable option of determining the

most appropriate variables to investigate in order to produce reliable and valid outcome (Craighead & Nemeroff, 2007).

Descriptive statistics were also used to capture the opinions and attitudes of the participants as obtained via descriptive questions. Specifically, median and quartiles were used to help describe outcome of the treatment program in case there was a non-normal distribution in the outcome of the treatment study. Given the nature of this descriptive study, the researcher relied on bar heavily to provide graphical summary of quantitative data.

Chapter 4: Results

Introduction

The study was successfully carried out over a period of 6 months. It is important to note that it had three main phases took place at different periods in a systematic manner. The first phase was designated to help identify the right participants whereas the second phase involved probing for the demographics, methamphetamine abuse patterns, reasons for abuse, and effects of methamphetamine. The third phase concentrated on the treatment process touching on such issues as the effectiveness of various treatment methods, suitability of the operational treatment, and the perception of the respondents regarding other aspects of treatment. Generally, the research succeeded in getting 100 participants, 50 males and 50 females from the group of 158 persons. The rest of the details are as detailed herein.

Phase 1

This was the core stage of the entire feasibility study as it was meant to identify methamphetamine users who were legible to participate in the study. This involved contacting a large number of respondents with the destined aim of acquiring at least 50 female and 50 male participants. They were evaluated based on gender, social functioning, psychological functioning, ability to make informed consent, and above all willingness to participate in the study. A total of 158 patients were contacted, but 38 were unsuitable for the current study due to use of multiple drugs that could impair their level of functioning and cognition. However, I settled on the initial sample of 50 females and 50 males for the study.

Phase 2

This phase of the data analysis reports on the demographics trends among the methamphetamine users, methamphetamine abuse patterns, reasons for abuse, and effects of methamphetamine.

Demographics

Age. Respondents in this study were 50 male and 50 female as shown in Figure 1. The respondents were of different age groups, with an age-range of 30-40 years being the dominant group. Among the female respondents, participants aged 13-18 years made up 10 % of the respondents, those aged 19-30 years constituted 24%, those aged 31-40 years constituted 40% of the respondents, while those aged above 40 years were 26% of the total respondents. Conversely, male respondents aged 13-18 years were 10% of the total male respondents, those aged 19-30 years comprised 26%, and participants aged 31-40 years were 50%, while those aged above 40 years comprised of 14%.

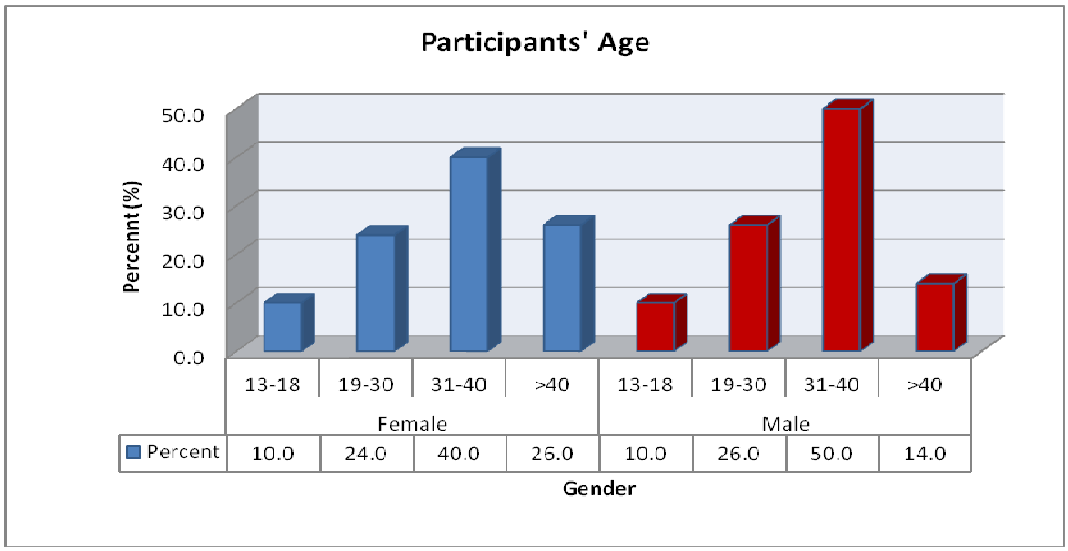


Figure 1. Participants' age distribution

Marital status. The statistics in the Figure 2 indicate that most females who abuse methamphetamines are either divorced or single while the majority male methamphetamine users are married. Specifically, both the divorced and single female abusers comprised of 26% while both married and minor female abusers constituted of 24% of the total female respondents (*N*=50). Conversely, 24% male respondents were divorced, 28% married, 24% single, and 24% minor (*N*=50). Hence, majority of female methamphetamine abusers were single and/or divorced whereas majority of male methamphetamine abusers were married as shown in Figure 2 below.

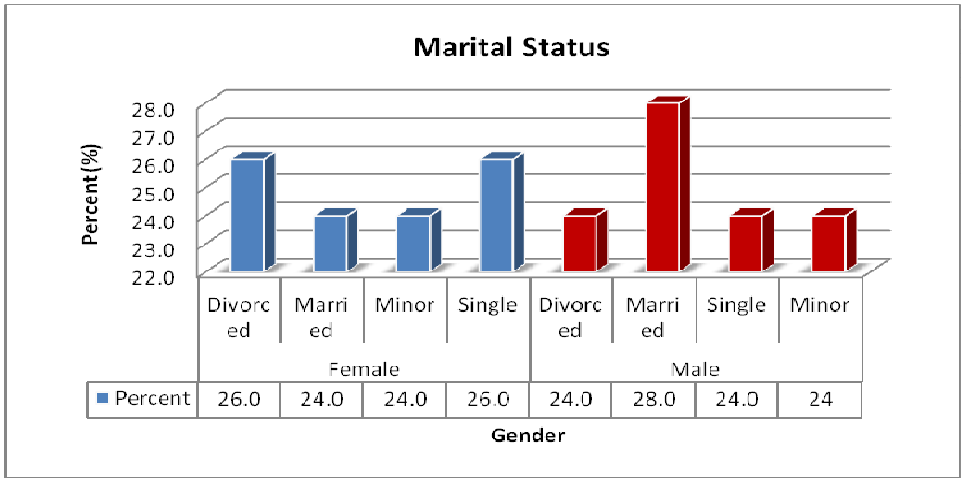


Figure 2. Respondents' marital status

Education level. Figure 3, below, is a representation of the respondents' education level. A majority (50%) of the participants (*N*=100) were pursuing their first degree or diploma in a college or university, 34% were secondary school students, and 16% postgraduate students. However, education level also varied with gender of the respondent with an obvious bias towards men being more educated. Specifically, 76% of male methamphetamine abusers were college or university students, 8% were secondary

schools students, while 16% were post-graduate students. Hence, it suffices to say that more male methamphetamine users were educated as compared to females.

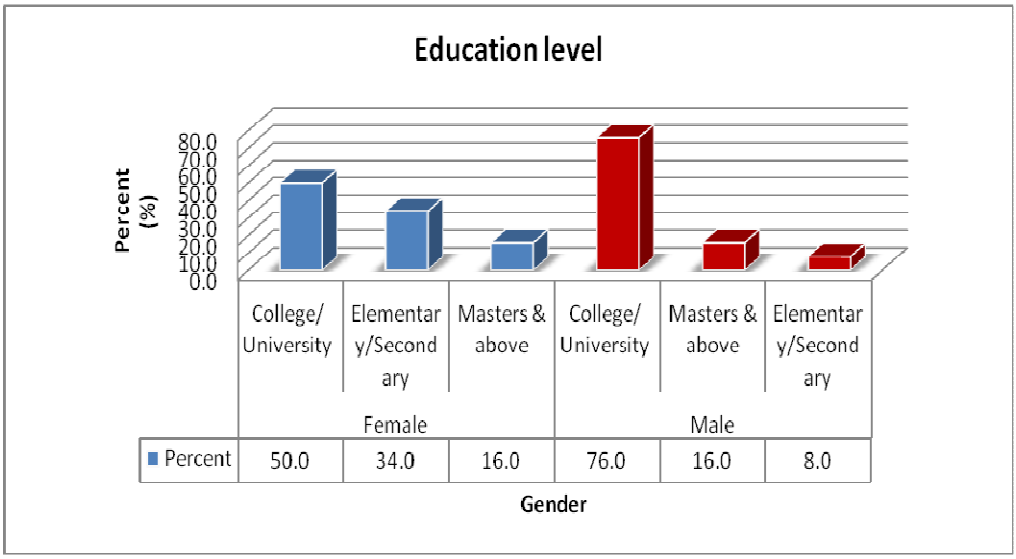


Figure 3. Participants' educational level

Childhood complications. An analysis of occurrence of childhood complications such as physical abuse, sexual abuse, and negligence among methamphetamine users is shown in Figure 4 below. The figure indicates that 60% of female methamphetamine abusers had childhood complications as compared to 42% of male methamphetamine abusers. Given that childhood complications and drug abuse are correlated, the researcher went ahead to obtain participant self-report of the severity of childhood complications on a Likert scale of agreed, neutral, disagreed, and strongly disagreed. Notably, response also differed with gender because 16% of females agreed, 34% were neutral, 10% disagreed, and 40% strongly disagreed as compared to 8% of men who agreed, 18% neutral, 16% disagreed, and 58% strongly disagreed that childhood complications were severe. These figures are indicated in Figure 5 below.

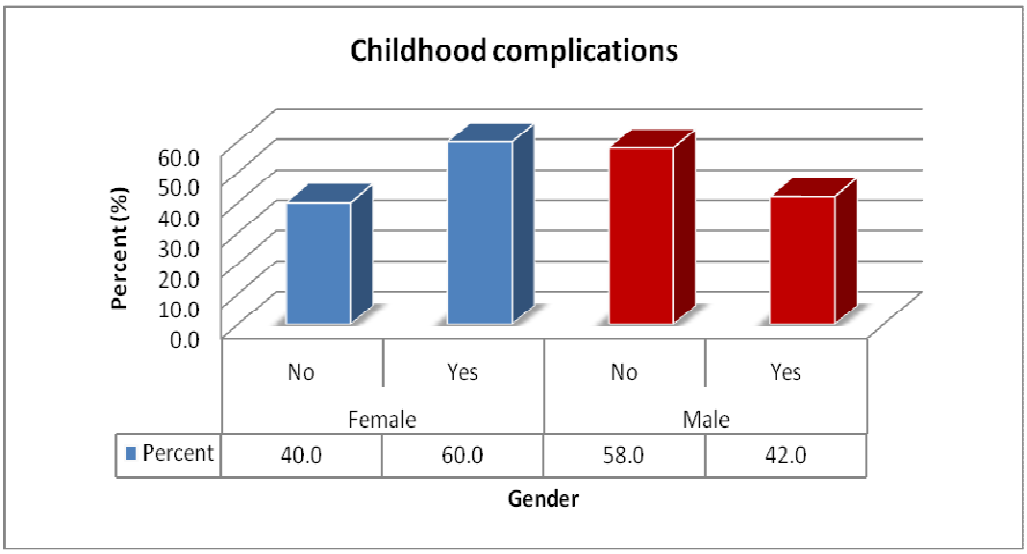


Figure 4. Childhood complications

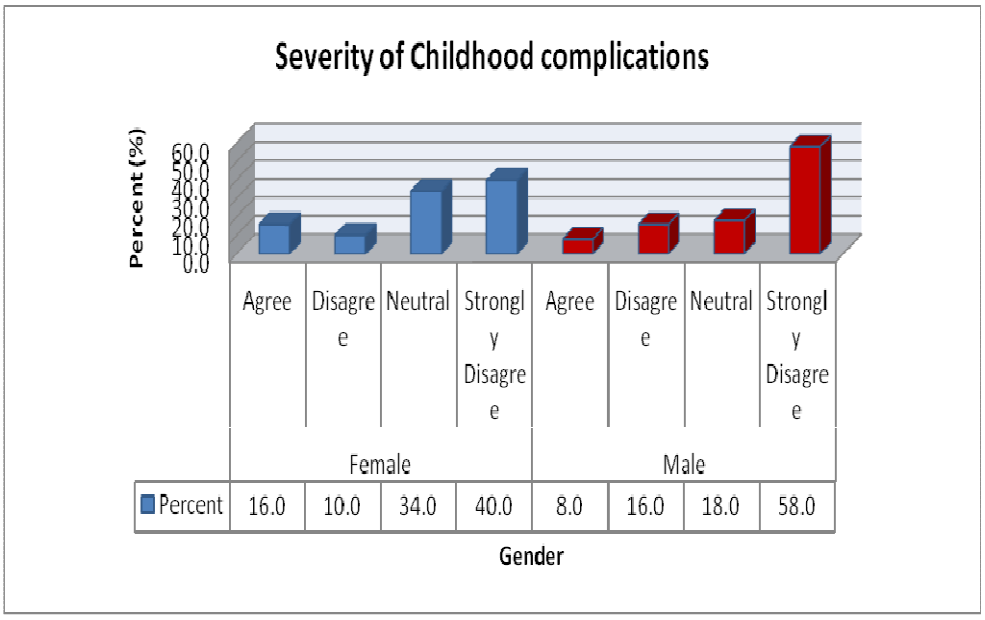


Figure 5. Severity of childhood complications

The researcher sought to know the current health status of the abusers as at enrolment to offer baseline for monitoring through treatment. Among the female participants, 34% agreed that their current health status was good; an equivalent proportion (34%) disagreed with the claim, while the remaining 32% remained neutral.

Conversely, majority (66%) of the male respondents remained neutral about the condition of their current health, with 16% agreeing that their health is good and 18% indicating that their current health was not good.

