

PREVALENCE OF POLYDRUG USE AMONG PATIENTS UNDERGOING METHADONE ASSISTED THERAPY IN NAIROBI COUNTY

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Submitted 8th May 2022, Accepted 12th June 2022, Published 03rd July 2022

ABSTRACT

Polydrug Use (PDU) among Methadone Assisted Therapy (MAT) continues to be a global concern with users engaging in concurrent intake of more than one psychoactive substance. However, due to the increased risks of drug abuse in society today, polydrug users are now seeking opioids use disorder (OUD) treatment in Methadone Assisted Therapy (MAT) which is undoubtedly associated with withdrawal and craving challenges. This paper therefore evaluates the prevalence of polydrug use among MAT patients in Nairobi County, Kenya. Guided by the social learning theory, this study used a mixed methods approach. The target population comprised 2121 patients from two MAT clinics in the county, from which a sample of 120 respondents was drawn through random sampling technique, with 60 in treatment group and 60 in control group. A quasi-experimental research design with pre and post strategy was utilized in experimental group site 1 and control group site 2. Both treatment and control group received baseline and endline assessment and MAT treatment. The experimental group received MI with instant assessment and feedback through engaging, focusing, evoking and planning and assessment for readiness to reduce polydrug use through self-rating readiness ruler. The control group received zero MI treatment. Baseline assessment was done for 5 to 10 minutes using TimeLine Fallback for polydrug use while Endline assessment was done using the same tools after 3 months. Data analysis was descriptively conducted to determine the prevalence of polydrug use among MAT patients used with findings presented in tables and charts. After three months follow up, the prevalence of polydrug use reduced the most for the treatment group with MI and less for the control group with no MI. Therefore, MAT clinicians should incorporate Motivation interviewing into their clinical practice to reduce prevalence of polydrug use for the patients undergoing MAT.

Key words: Methadone Assisted Therapy, Polydrug Use, Opioids, Opioids Use Disorder, Prevalence, Social learning theory

I. INTRODUCTION

There is a continuous surge in the numbers of opioid users and Polydrug use remains common both for recreation and regular drug use as reported by the *United Nations Office on Drugs and Crime* (UNODC, 2018b). Polydrug use is a major characteristic of drug use among young adults. In 2017, 53.4 million people worldwide had used opioids (UNODC, 2019a). In Africa, the number is estimated at 680,000 to 2.9 million opioids users (UNODC, 2019c). According to UNODC (2018c), 585,00 people died as a result of polydrug use in 2017. Among these people, 29.2 million polydrug used opiates, heroin and opium.

The number of people who had used injected drugs worldwide stood at 11.3 million in a 2017 review by UNODC (2019a).

According to the report presented by UNODC (2019b) on polydrug use in 2017, 271 million people worldwide aged 15-64 years were reported to have used polydrug, and one in every 18 people between ages of 15 and 64 years were reported to have used an illicit polydrug. More recently, drugs have become easily available in Africa. Ngarachu et al. (2019) in their study established polydrug use patterns of cannabis, 84.8% at baseline and 64.2% at follow up, heroin and benzodiazepines among 984 MAT patients aged 28-38 years. In addition, the UNODC report established that older people portrayed higher use of polydrugs such as Khat and Cannabis UNODC (2019a), than the young generation. National Authority for the Campaign Against Drug Abuse (NACADA, 2012) in Kenya, also conducted a rapid situation assessment of the status of drug and substance use in Kenya. The study showed that 19.8% of the 3,362 households drawn from 8 regions in 30 counties used at least one substance, while others were subject to polydrug use (NACADA, 2019). Polydrug use is a risk factor to substance use disorders (SUDs) (UNODC, 2018b). Generally, SUD describes a range of pathological patterns associated with use of psychoactive substances, illicit drugs and misuse of prescribed drugs (UNODC, 2019b). Polydrug use results in cognitive, behavioural and physiological symptoms of impaired control, social impairment, risk use and pharmacological criteria of impaired control over substance use, which include tolerance and withdrawal (APA, 2013). Notwithstanding, there is an opioids market boom worldwide with people continuing to use these substances despite the associated adverse health consequences. Overdose was found to be the leading cause of death among people who inject drugs (WHO, 2020). According to UNODC (2019), in 2017, 585,000 people died due to drug use, and opioids account for majority of related deaths. North America has the highest drug related mortality in the world amounting to 1 in 4 drug related deaths globally.

