ASSESSMENT OF PREVALENCE AND FACTORS ASSOCIATED WITH CONTINUAL SUBSTANCE USE AMONG PATIENTS USING METHADONE IN MEDICALLY ASSISTED TREATMENT CLINICS IN DAR ES SALAAM, TANZANIA.

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Department of Pharmaceutics and Pharmacy Practice

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By

Loning'o Samwel Mbesere

A Dissertation Submitted in (Partial) Fulfillment of the Requirements for the Degree of Master of Science (Pharmaceutical Management) of

Muhimbili University of Health and Allied Sciences
October, 2024

CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences the dissertation entitled; **''Assessment of Prevalence and factors associated with Continual Substance Use among patients using methadone in Medically Assisted Treatment Clinics in Dar es Salaam, Tanzania'',** in (partial) fulfilment of the requirements for the Master of Science (Pharmaceutical Management) of Muhimbili University of Health and Allied Sciences.

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(Co-Supervisor)

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Date

DECLARATION AND COPYRIGHT

I, **Samwel Loning'o Mbesere**, declare that this **dissertation** is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

Signature…… **Date**……...….....

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Lastly, and most importantly, I wish to express my sincere thanks to my spouse and family for their unending love, patience, and support. Their encouragement and understanding have been a constant source of strength and motivation throughout this journey.

DEDICATION

Lastly, I dedicate this research to the Almighty God, who has provided me with strength, wisdom, guidance, clarity of thought, protection, competence, and good health throughout this study. I offer all of this to you, O Lord.

ABSTRACT

Background: Substance use is a global concern, affecting millions. Methadone maintenance therapy (MMT) is effective for treating opioid addiction, but concurrent illicit drug use remains an issue among MMT patients. In Tanzania, Medically Assisted Treatment (MAT) has been in use since 2011, yet it faces challenges with concurrent substance use, impacting treatment outcomes.

Objective: To assess the prevalence and factors associated with continued substance use among patients using methadone in MAT centres (MNH, Mwananyamala RRH, and Temeke RRH) in Dar es Salaam.

Methods and Materials: A cross-sectional study was conducted at three MAT clinics in Dar es Salaam: Muhimbili National Hospital, Temeke Regional Referral Hospital, and Mwananyamala Regional Referral Hospital. The study included 461 participants selected through systematic sampling from the MAT database at each hospital. Data were collected using electronic questionnaires programmed with Open Data Kit (ODK) and administered via smartphones/tablets. Data cleaning and analysis were performed using STATA version 17. Descriptive analysis provided insights into the prevalence and patterns of continued substance use. The Modified Poisson model assessed factors associated with the outcome, with covariates having a p-value < 0.2 included in a multivariate analysis. Statistical significance was determined by a p-value < 0.05.

Results: The prevalence of continued substance use among methadone patients in MAT clinics was 52% (n=239). The most reported substances were cannabis (72%), heroin (30.1%), and alcohol (22.6%). There was a higher prevalence at Temeke RRH (65.2%) than at Muhimbili National Hospital (57.3%) and Mwananyamala RRH (36.1%). Modified Poisson model revealed that easy access to drugs in residential areas, stigma, loneliness, depression perceived insufficiency of methadone dosage and having friends using substances were significant factors associated with continual substance use. Sources of the substance used included easy drug access in residential areas (59.3%) and pharmacies 87% where prescription medicines, such as Diazepam (65.9%,) and Tramadol (48%)were obtained.

Conclusion: The study highlights a significant prevalence of continued substance use among methadone patients in MAT clinics in Dar es Salaam. Factors such as easy access to drugs, stigma, loneliness, depression, perceived insufficiency of methadone dosage, and social circles involving substance use are crucial in influencing continued substance use. Addressing these factors through comprehensive strategies is essential to improve treatment outcomes and reduce concurrent substance use among methadone patients in Tanzania.

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LIST OF ABBREVIATIONS

IRB	Institutional Review Board
MAT:	Medically Assisted Treatment
MMT:	Methadone Maintenance Therapy
MNH:	Muhimbili National Hospital
MOUD:	Medication for Opioid Use Disorder
MRRH:	Mwananyamala Regional Referral Hospital
ODK:	Open Data Kit
OMT:	Opioid Maintenance Treatment
OTP:	Opioid Treatment Program
OUD:	Opioid Use Disorder
POM	Prescription Only Medicine
SPSS:	Statistical Package for Social Sciences
TRRH:	Temeke Regional Referral Hospital
UNODC:	United Nations Office on Drugs and Crime
WHO:	World Health Organization
WMH:	World Mental Health

DEFINITION OF TERMS

Substance use: refers to the harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs, which can lead to dependence, addiction, and negative health and social consequences.

Illicit drugs: are substances that are illegal to produce, possess, or distribute, such as cocaine, heroin, and methamphetamine.

Opioid use disorder: is a medical condition characterized by the problematic use of opioids, leading to significant impairment or distress.

Patterns: In the context of research, patterns refer to recurring trends, behaviours, or characteristics that can be observed in data or phenomena.

Medically Assisted Treatment Clinic: This is a healthcare facility that provides treatment and support for individuals with opioid use disorder by offering methadone maintenance therapy as a part of the addiction treatment program.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Substance use refers to the harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs, which can lead to dependence, addiction, and negative health and social consequences (1). Substance use is prevalent and imposes a substantial burden on global health. According to the 2021 report from the United Nations Office on Drugs and Crime, approximately 296 million individuals aged 15–64 engaged in substance use, constituting 5.8% of this demographic. Notably, opioid consumption impacted 60 million individuals, including 31.5 million who used opiates such as heroin (2). The research conducted in sub-Saharan Africa revealed a high prevalence of cannabis misuse among patients receiving methadone treatment, standing at 62.7%. This figure closely aligns with the rates observed in South Africa, ranging from 12% to 67%, with a median of 23% (3,4).

The combination of counselling with Methadone Maintenance Therapy (MMT) has demonstrated effectiveness in the treatment of opiate addiction. (5). Treatment for opioid use disorder (OUD) that is backed by evidence involves medication-assisted treatment (MAT), which entails utilizing approved medications alongside counselling, additional behavioural therapies, and patient monitoring. Numerous advantages are provided by this program, such as a decline in illicit drug usage and mortality rates, a reduction in criminal behavioural, enhanced engagement with healthcare services, elevated employment rates, and diminished societal expenses. (6)**.** Furthermore, MMT has effectively decreased HIV transmission rates among patients. Nonetheless, there are ongoing worries about the simultaneous usage of additional illegal substances among participants in MMT initiatives, with insufficient exploration into the frequency and trends of substance misuse extending beyond cocaine and benzodiazepines. (7)**.**

Despite the advantages offered by methadone maintenance, there is often expressed apprehension regarding the consumption of other illegal substances among individuals participating in methadone programs. (8). Questions remain regarding the extent and manner of this usage, potential drug replacements, and its connection to opioid relapse. Presently, a significant portion of available literature has concentrated on cocaine and benzodiazepines,

neglecting research on the frequency of alternative substance use like cannabis and its association with the consumption of other illicit drugs among individuals visiting methadone clinics.

The continued use of substances while in MMT still being a challenge; the prevalence of cannabis use is high among patients seeking or receiving treatment for OUD (9)**.** Some studies have documented continued or intensifying cannabis use following MOUD initiation(10) and particularly in the interim period before dose stabilization (i.e. Maintenance) (11).

Several studies indicate that Cannabis (marijuana) is commonly used in combination with heroin or oral opiates, in addition to other substances such as cocaine and benzodiazepines (12)**.**In several studies of non-opiate illicit drug use in opiate-dependent individuals, rates of cannabis use were shown to remain high during treatment for opiate dependence when patients were attending methadone clinics (13)

The government of Tanzania launched an opioid treatment program (OTP) using methadone in Dar es Salaam in February 2011. There are reports of clients on Methadone Maintenance Treatment concurrently using heroin and other drug while under the treatment program(14). Continual use, use, and drug dependence on a broad range of prescription and nonprescription drugs during treatment pose a major clinical challenge to substance-specific pharmacotherapies like Methadone Maintenance Treatment (MMT) (15,16). On the other hand, continual use, principally involving heroin and cocaine, remains a significant root of MMT termination(17,18). Despite these efforts, there was limited information on continual substance use among clients attending methadone clinics in Tanzania. Therefore, the current research article assessed the prevalence and patterns of continual substance use among patients attending methadone clinics.

1.2 Problem statement

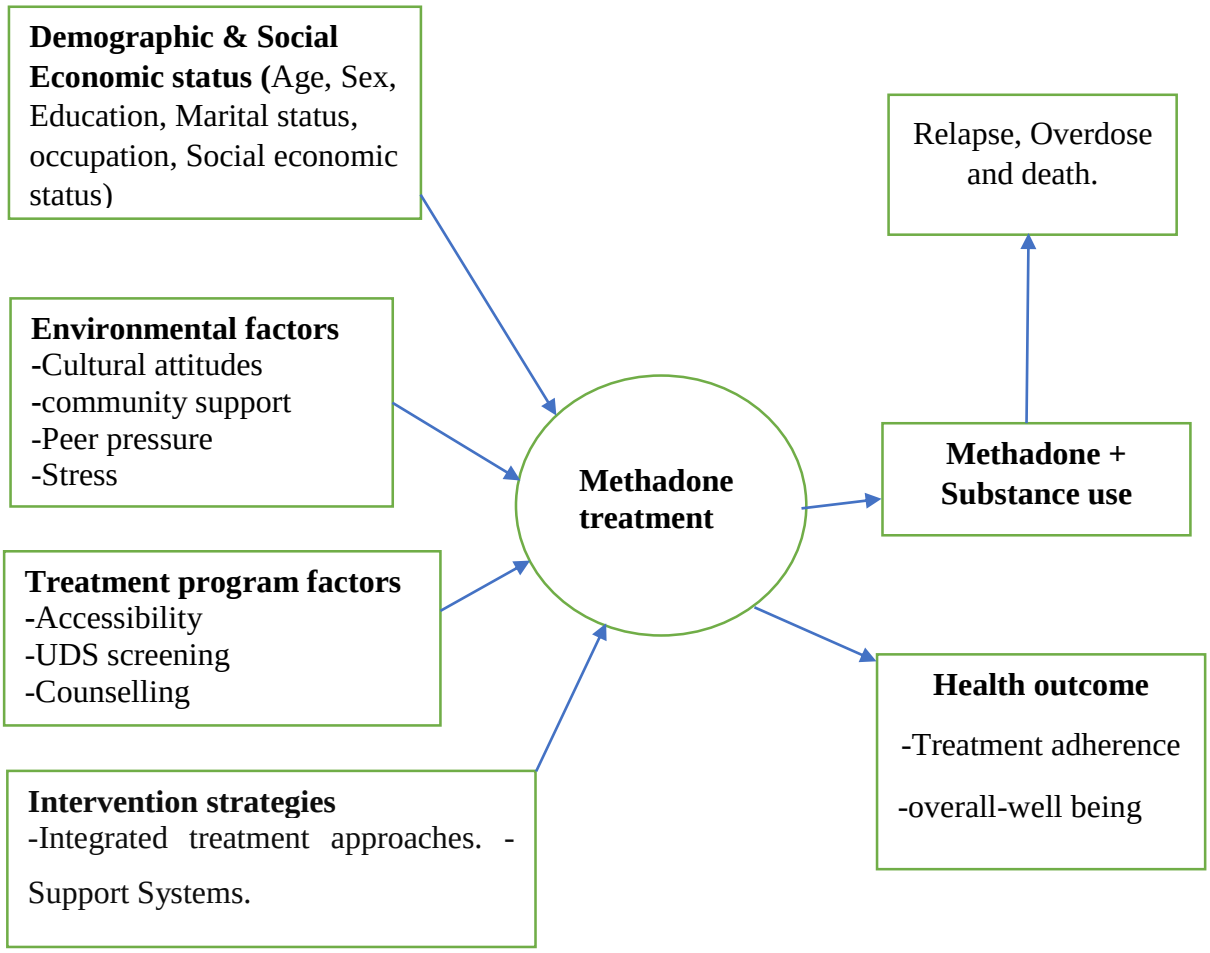
Substance use presents a significant global public health concern, transcending societal boundaries and impacting communities worldwide (19). The widespread availability of drugs and substances of use poses a significant challenge, adversely affecting the lives of countless individuals, including both adolescents and the general population (20). The rapid increase in the number of illicit drug users has reached alarming levels, infiltrating all corners of the globe without exception. Tanzania, like many other nations, has not escaped the harmful effects of this issue.