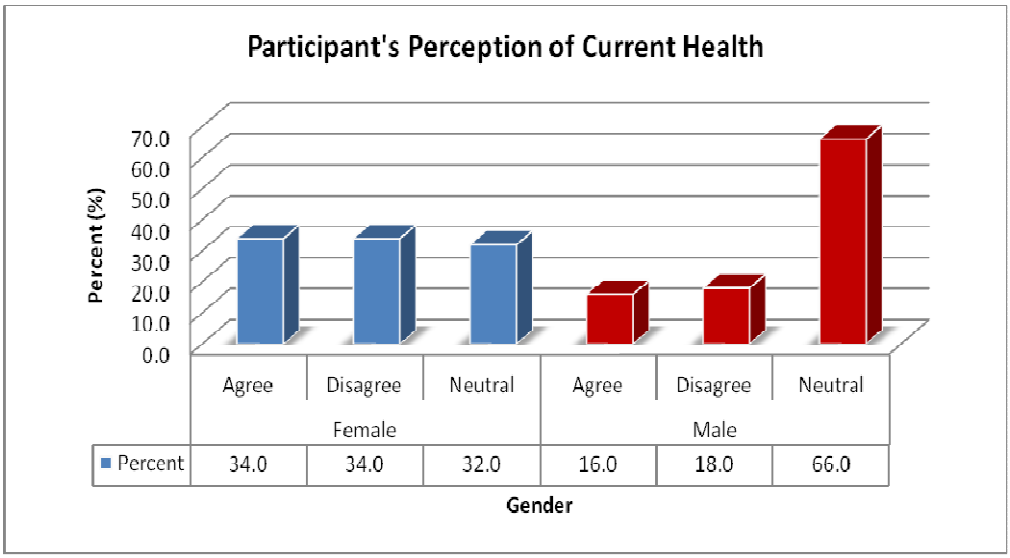


Figure 6. Current health status

Reasons for Using Methamphetamine

Figures 7, 8, and 9 indicate analysis of the reasons why the respondents used methamphetamine. Figure 7 focuses on four reasons: reduction of fatigue, increment of attention, wakefulness, and increased activity. Notably, majority (90% females and 84% males) respondents agreed to use of methamphetamine for reduced fatigue. Specifically, 66% (*N*=50) of females strongly agreed to methamphetamine use for reduced vis-à-vis 58% (*N*=50). The female respondents who remained neutral about the influence of the drug on reduction of fatigue were 10% against 16% for the male respondents. The remaining 24% of the female respondents and 26% of the male respondents generally agreed to consumption of methamphetamine for reduced fatigue. Remarkably, not a

single male or female respondent disagreed or strongly disagreed with priori that they consumed methamphetamine to reduce fatigue.

All the respondents indicated that they used methamphetamine to improve their levels of attentiveness. Interestingly, 50% of both male and female respondents agreed to use of methamphetamine to increase attentiveness while a similar proportion for both genders strongly agreed to methamphetamine use for the same reason. Hence, no respondent in either gender remained neutral, disagreed, or strongly disagreed to use of methamphetamine for increased attention.

Similarly, majority respondents either agreed or strongly agreed to using methamphetamine to remain awake. Precisely, 48% of females and 26% of males agreed to use of methamphetamine to achieve wakefulness. Notably, more females (52%) than males (48%) strongly agreed to methamphetamine use for the purpose of wakefulness. Importantly, 26% of male respondents disagreed to use of the drug for the sake of wakefulness. Hence, no respondent remained neutral or strongly disagreed, but some men disagreed as illustrated above.

All the respondents accepted the claim that they consumed the drug to ensure an increase in activity. For the female respondents, 58% indicated strong agreement to the fact that they consumed the drug to increase the levels at which they performed activities while 42% indicated strong agreement. No female respondent gave a neutral response or a disagreement to the claim. The male respondents on the other hand had 66% of the respondents agree to the fact that they consume the drug to enhance the rate at which they

perform activities while 34% of the respondents strongly agreed. No male respondents gave a neutral or a disagreement response.

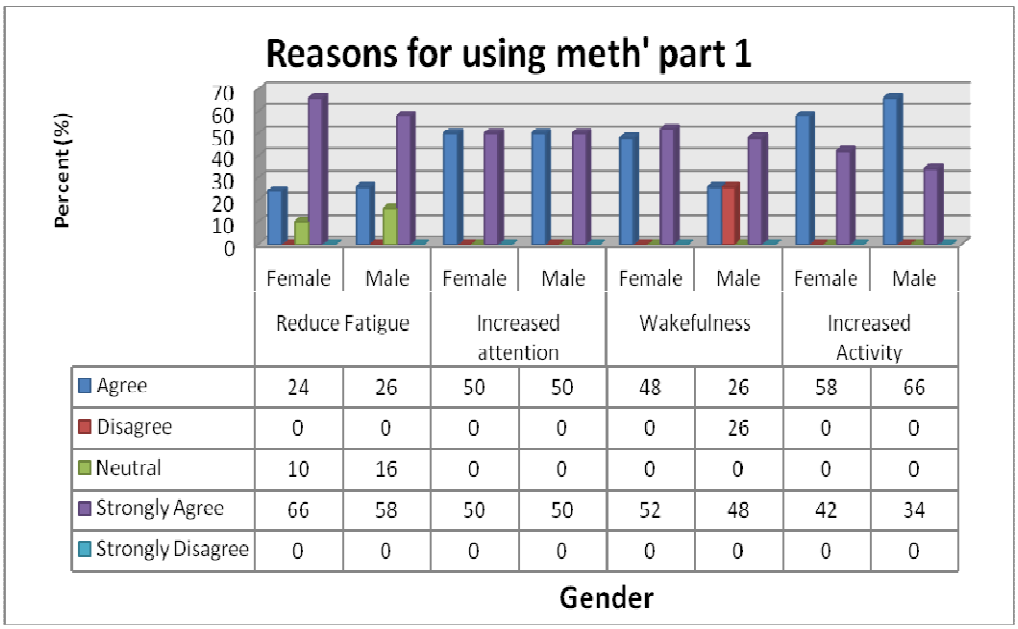


Figure 7. Reasons for using methamphetamine part 1

Figure 8 focuses on four additional reasons as to why respondents used methamphetamine. The four reasons are better sex, escape from emotional distress of sexual abuse, influence by marriage partners, and reduction of stress. Regarding better sex, majority male respondents agreed that the drug gave them better sex. The male respondents who gave a strong agreement to the claim that they use the drug to get better sex were 84% while the remainder agreed to using methamphetamine for better sex. There were no male respondents with a disagreement or a neutral response. Conversely, 40% of the female respondents gave a strong agreement to the fact that they consumed the drug to get better sex and 36% simply agreed to the claim. Although there were no neutral responses among females, 24% of the female respondents strongly disagreed to

the fact that they used methamphetamine in order to get better sex. Hence, this reason appears to drive drug use among men than women.

There was generally a mixed reaction regarding consumption methamphetamine as a way of escaping emotional distress from sex abuse. Notably, there were no neutral responses from either males or females. Among the female respondents, 24% strongly disagreed to the claim while a similar proportion agreed to this claim. Moreover, a further 16% agreed while 36% disagreed to methamphetamine use to escape distress from sexual abuse. Conversely, the 88% of males strongly disagreed to the fact that they consumed methamphetamine to escape emotional distress emanating from sexual abuse, 8% agreed, while 4% strongly agreed to the claim. Hence, more females than males appear to use methamphetamine as an escape to sexual abuse.

A unique observation was made with respect to partner influence in methamphetamine use. Precisely, no male or female respondent agreed or disagreed to this priori, but the majority strongly disagreed. While 16% of the female respondents and 8% of the male respondents equally remained neutral and strongly agreed respectively, 68% of female respondents and 84% of male respondents strongly disagreed.

Lastly, no respondent disagreed to the claim that they consumed the methamphetamine to reduce the levels of stress. The respondents who remained neutral to the claim were 18% of the female respondents and 34% of the male respondents. Female respondents who strongly agreed to the claim were 24% while the other 58% agreed to use of methamphetamine to reduce stress. The phenomenon was almost similar

among male respondents because 24% strongly agreed while 42% agreed to methamphetamine use to reduce stress.

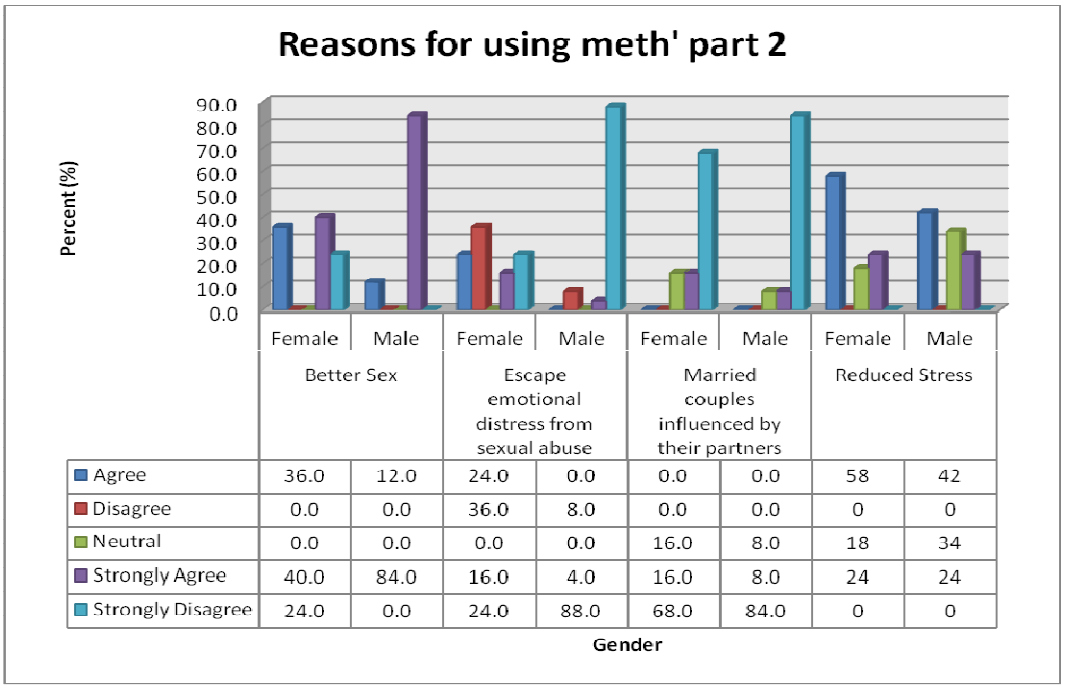


Figure 8. Reasons for using methamphetamine part 2

Figure 9 focuses on the last four factors thought to lead to consumption of methamphetamine. Beginning with methamphetamine use as a self-medication, no respondent agreed or disagreed to this claim in either gender. However, 40% of the female respondents remained neutral, 26% strongly agreed, while 34% strongly disagreed to medicating themselves with methamphetamine. Conversely, 58% of male respondents were neutral, none strongly agreed, while 42% strongly disagreed to medicating themselves with methamphetamine.

Similarly, response to consumption of methamphetamine in order to socialize had a mixed picture. Precisely, no male respondents remained neutral about the claim while

26% of the female respondents remained neutral. Besides, no respondent strongly agreed to using methamphetamine for the purpose of socialization between the genders. However, 48% of females against 50% males agreed to methamphetamine use for the purpose of socialization, 16% females against 34% males disagreed to having used methamphetamine for the purpose of socialization, while 10% females against 16% males strongly disagreed to this allegation.

With respect to methamphetamine use secondary to emotional problems, majority male respondents agreed while most of the female respondents remained neutral. Precisely, 50% of males agreed, only 8% remained neutral, and 42% strongly disagreed to methamphetamine use as a panacea to emotional problems. Conversely, 24% of females agreed to have used methamphetamine due to emotional problems, 40% remained neutral to this claim, 26% agreed strongly, and 10% disagreed strongly to this priori.

The very last reason for using methamphetamine that was assessed in this study was weight loss, which appeared to work for females as compared to male respondents. Specifically, majority (92%) of male respondents disagreed to using methamphetamine with an aim of reducing body weight with the remaining 8% strongly agreeing to this claim. Notably, the scenario was much different for female respondents because 26% agreed to have used methamphetamine mainly for weight loss while 16% agreed strongly. Specifically, only 34% of females strongly disagreed to have targeted weight loss while using methamphetamine while almost half (40%) the respondents remained neutral.

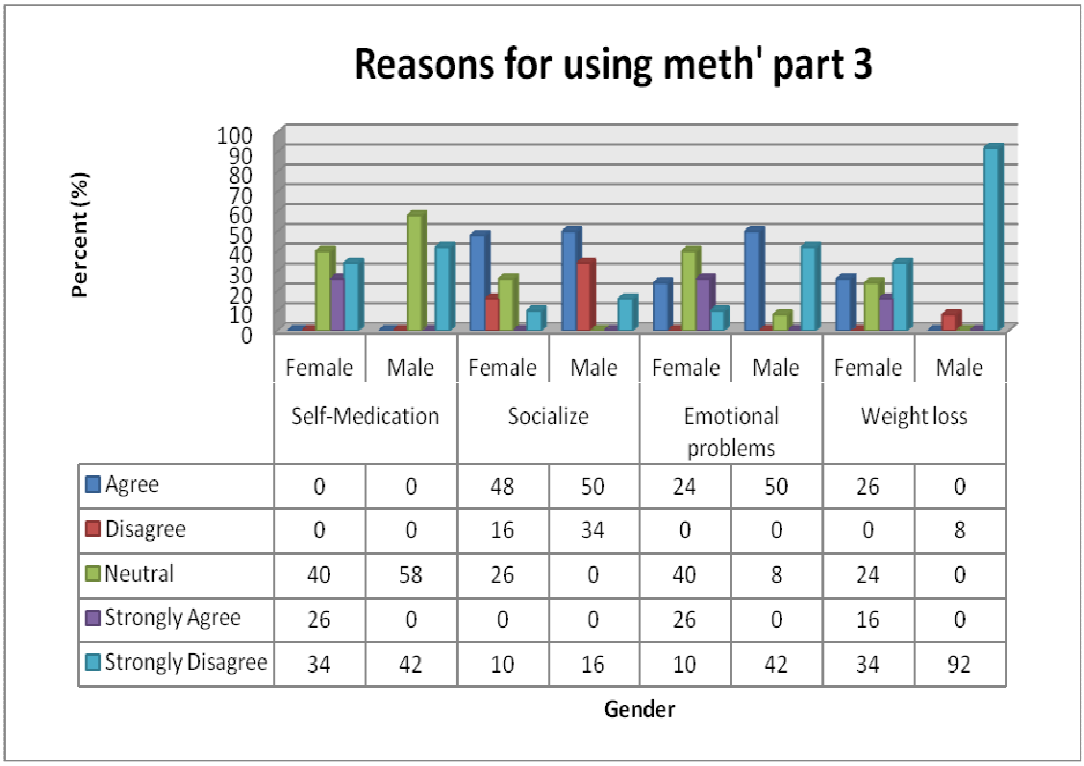


Figure 9. Reasons for using methamphetamine part 3

Source of knowledge on methamphetamine

Figure 10 gives a breakdown of initial source of knowledge on methamphetamine with a focus on friends, medical office, partner, and incitement after initial use. Of all the possible sources of methamphetamine-related information, advice from friends showed a more positive response with no male or female respondent indicating any form of disagreement to the claim. Although no female respondent indicated strong agreement to having started methamphetamine abuse after learning about it from friends, 26% of the male respondents indicated strong agreement. The respondents who indicated normal agreement were 48% of the female respondents and 50% of the male respondents. The

remaining 52% of the female respondents and 24% of the male respondents remained neutral to this claim.