II. LITERATURE REVIEW

A. Theoretical Review

The Social learning theory (SLT) by Bandura (1977) provides an understanding of the factors that underpin the prevalence of polydrug use among patients undergoing MAT in a socio-cultural perspective (Kendra, 2019). The social learning theory supports that polydrug use is learned through observation and modelling, hence MAT patients may observe polydrug use and polydrug use reduction behaviors from others and adopt similar strategies. According to Laland and Rendell (2019), this helps in cognitive

understanding and coding of polydrug use that is observed hence, influencing present and future polydrug use treatment among MAT patients. According to Bandura, witnessing polydrug use in MAT patients is likely to evoke usage by emulating, if the user goes unpunished. Active imagination helps polydrug users to reinforce or punish behaviour and therefore, MAT patients with active imagination and self-regulation experience internal rewards, hence do not engage in polydrug use. The central theme of SLT is self-efficacy/autonomous and competence that may be achieved to motivate and empower MAT patients to increase intrinsic motivation on polydrug use reduction (Ackerman, 2019).

B. Empirical Review

Prevalence of polydrug use, despite being high as reported in various studies, has generally received little interest and particularly, on the magnitude of use among patients undergoing Methadone Assisted Therapy (MAT) (Wagner et al., 2018). The study found out that the level of usage in Canada for illicit substance was 93.3% while polydrug use was 85% among patients of Opioid Maintenance Treatment (Wagner et al., 2018). More research has indicated that most patients suffering from opioid use disorder engage in polydrug use (American Addiction Center, 2020a) in order to enhance the effect of one or both substances, or to mitigate the unpleasant effect of one or both substances (NIDA, 2020b). Some of the common psychoactive polydrugs used include stimulants, opioids, depressants and hallucinogens (UNODC, 2019d; Drug policy network, 2017; Ministry of Health [MoH], 2017). The study by Radcliffe et al. (2019) reported that MAT patients had used various polydrug namely; heroin, cocaine, Amphetamine, methamphetamines, hallucinogens, benzodiazepines, novel psychoactive drugs or NPS and cannabis in the past 30 days. The common routes of administration included swallowing, snorting smoking, inhaling fumes, intramuscular injection, subcutaneous injection, intravenous injection, topical and sublingual, among others (Radcliffe et al., 2019; NIDA, 2020). The effect of the route of administration influences its choice such that, the faster the illicit psychoactive drug hits the brain, the greater and more reinforcing its effects on the users. While the psychoactive speed of action smoking takes 7-10 seconds, intravenous takes 15-30 seconds, injecting into the muscle or under the skin takes 3-5 minutes, mucous membrane absorption, snorting and rectal 3-5 minutes, swallowing 20-30 minutes, absorbed through the skin slowly over a period of a long period (UNODC, 2019c; Drug policy network, 2017; UNODC, 2018c). The following subsections discuss polydrug use prevalence by highlighting the commonly used polydrug by patients undergoing MAT.

C. Cannabis

Cannabis is the most commonly used psychoactive drug by MAT patients. Cannabis contains mind altering chemical tetrahydrocannabinol (THC) and is not categorized in the four classes of psychoactive substances (UNODC, 2019c). Its use is prohibited in Kenya (MoH, 2017). Studies have indicated that the effect of cannabis has individual differences in the users' central nervous system, while in some users, it acts as a stimulant and depressant, in others, it acts as a hallucinogen (Burgess, 2019). The high prevalence of cannabis polydrug use among MAT patients, especially women in Canada, was associated with more stimulant use through a meta- synthesis study (McBrien et al., 2019). A systematic review and meta-analysis of 6 studies on cannabis use and MAT treatment retention for OUD in Canada, indicates a high prevalence of cannabis use among MAT patients, between 11.2% to 78.6 % than those in the general population (McBrien et al., 2019). The results by McBrien et al. (2019) showed that about a third of Canadians have used cannabis once in a lifetime. At least 59.7% of males and 43.5% of females on MAT reported having used cannabis. Early initiation of cannabis use increases the risk of using illicit opioids (National Center for Biotechnology Information, 2020b).