The occurrence of substance misuse among individuals undergoing MMT is considerable, as studies have indicated rates ranging from 23.5% to 25% (21)**.**

Despite the availability of effective treatments for substance misuse, the persistent problem of substance use among patients attending MAT clinics remains prevalent. A considerable proportion of these patients continue to misuse substances despite their attendance at these clinics, resulting in adverse outcomes such as relapse and overdose(22).

In Tanzania, the available studies on the prevalence of continued substance use among patients receiving methadone treatment have predominantly focused on opioids, rather than on substance use as a whole (23,24). Therefore, this study aimed to assess the prevalence of continual substance use among methadone clinic attendees, analyze patterns of use and types of substance use, and identify associated factors.

1.3 Conceptual Framework



1.4 Rationale

Despite the presence of methadone treatment in MMT clinics, certain patients persist in substance use, presenting significant public health challenges and affecting the effectiveness of treatment and patient welfare. Through determining prevalence and pinpointing factors linked to substance use as well as sources of used controlled medicines among patients in methadone programs, the study has generated data on the burden of continued substance use and the factors contributing to continued substance use. Ultimately, improves the overall well-being and quality of life of patients undergoing methadone treatment.

1.5 Research questions

1.5.1 Broad Question

What are the prevalence and factors associated with continual substance use among patients using methadone in MAT clinics?

1.5.2 Specific Research Questions

1. What is the prevalence of continual substance use among patients using methadone in MAT clinics
2. What are the types and sources of used controlled prescription medicines among patients attending methadone in MAT Clinics?
3. What are the factors associated with continual substance use among patients using methadone in MAT clinics?

1.6 Research Objectives

1.6.1 Broad Objective

To assess the prevalence and factors associated with continual substance use among patients using methadone in MAT clinics

1.6.2 Specific Objectives

1. To determine the prevalence of continual substance use among patients using methadone in MAT clinics in Dar es Salaam
2. To identify types and sources of used controlled prescription medicines among patients attending methadone in MAT Clinics.
3. To assess factors associated with continual substance use among patients using methadone in MAT clinics in Dar es Salaam.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 The Burden of Substance Use

Substance use is a prevalent global concern, backed by consistent scientific findings illustrating the substantial harm and death resulting from the consumption of alcohol, tobacco, and illicit substances. (25). Results from surveys conducted by the World Health Organization (WHO) in 17 countries highlight the widespread prevalence of substance use on a global scale. (26)**.** For example, alcohol consumption is reported by 41% to 97% of adults at some point in their lives, while tobacco use ranges from 17% to 74% among adults. Additionally, cannabis is identified as the most frequently used illegal drug, with usage rates varying significantly from as low as 0.3% in the People's Republic of China to as high as 42% in the United States and New Zealand. Lifetime cocaine use also shows notable diversity, and the variation across countries underscores the diverse patterns of substance use, both within regions and globally (27).

At a worldwide level, an estimated 3.5% to 5.7% of individuals aged 15 to 64, roughly totaling between 155 to 250 million people, have tried illicit drugs at least once in the past year. (28)**.** Considering the regularity of use, approximately 16 to 38 million individuals are classified as problematic drug users, partaking in consistent or frequent drug intake, with 11 to 21 million individuals recognized as injection drug users(29)

The wide range of these estimates is partly due to the limited availability of accurate epidemiological data on the use of particular drugs besides marijuana, including inhalants, cocaine/crack, amphetamines/methamphetamine, hallucinogens, ecstasy/MDMA, sedatives, tranquillizers, heroin, and opioid painkillers (30)**.** This scarcity of data is particularly notable in countries with comparatively limited resources for research and evidence-based treatment despite experiencing an increase in illicit drug use (31)**.**

Methadone is extensively utilized in the treatment of opiate addiction. Approximately 250,000 drug users worldwide are estimated to undergo some variation of methadone treatment annually(32).

2.2 Prevalence of Continual Substance use among Patients using Methadone in MAT

Methadone maintenance treatment (MMT) is an efficacious and productive approach for managing opioid use disorder (OUD), demonstrating effectiveness in reducing drug usage and enhancing treatment adherence(33). Nonetheless, some patients persist in substance use while undergoing treatment at methadone clinics, precipitating adverse consequences such as relapse and overdose(34). The continual use of substances among patients attending methadone clinics has emerged as a significant global health concern, with its prevalence escalating as patients continue substance use while undergoing treatment(34)

Research conducted in Vietnam revealed that 23.5% of patients continued heroin use during MMT, a finding consistent with a Canadian study where 25% of individuals enrolled in a low-threshold methadone maintenance program persisted in using opioids and other substances during treatment. Furthermore, the United Nations Office on Drugs and Crime (UNODC) estimates that, in 2014, approximately 17 million individuals worldwide grappled with the impact of opiates(35).

Individual factors such as patients' sociodemographic characteristics, substance use before and during treatment, age, marital and employment status, gender, and duration of therapy are associated with MMT adherence and retention. For example, a systematic review and meta-analysis found that age, marital and employment status, gender, and duration of treatment were influential factors in maintenance in patients under treatment of methadone (36)**.** Another study found that early-sustained abstinence is predictive of long-term abstinence, and some interventions do not see results related to continued substance use lasting more than one year, which has encouraged the development of aftercare or continuing care programs (37).

2.3 Substances Used by MMT Patients with Continued Substance Use

One study reveals that a considerable proportion, approximately 79%, of MMT patients exhibit problematic alcohol use, with a majority being male (68%) (38)**.** Additionally, studies indicate that individuals entangled in the criminal justice system self-report using heroin, cannabis, or cocaine on numerous days, suggesting persistent substance misuse within this demographic (39)**.**

Another study conducted by Sundstrom et al. in 2015 identifies temazepam and oxazepam as the most commonly used and prescribed derivatives, respectively. The concurrent use of multiple drugs poses a heightened risk of drug intoxication and increases the likelihood of premature termination of Opioid Maintenance Treatment (OMT)(40). Similar findings are echoed in other studies, with screening indicating high rates of substance use among MMT patients, particularly opiates at 78%, amphetamines at 43%, cannabis at 9%, and cocaine at 2%(41).

Furthermore, research by Elizabeth et al. revealed the co-occurrence of substance misuse during management among MMT patients. Their review indicates that over 40% of individuals who misuse substances exhibit positive urine drug test results for cocaine or amphetamines, emphasizing the overlapping nature of substance misuse in this population(42).

In a study conducted in Kenya by Kurui et al. in 2021, the aim was to assess both past and ongoing substance use among patients enrolled in Methadone Maintenance Treatment (MMT) programs. It's noteworthy that 52.5% of respondents admitted to using at least one substance of use(43). This prevalence was lower than the 69.8% reported among college students in Eldoret, Western Kenya, yet higher than the 41% prevalence noted among high school students in Kenya (44).

2.4 Factors Associated with Continual Substance Use among Patients Using Methadone in MAT

In the context of Tanzania, a study focusing on positive continual drug substance use among MMT participants revealed a rate of 26.1%, with alcohol being the most commonly used substance at 43.4%, followed by cannabis at 24.5%(45). This aligns with findings from Bugando Medical Centre in 2010, which highlighted that alcohol was the most frequently used substance at 59.3%, followed by tobacco at 38.6% and cannabis at 29.3%. In contrast, heroin and cocaine were reported as the least used substances, with rates of 2.1% and 1.6%, respectively, among methadone patients. The study also identified significant associations between substance use and factors such as level of education, employment status, marital status, gender, family history of mental illness, and previous substance use(46)

Several interventions and strategies have been proposed to address substance misuse among patients on MMT. The provision of effective treatment and advice about substance misuse has been emphasized in different studies (39)**.** Additionally, the need for tailored interventions to address the complex needs of individuals with co-occurring substance misuse while on an MMT program has been elaborated(47).

Furthermore, the review of comparative studies on MMT provides valuable insights for addiction treatment specialists and policymakers, emphasizing the importance of evidence-based practices in addressing substance use(48).

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study design

The study is described as facility-based, cross-sectional, and analytical, utilizing quantitative data collection methods.

3.2 Study area

The study took place at three Methadone Clinic Centers in Dar es Salaam, including Muhimbili National Hospital (MNH), where the methadone clinic serves over 920 patients receiving methadone treatment. It also included the unit of the methadone clinic at Mwananyamala Regional Referral Hospital, which provides treatment for over 1200 patients, and the unit of the methadone clinic at Temeke Regional Referral Hospital, which currently caters to over 1127 patients.

3.3 Study population

The study population comprised selected clients attending methadone clinics at three centers Muhimbili National Hospital (MNH), Temeke Regional Referral Hospital (TRRH), and Mwananyamala Regional Referral Hospital (MRRH). Participants who agreed to take part in the study were enlisted.

3.4 Study Duration

The study spanned from November 2023 to May 2024, with proposal development scheduled from November 2023 to February 2024. Data collection and cleaning took place from March 2024 to May 2024. Data analysis and report writing were planned for June to August 2024, with report submission set for August 2024. Consequently, the overall duration was ten months.

3.5 Sample size calculation

The following simple formula can be used (Naing et al, 2006):

$$n=\frac{Z^2P\ (1-P)\ DE}{e^2}$$

Where,

n = sample size, Z =Z For the level of confidence of 95%, which is conventional, the Z value is 1.96, P = expected prevalence or proportion and e = precision errors, design effect (DE) to clear variation between clusters (wards and streets) and nonresponses rate (NRT) (Naing et al, 2006). Table 1 below shows the statistical values of each parameter used to calculate the sample of each study subject. Details for sample size, Table 1

Table 1: Statistical parameters used to calculate the sample size

Statistical parameter	**Values**
Prevalence of cannabis misuse among patients receiving methadone treatment in Sub-Saharan Africa (SAA)	63.0%
DE- Design Effect to clear variation between clusters	1.5
$Z_{1-\alpha}$ - The z-score corresponding to the desired level of significance	95%
Marginal of error (e)	5%
NRR-Non-Response Rate	10%
n_o- Sample size	537
N-Total Population on methadone	3247
Adjusting with Finite Population Correction Factor (FPCF)	461

3.6 Sampling Procedure

Systematic sampling was utilized to select the necessary sample size of clients receiving methadone treatment in three MAT clinics. The sample size for each MAT was determined using a proportional allocation method, where a clinic with fewer clients received a smaller portion of the total sample size (n=461), and conversely for clinics with more clients.

The selection of clients followed a specific set of procedures outlined in the report:

Obtaining the Sampling Interval: The total number of clients at a given MAT was divided by the required sample size at that site to determine the sampling interval. For instance, if MAT X had 1127 clients and the required sample size was 160, the sampling interval was calculated as 1127/160=7.

Establishing a Start Point: A starting point within the sampling interval (ranging from 1 to 7) was established by the supervisor. Subsequently, client selection proceeded by choosing one client after every 7 clients until the required sample size was reached (in this example, 160).

Informed Consent and Interviews: Selected clients were informed about the study on their treatment day and asked for their consent to participate. Those who consented underwent face-to-face interviews at the exit point. The distribution of sample sites by MAT is detailed in Table 2 of the report.

Table 2: Summary of proportional allocation of sample size by site (MAT)

Site	Number of Clients	Sub-sample size
Muhimbili National Hospital	920	131
Mwananyamala	1200	170
Temeke	1127	160
Total	3247	461

3.7 Inclusion and exclusion criteria

3.7.1 Inclusion criteria

The report indicates that clients attending methadone clinic centers who consented to participate in the study were excluded.

3.7.2 Exclusion criteria

Patient on methadone but not ready to participate in the study

A patient who has medical complications that would interfere with participation.

3.8 Study variables

3.8.1 Independent Variables

Socio-demographic characteristics: Age, sex, Occupational status, family history of mental illness, marital status, Resident, social support, living environment and socio-economic status.

Treatment program factors: Previous substance use, counselling, support services, Drug availability, and Duration of treatment,

Environmental factors: community support and access to resources,

Types and patterns: Interventions used in addressing the issue of continued substance use among patients attending methadone clinics

3.8.2 Dependent Variable

Prevalence of continual Substance use

3.9 Data Collection Procedure

The principal investigator and two research assistants conducted the data collection. Early in the morning during working hours, they held interviews and discussions with service providers, obtaining informed consent from the selected clients. These clients were directed to private rooms within the workstation, where they met with the investigators and were provided with consent forms to formally agree to participate in the study. Following this, data collection was conducted using gadgets.