There were no respondents who remained neutral or strongly agreed that their consumption resulted from the use of methamphetamine from a medical office, that is, that the initial contact was medical prescription. This element is a reflection of dependence, where a drug was medically prescribed but a patient develops dependence and progresses to abuse. Notably more females than males agreed to have gotten their first dose from a medical office. Precisely, 36% of females and 16% of males agreed to have initially gotten methamphetamine from a medical office. Those who strongly disagreed were 24% of the female respondents and 50% of the male respondents. The other 40% of the female respondents and 34% of the male respondents disagreed to the claim.

Conspicuously, no respondent even between genders strongly agreed to having abused methamphetamine due to incitement from the first use regardless of source. However, 26% of female users agreed that their abuse resulted from first use incitement/experience. No male respondent agreed that the actions resulted from first use incitements. Besides, 10% of the female users against 16% of the male users strongly disagreed to the claim of addiction resulting from first use while 16% of the female users and 34% of the male users disagreed. The remaining 48% of the female users and 50% of the male users remained neutral about the claim.

There was a mixed reaction from the claim methamphetamine abuse resulted from partner incitement. While 50% of the female users remained neutral about the claim, no

male respondent was neutral. Notably, 16% of female respondents and 8% of male respondents strongly agreed to the fact exposure leading to abuse resulted from influence of partners. A similar proportion also disagreed to this claim. Conversely, 16% of the female abusers against 60% of the male abusers strongly disagreed that their partners influenced them to abusing methamphetamine. The remaining 24% of the male respondents agreed that their partners influenced them into abusing methamphetamine.

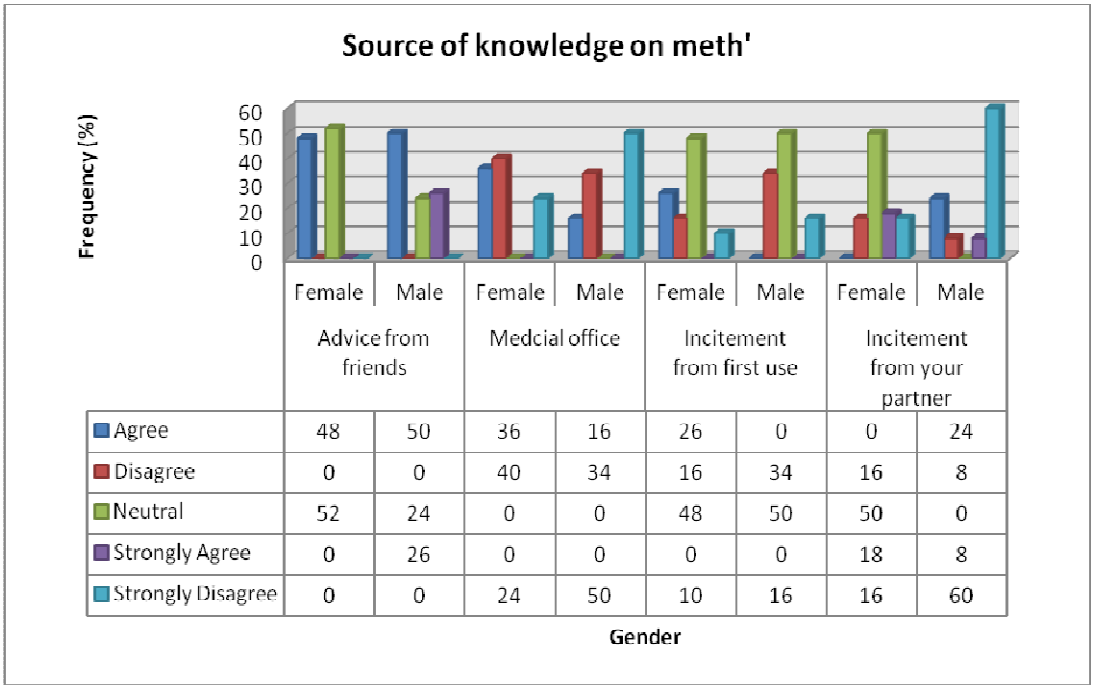


Figure 10. Source of knowledge

Daily Consumption

Figure 11 indicates the analysis regarding the rate of daily consumption of methamphetamine by the respondents. For the female respondents, 16% agreed that their daily consumption was high, 24% disagreed, 50% remained neutral, and the other 10% strongly disagreed that they had high daily consumption of the drug. Conversely, 8% of

the male respondents agreed that they had high daily consumption of methamphetamine, 26% disagreed, 50% remained neutral, and 16% strongly disagreed that they had high daily consumption of methamphetamine.

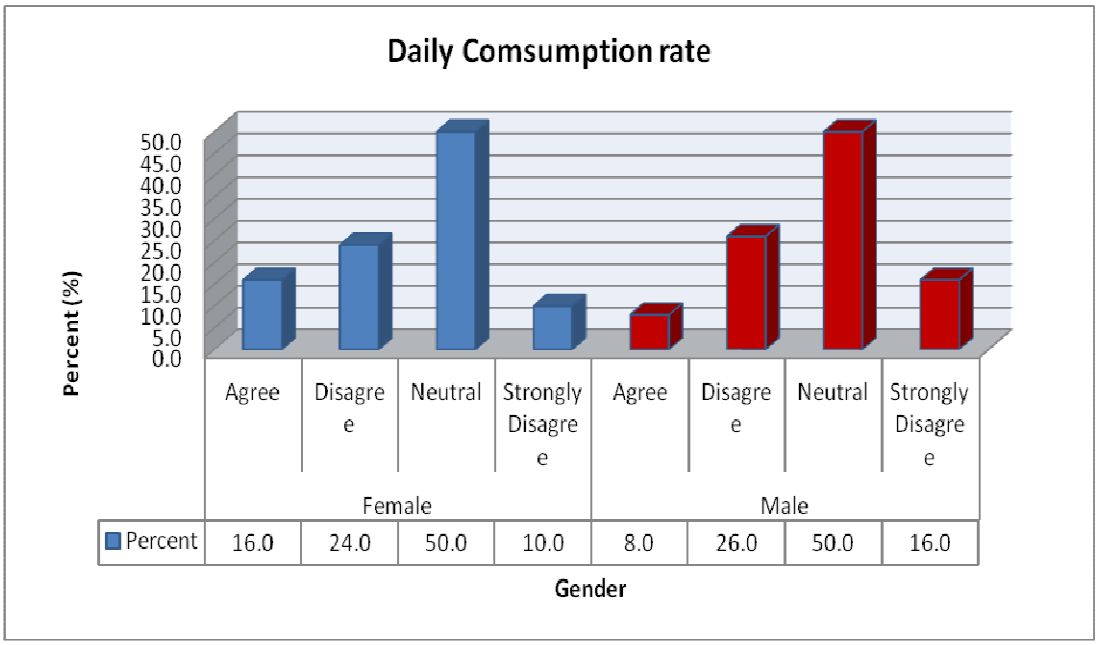


Figure 11. High daily consumption

Effects of Methamphetamine

Figure 12 focuses on internalized childhood problems, attempted suicide, skin problems, and work related problems as examples of effects of methamphetamine on the abusers. The effect of internalized childhood problems received mixed reactions from the respondents, with neither the females nor the males indicating strong agreement to the claim. Paradoxically, 42% of the female respondents and 8% of the male respondents agreed to the fact that methamphetamine abuse resulted to internalized childhood problems. Besides, 8% of the female respondents and 18% of the male respondents strongly disagreed to the claim. Moreover, 10% female respondents and 42% male

respondents disagreed with the idea that methamphetamine use lead to internalization of childhood problems. The remaining 40% of female respondents and 32% of male respondents indicated neutral response to the claim.

Similarly, attempted suicide as a consequence of methamphetamine use also received mixed reaction from the respondents with a significant proportion disagreeing. Specifically, 40% of the female respondents disagreed, 8% remained neutral, 16% indicated strong agreement, and the remaining 36% indicated strong disagreement. Conversely, 24% of male respondents agreed, 34% disagreed, 18% were neutral, 8% strongly agreed, and 16% strongly disagreed.

Unlike the first two, skin diathesis as a consequence of methamphetamine use received a general agreement among the respondents with no form of disagreement from either the male or the female respondents. Those who remained neutral were 10% of the female respondent and 16% of the male respondents. Normal agreement was recorded by 24% of the female respondents and 52% of the male respondents. The other 66% of the female respondents and 32% of the male respondents agreed to the fact that methamphetamine abuse resulted to skin problems.

Phenomenon of drug abuse leading to work-related problems is common, which was also replicated in the current study. In fact, there were no neutral respondents among both male and female, which replicated itself with respect to disagreement that methamphetamine causes work-related problems. For the female respondents, 42% recorded normal agreement to the claim, 24% recorded strong agreement, and the other 34% recorded strong disagreement to the claim. Conversely, 34% of the male

respondents agreed to the fact that methamphetamine caused work related problems, 50% recorded strong agreement, and 16 % recorded strong disagreement to the claim.

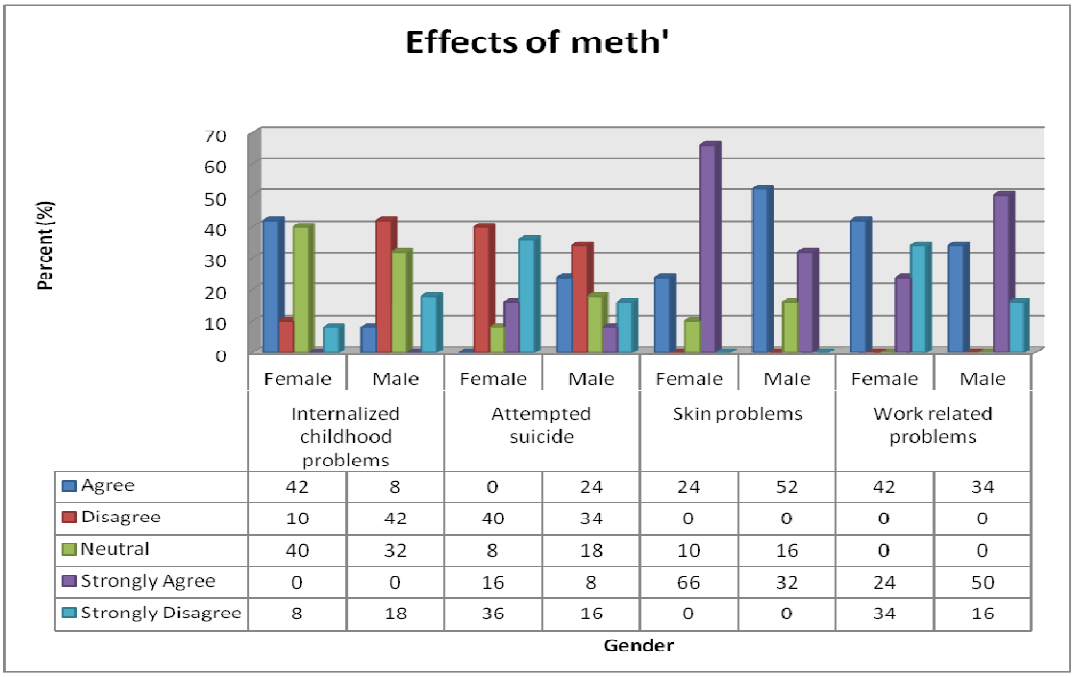


Figure 12. Effects of methamphetamine a

Figure 13 captures three additional effects of methamphetamine use namely stroke and heart damage, psychosis, and damage of the nervous system. There were no respondents who agreed to the fact that methamphetamine caused stroke and heart problems. Besides, 42% of the female respondents and 32% of the male respondents remained neutral to the claim. Additionally, 42% of the female respondents and 34% of the male respondents strongly disagreed that methamphetamine may cause heart damage and stroke. However, the other 16% of the female respondents and 34 % of the male respondents disagreed to the claim.

The effect of psychosis had a mixed reaction from the respondents with a larger proportion of respondents generally agreeing to the fact that methamphetamine abuse

may cause psychosis. For the female respondents, 26% strongly agreed and 40% agreed that methamphetamine abuse causes psychosis. Only 10% of the female respondents strongly disagreed to the claim while the other 24% remained neutral. Conversely, 24% of male respondents strongly agreed to the claim that methamphetamine abuse causes psychosis, 34% agreed, 24% strongly disagreed, and 26% indicated disagreement.

The last effect of methamphetamine abuse that was assessed pertained to damage of the nervous system. Notably, no respondent agreed or strongly disagreed to the claim that methamphetamine abuse causes nervous damage. However, 10% of the female respondents strongly disagreed to the claim, 42% agreed, while the other 48 % remained neutral. Conversely, 16% of the male respondents strongly disagreed with the claim, 58% indicated normal agreement while the other 26% remained neutral.

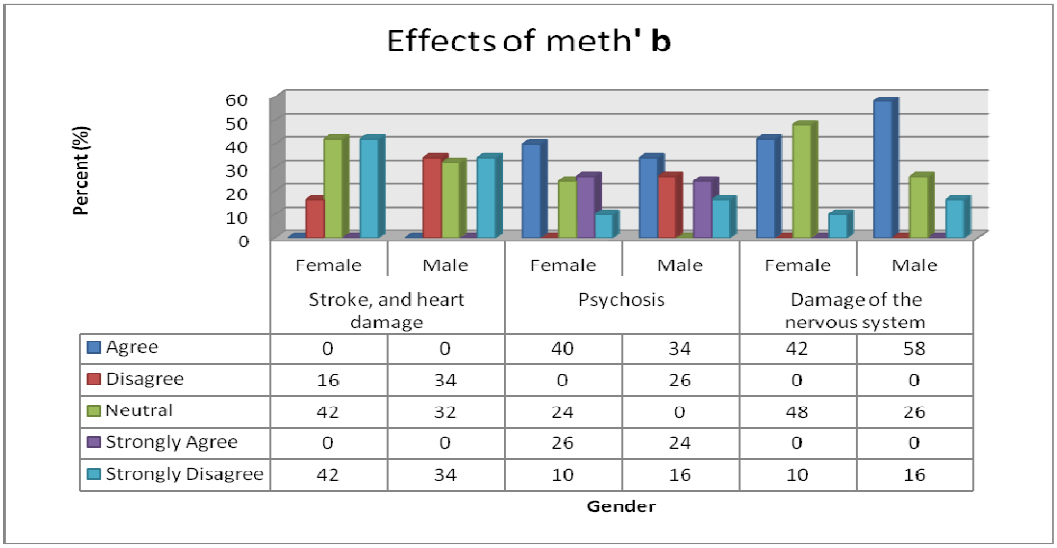


Figure 13. Effects of methamphetamine b

Effect of Methamphetamine use on Social and Psychosocial Functioning

Figure 14 shows an analysis of effect of methamphetamine use on social and psychosocial functioning with a focus on depression, decision making, risk-taking, and criminal thinking. Conspicuously, there were no disagreements to the fact that the abuse of the drugs caused depression. A significant proportion of female respondents 90% strongly agreed while 10% agreed that methamphetamine use leads to depression. Conversely, 58% and 42% of male respondents strongly agreed and agreed that methamphetamine use leads to depression respectively.

