PREVALENCE OF ALCOHOL USE, AND FACTORS ASSOCIATED WITH HAZARDOUS DRINKING AMONG MEDICAL DOCTORS IN DAR ES SALAAM, TANZANIA.

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By

George Gerald Misana

A Dissertation submitted in Partial Fulfillment of the Requirements

for the Degree of Masters of Public Health of

Muhimbili University of Health and Allied Sciences

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CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled "**Prevalence of alcohol use, and factors associated with hazardous drinking among medical doctors in Dar es Salaam, Tanzania,** in fulfillment of the requirements for the degree of Master of Public Health of Muhimbili University of Health and Allied Sciences.

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Dr. Mangi J. Ezekiel

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Date

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Dr. Linda S. Paulo

(Co-supervisor)

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Date

DECLARATION AND COPYRIGHT

I, **George Gerald Misana**, declare that this **dissertation** is my own original work that it has not been presented and will not be presented to any other university for a similar or any degree award.

Signature. …… Date……...

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Finally, I would like to thank my research assistants Reebok Mnyigumba and Agustino Kelvin from the Muhimbili College of Health and Allied Sciences for helping with data collection activities.

DEDICATION

I dedicate this work to other researchers. Exploration of the gaps in this work will serve them a good chance to identify other research problems and create sound research questions that may produce answers on how to improve the well-being of healthcare workers.

ABSTRACT

Background: Despite its few perceived benefits, alcohol consumption is associated with numerous adverse outcomes such as disease, injuries, social and economic impacts. In 2016, harmful alcohol consumption was reported to contribute to 5.3% of deaths and 5.1% of disease adjusted life years (DALYs) in that particular year. Doctors have been identified as one of the key agents in prevention of alcohol related harm through role modeling, educating, and treating alcohol-related harms. However, their attitude and alcohol consumption behaviors affect such roles

Aim: To determine the prevalence of alcohol use, and factors associated with hazardous drinking among medical doctors in the Dar-es-salaam region.

Methodology: A cross-sectional analytical study that involved doctors from government hospitals in Dar-es-salaam was done from 20th October 2023 to 30th December 2023. A semi-structured questionnaire was used to collect data about socio-demographic and work-related characteristics, psychological well-being status and alcohol consumption patterns among the selected doctors. By using SPSS version 23 for analysis, chi-square test and binary logistic regression model were used to assess the statistical significance of the results and p-value of 0.05 was considered significant.

Results: The prevalence of current drinkers is 55.8% while that of hazardous and moderate drinkers are 37.2% and 18.6% respectively. Having adjusted for confounders, the level of experience ($p = 0.009$), work department ($p = 0.04$), and psychological well-being ($p < 0.001$) retained a statistically significant association with hazardous alcohol use. Current drinkers with poor psychological well-being had 10.11 times higher odds of engaging in hazardous drinking (95% CI = 2.77 – 37) compared to those with good psychological well-being.

Conclusion: Alcohol use among medical doctors appears to be a common behavior in Dar es Salaam. Medical doctors in Dar es Salaam have higher prevalence of alcohol use and hazardous drinking than the general population.

Recommendation: Hospitals should design and implement health programs to promote, protect, and restore psychological wellbeing for those in need to prevent them hazardous drinking and its subsequent effects.

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LIST OF ABBREVIATIONS

AUD	Alcohol Use Disorder
AUDIT	Alcohol Use Disorder Identification Test
CI	Confidence Interval
CME	Continuous Medical Education
DALY	Disease Adjusted Life Years
GHQ	General Health Questionnaire
MD	Medical Doctor
Mmed	Master of medicine
MoHSW	Ministry of Health and Social Welfare
MUHAS	Muhimbili University of Health and Allied Sciences
NCDs	Non-Communicable Diseases
WHO	World Health Organization
SDGs	Sustainable Development Goals

DEFINITION OF TERMS

Alcohol use: a general term that describes all patterns of alcoholic beverage consumption/drinking such as moderate drinking, high episodic (binge) drinking, hazardous drinking and harmful alcohol use.

Alcohol use disorder (AUD): a medical condition characterized by an impaired ability to stop or control alcohol use despite adverse outcome. It is also known as alcoholism, alcohol dependence or alcohol addiction

Abstainer: a person who has not consumed alcohol within the past 12 months**.**

Harmful alcohol use: a pattern of alcohol consumption that result into undesired consequences such as physical and mental health. It may also include social consequences

Hazardous drinking: is a pattern of alcohol consumption that increases the risk of harmful consequences for the user or others. AUDIT score of 8+ indicate hazardous.