Participants could ask for clarification if they did not understand any questions. The investigator or research assistant addressed all questions or challenges that arose during the process.

3.11 Data Collection Tools

A questionnaire with open and closed-ended questions, developed by the Principal Investigator (PI), was used to gather information relevant to the study. The questionnaire contained three major sections: patient demographic characteristics, factors associated with substance use, and sources of controlled prescription medicines. A checklist was also used

to collect some variables from secondary data sources for the sampled individuals (n=461). This tool assisted in generating confirmatory information for the continual prevalence.

3.12 Data Management and Analysis

Quantitative data were collected using tablets with installed ODK programmed software and were downloaded and exported into Stata version 17 (STATA Corporation, TX-USA) for cross-checking, data cleaning, and analysis. De-identification of personal information was done to ensure anonymity and confidentiality. Quantitative data analysis started with running descriptive statistics to describe the characteristics of the dataset. This included univariate analysis of frequency and percentage response distributions, as well as measures of central tendency and dispersion. Later, inferential analysis was conducted using appropriate methods (e.g., Chi-Square test, and Modified Poisson Logistic Regression). A bivariate analysis was performed to assess differences in proportion outcomes, such as the prevalence of continual substance use among clients on methadone. Modified Poisson Logistic Regression was recommended for fitting outcomes with proportions ≥ 10% with explanatory variables including socio-economic factors such as marital status, sex, age, education level, socio-economic, and environmental risk factors such as depression, accessibility of substance use, peer pressure, lone less etc. Classical Logistic regression was deemed unsuitable since its overestimated odds ratios when the outcome of interest was ≥10%. For the Modified Poisson logistic regression, both unadjusted and adjusted prevalence ratios (PR) were reported. All variables with a p-value <0.2 in the crude analysis were included in the multivariable model. However, only variables with a p-value <0.05 were retained in the final model and considered statistically significant.

3.13 Analysis Per Each Specific Objective

The study consisted of three specific objectives:

To estimate the prevalence of continual substance use among patients using methadone in MAT clinics in Dar es Salaam. A question with yes or no answers was included in the questionnaire to determine if a client continued using substances despite being on the methadone program. The prevalence of continual substance use was calculated by taking the number of "yes" responses and dividing by the total sample size, then multiplying by 100%.

To document the factors associated with continual substance use among patients using methadone in MAT clinics in Dar es Salaam. The survey encompassed a range of factors including socio-demographic attributes (age, gender, employment status, familial mental health history, marital status, residency, social support, housing conditions, and socio-economic standing), treatment program factors (counselling, support services, and duration of treatment), and environmental factors (drug availability, community support, and access to resources). These factors were assessed using the chi-square test and logistic regression models to determine their association with the outcome of interest.

To identify sources of used controlled prescription medicines among clients attending methadone in MAT clinics. This objective was achieved by asking the clients questions about the sources of used controlled prescription medicines. These questions were analyzed and presented as descriptive results.

3.14 Ethical Considerations

Approval for the study was requested from the Ethical Review Committee within the Directorate of Research and Publication, while permission to carry out the study was sought from the Executive Directors and Heads of Psychiatry Departments at MNH, Temeke Hospital, and Mwananyamala Hospital. To ensure privacy and confidentiality, the identities of study participants were not disclosed during data collection or reporting.

3.15 Data Dissemination

The Department of Pharmaceutics and Pharmacy Practice received a presentation of the study's findings. The MUHAS archive has the final report on hand. Furthermore, the outcomes were disseminated at scientific meetings and shared through publication in a peer-reviewed medical journal.

3.16 Reliability and Validity of the Study

Before starting the study, a pilot test was conducted to assess the reliability and validity of the structured questionnaire utilized, ensuring its effectiveness and accuracy.

3.17 Study Limitations

Some clients may not have been truthful during face-to-face interviews about their continual substance use while undergoing methadone maintenance treatment.

Record reviews could not be considered a reliable source of information on continual substance use among clients on MMT. This unreliability was due to the fact that clients using methadone in MAT clinics were not screened on a quarterly basis as required by guidelines, allowing some clients to continue their substance use without being detected.

3.18 Mitigations

The investigator and research assistants conducted in-person interviews to aid in understanding the meaning of the questions.

CHAPTER FOUR

4.0 RESULTS

4.1 Demographic characteristics

This study aimed to interview 461 respondents but ended up with an actual sample size of 458 resulting in a response rate of 99.3%. The majority of the respondents were male 94.5%. The mean age of the respondents was 40.6 years and about half 46.5% were aged between 25-34 years About one-third 31.0% were single and less than 1% were divorced. About 40.4% were jobless while very few 5% were employed. About 63.3% had a primary level of education while only 1.1% had a college education **Table 3.**

Table 3: Socio-economic and demographic characteristics of the study participants (n=458)

Variable	Frequency (%)
Gender	
Male	433 (94.5)
Female	25 (5.5)
Age (years)	
Mean (SD)	40.6 (8.2)
Age group	
15-24	10 (2.2)
25-34	95 (20.7)
35-44	213 (46.5)
45-54	123 (26.9)
55-64	15 (3.3)
65+	2 (0.4)
Marital status	
Single	142 (31.0)
Married	97 (21.2)
Widow/widower	22 (4.8)
Divorced	4 (0.9)

Separated	114 (24.9)
Cohabiting	79 (17.3)
Employment status	
Employed	23 (5.3)
Business	244 (53.3)
Farmer	5 (1.1)
Retired	1 (0.2)
Jobless	185 (40.4)
Education level	
None	60 (13.1)
Primary	290 (63.3)
Secondary	103 (22.5)
College	5 (1.1)
Site	
Muhimbili NH	131 (28.6)
Mwananyamala RRH	169 (36.9)
Temeke RRH	158 (34.5)

4.2 Substance of abuse used.

Figure 1 shows substances used by the respondents before enrolling on the Methadone program. The most mentioned substance used was Heroin 96.1%, followed by Cannabis 86.0% and Alcohol 64.9%.

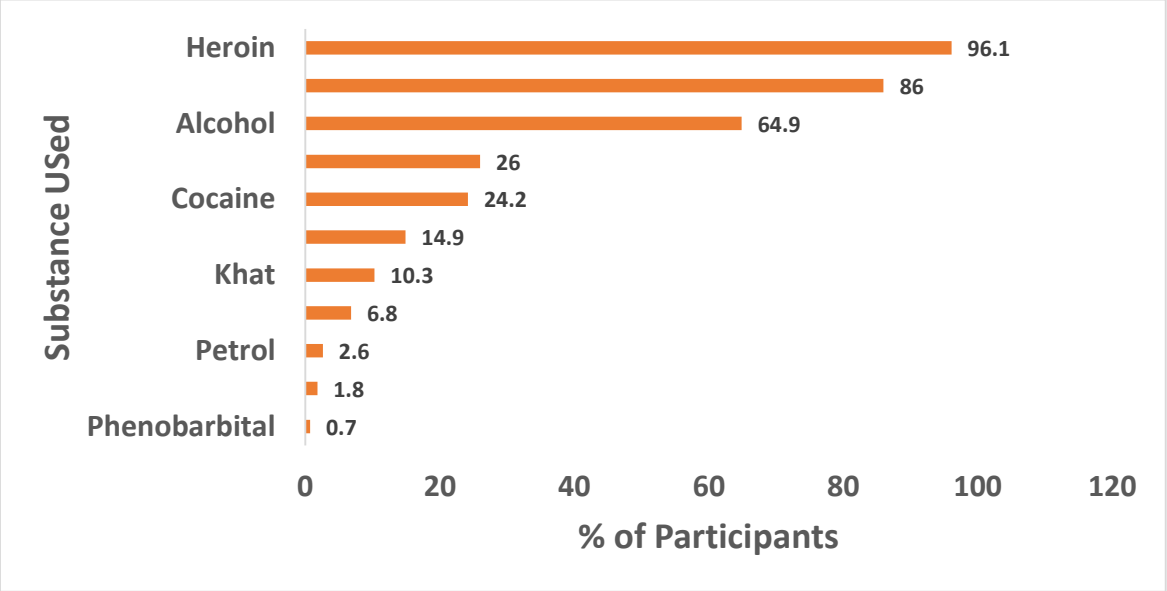


Figure 1: Types of the substance of abuse used before enrolling on the Methadone program (n=458)

4.3 Prevalence of continual substance use among patients using methadone in MAT clinics (interview source)

Figure 2 shows that the prevalence of continual substance use among patients using methadone in MAT clinics was 52% (n=239).

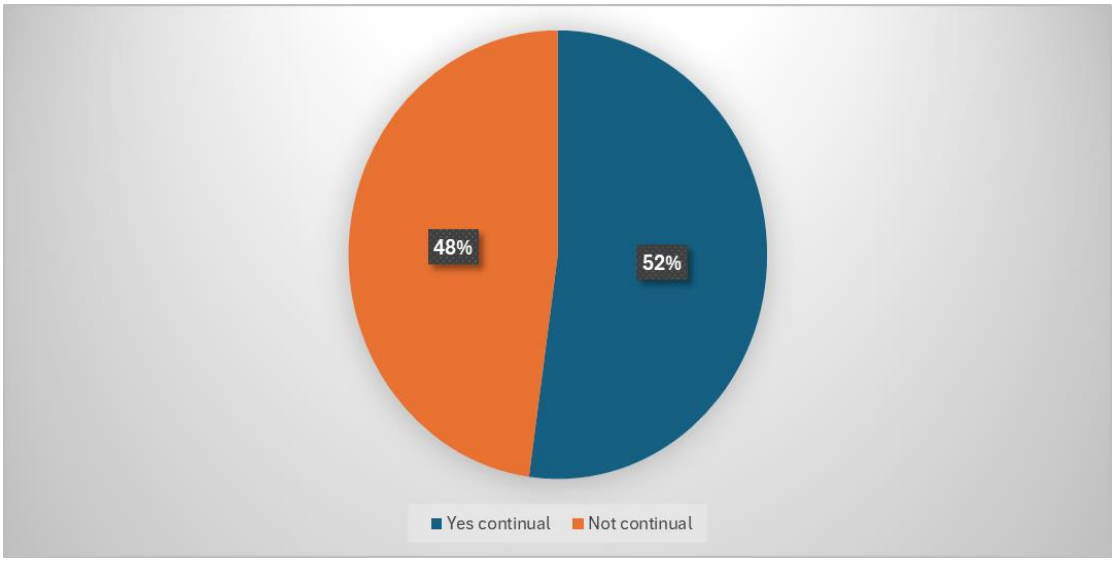
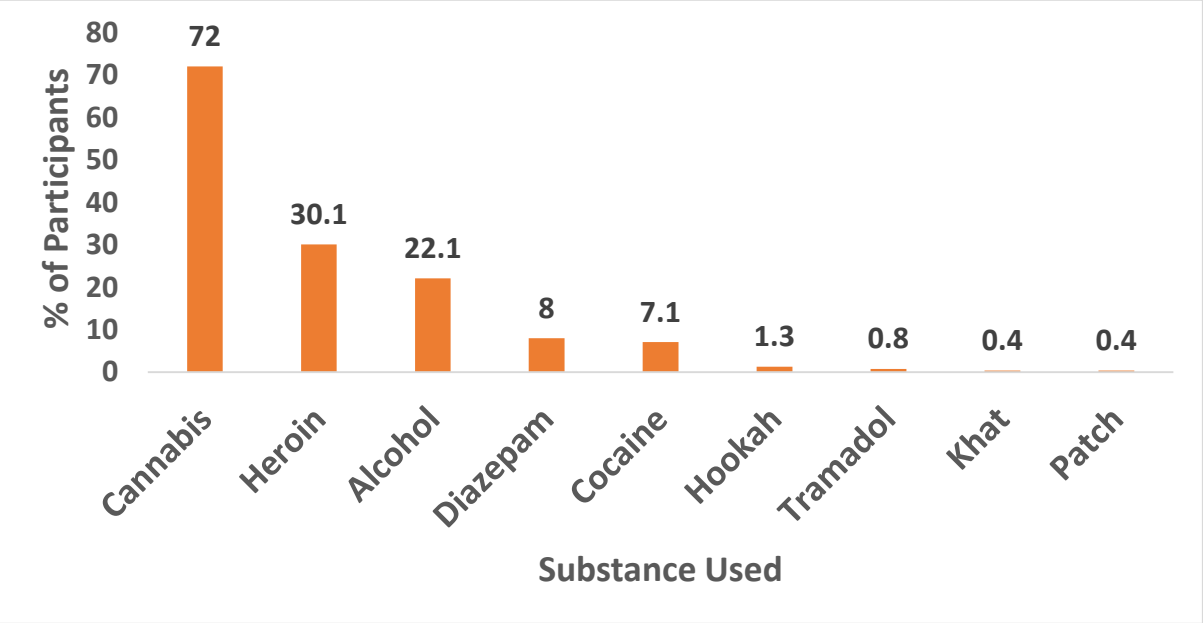


Figure 2: Percentage of participants on continual substance use after joining methadone treatment (interview source).