In terms of methamphetamine affecting decision-making ability, 50% female respondents remained neutral, 26% strongly agreed, 16% agreed, and 8% disagreed. On the contrary, 34% male respondents agreed that methamphetamine use leads to impaired decision-making capacity, 42% disagreed, and 24% remained neutral.

Literature indicates a strong correlation between drug abuse and risk-taking behavior, which informed assessment of this variable in the current study. Remarkably, 66% of female respondents and 92% of male respondents agreed that methamphetamine increased propensity to engage in risky behavior. Notably, only 8% of male respondents against 20% of female respondents remained neutral.

Finally, there was a mixed reaction regarding criminal thinking and methamphetamine use. For the females, 34% indicated normal agreement, 24% had strong agreement, 16% indicated normal disagreement, and 26% remained neutral. For the male respondents, 26% strongly disagreed, 8% indicated normal disagreement, and 66% indicated normal agreement to the claim.

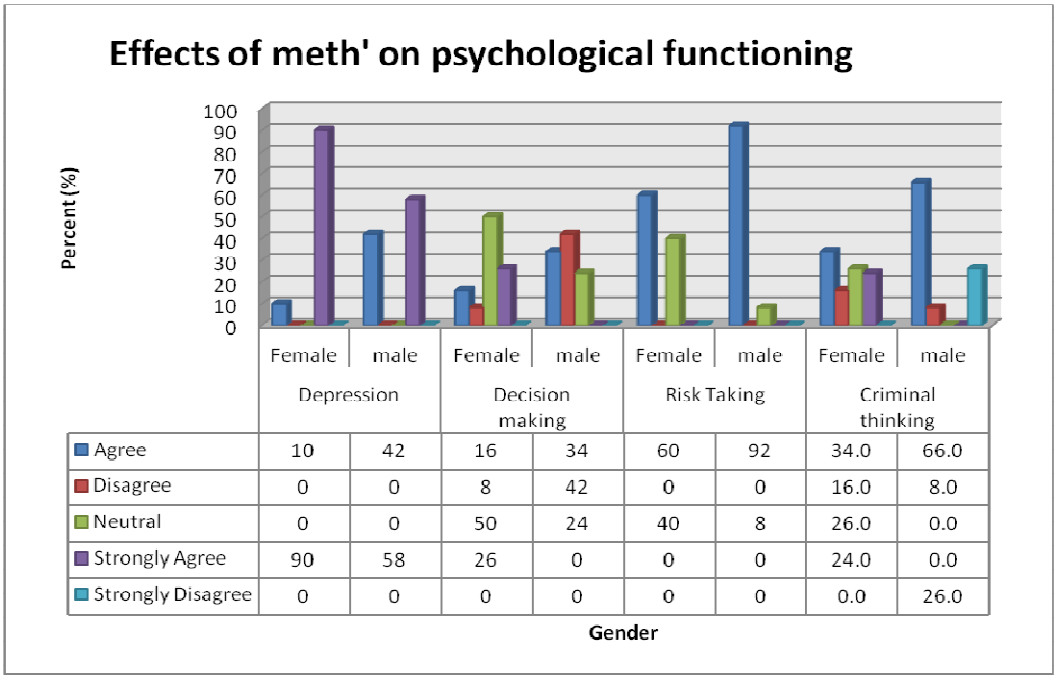


Figure 14. Effect on psychosocial functioning

Phase 3: Treatment

The researcher was interested to know how many of the respondents had previously sought treatment for methamphetamine use as indicated in Figure 15. It was noted that 50% of the female respondents and 76% of the male respondents had sought treatment regarding their addiction. Conversely, 50% of female respondents and 24% of male respondents had not sought for any form of treatment for their addiction to methamphetamine.

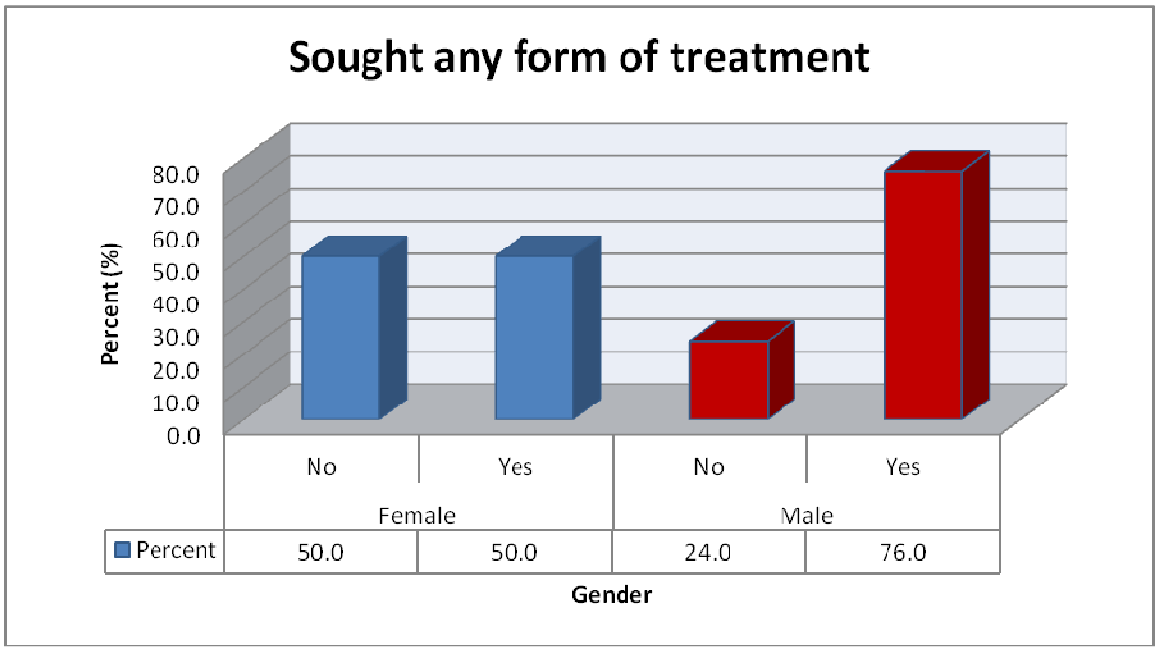


Figure 15. Proportion that sought treatment

Motivators to seek treatment

Literature indicates that early treatment is likely to reduce methamphetamine-related morbidity and mortality. Figure 16 shows the analysis of the factors that motivated the addicts to access treatment regarding their addiction. It analyses the influence of the factors like family and society influence, need for pregnancy, work, and awareness initiatives. Remarkably, all respondents agreed that family and society influence made them seek treatment. Precisely, 42% of female respondents and 58% of male respondents strongly agreed, while 58% of female respondents and 42% of male respondents indicating agreed.

Majority of the respondents disagreed to the claim that the need for pregnancy influenced them to seek treatment. Importantly, a majority (84%) of female respondents strongly disagreed while the remaining 16% strongly agreement that pregnancy was the

motivator to seeking treatment. The same question was relevant for male respondents in as much as men do not carry pregnancies. Similarly, only 8% strongly agreement that pregnancy pushed them to seek for treatment, 26% agreed, but 66% strongly disagreed.

In the context of work-related influence, female respondents had 42% remaining neutral, 24% agreeing strongly, and 34% disagreeing strongly. Conversely, 26% of male respondents agreed that work-related factors contributed to seeking treatment, 8% remained neutral, 50% strongly agreed, and 16 % strongly disagreed.

Finally, all respondents agreed that community awareness made them seek treatment. Specifically, 66% of the female respondents and 32% of the male respondents strongly agreed while 34% of female respondents and 68% of male respondents agreed. Therefore, it suffices to say that community awareness was perhaps the most important factor.

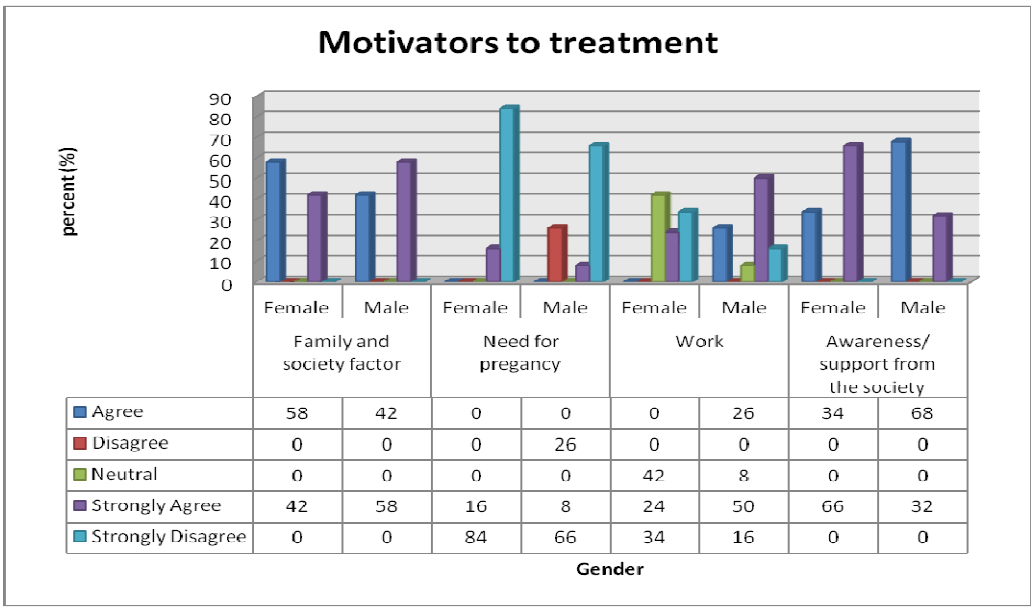


Figure 16. Motivators to treatment

Barriers to Seeking Treatment

Identifying barriers to health seeking behavior with respect to methamphetamine abuse is equally fundamental in designing treatment programs. Figure 17 gives a summary of factors such as stigma, parenting and childcare, medical co-morbidities, and vocational or educational training. A larger number of the respondents agreed that stigma was a significant barrier to seeking treatment. Specifically, 52% of female respondents strongly agreed to the claim and 8% agreed while 16% disagreed and 24% disagreed strongly. Conversely, 18% of males agreed and 74% strongly agreed while only 8% disagreed that stigma was a barrier to health-seeking behavior.

The parenting and child care factor as a barrier to seeking treatment had more females disagree. Specifically, only 8% of female respondents strongly agreed and 32% agreed while a whole 60% disagreed that parenting and/or child care was barrier to seeking treatment. Paradoxically, a significant proportion of male respondents appeared to agree that child care and/or parenting was a barrier to seeking treatment. Specifically, 42% of males agreed and 18% agreed strongly while only 24% disagreed and 16% disagreed strongly.

Analysis of medical conditions as barrier to seeking treatment had mixed reaction, with majority of the males agreeing and majority of the females disagreeing. Precisely, 50% of the male respondents agreed to the claim, 8% remained neutral, 26% disagreed, and the other 16% disagreed strongly. Conversely, 48% of the female respondents disagreed, 10% strongly disagreed and the remaining 42% remained neutral.

Finally, majority participants disagreed to the fact that vocational or educational training prevented them from seeking treatment. Notably, only 10% of the female respondents and 16% of the male respondents agreed to the claim. Those who disagreed strongly included 74% of the female respondents against 50% of male respondents. Although 26% of the male respondents remained neutral, 16% of female respondents and 8% of male respondents disagreed with the fact that training barred them from seeking treatment.

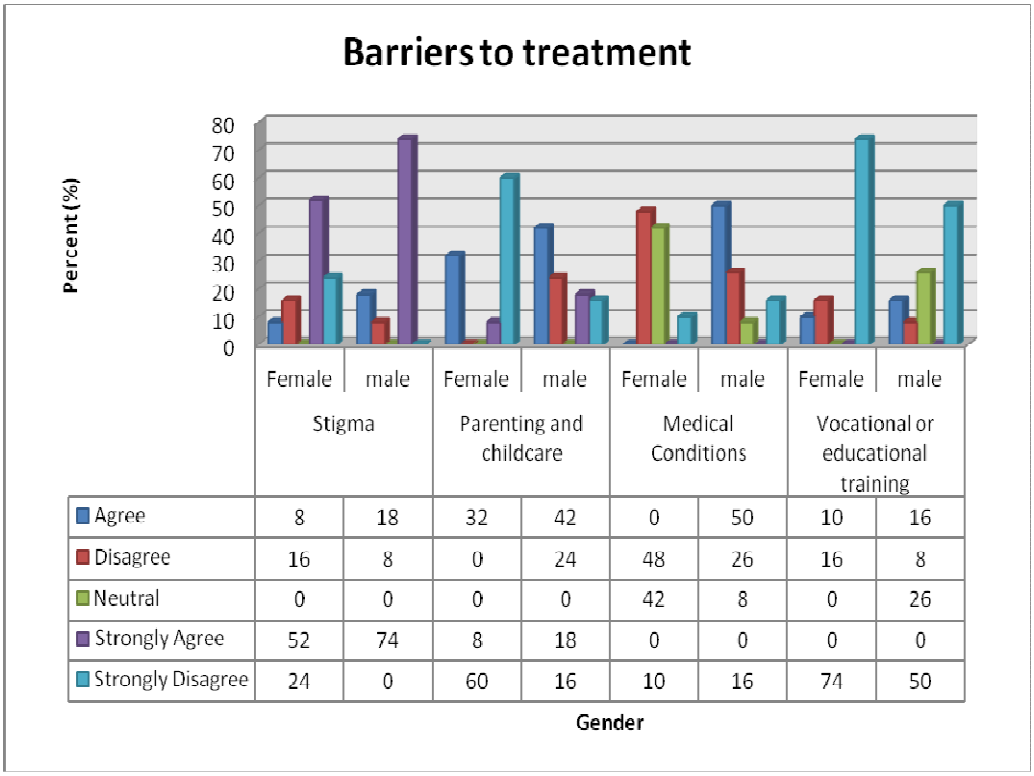


Figure 17. Barriers to seeking treatment

Preferred Treatment Modality

Figure 18 shows the preference of the respondents with regard to the nature of treatment. It analyses the treatment types that include outpatient, inpatient rehabilitation,