D. Stimulants

The stimulants comprise cocaine, amphetamine, methamphetamine and methylenedioxymethamphetamine (MDMA), new psychoactive drug (NPS) and nicotine (UNODC, 2019c; MoH, 2017). The effects of methamphetamine last for 4 to 6 hours. Methamphetamine is a powerful stimulant drug with highly addictive characteristics (Massah & Moradi, 2018) and whose prevalence was found to be high among Iranian women in MAT. According to Massah and Moradi (2018), while Iranian females used MA for self-treatment, particularly in depression, usage by males was also commonly associated with sexual dysfunction and enhancement. In Malaysia, Lim et al. (2018) found high use of methamphetamine in 21 men who had sex with men, age ranged from 21-43 years, those who had sex in the past 6 months and had used methamphetamine for the last 3 months. The duration of methamphetamine administration was 6-4 years within a range of 1-21 years. Studies by Massah and Moradi (2018) and Lim et al. (2018) support psychosocial treatments to address MA dependency in MAT. It is clear that with MAT, patients will receive the necessary treatment to motivate them towards engaging in other social activities than polydrug use. The use of amphetamine-type stimulants showed high prevalence among primary and private MAT in Kuantan, Malaysia (Singh et al., 2019). The study participants were a total of 237 regular MAT patients, with amphetamine-type stimulants history. The

results from chi-square analysis indicate, amphetamine was the most commonly used by private patients with 188 (79%) participants over the last 30 days in the MAT program.

E. Opioids

Globally, 33.12 million people are experiencing the problem of opioids use disorder (Wang et al., 2018). They are reported to be dependent on opioids for non-medical use and have a history of long durations of use among the population aged 15-65 years (UNODC, 2019b). Surprisingly, heroin is reaching the market despite declining opium production in Afghanistan, the country responsible for vast majority of the world's illicit opium poppy cultivation and production in 2017 (UNODC, 2019a). Kataja et al. (2018) in their study, observe that polydrug use is common in people with OUD. There is a high prevalence of Polydrug use among people with OUD, and use of alcohol, prescription drugs, methamphetamine and amphetamine (Singh et al., 2019; Wang et al., 2018). The most preferred opioids route of administration is smoking and through injection (Meacham et al., 2018). Opioids use lead to opioids use disorder impacting heavily on a country's economy through medical illness, loss of productivity, injuries and fatalities from automobile and other accidents, overdose inflicted deaths, suicides and violence (UNODC, 2019c). In 2017 alone, the study by Gust and McCormally (2018) revealed that 72,000 overdose deaths occurred and 2.1 million Americans aged 12 years and older met the diagnosis of OUD. National Institute on Drug Abuse International program (NIDA, 2018b) on advancing addiction science findings reveal that opioid misuse, addiction and overdose constitute an emerging health crisis. The inhaled or casing the dragon has a safer infectious profile and a greater subjective experience of highness, as compared to sniffing and snorting (Alambyan et al., 2018). The worst affected counties according to the report were Mandera, Mombasa and Nairobi (Nation Newsplex, 2018).

A study on concurrent drug use among MAT patients in mountainous areas in northern Vietnam (Tran et al., 2018) found high prevalence of opioids polydrug use in various MAT settings. This implies that a struggle to reduce polydrug use and suppress resistance effects often affects the psychological states of the patients, with some of them getting distressed. Another different study on the prevalence and factors associated with continual opioids use among patients attending methadone clinic at Mwananyamale Hospital, Dar es Salaam, Tanzania, found high prevalence of opioids polydrug use (Ripanda et al., 2019). The cited study findings support that opioids polydrug use is highly associated with high-risk behaviour which may hinder access to MAT. The high use of opioids through injection is associated with increased HIV transmission (Wambugu, 2019). This was revealed by the study on high uptake of MAT among

People who inject Heroin (PWIH) in Mathare low-income settlement, Nairobi, Kenya. The study revealed that PWIH had median of 5 (3-9) years of heroin use, with a range of heroin injection 1-22 years, daily frequency use was one and 12 times a day, with a median of 4 (3-6) times in a day. Polydrug use predicted the uptake of MAT with those who were polydrug using having ever enrolled in MAT (Wambugu, 2019).