Figure 3 shows that Cannabis 72% was the most reported substance use among those continual individuals followed by Heroin 30.1% and Alcohol 22.6%. While Patch 0.4%, Khat 0.4%, Tramadol 0.8% and Hookah 1.3% were reported by very few respondents **Figure 3**.



Types of substance use used by participants after joining methadone treatment (n=239) from face-to-face interviews

4.4 Prevalence of continual substance use among patients using methadone in MAT clinics (record review source)

In this study prevalence of continued substance use was also studied through secondary data review**. Figure 4** shows that the prevalence of continual substance use among patients using methadone in MAT clinics was 38% (n=161) by reviewing patient records.

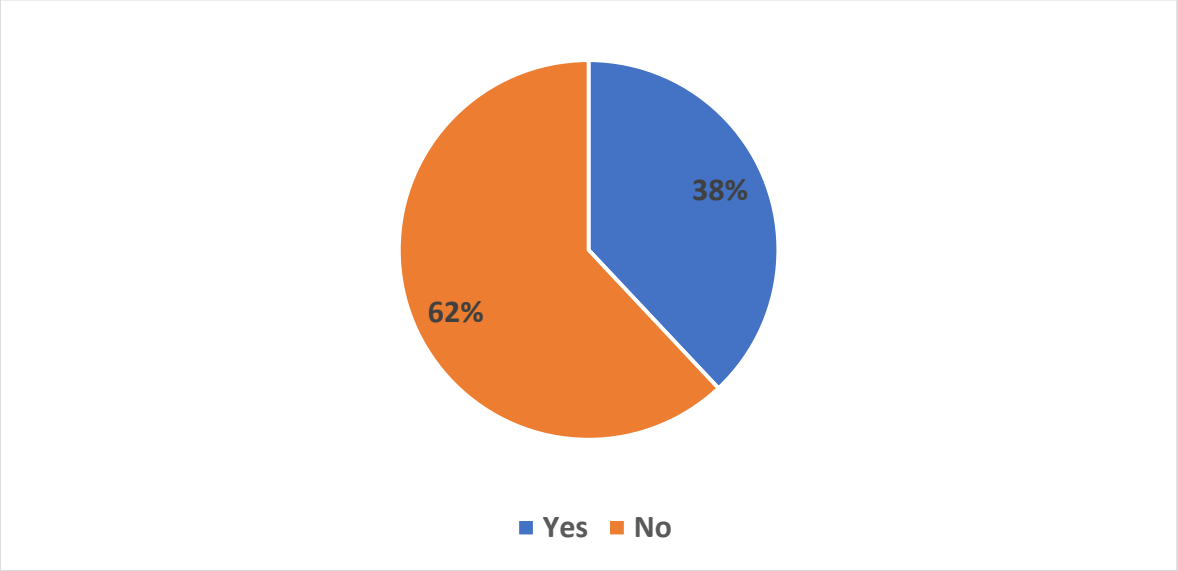
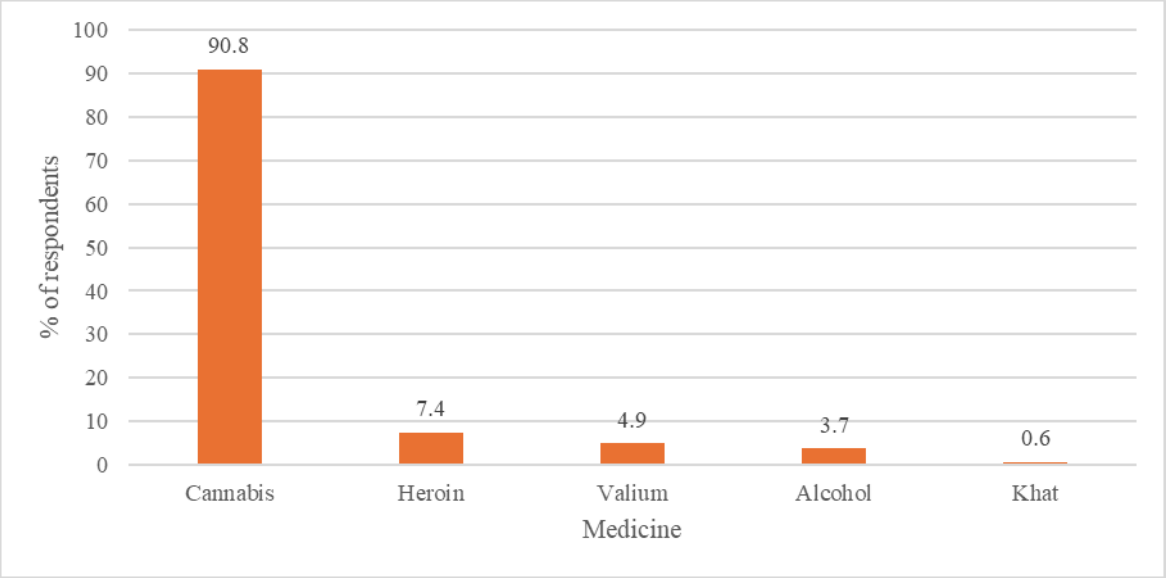


Figure 3: Percentage of participants on continual substance use after joining methadone treatment from January 2023 to January 2024 (record review source)

Using secondary data revealed that Cannabis was the substance of use mentioned by the majority 90.8%(n=148) who continued with the substance of use while Valium, Alcohol and Khat were mentioned by less than 5% of respondents **Figure 5.**



Types of substance of abuse that participants reported to continue using after joining methadone treatment (n=161) from the record review source

4.5 Comparison of prevalence of continual substance use

The prevalence of substance use reported in face-to-face interviews (52%) differs by 14% compared to record review (38%). The cross-tabulation revealed 96 clients who reported continued substance use in the primary data, but their secondary data indicated no continued use. There were 28 individuals who initially reported not continuing substance use in the primary data yet their secondary data revealed continued use. Among the 38 individuals who had missing secondary data, 10 stated in the primary data that they had continued their substance use

Table 4: Cross-tabulation of continual substance use between primary and secondary data

Continued Substance Use Using Primary Data		**Continued Substance Using Secondary Data**			
		No	**Yes**	**Missing**	**Total**
	No	163	28	28	219
	Yes	96	133	10	239
	Total	259	161	38	458

4.6 Types and sources of controlled prescription medicines used by patients attending methadone in MAT Clinics

One-quarter of the study respondents reported that prescription medicine such as Valium, Tramadol, Phenobarbital, or hospital medicine provide pleasure or relaxation like the substance of use **Figure 6**. About three-quarters of the respondents reported that they had never used prescription medicine such as Valium, Tramadol, Phenobarbital, or hospital medicine. Of those reported using prescription medicine the commonly used prescription medicine were Diazepam 65.9%(n=81) and Tramadol 48% (n=59). The majority 87.3% (n=400) of the respondents reported that pharmacy was the main source of prescription medicines.

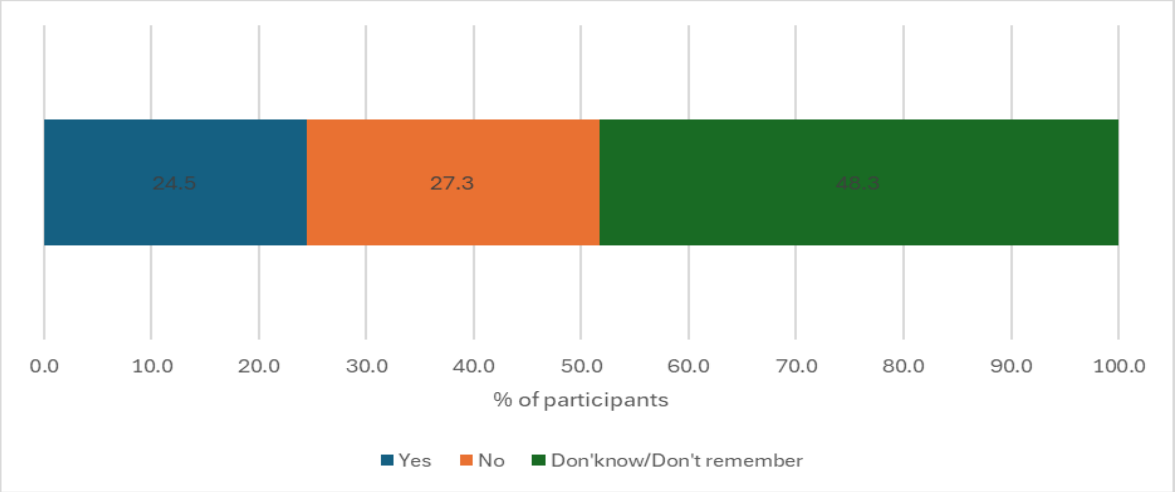


Figure 4: Do prescription medicines such as Valium, Tramadol, Phenobarbital, or hospital medicine provide pleasure or relaxation like substance use.

Table 3: Types and sources of prescription medicines used by patients using methadone in MAT clinics.

Variable	**Frequency (%)**
Ever use prescription medicine (N=458)	
Yes	123 (26.9)
No	335 (73.1)
Prescription medicine reported (N=123)	
Diazepam	81 (65.9)
Tramadol	59 (48.0)
Phenobarbitone	9 (7.3)
Source (N=445)	
Pharmacy	400 (87.3)
Hospital	31 (6.8)
Friend	10 (2.2)
Service providers in the Hospital	4 (0.9)

4.7 Counselling and recommendations

The majority 94.1%(n=431) reported receiving counselling on how to avoid risky environments for drug relapse and the majority were satisfied with the services received 95.4%(n=411). About 59%(n=270) of the respondents had comments or recommendations about methadone treatment received. The major comments given were as follows; - Methadone therapy is very effective and helps us a lot in treatment (40.0%), education should be provided to drug users; they do not know the dangers of mixing substances (11.1%) and lack of employment for people using methadone makes us go back to the streets (10.0%) **Table 5**.

Table 5: Comments or recommendations about methadone treatment received (n=270)

Recommendation	Frequency (%)
Methadone therapy is very effective and helps us a lot in treatment	108 (40.0)
Education should be provided to drug users; they do not know the dangers of mixing substances	30 (11.1)
Lack of employment for people using methadone makes us go back to the streets	27 (10.0)
Service providers do not value us; as addicts, we are scolded and chased away	24 (8.9)
Our colleagues who are still on the streets should also be encouraged to come and drink methadone	15 (5.6)
The time to close the pharmacy window should be extended because it closes early, and we miss getting the medication	15 (5.6)
Screening is not regularly taken until the doctor's appointment day, which is why people sneak around unnoticed	13 (4.8)
Methadone medication is not sufficient There is a persistent thirst that does not go away when you drink methadone alone	12 (4.8)
Dispensing machines and pharmacy windows should be increased to reduce congestion	12 (4.8)
The punishment of being suspended from drinking methadone should be replaced so that we do not miss taking the medication	7 (2.6)
The government should control the availability of drugs on the streets	4 (1.5)
Let's be given the medication to drink at home while we are on the trip to avoid relapsing into drug use	3 (1.1)

4.8 Factors associated with continual substance use among patients using methadone in MAT clinics in Dar es Salaam

Figure 4 shows the individual and environmental factors linked to continual substance use. Having a friend who uses substances (42.8%), easy to obtain substance drugs in the residential areas (38.2%), facing depression (25.8%), facing stigmatization (22.3%), and living lonely life (20.5%) were the common prevailing factors for continual substance use. Factors such as currently living alone, being on long-term medication and perceiving that Methadone gives little pleasure were reported by less than 10% of the respondents.