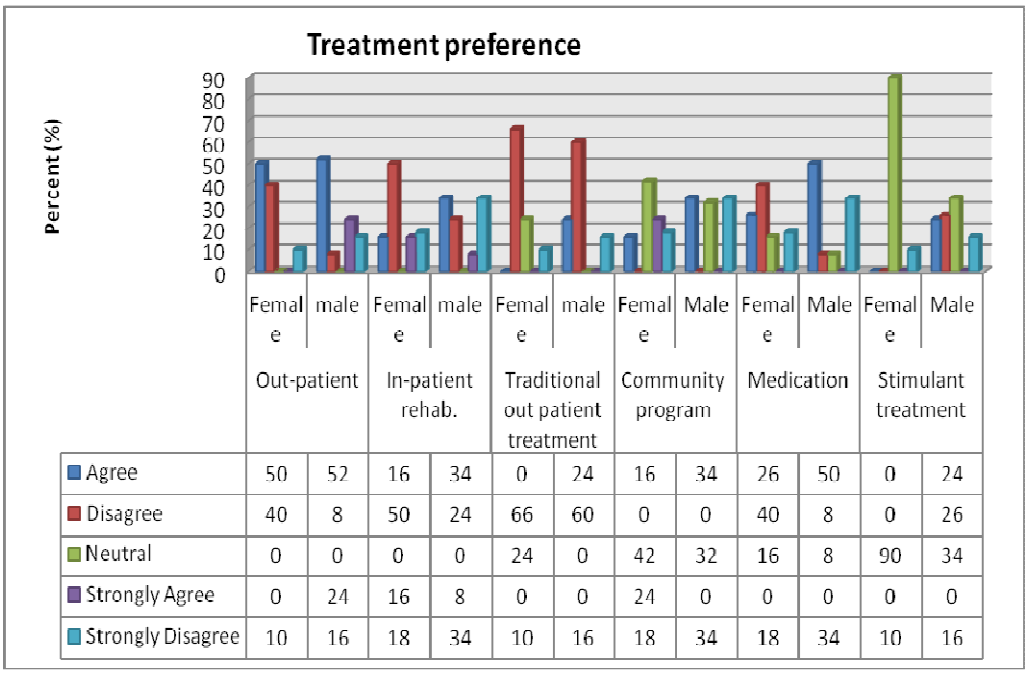
traditional outpatient treatment, CLIFF-TC, medication, and stimulant treatment. Coincidentally, 50% of the female respondents and 52% of the male respondents preferred outpatient treatment while 24% of male respondents strongly preferred the same treatment modality against none for females. Notably no respondent in either gender was neutral to outpatient treatment as a preferred modality. Besides, 40% of female respondents and 8% if male respondents disagreed were not for the opinion that outpatient treatment for methamphetamine abuse is the method of preference while 10% females and 16% males strongly disagreed to this notion.

In inpatient rehabilitation treatment modality, the female respondents indicated a 16% agreed to it as a preferred method, 50% disagreed, 16% strongly agreed, and 18% strongly disagreed. Conversely, 34% of male methamphetamine abusers considered inpatient treatment the preferred treatment modality, 24% disagreed, 8% strongly agreed, and 34% strongly disagreed.

The third modality for which preference was assessed is the traditional OTC method. Notably, majority of the respondents disagreed that OTC is a preferred method. Specifically, 24% of the male respondents agreed, 16% disagreed strongly, and 60% disagreed. On the other hand, 10% of the female respondents strongly disagreed, 66 % disagreed, and the remaining 24% remained neutral. Results for OTC method differ with those for CLIFF-TC method that had mixed reactions. Specifically, 42% of the female respondents and 32% of male respondents were neutral, 16% females and 34% males agreed, 18% females and 34% males disagreed strongly, while 24% females agreed strongly

The researcher also assessed preference to medication as a method of methamphetamine treatment. Notably, majority (40%) female methamphetamine abusers disagreed that medication was the preferred method of treatment with a further 18% disagreeing strongly. Besides, 24% of female respondents agreed to medication as a preferred treatment modality while 16% were neutral. Conversely, half of the male respondents (50%) agreed to medication as a preferred treatment method, 8% remained neutral, another 8% disagreed, and 34 % disagreed strongly.

The last methamphetamine treatment method for which preference by the respondents was assessed is stimulant treatment. A majority (90%) of the female respondents were neutral while the remaining 10% strongly disagreed to this approach. Conversely, the largest proportion of male respondents remained neutral to stimulant treatment as a method of choice, 24% agreed, 26% disagreed, and 16% disagreed strongly to stimulant treatment as a preferred method.



	Female	male	Female	male	Female	male	Female	Male	Female	Male	Female	Male
	Out-patient		In-patient rehab.		Traditional out patient treatment		Community program		Medication		Stimulant treatment	
Agree	50	52	16	34	0	24	16	34	26	50	0	24
Disagree	40	8	50	24	66	60	0	0	40	8	0	26
Neutral	0	0	0	0	24	0	42	32	16	8	90	34
Strongly Agree	0	24	16	8	0	0	24	0	0	0	0	0
Strongly Disagree	10	16	18	34	10	16	18	34	18	34	10	16

Figure 18. Treatment preference

Perceived Effectiveness of Current Treatment Method

Scientific evidence notwithstanding, patient's perception of treatment effectiveness may influence retention. Hence, the researcher sought to determine whether participants considered their current treatment modality effective or not. Remarkably, there was a general consensus that current treatment was effective. Specifically, 40% of female respondents agreed while the other 60% strongly agreed that their treatment was effective. Conversely, only 8% of male respondents considered their current treatment as good while the majority (92%) strongly agreed to their current treatment being effective.

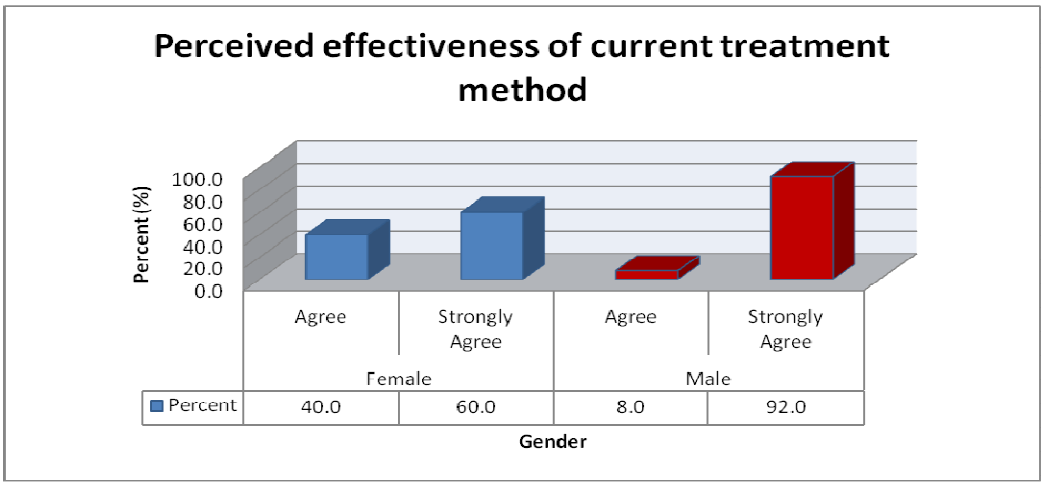


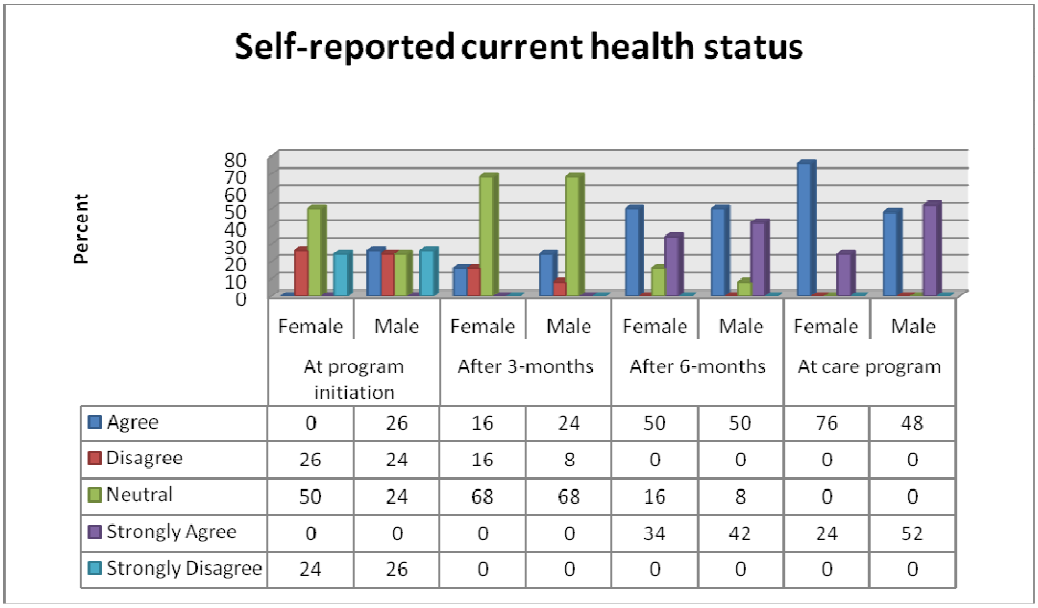
Figure 19. Perceived effectiveness of current treatment method

Current Health

Figure 20 gives an analysis of current health of the respondents. It analyses the changes in the health of the respondents at the beginning of treatment, after three months, after six months, and at care programs. At the beginning, 50% of the female respondents were reserved to make an opinion (neutral), 26% disagreed that their health was good, while 24% strongly disagreed that their health was good. Conversely, 26% of the male respondents agreed that their health status as at entry to treatment was good although an equal proportion disagreed strongly. Similarly, 24% disagreed while an equal proportion remained neutral to this question.

Majority of the respondents (68%) for both male and female respondents stated that their health remained neutral after three months. However, 16% of female respondent agreed that their health after three months in treatment was good while 24% disagreed that their health improved by the third month of treatment. On the other hand, 24% of males reported that their health had improved while 8% disagreed with this notion.

After six months, 50% of the male and female respondents agreed that their health status had improved, which was a significant rise. In fact, 34% of female respondents and 42% of the male respondents strongly agreed that the 6-month treatment program improved their health. Notably, only 8% of female respondents and 16% of male respondents remained neutral to this question. Summative evaluation (after care program) was a different picture all together because no respondent remained reserved or disagreed with priori that their heath had improved. In fact, 76% of females and 48% of males agreed while 24% of females and 52% of males strongly agreed to this observation.



	Female	Male	Female	Male	Female	Male	Female	Male
	At program initiation		After 3-months		After 6-months		At care program	
Agree	0	26	16	24	50	50	76	48
Disagree	26	24	16	8	0	0	0	0
Neutral	50	24	68	68	16	8	0	0
Strongly Agree	0	0	0	0	34	42	24	52
Strongly Disagree	24	26	0	0	0	0	0	0

Figure 20. Self-reported current health status as good

Preference to Continue with Treatment

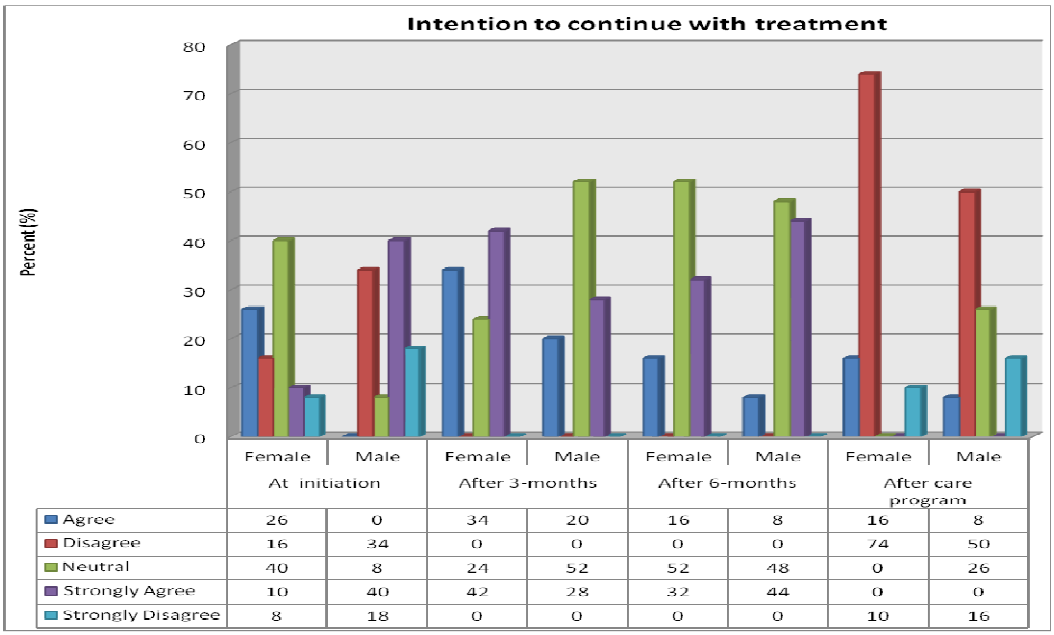
Figure 21 gives a summary of patients' preference to continue with treatment program as obtained at the beginning of treatment, after three months, after six months, and after the care program. The response of the female respondents at the beginning of treatment indicates that 26% agreed to continue, 16% disagreed, 40% were neutral, 10%

strongly agreed, and 8% strongly disagreed to continue with the treatment. Conversely, 18% of the male respondents strongly disagreed to continue with treatment at the beginning of the treatment, 34% disagreed, 40% strongly agreed, while 8% remained neutral.

Notably, opinion on continuing with treatment after three months of treatment had greatly changed. For instance, 42% of female respondents strongly agreed to continue and 34% agreed whereas 24% remained neutral with no one dissenting to continue with treatment. Paradoxically, majority (52%) male respondents remained neutral with only 28% strongly agreeing to continue and 20% agreeing.

Conspicuously, the phenomenon had greatly changed by the end of six months in treatment. Specifically, proportion of female respondents remaining neutral had increased from 24% after three months to 52% after six months. Besides, proportion of neutral male respondents remained fairly constant at 48%. However, total proportion of females opting to continue with treatment had changed to 32% agreeing strongly and16% agreeing. Conversely, 44% of the male respondents strongly agreed to continue while 8% of the male respondents agreed to continue.

Preference to continue with treatment after the care program also had remarkable changes. Specifically, 26% of the male respondents remained neutral about continuing, 50% disagreed, 16% strongly disagreed, and only 8% agreed to continue. Conversely, 10% of the female respondents strongly disagreed to continue with treatment, 74% disagreed, while only 16% agreed to continue with the program.



	Female	Male	Female	Male	Female	Male	Female	Male
	At initiation		After 3-months		After 6-months		After care program	
Agree	26	0	34	20	16	8	16	8
Disagree	16	34	0	0	0	0	74	50
Neutral	40	8	24	52	52	48	0	26
Strongly Agree	10	40	42	28	32	44	0	0
Strongly Disagree	8	18	0	0	0	0	10	16

Figure 21. Preference to continue with treatment

Satisfaction with Treatment and Support Services Thereto

Figure 22 is a summary of client satisfaction with the treatment program as a whole and with support services offered during treatment. Notably, 42% of female respondents reported to have been satisfied with treatment while 58% reported strong satisfaction with the treatment program vis-à-vis 34% of male respondents who reported satisfaction, 40% reported strong satisfaction, while 26% remained neutral to this question.