Kenya has an estimated 18,327 people who inject drugs and almost half are in the coastal region (Beghazal et al., 2016). Other consequences of heroin use include patterns of polydrug use, sexual risk of HIV, Hepatitis C, increasing psychiatry mental illness, heroin injection and increasing HIV epidemics and MAT uptake (Wambugu et al., 2019; Rhodes & Rhodes, 2018), as well as increasing criminal activity and illicit sex (CDC, 2020b). Therefore, among other benefits of Methadone, like Naltrexone and buprenorphine, is that it helps individuals with an OUD to abstain from, or decrease the use of illegal or non-prescribed opioids addiction as the first line of treatment. Opioid misuse, addiction and overdose, constitute an emerging health crisis (NIDA, 2018b). Empirical studies conducted in different countries, covering over 25 years have shown methadone assisted therapy as being effective in treating opioids withdrawal, euphoric effect of illicit opioid use and decreased opioid craving (Gust & McCormally, 2018).

F. Depressants

Many studies report that depressant psychoactive drugs depress the central nervous system. These include the alcohol use (NIDA, 2020a) and non-medical use of prescriptions namely, barbiturates, benzodiazepine, gamma-hydroxybutyrate (GHB), and rohypnol (NIDA, 2020e). While various polydrug substances are used by MAT patients as a stimulant, depressants are used for reduction in arousal and stimulation. The result from Radcliffe et al. (2019) revealed harmful alcohol use by MAT patients from England. The study on patterns of *alcohol polydrug use* among men receiving MAT for heroin and/or cocaine use in England, Brazil and Spain were found to be high in prevalence, in spite of the harmful effects of alcohol polydrug use (Radcliffe et al., 2019). Results showed that 41% of the men in the MAT treatment met the criteria for harmful alcohol drinking and among them, 28% were not receiving treatment for alcohol. More participants with harmful alcohol use from England reported not receiving alcohol treatment, than those from Spain and Brazil. The study by Lee (2019) on alcohol use among 395 MAT patients reported 24.8% daily use of alcohol. Studies on polydrug use of alcohol in MAT patients depict a high prevalence. The harmful polydrug use of alcohol however, remains neglected by the current MAT clinic treatment and intervention strategies. In a study conducted by Satre et al. (2019), MI intervention was found to reduce unhealthy polydrug use, alcohol use and improve patients' motivation reducing

polydrug use for non-prescribed psychoactive substances among primary care patients with HIV. Safranek et al. (2020) also observe that non-pharmacological intervention found that MI reduces polydrug use of alcohol, marijuana and opioid use during pregnancy. Alcohol polydrug use is associated with increased morbidity and mortality among people in MAT (Wang et al., 2018).

G. Hallucinogens

The empirical evidence reviews hallucinogens as psychoactive substances that alter MAT patients' awareness of their surroundings, thoughts and feelings (NIDA, 2019). They are found in two classes, the classic hallucinogens and dissociative substances. The psychoactive substances from the two classes cause hallucinations and images that seem real but are not. The common classes of hallucinogens include D-lysergic acid diethylamide (LSD), mescaline (popote), ecstasy/molly, methylenedioxymethamphetamine (MDMA) and mushrooms. The dissociative include phencyclidine (PCP) which causes symptoms that mimic schizophrenia, causes depression and coma, memory loss, difficulty with speech and thinking, weight loss and symptoms can persist up to 1 year after stoppage (NIDA, 2019). There is also Ketamine, dextromethorphan (DXM) and salvia. The dissociative psychoactive substances can also cause depressant and stimulants' effects.