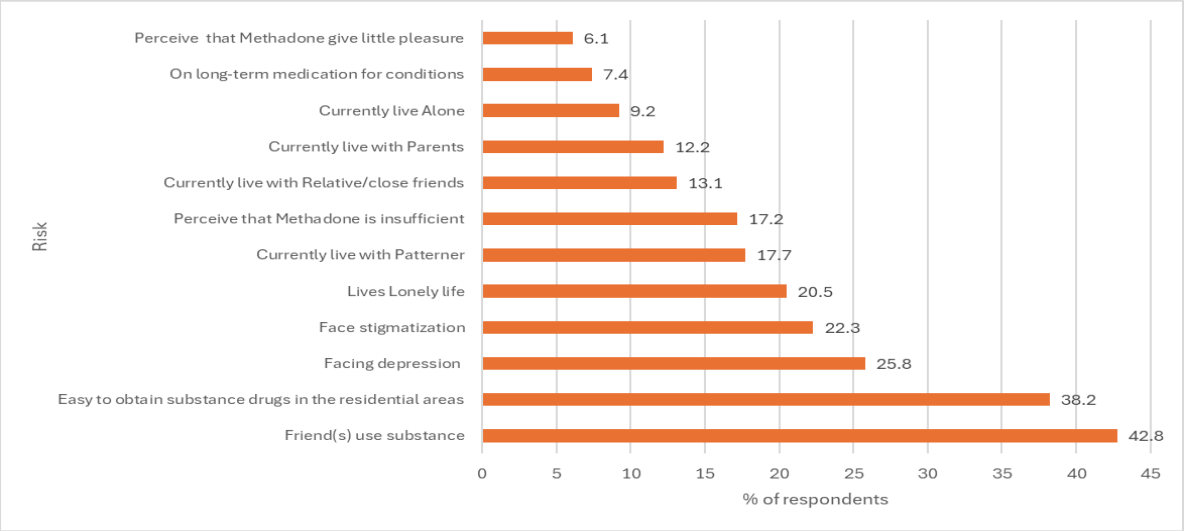


Figure 5: Individual and environmental factors for continual substance use

4.9 Association between continual substance use and selected factors: bivariate analysis

Bivariate analysis showed that the prevalence of continual substance use was higher in Temeke RRH than in Mwananyamala RRH (65.2% vs 36.1%, p<0.001). Those who perceived that it is easy to obtain substance drugs in the residential areas were more likely to continue with substance use as compared to the counterpart group (59.3% vs 39.3%, p<0.001). Respondents who reported experiencing stigma were more likely to continue with substance use than those who did not (62.6% vs 46.4%, p=0.001). A higher proportion of continual substance use among respondents who reported to live a lonely life was observed as compared to the comparative group (67.6% vs 45.5%, p<0.001). The respondents reported

to face depression were more likely to continue with substance use than those who did not face depression (60.8% vs 45.8%, p=0.002). Those who perceived that Methadone has insufficient pleasure were more likely to continue with substance use as compared with those who did not perceive so (64.2% vs 47.8%, p=0.002). Individuals reported having friend(s) who are currently using substance use were more likely to continue with substance use than the counterpart group (57.7% vs 36.4%, p<0.001) **Table 6**.

Table 6: Association between continual substance use and selected factors: bivariate analysis.

Variable	N	Continual (%)	P-values
Gender			0.667
Male	433	227 (52.4)	
Female	25	12 (48.0)	
Age group			0.093
<35yrs (Youths)	105	64 (61.0)	
35-44yrs (Young adults)	213	109(51.2)	
45+yrs (Adults)	140	66(47.1)	
Marital status			0.824
Married/Cohabiting	176	93 (52.8)	
Not Married	282	146 (51.8)	
Employment status			0.593
Business	244	130 (53.3)	
Jobless	185	92 (49.7)	
Others	29	17 (58.6)	
Education level			0.542
No formal	60	28 (46.7)	
Primary	290	151 (52.1)	
Secondary/above	108	60 (55.6)	
Wealth Index			0.155
Lowest	106	60 (56.6)	
Second	96	44 (45.8)	
Middle	102	48 (47.1)	
Fourth	103	54 (52.4)	
Highest	51	33 (64.7)	
Site			<0.001
Muhimbili	131	75 (57.3)	
Mwananyamala RRH	169	61 (36.1)	
Temeke RRH	158	103 (65.2)	

Methadone give little pleasure			0.799
Yes	52	28 (53.9)	
No	406	211 (52.0)	
Easy to obtain substance drugs in the residential areas			<0.001
Yes	295	175 (59.3)	
No	163	64 (39.3)	
Face stigmatization			0.001
Yes	163	102 (62.6)	
No	295	137 (46.4)	
Lives Lonely life			<0.001
Yes	139	94 (67.6)	
No	319	145 (45.5)	
Facing depression			0.002
Yes	194	118 (60.8)	
No	264	121 (45.8)	
Methadone dose is insufficient			0.002
Yes	123	79 (64.2)	
No	335	160 (47.8)	
On long-term medication for conditions			0.799
Yes	67	34 (50.8)	
No	391	205 (52.4)	
Friend(s) use substance			<0.001
Yes	340	196 (57.7)	
No	118	43 (36.4)	
Currently live with			0.547
Parents	99	56 (56.6)	
Partner	157	81 (51.6)	
Alone	76	42 (55.3)	
Relative/close friends	126	60 (47.6)	

4.10 Predictors of continual substance use

The following factors were significant as unadjusted analysis: age (<35years), Wealth Index (highest), Site (Muhimbili NH and Temeke RRH), individuals reported that substance use easily obtained in the residential areas, those reported facing stigma and those reported living lonely life. Furthermore, individuals who perceived that the Methadone dose was not sufficient and those with a friend(s) who use substance use were significant factors associated with continued substance use. However, after running an adjusted analysis, out

of nine factors which were significant at the unadjusted stage only six factors were significantly associated with continual substance use. These factors include Wealth Index (highest) (aPR=1.5; 95%CI 1.1-2.2), Study site: (Muhimbili NH) (aPR=1.5; 95%CI 1.2-1.9) and Temeke RRH (aPR=1.7; 95%CI 1.4-2.2), reporting that substance use is easily obtained in the residential areas (aPR=1.4; 95%CI 1.1-1.7) and living lonely life (aPR=1.4; 95%CI 1.1-1.8). Other factors were perceiving that Methadone has insufficient pleasure (aPR=1.2; 95%CI 1.04-1.5) and having a close friend(s) using substance use (aPR=1.3; 95%CI 1.03-1.7) **Table 7.**

Table 7: Factors associated with continual substance use: Crude and Adjusted Analysis using Modified Poison Logistic Regression

Variable	Category	cPR	P-value	aPR	P-value
Gender	Male	1.1(0.7-1.7)	0.679		
	Female	Ref		Ref	
	<35yrs (Youths)	1.3(1.02-1.6)	0.031	1.2(1.0-1.5)	0.123
Age group	35-44yrs (Young adults)	1.1(0.9-1.4)	0.463		
	45+yrs (Adults)	Ref			
Marital status	Married/Cohabiting	1.0(0.9-1.2)	0.824		
	Not Married	Ref			
Employment status	Business	1.1(0.9-1.3)	0.469		
	Jobless	Ref			
	Others	1.2(0.8-1.7)	0.341		
Education level	No formal	Ref			
	Primary	1.1(0.8-1.5)	0.463		
	Secondary/above	1.2(0.9-1.6)	0.284		
Wealth Index	Lowest	1.2(0.9-1.6)		1.1(0.9-1.5)	0.334
	Second	Ref		Ref	
	Middle	1.0(0.8-1.4)	0.863	1.1(0.8-1.4)	0.552
	Fourth	1.1(0.9-1.5)	0.356	1.1(0.9-1.5)	0.377
	Highest	1.4(1.1-1.9)	0.023	1.5(1.1-2.2)	0.003
	Mwananyamala RRH	Ref		Ref	
Site	Muhimbili NH	1.6(1.2-2.0)	<0.001	1.5(1.2-1.9)	0.001
	Temeke RRH	1.8(1.4-2.3)	<0.001	1.7(1.4-2.2)	<0.001
	Yes	1.0(0.8-1.4)	0.796	Ref	

Methadone gives little pleasure					
	No	Ref			
Substance use easily obtained in residential areas	Yes	1.5(1.2-1.9)	<0.001	1.4(1.1-1.7)	0.003
	No	Ref		Ref	
Face stigmatization	Yes	1.3(1.1-1.6)	0.001	1.1(0.9-1.3)	0.504
	No	Ref		Ref	
Lives Lonely life	Yes	1.5(1.3-1.8)	<0.001	1.4(1.1-1.8)	0.007
	No	Ref		Ref	
Facing depression	Yes	1.3(1.1-1.6)	0.001	1.0(0.8-1.2)	0.995
	No	Ref		Ref	
Methadone is insufficient	Yes	1.3(1.1-1.6)	0.001	1.2(1,04-1.5)	0.015
	No	Ref		Ref	
On long-term medication for conditions	Yes	Ref			
	No	1.0(0.8-1.3)	0.801		
Friend(s) use substance	Yes	1.6(1.2-2.0)	<0.001	1.3(1.02-1.7)	0.030
	No	Ref		Ref	
Currently, live with	Parents	1.2(0.9-1.5)	0.180		
	Patterner	1.1(0.9-1.4)	0.509		
	Alone	1.2(0.9-1.5)	0.285		
	Relative/close friends	Ref			

CHAPTER FIVE

5.0 DISCUSSION

Results of this study indicate a high prevalence of 52% of continued substance use among patients on methadone treatment. Continued substance use involved both illicit and prescription drugs. Secondary data review revealed a lower percentage of 38% of continued substance use compared to primary data results. In this regard, the prevalence of continual substance use obtained from face-to-face interviews was higher by 14% than that obtained from record review. Factors found to be associated with continued substance use included wealth index, study site, area of residence, living alone, perceiving Methadone as insufficient pleasure and having a close friend(s) who use illicit drugs. Other reasons include stigmatization, loneliness, and depression. A notable number of individuals who continued using substances cited the lack of activities to occupy their time, causing them to return to drug-using environments where they reunited with friends who were not part of the treatment program.

The difference in the prevalence of continued substance obtained by self-reported data and medical records highlights a critical issue in accurately monitoring and addressing substance use in methadone treatment programs. Self-reported data may be influenced by social desirability bias or fear of stigma, leading to underreporting in clinical settings. Lack of population screening on a quarterly basis according to guidelines, instead there was random screening for those with an appointment to see the doctors only. This screening procedure creates a significant chance of missing a significant number of clients who avoid being identified. In this mode of screening, medical records might not capture all instances of continued substance use due to infrequent screenings. The continued use of substances such as cannabis (72%), heroin (30.1%), alcohol (22.6%), Diazepam 8%, Tramadol (7.1%) and other substances suggest that methadone alone may not fully address the multifaceted nature of addiction

Continued substance use among clients undergoing treatment is not unique to Tanzania. Studies in different settings have reported different prevalence of continued substance use among people on MMT treatment, some have reported higher prevalence than that reported in this study, and some have reported lower prevalence compared to this study. Oluoch et al

(2023), Western Kenya revealed the prevalence of cannabis (89%) and Heroin (86.9%) among clients undergoing methadone maintenance treatment. Rigg et al (2023) reported that on average, 81% of MMT patients used tobacco, 47% used alcohol, 32% used heroin, 24% engaged in injection drug use, and 12% used illicit drugs(49). A lower prevalence than that in this study has been reported by Ab Lloh S, et al which was 38.7% from self-reported data and 40.7% (n = 61) by positive urine test of participants who continued to use illicit drugs (50,51). Tran T et al (2018), in mountainous areas in northern Vietnam, among the 241 male MMT patients, 13.4% reported concurrent opioid use. Tran T et al (2024) at Nam Dinh Province, Vietnam reviewed a survey of polysubstance use in three outpatient MMT clinics and identified 24.8% of participants reported daily alcohol use, 68.6% smoked regularly, and 6% used illicit drugs. Mamat R, et al (2020) in Malaysia revealed the prevalence of substance use from the self-reported interview to be 37% in the last 30 days and 42% in the last 90 days. Less than half self-reported to have used illicit opiates in the last 30 days (37%), and 90 days (42%). A study by Shams I et al (2019) in Ontario, Canada reported a prevalence of 49.9% which is close to that reported in this study.