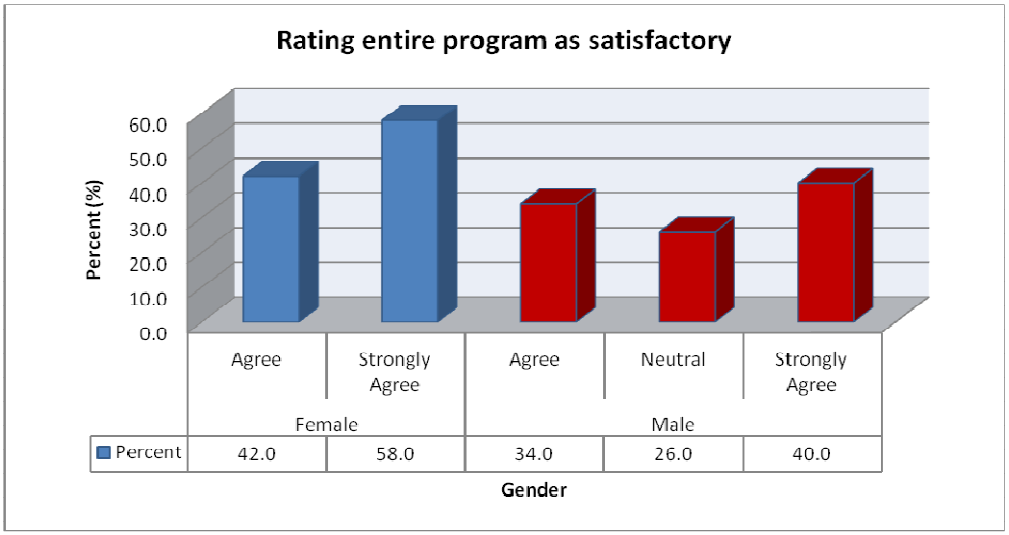


Figure 22. Rating of entire program

Conversely, 10% of female respondents reported satisfaction with support services given as part of treatment program while the remaining 90% reported strong satisfaction. Paradoxically, majority (66%) male respondents reported satisfaction with support services while only 34% reported strong satisfaction with support services.

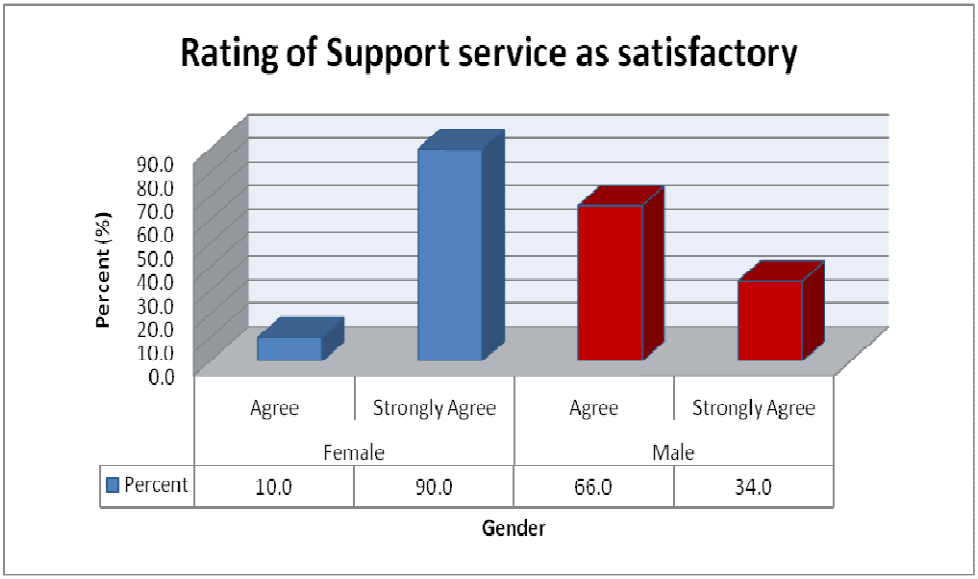


Figure 23. Rating of support services

Chapter 5: Discussion, Conclusions, and Recommendations

Discussion

With sufficient reference to the existing literature, it is evident that substance abuse is a major challenge to the society. There are many factors that have come up in the issue of management and treatment of patients who are addicted to methamphetamine. This study however noted a gap in the treatment or management of methamphetamine abusers. It was initially hypothesized that there are significant differences in the way methamphetamine users respond to the drug and the liberty from addictions. As such, it prompted an integrated study involving in depth literature review and multiple methods of data collection such as interviews and questionnaires. It is important to note that the multiplicity of method strategically counteracted weaknesses of individual methods.

It can be concluded that the study was successful given that it realized a 100% response rate as anticipated in the estimate sampling of 50 males and 50 females. This was achieved through extending the targeted number to 158 participants, out of whom others were found incapable of making informed decisions.

Remarkably, all the three objectives of the study were adequately investigated and the findings provided the answers to the corresponding research questions. The following is a discussion of findings along research objectives.

Respondent's characteristics

Forty percent of respondents in the current study were aged 30-40 years and 24% were aged 19-30 years. Although not exactly within the given age range, these findings are within the 20s-30s range reported by Hunt, Kuck, and Truitt (2006), and NSDUH

(2014), which reported average age at initiation of meth use as 21.6 years. Additionally, 26% of women in the current study and 24% of men were single. Specifically, results for the women are in tandem with observation by Piper (2008) that single women who use methamphetamine constitute 15% of all female users. However, Piper's assertion that the number of single women who use methamphetamine is approximately four times that of single men is different from current findings because the proportions were almost equal.

Moreover, 66% of women in the current study and 92% of men had a minimum of a college education (including ongoing), which reflects a high level of education. These findings are contrary to claims by NIDA (2000) that women who use methamphetamine are less likely to have education level beyond high school. However, 60% of women in the current study reported to have had adverse childhood experiences, which is consistent with Piper's (2008) observation that women who use methamphetamine have higher frequency for physical abuse and psychological trauma.

Reasons for Using Methamphetamine

Identifying reasons for use of methamphetamine was one of the specific objectives in this study for which data were obtained via the questionnaires. Specifically, question B-Q8 in Questionnaire B that sought respondents' condition aided in this task. Importantly, both the literature review and reconnaissance interview revealed the following possible reasons for methamphetamine abuse:

- Reduced fatigue (B-Q8-a).
- Increased attention (B-Q8-b).
- Wakefulness (B-Q8-c).

- Increased activity (B-Q8-d).
- Better sex (B-Q8-e).
- To escape the poignant or emotional distress that is caused by occurrence of victimization or sexual abuse (B-Q8-f).
- Partners influence (B-Q8-g).
- Stress reduction (B-Q8-h).
- Self-medication (B-Q8-i).
- Socialization (B-Q8-j).
- Emotional problems (B-Q8-k).
- Weight loss (B-Q8-l).

The sole aim of their inclusion was to confirm their validity and severity. Importantly, Heseltine (2006) already indicated that reasons for taking methamphetamine vary with gender. Importantly, all these reasons featured significantly in the current study going by a sum total of participants who 'agree' and 'significantly agreed' that each factor was a reason. Notably, acceptance is hereby defined as sum total of 'agreed' and 'significantly agreed', denial as sum total of 'disagree' and 'strongly disagree', while the remainder are the ones who were neutral.

All female and male respondents accepted that increased attention and increased activity were reasons behind their use of methamphetamine. Among factors that received more than 90% acceptance for women were reduced fatigue, increase attention, wakefulness, increased activity; those with 50-89% were emotional problems, better sex and stress reduction; and those with less than 50% were weight loss, socialization, partner

influence, self-medication, and escape from emotional stress from abuse. Conversely, increased attention, increased activity, and better sex had more than 90% acceptance among male respondents; reducing fatigue, wakefulness, reduced stress, socialization, and emotional problems had 50-89%; partner influence, escape from emotional stress from abuse, had below 50%; and weight loss and self-medication had no male respondents accepting that they informed their use of methamphetamine.

Key findings are observation that only 42% of women reported that they used methamphetamine in order to lose weight, which is contrary to assertion by various researchers that women mostly use methamphetamine to lose weight (Jenner & Lee, 2008; Korte et al., 2014; Piper, 2008). However, the figure is within range reported by Piper (2008) who argued that 37% of women who had used methamphetamine in a Californian study had done so to lose weight. The same study had reported 8% of men who used methamphetamine to have done so to lose weight, which is contrary to findings in this study where no male respondent accepted to have been informed by weight loss.

According to Abadi et al. (2012), men are likely to use methamphetamine to socialize and externalize childhood experiences. Remarkably, 48% of men in this study reported to have used methamphetamine for socialization purposes, which brings about the role of peer pressure that is known to be a key driver of drug abuse especially among youths. Interestingly, a significant proportion of study population was youthful.

Additionally, Korte et al. (2014) highlighted that women are more likely to use methamphetamine as a way of stress reduction, which was indeed conformed in the current study because 82% of women accepted to this observation. However, the

proportion of men that also reported to have used methamphetamine to reduce stress (76%) is almost equal to that of women. Perhaps, other variables such as source and duration of stress that were not investigated in this study could have contributed to this observation.

Moreover, the current study reported 96% of men reporting to have used methamphetamine for purposes of better sex. Brecht et al. (2004) had reported notably similar findings. Therefore, it suffices to say that men may use methamphetamine just as they use over-the-counter drugs, oblivious of the fact methamphetamine may cause addiction. Importantly, it is documented that methamphetamine indeed increases libido in men though it may also reduce it at high concentrations. This observation should be a concern to stakeholders in the fight against HIV/AIDs because methamphetamine use among gay men is rampant and relationship between methamphetamine use and risky sexual behavior such as unprotected sex is unequivocal (Semple, Grant & Patterson, 2002). In fact, Piper (2008) reported that an estimated 10-20% of gay men use meth.

The current study also indicates that some female respondents used methamphetamine due to partner influence (16%) and some to escape emotional distress emanating from abuse including sexual abuse (40%). Notably, Brecht et al. (2014) argued that these two are common reasons behind women using meth. Similarly, Lex (1995) and Weissman and O'Boyle (2000) argued that women who use drugs are more likely to have a partner who use drugs. According to Piper (2008), women who use meth are more likely to suffer abuse including sexual abuse even 30 days prior to entering treatment. Perhaps, an observation that a significant proportion of women in this study accepted that

emotional distress from abuse was a reason could be attributed to Piper's claim. Unfortunately, determining rate of abuse such as physical, emotional or sexual, was beyond the scope of this study.

Finally, a possible explanation as to why all women in the current study reported wakefulness, increased activity, increased attention as reasons behind their use of meth could be due to simultaneous pressure from working and academics given that a significant proportion of respondents was or had pursued higher education. The fact that male respondents incriminated the same reasons tends to support this hypothesis. Remarkably, all the reasons listed are thus the causes of the abuse of the drug, though some reasons are specific to the situations that the individual abusers are faced with as earlier hypothesized by Anglin et al. (2000).

Effects of Methamphetamine Abuse

It is common knowledge that identifying a remedy to a problem highly depends on understanding it. This explains why targeting effective treatment for methamphetamine addicts begun by comprehension of its effect on the victims, who were distinctly considered by gender for the purpose of establishing gender differences. Indeed, off-label use, which is also referred to as abuse of methamphetamine has a lot of adverse effects spanning across physical and behavioral dysfunction.

The effects noted from the interview and literature review and included in the questionnaire were internalized childhood problems (B-Q11-a), attempted suicide (B-Q11-b), skin problems (B-Q11-c), work-related problems (B-Q11-d), stroke and heart damage (B-Q11-e), psychosis (B-Q11-f), and damage of the nervous system (B-Q11-g).

Other effects were categorized as psychological functioning that included depression (B-Q12-a), decision making capacity (B-Q12-b), risk-taking behavior (B-Q12-c), and criminal thinking (B-Q12-d).

Findings on effects of methamphetamine use in the current study were as mixed as the causes. Notably, all male and female respondents reported to have suffered depression at one point due to methamphetamine use. But for skin disorders in women that had 90% of women reporting them as common effects, women also reported work problems, psychosis, criminal thinking, and risk-taking behavior in the range of 50-80%. Notably, less than 50% of women accepted that internalized childhood problems, attempted suicide, nervous damage, and impaired decision making were part of effects of methamphetamine use.

Conversely, all men similarly accepted that depression is a common effect of methamphetamine use. Additionally, work problems, risk-taking behavior, and skin problems were also reported by more than 80% of male respondents; criminal behavior, nervous damage and psychosis were reported by 50-79% of men; and internalized childhood problems, attempted suicide, and impaired decision making was reported by less than 50% of male respondents.

Weissman and O'Boyle (2000) reported that the U.S Criminal Justice System has recorded women as the fastest growing population and attributed this observation to chemical dependency. Findings from current study appear to resonate to these findings because 58% of female respondents accepted that methamphetamine abuse had caused criminal behavior at one point in life. In fact, it is interesting that proportion of women

reporting criminal thinking secondary to methamphetamine consumption was almost equal (58% women and 66% men) in the current study. Coincidentally, Brecht et al. (2004) reported that legal issues are fundamental effects of psychostimulant use. Again, the current study did not include specific types of criminal activities that respondents had engaged under methamphetamine influence.

Additionally, risk-taking behavior as a consequence of methamphetamine use was reported by 60% of women and 92% of men. Notably, Weissman and O'Boyle (2000) also reported that HIV prevalence among methamphetamine users is higher as compared to general population partly because of risky behavior such as having unprotected sex with multiple partners, needle sharing for those using intravenous route of administration, and prostitution to obtain money for purchasing drugs. The fact that a significant proportion of men also reported to have used methamphetamine to increase libido is a red flag.

Notably, more than half the respondents across gender also reported to have suffered work problems and psychosis. Although the definition of psychosis used herein does not suite definition by experts such as American Psychological Association, majority respondents accepted to have suffered key features of psychosis such as hallucinations, violent behavior and paranoia, which had also been reported by Brecht et al. (2004) as common among people who abuse methamphetamine.

Additionally, 90% of women and 84% of men in the current study reported to have had an episode of attempted suicide, which is a key mental disorder. Similarly, Abadi et al. (2012) and NIDA (2013) concur that women who use meth are at a higher

risk for suicidal attempts. Importantly, literature indicates that at least a quarter of all suicidal attempts ultimately lead to suicide, which may contribute to drug-induced deaths reported by Calcaterra and Binswanger (2013).