H. Non-Prescribed Psychoactive Drugs

Studies on non-prescribed use of methadone and buprenorphine prior to opioids substitution treatment, show high prevalence of non-prescribed polydrug use among patients with opioids dependence in five Swedish cities (Johnson & Richert, 2019). The study findings revealed that the prevalence of non-prescribed psychoactive polydrug use was 87.8% for methadone, 80.5% for buprenorphine and 50.6% for buprenorphine /naloxone. To reduce prevalence and use of opioids, Methadone assisted therapy is a pharmacological intervention that is approved by Food and Drug Administration (FDA) and is the most common treatment for OUD (SAMHSA, 2020b). Methadone is a full synthetic opioid agonist that acts on opioid receptors to prevent opioid withdrawal symptoms and reduce opioid cravings (National Center for Biotechnology Information, 2020b). The overall goal of MAT is for patients to achieve full recovery demonstrated by the ability to live a self-directed life, improved health, wellness, quality of life and well-being within one year (Bell & Strang, 2020; Ali et al., 2018; SAMHSA, 2020b). However, despite evidence-based benefits of MAT in managing OUD, MAT patients continue to use illicit opioids (McBrien et al., 2019). This does not only lead to increased prevalence in polydrug use, but also heightens negative impacts on the MAT patients. While MAT is said to utilize Methadone medication in

combination with adjunctive psychosocial treatment to provide a holistic treatment approach for OUD (Shams et al., 2019), discontinuation of the therapy administration may have adverse effects, including continued opioid use and polydrug use (Martin et al., 2018). Food and drug administration supports that it is better or safer to start MAT, or continue with MAT despite polydrug use since the harm caused by the untreated OUD outweighs the risks (Martin et al., 2018).

In Kenya, studies have indicated that Kenyans have a high uptake of MAT, among them, patients who inject drugs (PWID), such as heroin (Wambugu, 2019). It has been established that MAT plays a critical role in HIV reduction among PWID. These patients receive MAT as guided by the national treatment protocol for SUD (MOH, 2017).

III. METHODOLOGY

The study utilized a quasi-experimental research design in the control group and experimental group. The mixed methods research strategy was used to collect both quantitative and qualitative data (Nardi, 2018) from the MAT patient respondents. While quantitative data was used to determine the prevalence, the types of polydrug use among patients undergoing MAT used qualitative data. The independent variables in the treatment group were manipulated against dependent variables, measurement, comparison and control group in the selected MAT treatment clinics, where patients seek daily MAT health care. The strategy enabled the control confounding variables that may influence the independent and dependent variables. The quasi-experimental research design entailed a pre and post-test strategy in which, the dependent research variable was measured once before MI treatment and after implementing the MI treatment. Participants were therefore grouped into two, the treatment group and control group. The treatment group was in different sites to avoid a herding effect. Both the treatment and control group study participants received their MAT daily dosage in their MAT clinics. The study design facilitated the identity of differences between treatment and control groups with a homogeneous group of participants. Consequently, a relatively small sample size was used based on this research design. A baseline assessment for both treatment and control group, and MI in the treatment group over a period of six (6) weeks was performed. The counter balancing took place by changing control and treatment participants' time and sessions to control the confounding systematic relationship of MI treatment time differences, intervention in the same room and similar order of treatment sessions.

II. TABLE 1

Study Design

Groups	MAT Clinic A	MAT Clinic B
Treatment group	MAT Treatment, psychometric assessment and MI	
Control Group		MAT Treatment, psychometric assessment and Zero MI

The study was conducted in selected MAT clinics in Nairobi County. The County was considered ideal based on the prevalence and incidence of the opioids use (Rhodes & Rhodes, 2018; Nation newsplex, 2018). The clinics are named MAT Clinic A and B. The study targeted patients with opioids addiction under MAT treatment in the selected study MAT clinics, yet subject to Polydrug use. The target population comprised 2121 patients, with 1207 and 914 MAT patients from MAT Clinic A and B respectively (Study sites clinical records, 2020). Participants were then selected through use of secondary MAT clinical records for demographic, polydrug use history, medical and family, personal polydrug use history after which, a psychometric tool for quantitative data and MI in a representative sample from the MAT population were administered. The MAT patients ‘significant others,’ as well as MAT service providers and key informants from the population were included in the study. A sample of 120 participants was therefore obtained and assigned into the 2 groups. Both treatment and control groups went through baseline and endline assessment, as well as their daily MAT. Baseline and endline assessment for both groups were conducted through TLFB, WHO-5 well-being questionnaire and secondary MAT clinical record assessment. The study sample was identified from the clinical records drawn from study site A and B which consisted of a total population of $N = 2121$. The sampling criteria is guided by Tara’s (1967) formula $n = N / (1 + N(e)^2)$ (Louangrath, 2017; Imperial Writers, 2016).