In most of the studies reporting continued substance use, the most used substances are cannabis, tobacco and alcohol. This could be due to the easy availability of these substances, as in most countries tobacco and alcohol are legal and easy to access. There needs to be active screening and counselling sessions for people on MMT to ensure that they don't continue to use substances during treatment as the continued substance may interfere with the recovery process and can result in relapse of substance use.

Our study found that there is a 30.1% continued use of opioids among people on MMT treatment. This prevalence is higher than that found in a study by Ripanda AS et al. in 2019 which reported a prevalence of continued substance use to be at 16% (23). This indicates the prevalence of continued opioid use among people on MMT may be increasing in Tanzania. There are no documented interventions regarding combating this problem. This study urges for rollout of targeted interventions such as active screening of continued substance use to help in alleviating this problem.

The unadjusted analysis revealed that individuals from households with the highest wealth index were significantly more likely to continue substance use (cPR=1.4, 95% CI 1.1-1.9, p=0.023). This predictor remained significant even after adjusting for other factors (aPR=1.5, 95% CI 1.1-2.2, p=0.003). This suggests that wealthier individuals might have more resources to obtain substances, contributing to continued use despite being in a treatment program. Alternatively, it could reflect differing social pressures or stressors associated with higher socio-economic status.

Unadjusted analysis showed significant differences in continued substance use across different study sites. Specifically, patients at Muhimbili NH (cPR=1.6, 95% CI 1.2-2.0, p<0.001) and Temeke RRH (cPR=1.8, 95% CI 1.4-2.3, p<0.001) had higher rates of continued use compared to those at Mwananyamala RRH. These site-specific differences persisted in the adjusted analysis, with patients at Muhimbili NH (aPR=1.5, 95% CI 1.2-1.9, p=0.001) and Temeke RRH (aPR=1.7, 95% CI 1.4-2.2, p<0.001) showing significantly higher likelihood of continued substance use. The variation in prevalence between the three MMT clinics may be due to misinformation given during the recruiting process by some civil society organizations (CSOs). For example, a CSO working with Temeke MMT clinic used the slogan "Support, don't punish," which implied that cannabis is not a problem but heroin is, potentially leading to higher rates of cannabis use at Temeke.

Patients who perceived methadone as insufficient in providing pleasure were more likely to continue substance use (cPR=1.3, 95% CI 1.1-1.6, p=0.001). This perception remained a significant predictor in the adjusted model (aPR=1.2, 95% CI 1.04-1.5, p=0.015). This indicates that subjective satisfaction with methadone treatment is crucial; those who feel that methadone does not adequately address their needs for pleasure are more likely to relapse into using other substances. It underscores the importance of addressing patients' perceptions through continuous education and counselling during treatment sessions.

Our findings also highlight significant misuse of prescription medicines among patients participating in the MMT program, with Diazepam (65.9%) and Tramadol (48%) being the most used. A substantial majority (87.3%) of these medications were obtained from pharmacies, indicating a need for stricter regulation and monitoring of prescription practices. This prevalence is higher compared to the one reported by Anderson et al in 2013, USA,

which reported nearly 40% of patients in the MMT program had used medication not prescribed to them for pain, sleep and sedation (52). The use of these prescription medications as reported by participants in our study is attributed to unlawful and malpractice happening in pharmaceutical outlets which do not comply with available rules and regulations. The available regulations demand and direct all prescription-only medicines (POM) to be issued as per prescription from a duly qualified medical practitioner. The respondents reported that they could buy the prescription medicines whenever they wanted without a prescription. This malpractice has even gone far to the extent that they could purchase any quantity of prescription medicines without being questioned as one person can swallow between 10 to 20 diazepam tablets at once. Some respondents reported that few outlets inflate the prices for those clients who went to buy the POM in large quantities. To mitigate this issue, it is essential to implement regular inspections on adherence to dispensing protocols in all retail pharmacies, Accredited drug Dispensing outlets (ADDO) and medical stores.

The study highlights several important recommendations as reported by respondents, which provide valuable insights for improving methadone treatment programs. The recommendations gathered from 270 participants who are undergoing methadone treatment provide valuable insights into how the program can be improved to better serve its users. The feedback reflects both the strengths of methadone therapy and the areas that need attention to optimize its effectiveness A significant portion of participants (40.0%) praised methadone therapy for its effectiveness and highlighted that methadone is a crucial component of their treatment, helping them manage their addiction and improve their quality of life. However, participants also identified several areas needing improvement. A notable recommendation is the need for education about the dangers of mixing substances, as suggested by 11.1% of respondents. Many drug users are not fully aware of the risks associated with combining different drugs, which can lead to dangerous health complications.

Employment challenges were highlighted by 10.0% of participants, who noted that the lack of job opportunities drives some individuals back to street life and, potentially, drug use.

Another reported challenge by 8.9% of respondents was feeling undervalued and mistreated by service providers. These participants reported being scolded and chased away, whenever

they made a mistake whereby they requested being given an alternative punishment but not being denied taking their medication. Extending the operation hours of pharmacy windows was suggested by 5.6% of participants, while the remaining minority less than 4. 8% of respondents reported that the current methadone dosage is insufficient, as they continue to experience persistent thirst

Critical observation reveals that the majority of the factors from different studies on continuity of substance use concurrently with MMT relate to the ones identified in our current study with the exception of a few factors like religiosity and role models (53). Otherwise, almost the majority of factors do resemble such as availability of substance use within their localities, facing stigma, lonely life and depression, low dose of methadone which couldn't sustain till the next refilling dose as they face unbearable cravings and those clients having friends who are currently using the substance of use but not enrolled in the program. Others include low motivation to change and Peer pressure.

The identification of factors associated with the continuity of substance use is very important for proper future planning of a successful methadone program and also facilitates the development of an effective strategic plan to provide the proper modules, education, and support for the patient to achieve the goal of the program.

5.1 Study Strengths and Limitations

This study has several strengths it employed both primary and secondary data collection methods and thus has generated robust findings on the prevalence of continued substance use. The current study has been conducted on multiple sites that are offering MMT services in Dar es Salaam ensuring regional representation. This study involved a large sample size to increase study precision in estimating the prevalence of continued substance use.

Despite the strengths, the study has several limitations. First, there is a high likelihood that patients in primary MMT settings may deny or conceal their history of illicit substance use, as being tested for illicit substances can cause serious issues with their treatment providers. Second, since this was a survey there is potential for social desirability bias in that some participants may have continued substance use but are reluctant to report that.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

Conclusion

The findings indicate a high prevalence of continued substance use among patients using methadone treatment. Continued substance use was primarily driven by the availability of drugs in the community, social networks involving friends who use substances, and individual factors such as loneliness, depression, and perceived insufficiency of the methadone dose. Cannabis, heroin, and alcohol were the most commonly used substances among those who continued their substance use. Furthermore, prescription drugs like diazepam and tramadol were also reported, although at lower rates. The discrepancy between self-reported data and medical records highlights the challenges in accurately monitoring substance use among patients in MMT programs. The significant variation between the two data sources suggests the need for improved screening procedures and record-keeping practices to ensure more accurate monitoring and support for patients.

Recommendations

This study revealed a significant discrepancy in the prevalence of continual substance use when comparing face-to-face interviews with recorded data. This underscores the importance of strictly adhering to the recommended quarterly screening procedures to identify and address ongoing substance use among patients.

The study also highlighted the misuse of controlled substances, prompting Regulatory Authorities and law enforcement to develop robust mitigation procedures to protect at-risk individuals and the broader population.

Future research should explore alternative methods for approaching MMT (Methadone Maintenance Treatment) patients. This would enable researchers to more accurately estimate the prevalence of illicit substance use and associated factors among patients in MMT programs.

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APPENDICES

Appendix I: Questionnaire English Version

TOOL FOR ASSESSING CONTINUAL SUBSTANCE USE AMONG CLIENTS ATTENDING MAT CLINIC

Part A: Participant Information

SN	Question	Answer
1	Participant Number:	
2	Gender: 1) Male 2) Female	
3	Age in years	
4	Marital Status: 1) Single 2) Married 3) Widowed 4) Divorced 5) Separated 6) Living together	
5	Employment Status: 1) Employed 2) Businessperson 3) Farmer 4) Student 5) Retired 6) Unemployed	
6	Education Level: 1) None 2) Primary 3) Secondary 4) College	
7	MAT Clinic Name: 1) MNH 2) Mwananyamala 3) Temeke	

Part B: Drug Use

SN	Question	Answer
8	Prior to enrolling in methadone treatment, what type of substance of use have you used from the following? a). Cannabis/Marijuana b). Alcohol c). Khat d). Heroin e).Glue f). Hookah g).Petrol h). Valium/Diazepam i) Tramadol	

	J).Phenobarbitone k).Other (specify)_____ _____	
9	Since starting methadone treatment, does any of your close friends use substance of use? (Yes/No)	
10	Do methadone treatments provides pleasure like other substance of use? (Yes/No)	
11	In the areas you live, are substances of use easily accessible if needed? (Yes/No)	
12	Since starting methadone treatment, do you experience stigma or rejection from family or friends because of your drug use history? (Yes/No)	
13	Since starting methadone treatment, do you often find yourself in lonely environments? (Yes/No)	
14	Since starting methadone treatment, do you experience stress at times? (Yes/No)	
15	Have you ever felt that your methadone dose was insufficient to the extent of seeking other drugs before your next clinic visit? (Yes / No)	
16	Are you currently using other medicines for the treatment of other long-term illnesses like diabetes, hypertension, TB, or HIV? (Yes/No)	
17	Since starting methadone treatment, do you have close friends who use substances of use? (Yes/No)	
18	Since starting methadone treatment, who do you live with? a). Parents b). Spouse. c). Close friend. d). Alone e). Relative	

19	Since joining methadone treatment, have you ever used other substances for pleasure or relaxation? 1). Yes, I have used 2) No, I haven't
20	If Yes to question 19, which of the following substances have you used: a) Cannabis/Marijuana/hashish. b) Alcohol c) Khat d) Heroin e) Valium f) Tramadol g) Phenobarbital h) Glue i) Hookah j) Petrol k) Other (specify)_____
21	If Yes to question 19, have you stopped for a period and then resumed use? 1. Yes 2) No
22	If Yes to question 19, have you continued using these substances throughout your methadone treatment for pleasure or relaxation? Yes 2) No
23	If yes to question 22, have you added new substance of use different from the original ones? (YES / No
24	If Yes to question 23, which of these substance use below are you currently using: a) Cannabis/Marijuana. b) Alcohol c) Khat d) Heroin e) Valium f) Tramadol g) Phenobarbital h) Glue

	i) Hookah j) Petrol k) Other (specify)_____
25	Do prescription medicines like Valium, Tramadol, Phenobarbital, or others of the like bring the same pleasure as that of substance use? (Yes/No)
26	Since starting methadone treatment, which of these prescription medicines have you used from the following? a). Diazepam b). Tramadol c). Phenobarbitone d). I have never used e). Any other, specify
27	Where do you get these prescription medicines? a) Pharmacy b) Hospital c) Friends d) Healthcare facility staff e) Other (specify)_____
28	While undergoing methadone treatment, do you receive counselling on how to avoid risky environments for drug relapse? (Yes / No)
29	If yes for question 28, are you satisfied with the quality of counselling you receive? (Yes / No)
30	Do you have any information or comments you would like to share about methadone treatment? (Yes / No)
31	If Yes to question 30, please provide your feedback on the methadone treatment you receive.

Household Resources Ownership - Participant

SN	Question	Answer
32	Does your family have electricity? (Yes/No)	
33	Does your family have a TV? (Yes/No)	
34	Does your family have a radio? (Yes/No)	
35	Does your family have a pressing iron? (Yes/No)	

36	Do you or any household member have a bank account? (Yes/No	
37	What material is the floor of your house made of? (Cement or Mud/Clay or Animal dung)	
38	What material are the outer walls of your house made of? (Cement blocks or Burnt bricks/Wood or Grass	
39	What material is the roof of your house made of? (Iron sheets or Tiles or Concrete/Grass or Thatch)	
40	What type of energy source do you mainly use for cooking at home? (Electricity or Gas/Charcoal or Wood)	
41	What is the main source of lighting energy used at home? electricity/Other)	

Appendix II: Questionnaire English Version

FOMU YA TATHMINI YA MATUMIZI YA DAWA ZA KULEVYA KWA WAATHIRIKA WA DAWA ZA KULEVYA WANAOENDELEA KUTUMIA DAWA HIZO SAMBAMBA WAKIWA WANAPATA MATIBABU YA DAWA YA METHADONI.