Homer et al. (2008) reported that social isolation, depression, and aggression are common among people who use methamphetamine. The report on depression is a true reflection of findings in the current study because all respondents across gender accepted that they had experienced depression attributable to meth use.

Notably, no respondent reported stroke or heart disorders as an effect of methamphetamine use across gender. The variation in the response could be explained by cumulative exposure, that is, the longer the duration and perhaps quantity of methamphetamine consumed the more likely are these rare adverse effects. In fact, Otero et al. (2006) already pointed towards possibility that rare adverse effects such as stroke or heart damage may indeed occur with methamphetamine abuse, only that majority drug users will have received treatment before a sufficient dose is attained.

Progress of Methamphetamine Treatment

Through this objective, the study intended to determine effective methods for administering treatment to the affected methamphetamine abusers. As such the feasibility processes involved tracking progress of the participants for a period of six months to determine the treatment needs of the different gender groups. In summary, there was no particular treatment that was identified to be suitable for everyone. Addiction was determined to be a complex ailment albeit one that is manageable with the right kind of

treatment. Drug Rehabs (2008) argued that the success of a treatment program for drug abuse requires the victim to be monitored and treated closely for a long period of time. However, treatment programs were slowed by some identified factors.

The researcher initially focused on barriers and motivators of entry to treatment. Men overwhelmingly reported stigma as a key barrier to accessing treatment and more than half the women also concurred. These findings are in tandem with report by Semple, Grant, and Patterson (2005). A second key barrier identified by both men and women is parenting and childcare. Several researchers advocating for gender-specific programs have repeatedly argued that parenting disadvantages women because they feel insecure to be separated from their children if they were to enter resident rehabilitation programs (Weissman & O'Boyle, 2000). Besides, issues with adherence in women are also attributed to parenting role. Paradoxically, more men than women in the current study reported parenting as a barrier to entering treatment, which is contrary to the above claims.

Conversely, I focused on a few motivators of entry to treatment including procreation need, work, available support services, and family and society influence. Remarkably, all respondents, both men and women, agreed that family and society influence played a major role in influencing their decision to enter into treatment program. Notably, Westermeyer and Boedicker (2000) had earlier argued that women are more likely to enroll for treatment due to family and society norms that disapprove drug use among women. In fact, Weissman and O'Boyle (2000) also claimed that drug use among men in several ethnic groups is generally socially tolerated, which is the principle

of ‘machismo’ that refers to cultural aspect of depicting men as superior to women insofar as social norms are concerned. The same aspect of family and society pressure on women appears to have played a role in participants entering treatment program for procreation purposes. According to Harnandez, Rounsville and Kranzer (2004), society disapproves pregnant women taking drugs. Although only 16% of women and half of these reported to have entered treatment for pregnancy related issues, the findings concur with argument postulated by the above authors.

Moreover, more men than women reported that they joined treatment because of work-related problems. This finding may be explained by the fact that majority women who abuse methamphetamine have been observed to be unemployed (NIDA, 2000). Importantly, a unique variable that could not be tested in the current study but that is relevant in term of explaining difference in entry to treatment between men and women is the phenomenon of ‘telescoping’, defined as “gender-specific physiologic consequences of drug use” (Weissman & O’Boyle, 2000 p. 1). Perhaps, some women could have experienced severe effects of methamphetamine at the same or even lower serum concentration of the drug, pushing them to seek for treatment earlier.

Also, I focused on patient’s perceived improvement following treatment initiation, which was assessed at entry, after 3-months, after 6-months, and after care program. Notably, men showed greater improvement in majority parameters including medical problems and family relationships as compared to women. This is despite the fact that unemployment, childcare responsibilities, living with another drug and/or alcohol addict, history of sexual or physical abuse, and increased psychiatric symptoms

were equally noted in men as in women. The study results confirmed that methamphetamine abusers formed a category of patients with multiple problems in key or major life. A possible explanation to this finding could be that gender-specific services that suit women may not have been delivered as advocated for by Weissner and O'Boyle (2000) and Piper (2008). Nevertheless, both women and men reported satisfaction with the treatment program and with support services given as part of the long-term treatment program. Although respondents in this study reported immense success, Jenner and Lee (2008) noted that rehabilitation centers record higher relapse rate estimated at 88% and that females tend to have a greater incidence of early termination and/or discharge against medical advice as compared to men. Unfortunately, relapse and recidivism rates were beyond the scope of this study due to time limitation.

Additionally, majority respondents in the current study preferred out-patient treatment (50%), followed by community rehabilitation program (40%), in-patient rehabilitation (32%), medication (26%), but none preferred stimulant treatment or the traditional out-patient treatment program. Conversely, majority men (76%) preferred out-patient program, followed by medication (50%), in-patient rehabilitation (42%), community program (34%), and traditional out-patient and stimulant treatment (24%). However, an earlier study by Rowan-Szal et al. (2009), had reported patients preferring community program and traditional outpatient services to other options.

Conclusion

From the analysis of data collected in the three phases of the study and the critical discussion with respect to the current literature, we can reach at the following

conclusions. Findings indicate people who use methamphetamine are generally young and educated. However, men tend to be more educated than women but women are more likely to be single compared to men. In terms of reasons for using methamphetamine, increased activity, increased attention, wakefulness, reduced fatigue and reduced stress cut across gender. However, more men use methamphetamine for enhanced sexual experience, while more women may be victims of peer pressure from their partners. Besides, more women may use methamphetamine to lose weight, as self-medication, and to escape emotional stress related to abuse, both current and in childhood.

Moreover, all highlighted effects of methamphetamine use except stroke and heart damage were documented, which means they are common. Importantly, depression is a common psychological effect among both men and women. Additionally, women reported more skin disorders while men reported risk-taking behavior as a significant effect of methamphetamine abuse.

Insofar as motivators and barriers to treatment are concerned, the researcher hereby affirms that stigma is a key barrier for both men and women entering into treatment program, while parenting may equally affect both men and women contrary to earlier proposition that more women than men are affected. The most notable motivators to treatment for both men and women were awareness and family/society support.

In terms of preference to various modalities of treatment, more men preferred out-patient method and medication while women preferred out-patient method and community program. The later is a replica of CLIFF-TC that has been tested elsewhere and shown to be effective. Importantly, all respondents reported satisfaction with

treatment and were indeed observed to have benefitted from treatment despite the short follow-up period.

Recommendations

This study was limited to a period of six months only. Therefore, it is important that a longitudinal study that will monitor patients for more than six months be conducted so that long-term treatment efficacy including relapse rate be determined between female and males. Additionally, a study that will compare treatment outcomes and cost-effectiveness of gender-specific versus mixed-type treatment programs is strongly recommended.

References

Abadi, M. H., Shamblen, S. R., Johnson, K., Thompson, K., Young, L., Courser, M., . . . Brown, K. (2012). Examining human rights and mental health among women in drug abuse treatment centers in Afghanistan. *International Journal of Women's Health*, *4*, 155-156.

Amaro, H., Blake, S., Schwarz, P., & Flichbaugh, L. (2001). A review of substance abuse prevention interventions for young adolescent girls. *Journal of Early Adolescent*, *21*(3), 294-324.

American Psychological Association. (2011). Guidelines for psychological practice with lesbians, gay, and bisexual clients. *American Psychologists*, *42*(1), 10-42.

Angen, M. J. (2000). Evaluating interpretive inquiry: Reviewing the validity debate and opening the dialogue. *Qualitative Health Research*, *10*(3), 378-395.

Anglin, M., Brecht, M., O'Brien, A., & Mayrhauser, C. (2004). Methamphetamine use behavior and gender differences. *Addictive Behaviors*, *29*(1), 86-106.

Brecht, M. L., O'Briene, A., Mayrhauser, C., & Anglin, M. D. (2004). Methamphetamine use behaviors and gender differences. *Addictive Behaviors*, *29*(1), 89-106.

Bride, E. (2011). Single gender treatment of substance abuse: Effect on treatment retention. *Social Work Research*, *25*(4), 223-232.

Caetano, R., & Raspberry, K. (2000). Drinking and DSM-IV alcohol and drug dependence among White and Mexican-American DUI offenders. *Journal of Studies on Alcohol*, *61*(3), 420-426.

Calcaterra, S., & Binswanger, I. A. (2013). Psychostimulant-related deaths as reported by a large national database. *Substance Abuse*, *34*(2), 1-16. doi:10.1080/08897077.2012.726959.

Clinton, W.J. (1993). Executive Order 12880. Retrieved from http://nodis3.gsfc.nasa.gov/displayEO.cfm?id=EO_12880_ .

Conrod, P. J, & Stewart, S. H. (2008). Anxiety and substance use disorders: The vicious cycle of comorbidity. New York: NY: Springer.

Corbetta, P. (2003). *Social research: Theory, methods, and techniques.* Thousand Oaks, CA: SAGE.

Craighead, E., & Nemeroff, C. (2002). *The Corsin encyclopedia of psychology and behavioral sciences.* New York, NY: John Wiley & Sons.

Creswell, J. W. (2009). Research design: Qualitative, quantitative, and mixed methods approach. Palmdale, LA: SAGE

Drug Enforcement Administration. (2012). A tradition of excellence. Retrieved from http://www.deamuseum.org/dea_history_book/1970_1975.htm

Drug Rehabs. (2008). Methamphetamine addiction treatment. Retrieved from http://nodis3.gsfc.nasa.gov/displayEO.cfm?id=EO_12880_ .

Farley, J.E., Landers, T.F., Godfrey, C., Lipke, V., & Sugarman, J. (2014). Optimizing the protection of research participants and personnel in HIV-Related research where TB is prevalent: Practical solutions for improving infection control. *JAIDS Journal of Acquired Immunodeficiency Syndromes*, *65*(1), 19-23.

Floyd, A. S., Monahan, S. C., Finney, J. W., & Morley, J. A. (1996). Alcoholism treatment outcome studies 1988-1992: The nature of the research. *Addictive Behaviors*, *21*(4), 413-428.

Fiorentine, R., Nakashima, J. & Anglin, M.D. (1999). Client engagement in drug treatment. *Journal of Substance Abuse & Treatment*, *17*, 199-206.

Goldstein, R. B. (2009). Comorbidity of substance use with independent mood and anxiety disorders in women: Results from the national epidemiology survey on alcohol and related conditions. In K. T. Brady, S. E. Back, S. F. Greenfield (Ed.), *Women and addiction: A comprehensive handbood* (pp. 173-192). New York, NY: Guilford Press.

Green, C. A., Polen, M. R., Dickinson, O. M., Lynch, F. L., & Bennet, M. D. (2002). Gender differences in predictors of initiation, retention and completion in a HMO-based substance abuse treatment program. *Journal of Substance Abuse Treatment*, *23*(4), 285-295.

Grella, C. E., Hser, Y., Teruya, C., & Evans, E. (2005). How can reseach-based findings be used to improve practice? Perspectives from participants in a Statewide outcomes monitoring study. *Journal of Drug Issues*, *35*(3), 469-483.

Harnandez-Avila, C., Rounsaville, B., & Kranzer, H. (2004). Opioid, cannabis and alcohol dependent women women show more rapid progression to substance abuse treatment. *Drug & Alcohol Dependence,74*(3), 265-272.

Hartman, J., Listwan, S., & Shaffer, D. (2000). Methamphetamine users in a community-based drug court: Does gender matter? *Journal of Offender Rehabilitation*, *45*(34), 109-130.

Haseltine, F. (2006). Gender differences in addiction and recovery. *Journal of Womens's Health & Gender-Based Medicine*, *9*(6), 579-583.

Hays, D. G., & Singh, A. A. (2011). *Qualitative inquiry in clinical and educational settings.* New York, NY: Guilford Press.

Hodgins, D. C., El-Guebaly, N., & Addington, J. (1997). Treatment of substnace abusers: Single or mixed gender programs. *Addiction*, *92*(7), 805-812.

Hser, Y., Evans, E., & Huang, Y. (2005). Treatment outcomes among women and men methamphetamine abusers in California. *Journal of Substance Abuse Treatment, 28*(1), 77-85.

Hser, Y., Huang, Y., Teruya, C., & Anglin, (2004). Gender differences in treatment outcomes over a three-year period: A path model analysis. *Journal of Drug Issues, 34*(2), 419-440.

Hser, Y., Polinsky, M. L., Maglione, M., & Anglin, M. D. (1999). Matching clients' needs with drug treatment services. *Journal of Substance Abuse Treatment, 16*, 299-305.

Hunt, D., Kuck, S., & Truitt, L. (2006). Methamphetamine use: Lessons learned. *U.S Department of Justice Reports*, 1-49. Retrieved from https://www.ncjrs.gov/pdffiles1/nij/grants/209730.pdf.

Hussey, J., & Hussey, R. (1997). *Buisness research: A practical guide for undergraduate and postgraduate students.* Basingstoke: Macmillan.

Homer, B. D., Solomon, T. M., Moeller, R. W., Mascia, A., DeRaleau, L., & Halkitis, P. N. (2008). Methamphetamine abuse and imparment of social functioning: A review of underlying neurophysiological causes and behavioral implications. *Psychological Bulletin*, *134*(2), 301-310.

Jenner, L., Lee, N. (2008). Treatment approaches for users of methamphetamine: A practical guide for frontline workers. Canberra, Australia.

Kandall, S.R. (1996). Women and addiction in the United States 1920 to the present. In S. R. Kandall, *Subsatnce and shadow: A history of women and addiction in the United States 1850 to present* (pp. 53-79). Cambridge, MA: Havard University Press.

Kassada, D. S., Marcon, S .S., Pagliarini, M. A., & Rossi, R. M. (2013). Prevalence of drug abuse among pregnant women. *Acta Paulista De Enfermagem, 26*(5), 467-450.

King, G., Alicata, D., Cloak, C., & Chang, L. (2010). Neuropsychosocial deficits in adolescent methamphetamine abusers. *Psychopharmacology, 212*(2), 243-249.

Klenke, K. (2008). *Qualitative research in the study of leadership.* Brardfork, U.K: Emerald Group Publishing.

Knight, D. K., Logan, S. M., & Simpson, D. D. (2001). Predictors of program completion for women in resdential substance abuse treatment. *American Journal of Drug & Alcohol Abuse*, *27*(1), 1-18.

Korte, J. E., Merghati-Khoie, E., Rimaz, S., & Brady, K. T. (2014). Increased condom use with psychological abuse among drug-abusing women in Tehran. *Drug & Alcohol Dependence, 140,* e110.

Kumar, R. (2005). *Research methodology: A step-by-step guide for beginners*. (2nd ed), Singapore, Malaysia: Pearson Education.

Lex, B. W. (1994). Alcohol and other drug abuse among women. *Alcohol Health & Research World*, *18*, 212-219.

Luo, R., Zhang, S., Xiang, P., Shen, B., Zhuo, X., & Ma, D. (2015). Elements concentrations in the scalp hais of methamphetamine users. *Forensic Science International, 249*, 112-115.