Where:

- n : signifies the sample size
- N : signifies the population under study
- e : signifies the margin error of 0.05 confidence level
- n : $2121 / (1 + 2121(0.05)^2)$
- n : $2121 / (1 + 5.3025)$
- n : $2121 / (6.3025)$
- n : 336

A desired sample size of 336 MAT patients, were obtained from both study sites 1 and 2. However, the inclusion and exclusion criteria depicted in Table 1 was followed to include only patients who meet study inclusion criteria. Through systematic random sampling at an interval of eight patients, the respondents were selected from the desired sample size of 336 to attain the study sample size $n = 120$ at 95% confidence interval. Questionnaires (Time follow back [TLFB] psychometric tool) and interview schedule unstructured interview (APA, 2019) were used for data collection. Secondary data on the other hand included MAT patients' clinical records on biography, history of polydrug use evidenced by the toxicology report, PDU Patient, date of entry in the MAT, at least 2 weeks in MAT, active MAT client, current MAT dosage, not on Psychiatry medication and not on Psychotherapy. Data analysis was conducted using Statistical package for social sciences (SSPS) and presented descriptively in form of charts.

IV. RESULTS AND DISCUSSION

The aim of the paper was to establish the prevalence of polydrug use in patients undergoing Methadone assisted therapy. Prevalence was measured in both the treatment and control group through MAT patients' secondary data from MAT clinical record, timeline follow back (TFLB), self-assessment reports and observation of trends in polydrug use. The baseline assessment data from the TFLB questionnaire revealed the prevalence of polydrug use to be at 96.67% ($n = 58$) for treatment group and 98.33% ($n = 59$) for control Group. 2 study participants from treatment group and 1 from control group revealed in the TFLB to not having engaged in polydrug use daily for the 7 days the TFLB was administered, compared to the rest. The results are shown in Figure 1a and 1b respectively (Source: Researcher, 2021).

FIGURE 1A:

Treatment Group Prevalence of Polydrug Use

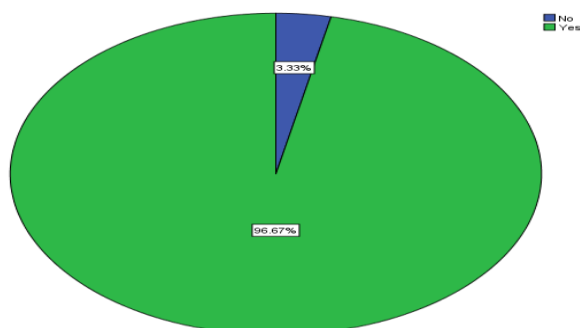
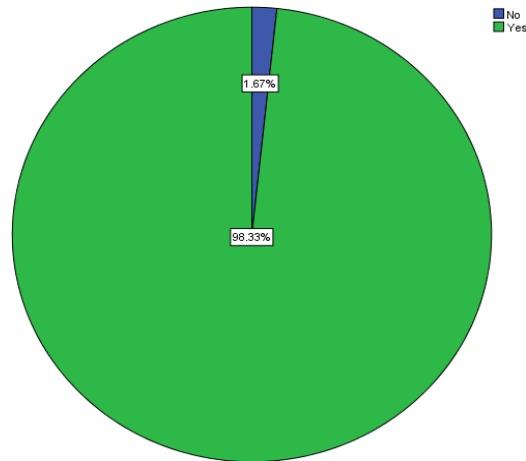


FIGURE 1B:

Control Group Prevalence of Polydrug Use



During Endline assessment, the data from the TFLB questionnaire revealed that the prevalence of poly drug use to be 68.52% (n = 37) for treatment group and 77.36% (n = 41) for control group as shown in Figure 2a and 2b respectively (Source: Researcher, 2021). This is an indication that there was significant reduction in polydrug use in both the treatment and control group. The treatment group reduced its frequency in polydrug use by 28.15% a significant difference post motivation interview between treatment and control group. The control group reduced its frequency in polydrug use by 20.97%.