Sehemu A: Taarifa za Mshiriki

SN	**Swali**	**Majibu**
1	Namba ya Mshiriki:	
2	Jinsia: 1) Me 2) Ke	
3	Umri kwa miaka:	
4	Hali ya Ndoa: 1)Mseja 2)Ameoa/ameolewa 3)Mjane/Mgane 4)Mtalakiwa 5)Wametengana 6)Wanaishi pamoja	
5	Hali ya Ajira: 1)Mwajiriwa 2)Mfanyabishara 3)Mkulima 4)Mwanafunzi 5)Mstaafu 6)Mwanafunzi 7)Hana kazi	
6	Kiweko cha Elimu: 1) Hajasoma 2) Msingi 3)Sekondari 4)Chuo	
7	Jina la MAT: 1)MNH 2)Mwananyamala 3)Temeke	

Sehemu B: Matumizi dawa za kavya

SN	Swali	Jibu
8	Kabla ya kujiunga na tiba ya methadoni, je ni aina gani ya dawa za kulevya ulishawahi kutumia zipi kati ya zifuatazo? (Mtajie) a) Bangi /ndumu/kubwa. b) Pombe c) Mirungi d) Heroine e) Gundi f) Shisha g) Petroli h) Nyinginezo (taja)_____	

9	Toka umeanza matibabu ya methadone je kuna Rafiki yako wa karibu anayetumia dawa za kulevya?(Ndiyo/Hapana)	
10	Je matibabu ya methadone yanaleta starehe kama dawa zingine za kulevya?(ndiyo/Hapana)	
11	Katika maeneo unayoishi je kuna urahisi wa kupata dawa za kulevya kama mtu akihitaji (Ndiyo/hapana)	
12	Toka umeanza matibabu ya methadone, je katika mazingira unayoishi kuna wakati unanyanyapaliwa au kukataliwa na ndugu au marafiki kwa sababu ya historia yako ya kutumia dawa za kulevya. (Ndiyo/Hapana)	
13	Toka umeanza kutumia dawa ya methadoni, je kuna wakati unakaa kwenye mazingira ya upweke mara kwa mara?Ndiyo/ Hapana	
14	Je toka umeanza kutumia matibabu ya methadone kuna wakati unapata msongo wa mawazo?(Ndiyo/hapana)	
15	Je kuna wakati unahisi dozi yako ya methadone unayopata haikutoshi kiasi cha kupata alosto kabla ya kufika kliniki kupata dozi nyingine?ndiyo/hapana	
16	Je kwa sasa kuna matibabu mengine ya magonjwa ya muda mrefu kama kisukari, pressure TB au HIV unayotumia (Ndiyo/Hapana)	
17	Toka umeanza matibabu ya methadone je kuna Rafiki yako wa karibu anayetumia dawa za kulevya?(Ndiyo/Hapana)	
18	Je toka umeanza matibabu ya methadone unaishi na nani)?	
19	Toka umejiunga na tiba ya methadone je umeshawahi kutumia dawa nyingine ya kulevya kwa ajili ya starehe au kujiburudisha? 1)Ndiyo nimewahi 2) Hapana sijawahi	
20	Kama Ndiyo kwa swali la 19, ni aina zipi kati ya dawa hizi zifuatazo: a) Bangi /ndumu/kubwa. b) Pombe c) Mirungi d) Heroine e) Valium f) Tramadol	

	g) Phenobarbitone. h) Gundi i) Shisha j) Petroli k) Nyinginezo (taja)_____	
21	Kama Ndiyo swali 19, je ulishawahi kuacha kwa muda na kurudia kutumia tena? 1) Ndiyo 2) Hapana	
22	Kama Ndiyo swali 19 je unaendelea kutumia dawa hizo katika kipindi chote ukiwa kwenye tiba ya methadone kama starehe au kiburudisho? 1) Ndiyo 2) Hapana	
23	Kama uliendelea kutumia swali 22, je umeongeza dawa nyingine mpya tofauti na zile za awali? 1) Ndiyo 2) Hapana	
24	Kama ndiyo swali la 23, je unaendelea kutumia dawa zipi za kulevya kati ya hizi zifuatazo? a) Bangi /ndumu/kubwa. b) Pombe c) Mirungi d) Heroine e) Valium f) Tramadol g) Phenobarbitone. h) Gundi i) Shisha j) Petroli k) Nyinginezo (taja)_____	
25	Je, dawa zinazotolewa kwa cheti kama Valium, Tramadol, Phenobarbital, au nyingine zinazofanana huleta raha kama zile za kulevya? Ndiyo/Hapana	
26	Je umeshawahi kutumia dawa zinazotolewa kwa cheti mfano Valium, Tramadol, Phenobarbitone, Au nyingine? 1) Ndiyo 2) Hapana	

27	Kama ndiyo, je hizo dawa huwa zipatikana wapi? a) Duka la dawa b) Hospitali c) Rafiki d) Wafanyakazi wa vituo vya kutolea huduma za afya e) Nyinginezo (taja)_____	
28	Je huwa unapata ushauri nasaha juu ya jinsi ya kutumia dawa na kuepuka mazingira hatarishi? Ndiyo/Hapana	
29	Je Kama ndiyo kwa swali la 28, je unaridhika na ubora wa uhsauri unaopata? Ndiyo //Hapana	
30	Je, kuna taarifa au maoni yoyote ungependa kutoa kuhusu matibabu ya dawa ya methadone? 1) Ndiyo 2) Hapana	
31	Kama ndiyo swali la 30, tafadhari toa maoni yako kuhusu matibabu ya methadone unayopata. _____ _____	

Umiliki wa rasilimali kwenye kaya- ya Mshiriki

SN	Swali	Majibu
1	Je, familia yako ina…. Umeme wa TANESCO? (Ndiyo/Hapana)	
2	Je, familia yako ina… Runinga/TV? (Ndiyo/Hapana	
3	Je, familia yako ina… Redio? (Ndiyo/Hapana	
4	Je, familia yako ina… Pasi? (Ndiyo/Hapana	
5	Je wewe au mwanakaya kuna jamaa yoyote wa familia hii aliye na akaunti ya benki? (Ndiyo/Hapana	
6	Sakafu ya nyumba yenu imetengenezwa na nyenzo gani? (Sementi au Malumalu/Udongo au kinyesi cha wanyama)	
7	Kuta za nje za nyumba yenu zimetengenezwa na nyenzo gani? (Tofari za sementi au kuchoma/Miti au nyasi)	

8	Paa la nyumba yenu limetengenezwa na nyenzo gani? (Bati au vigae au zege/Nyasi au makuti)	
9	Je nyumbani mnatumia moto nishati ya aina gani kupikia sana sana? (Umeme au gesi/Mkaa au Kuni)	
10	Ni chanzo gani cha nishati munatumia sana nyumbani kwa mwangaza? (Umeme wa TANESCO/Nyingine)	

Appendix III: Checklist

SN	QUESTION
1	MAT Clinic 1). Muhimbili 2). Mwananyamala 3). Temeke
2	Records reviewer ……
3	Client ID NO.
4	Age of the client
5	Continual substance use (Yes) (No) (Not recorded)
6	Types of substances used. a) Marijuana/Hashish b) Alcohol c) Khat d) Heroin e) Glue f) Shisha g) Petrol h) Others (specify)_____
7	Controlled prescription medicines

KISWAHILI

SN	SWALI
1	Kliniki ya MAT 1) Muhimbili 2) Mwananyamala 3) Temeke

2	Mchukuwa taarifa….....
3	Namba ya Kitambulisho cha MAT cha Mteja
4	Umri wa Mteja
5	Muendelezo wa dawa za kulevya pamoja na (Ndiyo) (Hapana) (Haijasajiliwa)
6	Aina za dawa za kulevya zilizotumika. a) Marijuana/Hashish b) Pombe c) Mirungi d) Heroin e) Gundi f) Shisha g) Petroli h) Nyinginezo (Taja)_____
7	Dawa tiba zenye asili ya kulevya

Appendix IV: Consent Form English version

CONSENT FORM TO PARTICIPATE IN RESEARCH

This Consent form has 2 parts:

- Information sheet **(information to the participants about the research)**
- Consent part **(for signature if the participant has agreed to participate in the research)**

Part 1: Information sheet

Introduction

Hello! My name is ……. from Muhimbili University of Health and Allied Sciences. I am researching Continual substance use among clients attending MAT Clinics at Muhimbili, Mwananyamala and Temeke in Dar es Salaam. I would like to give you information about this research and invite you to take part in it. This consent form may have information that you do not understand, please don't hesitate to stop the conversation for me to explain the part that is not understood. If you have any questions, you can ask me or another researcher who accompanied me.

Purpose of the research

This study aims to assess the prevalence and factors associated with continual substance use among patients using methadone in MAT clinics at Muhimbili, Mwananyamala and Temeke in Dar es Salaam, Tanzania.

Understanding the prevalence and factors associated with continual substance use and sources of controlled medicines for MAT clients attending MAT clinics is crucial for improving treatment outcomes and reducing the burden of substance use in Dar es Salaam, Tanzania. This proposal can be a valuable tool for policymakers in Dar es Salaam, Tanzania,

providing them with data-driven insights and actionable recommendations to inform policy development, resource allocation, and decision-making processes aimed at addressing continual substance use among patients attending MAT clinics.

What does your participation involve?

Your participation involves agreeing to answer questions and give information to the principal investigator or the research assistant during the interview.

Confidentiality

All the information that will be obtained in this research, will be well-preserved and will be used for research purposes only. There will be no document that will reveal your identity.

Right to withdraw

Your participation is voluntary. Refusal to participate or withdraw at any time after you consented, won't affect you or bring effects to another person related to you.

Benefits

Participating in this study will not benefit you personally, but your participation will provide useful information which might be used in planning the necessary interventions that will benefit you and this group of clients in one way or another and you will receive professional advice.

Risks

We do not anticipate any negative impacts when you participate in this study.

Who to contact for further questions or instructions

In case of any inquiry please contact the researcher, Loningó Samwel student from MUHAS, P. O. BOX 65001, Dar es Salaam, mobile number +255 787305463. If you ever have questions about your rights as a participant, you may call Professor Bruno Sunguya the Chairperson of the Senate, Research and Publications Committee, MUHAS. P.O. Box 65001, Dar es Salaam-Tanzania, Tel+2552150302-6)

Signature (Researcher).....

Part two: Consent

I have been invited to participate in a study on the prevalence and factors associated with continual substance use among clients attending MAT Clinics at Muhimbili, / Mwananyamala / Temeke in Dar es Salaam, Tanzania.

I have read / someone has read for me the basic information on this study. I have had the opportunity to ask questions related to this study and I have been answered enough to my satisfaction. By my own free will, I agree to participate in this study.

Signature of participant _____

Date _____

Day/Month/Year

Researcher's Statement.

I certify that the participant has been allowed to ask questions and all the questions he or she has asked have been answered correctly according to my understanding. I certify that the participant has given consent to voluntary participate without coercion or deceit.

Name of researcher _____

Signature of researcher _____

Date _____

Day/Month/Year

Appendix V: Fomu ya Ridhaa

Utangulizi

Habari! Jina langu ni ……. kutoka Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili. Ninafanya utafiti juu ya matumizi endelevu ya dawa za kulevya miongoni mwa wana MAT wanaopata huduma ya methadoni katika kliniki za MAT za Muhimbili, Mwananyamala na Temeke katika mkoa wa Dar es salaam.

Ningependa kukupatia habari kuhusu utafiti huu na kukualika kushiriki. Huenda fomu hii ya ridhaa ina habari ambazo huenda usielewe, tafadhali usisite kuuliza ili nieleze sehemu ambayo haieleweki. Ikiwa una maswali yoyote, unaweza kuniuliza mimi au mtafiti mwingine aliyefuatana nami..