McWilliams, J. C. (1990). The history of drug control policies in the United States. In J. A. Inciardi (Eds.), *Handbook of drug control in the United States* (pp. 29-50). Santa Barbara, CA: Greeenwood Press.

Monette, D., Sullivan, T., Dejong, C. (2010). *Applied social research: A tool for the human services.* Pacific Grove, CA: Brooks/Cole.

Mouton, J. (2001). *How to succeed in your master's and doctoral stuides.* Pretoria, South Africa: Van Schaik

National Clearing House for Alcohol and Drug Information [NCADI]. (2011). Methamphetamine: Highly addictive and highly dangerous. Retrieved from http://www.4therapy.com/life-topics/substance-abuse/methamphetamine-highly-addictive-and-highly-dangerous-2478

National Institute on Drug Abuse [NIDA]. (1999). Methamphetamine abuse alert. Retrieved from http://www.nida.nih.gov/NIDA_Notes/NNVol13N6/tearoff.html

National Institute on Drug Abuse [NIDA]. (2000). Gender differences in drug abuse risks and treatment. Methamphetamine abuse alert. Retrieved from http://www.drugabuse.gov/NIDA_notes/NNVol15N4/tearoff.html

National Institute on Drug Abuse [NIDA]. (2008). Treatment approaches for drug addiction. Retrieved from http://www.drugabuse.gov/PDF/InfoFacts/Treatment08.pdf

National Institute on Drug Abuse [NIDA]. (2010). Treatment approaches for drug addiction. Retrieved from http://www.drugabuse.gov/publications/drugfacts/treatment-approaches-drug-addiction

National Institute on Drug and Abuse [NIDA]. (2013). Methamphetamine abuse and addiction. *NIDA Research Report Series*, 2-10. Retrieved from https://www.drugabuse.gov/sites/default/files/methrrs_web.pdf.

National Survey on Drug Use and Health. (2007). Methamphetamine use. Retrieved from www.oas.samhsa.gov/2k7/meth/meth.htm

Nelson-Zlupko, L., Dore, M. M. Kauffman, E., & Kaltenbach, K. (1996). Gender differences in drug addiction and treatment: Implications for social work intervention with substnace-abusing women. *Journal of Substnace Abuse & Treatment*, *13*(1), 51-59.

NeSmith, C., Wilcoxson, A., & Satcher, J. (2000). Male leadership in an addicted women's group: An empirical approach. *Journal of Addicts & Offender Counselling, 20*(2), 75-84.

Nordahl, T E., Salo, R., & Leamon, M. (2003). Neuropsychological effects of chronic methamphetamine use on neurotransmitters and cognition: A review. *Journal of Neuropsychological & Clinical Neurosciences*, 15, 317-325.

Office of National Drug Control Policy. (2014). Consequences of illicit drug use in America. *ONDCP Fact Sheet*, 1-3. Retrieved from https://www.whitehouse.gov/sites/default/files/ondcp/Fact_Sheets/consequences_of_illicit_drug_use_-_fact_sheet_april_2014.pdf.

Office of Substance Abuse Services. (2004). Gender difference and their implications for substance use disorder treatment. Retrieved from www.dmhmrsas.virginia.gov/.../OSAS-REGenderSpecificSATX.doc

Otero, C., Boles, S., Young, N. K., & Dennis, K. (2006). Methamphetamine addiction, treatment and outcomes: Implications for child welfare workers. *SAMHSA Reports*, 1-11.

Pachanadeswaran, S., & Jayasundara, D. (2012). Experience of drug use parenting among women in substance abuse treatment: An exploratory study. *Journal of Human Behavior in the Social Environment, 22*(8), 971-987.

Pelissier, B., & Jones, N. (2005). A review of gender differences among substance abusers. *Crime & Delinquency, 51*(3), 343-372.

Piper, B. (2008). A four-pillars approach to methamphetamine: Policies for effective drug prevention, treatment, policing and harm reduction. *Drug Policy*, 2-24. Retrieved from https://www.drugpolicy.org/docUploads/FourPillarsMethamphetamine.pdf.

RAND Corporation. (2009). The economic cost of methamphetamine use in the United States, 2005. *RAND Monographs*, 1-106. Retrieved from http://www.rand.org/content/dam/rand/pubs/monographs/2009/RAND_MG829.pdf.

Rowan-Szal, G., Joe, G., Simpson, D., Greener, J., & Vance, J. (2009). During-treatment outcomes among female methamphetamine-using offenders in prison-based treatments. *Journal of Offender Rehabilitation, 4* (5), 388-401.

Rawson, R.A., Marinelli-Casey, P., Anglin, M.D., Dickow, A., Frazier, Y., Gallagher, C. ... Zweben, J. (2004). A multi-site comparison of psychosocial approaches for the treatment of methamphetamine dependence. *Addiction*, *99*(6), 708-717.

Schuckit, M. A., Irwin, M., & Brown, S. A. (1990). History of anxiety symptoms among 171 primary alcholics. *Journal of Studies on Alcohol and Drugs*, *51*(1), 49-67.

Semple, S., Grant, I., & Patterson, T. (2005). Utilization of drug treatment programs by methamphetamine users: The role of social stigma. *American Journal on Addiction, 14*(4), 367-380.

Substance Abuse and Mental Health Services [SAMHSA]. (2004). Primary methamphetamine/amphetamine treatment admissions 1992-2002. Retrieved from http://www.oas.samhsa.gov/2k4/methTX/methTX.cfm html

Substance Abuse and Mental Health Services [SAMHSA]. (2007). The NSDUH report on methamphetamine use. Retrieved from http://www.oas.samhsa.gov/2k4/methTX/methTX.cfm html

Substance Abuse and Mental Health Services [SAMHSA]. (2008). Employment status and substance abuse treatment admissions: 2006. Retrieved from www.oas.samhsa.gov

Substance Abuse and Mental Health Services Administration [SAMHSA]. (2014). Results from the 2013 National survey on drug use and health: Summary of national findings. *NSDUH Series H-48*, 1-105. Retrieved from http://www.samhsa.gov/data/sites/default/files/NSDUHresultsPDFWHTML2013/Web/NSDUHresults2013.pdf.

VandelBos, G. R. (2007). *APA dictionary of psychology.* Washington, DC: American Psychological Association.

Vannicelli, M., & Nash, L. (1984). Effect of sex bias on women's studies on alcoholism . *Alcoholism: Clinical Experimental Research*, *8*(3), 334-336.

Wang, G. J., Smith, L., Volkow, N. D., Telang, F., Logan, J., Tomasi, D., … Fowler, J. (2012). Decreased dopamine activity predicts relapse in methamphetamine abusers. *Molecular Pyschiatry, 19*(9), 918-925.

Weisner, C., McCarty, D., & Schimidt, L. (1999). New directions in alcohol and drug treatment under managed care. *American Journal of Managed Care*, *5*, 57-69.

Weissmann, M., & O'Boyle, K. (2000). Women and addiction: Treatment issues and innovative treatment models. *Source*, *10*(1), 17-20.

Westmeyer, J., Boedicker, A. E. (2000). Course, severity and treatment of substance abuse among women versus men. *American Journal of Drug & Alcohol Abuse 26*(4), 523-535.

Whitebread, C. (1995). The history of the non-medical use of drugs in the United States. Retrieved from Retrieved from http://www.druglibrary.org/schaffer/History/whiteb1.html

Wilkerson, M. (1995). Why can't most meth addicts stay clean? Retrieved from Retrieved from http://www.thefix.com/content/why-cant-most-meth-addicts-stay-clean8107

Winslow, B. (2007). Methamphetamine abuse. *American Family Physician, 76*(8), 1169-1178.

Winslow, B. T., Voorhees, K. I., Pehl, K. A. (2007). Methamphetamine abuse. *American Family Physician, 76*(8), 1169-1178.

Wu, K. (2014). Research philosophy intercultural. *Open Journal of Philosophy, 4*(3), 378-389.

Young, N. K., Gardner, S. L., & Dennis, K. (1998). *Responding to alcohol and other drug problems in child welfare: Weaving together practice and policy.* Washington, DC: CWLA Press.

Yun, K., Park, H., Kwon, D., Kim, Y., Cho, H., … Jeong, J. (2012). Decreased Cortical complexity in methamphetamine abusers. *Neuroimaging, 201*(3), 226-230.

Appendix A: Questionnaires

QUESTIONNAIRE A

Respondent's Suitability Assessment Guide.

This guide is meant to allow the research facilitator establish the suitability of the respondent making informed consent as it regards to participation in the research. As such, it helps in achieving the required sample of 50 males and 50 females, which needs to be done by convenient sampling.

Qualified respondents must

- be above the age of 18 years or represented by a parent or guardian for the underage
- Be able to define themselves
- Be somehow productive or employed or occupied e.g. being a housewife (NOTE: The productivity or the role might be influenced negatively by the use of methamphetamine but the presence of responsibility indicates that the participants can make informed decision if well informed.
- Have friends or family for which the relationship must not be violent, abusive or despised as insane or something to suggest so.
- Have been at the rehabilitation center for more than 1 week.

Evaluation table

Gender	
Age Group	13-18, 19-30, 30-40, 50-Above
Self-Definition	
Responsibility	
Social or psychological aspect / functioning	
Period of Stay at the clinic	

QUESTIONNAIRE B

RESPODENT's CONDITION ASSESSMENT

Demographics

Q1-Gender

Male	**Female**

Q2-Age group

Age Group	
13-18	
19-30	
30-40	

50-Above	

Q3-Marital status

Marital Status	
Single	
Married	
Divorced	
Minor	

Q4-Education level

Educational level	
Elementary / Secondary	
College / university Degree	
Masters and above	,

Health

Q5- Do you have any health complications from your childhood?

YES NO

	1-Strongly Disagree	**2- Diasgree**	**3- Neutral**	**4- Agree**	**5- Strongly**

					Agree
Severity					

……

……

……

……

Q6- Do you have any physical challenges?

YES NO

……

……

……

……

Q7- How is your current health as affected by use of methamphetamine?

	1-Strongly Disagree	**2- Diasgree**	**3-Neutral**	**4- Agree**	**5- Strongly Agree**
Good					

Reasons for using the methamphetamine

Q8- Why did you use the methamphetamine?

	1-Strongly Disagree	**2-Diasgree**	**3-Neutral**	**4-Agree**	**5-Strongly Agree**
• Reduced fatigue					
• Increased attention					
• Wakefulness					
• increased activity					
• Better Sex					
• to escape the poignant or emotional distress that is caused by the occurrence of					

victimization or sexual abuse					
• Married couples Influenced by their partners					
• Reduce stress					
• Self-medication					
• Socialize					
• Emotional problems					
• Weight loss					

Pattern of drug Abuse

Q9- How did you come to know and abuse the methamphetamine drug?

	1-Strongly Disagree	**2-Diasgree**	**3-Neutral**	**4-Agree**	**5-Strongly Agree**
• Advice from Friends					
• Medical office (anxiety, mood					

disorders, and pain)					
• Incitement from the first use					
• Incitement from your partner (for the married or engaged or dating)					

Q10- What is your consumption rate over the past one month?

	1 pellets	**2 pellets**	**3 pellets**	**4 pellets**	**5 pellets**	**Above 5**
Daily average consumption						

Effects of methamphetamine

Q11. Do you have any health complications resulting from the methamphetamine use?

Factors	**1- Strongl**	**2- Diasgre**	**3- Neutr**	**4- Agre**	**5- Strongl**

	y Disagree	**e**	**al**	**e**	**y Agree**
• Internalized childhood problems					
• Attempted suicide					
• Skin problem					
• Work Related problems					
• stroke, and heart damage					
• Psychosis					
• Damage of the nervous system					

Q12- How is social and psychological functioning influenced by use of methamphetamine in terms of the following issues?

Factors	**1-Strongly Disagree**	**2-Diasgree**	**3-Neutral**	**4-Agree**	**5-Strongly Agree**
Depression					
decision making					
risk taking					
criminal thinking					

QUESTIONNAIRE C

TREATMENT

Q1- Have you sought any form of treatment before?

YES NO

Q2- What kind of treatment do you prefer and consider effective for your addiction to methamphetamine?

	1-Strongly Disagree	**2-Diasgree**	**3-Neutral**	**4-Agree**	**5-Strongly Agree**

• Out-patient					
• In-patient Rehabilitation					
traditional outpatient (OTP) treatments therapeutic					
community program called clean lifestyle (CLIFF-TC					
• Medication					
• Stimulant treatment					

Q3-How do you gauge the current treatment you are undergoing?

	1-Strongly Disagree	**2-Diasgree**	**3-Neutral**	**4-Agree**	**5-Strongly Agree**
Good					

Q4-What has motivated you into accessing the treatment?

	1-Strongly Disagree	2-Diasgree	3-Neutral	4-Agree	5-Strongly Agree
• family and society factor					
• The need for pregnancy for women into seeking treatment?					
• Work					
• Awareness / support from the society					

……

……

……

……

Q5 -What prevented you from getting treatment?

	1-Strongly Disagree	2-Diasgree	3-Neutral	4-Agree	5-Strongly Agree

• Stigma					
• Parenting and childcare e.g. the lack of surrogates to carry out their responsibilities					
• Medical Conditions					
• vocational or educational training/ Work					

QUESTIONNAIRE D

Continuous Monitoring

Q1- How is your current health?

Period		**1- Strongly Disagree**	**2- Diasgree**	**3- Neutral**	**4-Agree**	**5- Strongly Agree**
• At the Begging	Good					
• After 3 months	Good					
• After 6 months	Good					
• After-care Program	Good					

Q2- Do you feel like continuing with the program?

Period		**1- Strongly Disagree**	**2- Diasgree**	**3- Neutral**	**4- Agree**	**5- Strongly Agree**
• At the Begging	Continue with the treatment					
• After 3	Continue					

months	with the treatment					
• After 6 months	Continue with the treatment					
• After-care Program	Continue with the treatment					

3. Do they have the required facilities to handle your conditions including medicine, support and other kits?

	1-Strongly Disagree	**2-Diasgree**	**3-Neutral**	**4-Agree**	**5-Strongly Agree**
The institution has adequate facilities					

QUESTIONNAIRE E

END of PROGRAM QUESTIONNAIRE

Q1-How do you the rate entire program?

	1-Strongly Disagree	**2-Diasgree**	**3-Neutral**	**4-Agree**	**5-Strongly Agree**
Satisfactory					

Q2-How do you rate the support given by the experts?

	1-Strongly Disagree	**2-Diasgree**	**3-Neutral**	**4-Agree**	**5-Strongly Agree**
Satisfactory					

Strengths

……

……

……

……

……

……

Challenges

……

……

……

……

……

……

Recommendations

……

……

……

……

……

……