FIGURE 2A:

Treatment Group Prevalence of Polydrug Use

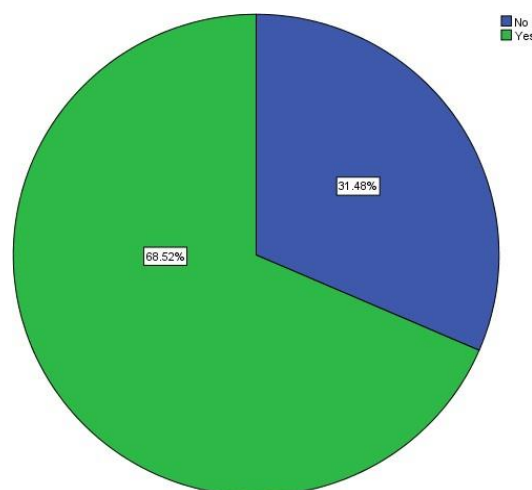
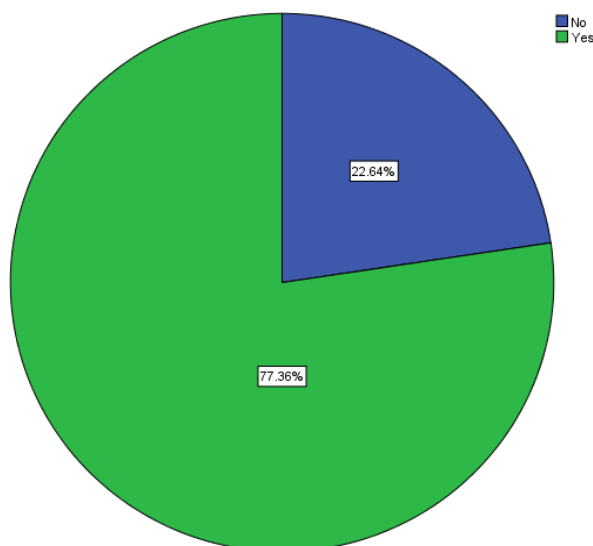


FIGURE 2B:

Control Group Prevalence of Polydrug Use



A. Qualitative data on Importance of reducing poly drug use

In relation to their current MAT, the respondents admitted that it was important for them to stop or reduce polydrug use so that they are able to be weaned off MAT and complete the MAT program, change their lives, health, be sober and find new jobs. This is confirmed by the quantitative data where 44% of the respondents stated that it was important as the only thing that would get them from the self-reported indicators to a higher number on the self-rating readiness ruler. Over 80% of the respondents stated that they considered the decision of polydrug reduction important. All the MAT patients from treatment group that were on cessation of MAT indicated that it was very important that they make change of polydrug use reduction, except one who indicated somewhat important on making the change.

When asked what benefits they can identify if they stopped or reduced polydrug use, the respondents stated that they would be able to rebuild their bonds with their families, save money spent on substance use, own a sense of achievement, pride, joy, excitement and calmness, be a good role model to grandchildren, motivate other polydrug users on the benefits of stopping/reducing polydrug use and they will be able to pursue their careers and their passion in life. The study participants also stated some of the concerns that may hinder them from reducing polydrug use such as: withdrawals (Arosto), cravings,

missing MAT dosage, boredom, bad company, family issues, lack of appetite, lack of job, lack of sleep, nightmares, health issues, restlessness and missing MAT doses.