Kichwa cha habari cha utafiti

Tathmini ya matumizi ya dawa za kulevya kwa wana MAT wanaoendelea kutumia dawa za kulevya sambamba wakiwa wanapata matibabu ya dawa ya methadoni.

Mtafiti Mkuu.

Mfamasia Lonongó Samwel, mwanafunzi wa shahada ya uzamili ya Menejimenti ya famasia katika chuo kikuu cha afya na na Sayansi shirikishi - Muhimlili

Dhumuni la utafiti

Utafiti huu una dhumuni kubwa la kuchunguza ueneaji na sababu zinazohusiana na matumizi endelevu ya dawa za kulevya miongoni mwa wana MAT wanaotumia methadone katika kliniki za MAT.

Utaratibu

Utafiti huu utawahusu wana MAT wote wanaohudhuria kupata tiba ya methadone katika vituo vya Muhimbili, Mwananyamala na Temeke mkoani Dar es salaam katika kipindi cha utafiti. Tunatarajia kuhusisha wana MAT 461 katika utafiti huu.

Faida

Kushiriki katika utafiti huu hautakuletea faida wewe peke yako au wewe binafsi tu, lakini ushiriki wako utatoa taarifa muhimu ambazo zinaweza kutumika katika kupanga mikakati

inayohitajika ambayo itakunufaisha wewe na kundi lote la wana MAT kwa njia moja au nyingine na utapokea ushauri wa kitaalamu.

Madhara

Utafiti huu hauna madhara yoyote kwa yeyote atakayeshiriki.

Usiri

Taarifa za mshiriki zitakuwa ni siri na zitatumika kwa ajili utafiti huu tu.

Haki za mshiriki.

Mshiriki ana uhuru wa kujitoa wakati wowote anapokuwa katika utafiti huu.

Maswali

Unapokuwa na maswali, wasiliana na mtafiti mkuu Mfamasia Loningó Samwel Mbesere wakati wowote. Simu namba 0787305463. Ukiwa na swali juu ya haki zako kama Mshiriki unaweza kuuliza kutoka kwa Professor Bruno Sunguya mwenyekiti wa kamati ya Senate, utafiti na Uchapishaji, MUHAS. P.O. Box 65001, Dar es Salaam-Tanzania, Tel+2552150302-6)

Mimi....., nimesoma/nimesomewa

/nimeelezewa kuhusu utafiti huu na nimeelewa. Kwa ridhaa yangu mwenyewe nimekubali kushiriki katika utafiti huu.

Sahihi ya mshiriki.....Tarehe.....

Namba ya utafiti.....

Namba ya MAT……

Sahihi ya mtafiti..... Tarehe.....

Uthibitisho wa Mtafiti

Ninathibitisha kwamba mshiriki amepewa fursa ya kuuliza maswali na maswali yote aliyouliza yamejibiwa kwa usahihi kulingana na uelewa wangu. Ninathibitisha kwamba mshiriki ametoa ridhaa ya kushiriki kwa hiari bila kulazimishwa au udanganyifu.

Jina la Mtafiti _____

Sahihi ya Mtafiti _____

Tarehe _____

Siku/Mwezi/Mwaka

Appendix VI: Approval for ethical clearance

UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

OFFICE OF THE DIRECTOR – RESEARCH, PUBLICATIONS AND INNOVATION

Ref. No.DA.282/298/01.C/2163 Date: 14/03/2024

MUHAS-REC-03-2024-2163
LONINGO SAMWEL MBESERE,
MUHAS.

RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED: PREVALENCE AND FACTORS ASSOCIATED WITH CONTINUAL SUBSTANCE ABUSE AMONG PATIENTS USING METHADONE IN MAT CLINICS.

Reference is made to the above heading,

I am pleased to inform you that the Chairman has on behalf of the University Senate, approved ethical clearance of the above-mentioned study, on recommendations of the Senate Research and Publications Committee meeting accordance with MUHAS research policy and Tanzania regulations governing human and animal subjects research.

APPROVAL DATE: 14/03/2024
EXPIRATION DATE OF APPROVAL: 14/03/2025

STUDY DESCRIPTION:
Purpose:
The purpose of this prospective observational cohort study is to determine prevalence and factors associated with continual substance abuse among patients using Methadone in MAT clinics.

The approved protocol and procedures for this study is attached and stamped with this letter, and can be found in the link provided: https://irb.muhas.ac.tz/storage/Certificates/Certificate%20-%2014554.pdf and in the MUHAS archives.

The PI is required to:

1. Submit bi-annual progress reports and final report upon completion of the study.
2. Report to the IRB any unanticipated problem involving risks to subjects or others including adverse events where applicable.
3. Apply for renewal of approval of ethical clearance one (1) month prior its expiration if the study is not completed at the end of this ethical approval. You may not continue with any research activity beyond the expiration date without the approval of the IRB. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.
4. Obtain IRB amendment (s) approval for any changes to any aspect of this study before they can be implemented.
5. Data security is ultimately the responsibility of the investigator.
6. Apply for and obtain Data Transfer Agreement (DTA) from NIMR if data will be transferred to a foreign country.
7. Apply for and obtain Material Transfer Agreement (MTA) from NIMR, if research materials (samples) will be shipped to a foreign country.
8. Apply for and obtain permission to publish the results from National Institute for Medical Research. The application should be before submitting to a publisher and not concurrently through the email publications@nimr.or.tz.
9. Any researcher, who contravenes or fail to comply with these conditions, shall be guilty of an offence and shall be liable on conviction to a fine as per NIMR Act No. 23 of 1979, PART III section 10 (2)
10. The PI is required to ensure that the findings of the study are disseminated to relevant stake holders.
11. PI is required to be versed with necessary laws and regulatory policies that govern research in Tanzania. Some guidance is available on our website https://drp.muhas.ac.tz/.

Dr. Nahya Salim Masoud,

Chairperson, MUHAS Research and Ethics Committee



Appendix VII: Introduction letter

UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

OFFICE OF THE DIRECTOR – POSTGRADUATE STUDIES

In reply quote;
Ref. No. HD/MUH/T.870/2022

14th March, 2024

THE EXECUTIVE DIRECTOR,
MWANANYAMALA REGIONAL REFERRAL HOSPITAL,
P.O. BOX 61665.

DAR ES SALAAM.

RE: INTRODUCTION LETTER OF LONINGO SAMWEL MBESERE

We would like to inform you that the carrier of this letter is Loningo Samwel Mbesere with registration number HD/MUH/T.870/2022 a student in the School of Pharmacy at Muhimbili University of Health and Allied Science (MUHAS), pursuing MSc. Pharmaceutical Management.

As part of his studies, he will be doing an elective research titled **"PREVALENCE AND FACTORS ASSOCIATED WITH CONTINUAL SUBSTANCE ABUSE AMONG PATIENTS USING METHADONE IN MAT CLINICS".**

The Ethical Clearance for doing the said research has been given by the University.

Kindly request your assistance and cooperation to our student.

Yours Sincerely,

Ms. Victoria Mwanilwa
For: DIRECTOR, POSTGRADUATE STUDIES

cc: Loningo Samwel Mbesere

9 United Nations Road; Upanga West; P.O. Box 65001, Dar Es Salaam: Tel. G/Line: +255-22-2150302/6; Ext. 1015; Direct Line:+255-22-2151378;Telefax:+255-22-2150465;E-mail:dpgs@muhas.ac.tz;Web:https://www.muhas.ac.tz

Appendix VIII: Permission to collect data at MNH, Temeke and Mwananyamala

THE UNITED REPUBLIC OF TANZANI

MINISTRY OF HEALTH

MUHIMBILI NATIONAL HOSPITAL

In reply please quote;

Ref. No.: MNH/CRTCU/Perm/2024/140 Date: 18th March, 2024

Head of Department,
Psychiatry and Mental Health,
Muhimbili National Hospital

RE: PERMISSION TO COLLECT DATA AT MNH

Name Student	**Loningo Samwel**
Title	**"Prevalence and Factors Associated with Continual Substance Abuse Among Patients Using Methadone".**
Institution	Muhimbili University of Health and Allied Sciences
Supervisor	Prof. G. Kagashe (MUHAS)
Co – Supervisor	Dr. Betty Maganda (MUHAS) Dr. Iddi Haruna Nkya (MNH)
Period	18th March, 2024 to 30th June, 2024

Approval has been granted to the above principal investigators to collect data at MNH. Dissemination of study findings at MNH shall be overseen by **Dr. Iddi Haruna Nkya** (MNH) supervisor.

Kindly ensure the named principal investigator abide to the ethical principles and other conditions of the research approval.

Sincerely,

HEAD, TEACHING, RESEARCH & CONSULTANCY UNIT
P.O. Box 65000
DAR-ES-SALAAM
MUHIMBILI NATIONAL HOSPITAL

Dr. Charles K. Pallangyo
For: Head of Clinical research, Training and Consultancy Unit

c.c DMS
c.c Dr. Iddi Haruna Nkya
c.c Loningo Samwel

Upanga West, Kalenga Street, Plot No. 10480/3, P.O. BOX 65000, Dar es Salaam, Tanzania.
Telephone: +255-22-2151367-9, Telephone: +255-22-2151351-2
Email: info@mnh.or.tz, Website: www.mnh.or.tz

JAMHURI YA MUUNGANO WA TANZANIA
WIZARA YA AFYA.
HOSPITAL YA RUFAA YA MKOA YA TEMEKE

Baruapepe:temekerh@afya.go.tz,S.L.P 45232 Dar es Salaam,Simu 0222856007

Kumb. Na. TRRH/RSC/9/9/02/76 **Tarehe: 22/03/2024**

Ndg. Loningo Swamwel
Muhimbili University of Health and Allied Sciences
S.L.P 65001
DAR ES SALAAM.

YAH: OMBI LA KUFANYA UTAFITI "PREVALENCE AND FACTORS ASSOCIATED WITH CONTINUAL SUBSTANCE ABUSE AMONG PATIENTS USING METHADONE IN MAT CLINICS " (RESEARCH)

Tafadhali husika na somo tajwa hapo juu.

2. Nimepokea barua yako ya tarehe 14 March, 2024 kuhusu ombi lako la kufanya Utafiti (Research) katika Taasisi yetu, kuhusu **"Prevalence and factors associated with continual substance abuse among patients using methadone in MAT Clinics "**

3. Ombi lako limekubaliwa, utatakiwa kulipa ada kiasi cha **Tshs.100,000/=**. Hivyo wasiliana na mhasibu wa mapato wa Hospitali **Ndg. Lusajo Nsajigwa** kwa namba **0717 959495** ili akupatie control Number kwa ajili ya malipo ya ada hii ili uweze kuruhusiwa kufanya utafiti.

4. Asante kwa ushirikiano.

Kny: MKURUGENZI MSAIDIZI
HOSPITALI YA RUFAA YA MKOA WA TEMEKE

Dkt. Husna Msangi
Kny: MKURUGENZI
HOSPITALI YA RUFAA YA MKOA YA TEMEKE

Nakala: CSCO/PSY - ***Tafadhali hakikisha taarifa ya utafiti inabaki hospitalini***

THE UN THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF HEALTH

Telephone Address:

Telephone: 022-2760500

Mwananyamala Regional
Referral Hospital,
P.O.Box 61665
Dar es Salaam.

RE: NO.: MA. 240/341/01/8

DATE: 19th March,2024

Director,
Muhimbili University of Health and,
Allied Sciences,
P.O.BOX 65001,
DAR ES SALAAM.

RE: LONINGO SAMWEL MBESERE- TO CONDUCTI HIS RESEARCH IN MWANANYAMALA REGIONAL REFERRAL HOSPITAL

The captioned subject refers

2. May you be informed that your request to research Titled "***Prevelence and Factors Associated with continual substance abuse among patients using methadone in MAT Clinics" start*** **to 20th March,2024**, to **21 March,2024** is asserted.

3. The Institution charges **50,000/=**, as Data Collection fee as per student spent. The payments are to be made upon reporting.

4. May she report to the Administration and HR department head for further instruction.

4. May she report to the Administration and HR department head for further instruction.

Thanks.

Dr. Zavery Benela
MEDICAL OFFICER INCHARGE
MWANANYAMALA REGIONAL REFERRAL HOSPITAL

COPY:
Heads of Internal Med Department - **MWANANYAMALA REGIONAL REFERRAL HOSPITA**

Loningo Samwel Mbesere - Report to the Internal Med Department