These findings are consistent with recent findings on the prevalence of polydrug use being high among patients undergoing Methadone Assisted Therapy (MAT) (Wagner et al., 2018). The study findings confirm the argument that most patients suffering from opioid use disorder engage in polydrug use while undergoing MAT treatment (American Addiction Center, 2020a). In support of the study findings, NIDA (2020b) echoes that the high prevalence in polydrug use among patients undergoing MAT is influenced by the attempts to enhance the effect of the polydrug used for one or both substances, or to mitigate the unpleasant effect of one or both substances (NIDA, 2020b). Current study agrees with findings by NIDA (2020b) that high prevalence of polydrug use is to mitigate the effect of other polydrug, MAT patients self-report cited attempts to reduce withdrawals (Arostio) and craving. While Wagner's et al. (2018), findings on high prevalence of polydrug use among MAT patients was drawn from various countries like Canada and Meta-analysis, the current study findings on high prevalence of polydrug use is based on two MAT clinics and quasi-experimental research design in Kenya. The current study looked at the prevalence of polydrug use from the treatment and control group perspective, ignoring the polydrug use prevalence in gender, age, level of education, employment, religion and marital status. Maybe this would have brought out the differences in prevalence of polydrug use. The study revealed partners in MAT and in polydrug use, the study did not assess the prevalence across partners which maybe could have yielded some valuable data. During endline assessment, the study findings established that some MAT patients who participated in baseline were in security systems, some in MAT van dosing and others had dropped out. The study did not assess their endline prevalence in polydrug use which could have shed some light. As revealed by this study, the high prevalence polydrug use is alarming. Despite the evidenced effectiveness of MAT in treating Opioid use disorder (Ngarachu et al., 2019), it is challenged by MAT patients' high prevalence of polydrug use, while undergoing MAT treatment (Wang et al., 2018; Singh et al., 2019). From the MAT clinic records, the study established that MAT guidelines direct MAT clinicians to reduce the methadone dosage to the affected MAT patients, after screening for the actual psychoactive substance used to avoid the risk of respiratory distress. Therefore, the high prevalence of polydrug use among patients undergoing MAT impacts negatively on MAT treatment outcome (Klimas et al., 2018). Findings from the study MAT patients' clinical records revealed evidence of MAT patients that had ever been tested for polydrug use found to be positive and with high prevalence of polydrug use. This finding is confirmed by the baseline and endline assessment and MAT patients self-report, the presence of opioids

in urine after administration of MAT is a sign that the patient needs a higher methadone dose (SAMHSA, 2018b).

V. CONCLUSION

There is a high prevalence of polydrug use in patients undergoing Methadone assisted Therapy. The baseline assessment results indicated a high prevalence of polydrug use for both treatment and control groups. More so, Polydrug use cuts across all genders with highest prevalence being reported in males than in females, besides being used by both young and adult patients. Notably, polydrug use was highly reported among the young adults. MAT patients under polydrug use exist at all levels of education with majority having attained primary education, followed by secondary education and few who had attained a tertiary education. From the study findings, it is no doubt that polydrug use affects both permanent and pensionable workers including those in the medical field and casual workers cutting across all religions, with very few being active in religious activities. Polydrug use also affects individuals in varying marital statuses with the married being mostly affected resulting in frequent separations. After three month follow up, the prevalence of polydrug use reduced the most for the treatment group with MI and less for the control group with no MI. Generally, the difference in the treatment group is associated with MI and in the control group with MAT. There are differences in polydrug use reduction of 7.18% between the treatment and control group. Therefore, Methadone Assisted therapy is effective in reduction of polydrug use, but not as effective when combined with MI.

VI. RECOMMENDATIONS

The following recommendations were drawn from the study findings:

- a) Since the effectiveness of Motivation interviewing has been proven to reduce prevalence of polydrug use, MAT clinicians should incorporate Motivation interviewing into their clinical practice to reduce prevalence of polydrug use for the patients undergoing MAT and help them build a rational understanding of the polydrug use reduction.
- b) There is a need to develop standard intervention plans of motivation interviewing to go hand in hand with Methadone assisted therapy by the MAT clinicians guiding the process, phases, action and timelines of the motivation interviewing as a strategy to reduce prevalence of polydrug use.
- c) A guideline on monitoring and evaluation tools for polydrug use reduction should be encouraged by the administrators and embraced by the MAT clinician to review implementation of MI in an effort to assess and reduce polydrug use among MAT patients
- d) There is need for the Ministry of health to develop a policy document on protection and prevention

of polydrug use through psychoactive drug screening while undergoing medical treatment between age 11-20 years and during schooling by the Ministry of education to reduce prevalence of polydrug use among the youths.

- e) Future researches should advocate for polydrug use reduction across genders, religions and between ages 18-57 years by the mental health professionals in an effort to reduce prevalence of polydrug use.
- f) A study evaluating on polydrug use differences among MAT patients in relation to their gender, age, level of education, employment, religion and marital status should be conducted.

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