Healthy behaviors: are intentional or unintentional actions taken by individuals that can promote or detract from health of the actor or others. They include behaviors such as diet, physical activity, smoking, substance use, risky sexual behaviors, health seeking behaviors and adherence to prescribed medical treatment

High episodic (binge) drinking: consuming at least six and eight standard drinks (units) in one sitting for women and men respectively.

Moderate alcohol use/moderate drinking: drinking behavior/pattern that scores less than eight (<8) in AUDIT

Psychological distress: a combination of negative affective states such as anxiety, emotional vulnerability, irritability, and sadness that correlate with physical morbidity, reduced quality of life, and increased use of health services**.**

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Alcohol is a psychotropic substance with dependence-producing properties. It has been widely used in many societies for a long period. Its consumption is associated with perceived benefits such as relaxation, mood alteration, and sensory pleasure (Dunbar *et al.*, 2017). When consumed in low or moderate amounts, alcohol has protective health benefits on the cardiovascular system (Chiva-blanch and Badimon, 2020). However, these few benefits are outweighed by the numerous health risks of consuming it. Alcohol consumption is known to be a causal factor in about 200 diseases and injuries. It is associated with an increased risk of non-communicable diseases such as cardiovascular disease, liver cirrhosis, and cancers. Furthermore, uncontrolled alcohol consumption is associated with an increased risk of developing behavior disorders such as alcohol use disorder (Institute on Alcohol Abuse and Alcoholism, 2020).

The high burden of disease as the result of harmful alcohol consumption produces significant social and economic impacts. In 2016 WHO report indicated that, harmful use of alcohol accounted for 3 million deaths (5.3%) worldwide and 132.6 million disability-adjusted life years (DALYs), that is 5.1% of all DALYs in that particular year. Mortality attributed to alcohol consumption is higher than that caused by diseases such as tuberculosis, HIV/AIDS, and diabetes (World Health Organization (WHO), 2018).

It is estimated that about 2.3 billion people are current drinkers (World Health Organization (WHO), 2018). That means they have consumed alcohol within the past 12 months. This is nearly half of the world's population (43%). Three regions have more than half of their population as current drinkers. These are America, Europe, and the Western Pacific. While Europe is leading in alcohol consumption level and proportion of drinkers, the African region experiences the highest burden of disease and injuries attributed to alcohol (World Health Organization (WHO), 2018).

In Africa, current drinkers consume an average of 40.0 grams of pure alcohol per day (World Health Organization (WHO), 2018). This is 20% higher than the average consumption worldwide. The prevalence of heavy episodic drinking among current drinkers remains

high(over 60%) in some sub-Saharan African countries (World Health Organization (WHO), 2018).In Tanzania, the prevalence of alcohol use varies across regions. It is up to 47% in the northern regions of Kilimanjaro and Mwanza, meanwhile, Dar es Salaam reported a prevalence of 17% as current alcohol users. Furthermore, variations of alcohol consumption exist between subgroups in the population for instance Men have shown a higher prevalence than women in the same regions (Mbatia *et al.*, 2009; Francis *et al.*, 2015).

In efforts to promote public health through strengthening prevention and treatment of substance abuse including narcotic drug abuse and harmful use of alcohol, healthcare workers have a significant role to play in the prevention of alcohol-related harms. This is possible through role modeling, educating, and medical treatment against harmful alcohol use. However their attitudes and level of al alcohol consumption affect such a crucial role (Rosta, 2002; Obadeji *et al.*, 2015).

1.2 Problem statement

Drinking alcohol is associated with an increased risk of non-communicable diseases such as cardiovascular diseases, liver cirrhosis, and malignant conditions (World Health Organization (WHO), 2018). Due to its dependency-producing properties, Alcohol consumption may lead to mental and behavioral disorders such as alcohol use disorders. High disease burden as the result of harmful alcohol consumption produces serious negative impacts socially and economically (World Health Organization (WHO), 2010).

Globally, it was estimated that total per capita alcohol consumption among males and females on average was 19.4 and 7.0 liters of pure alcohol respectively (WHO, 2022). These figures were expected to rise over the next 10 years. Alcohol consumption levels and the proportion of drinkers varies across regions with Europe being the leading region (World Health Organization (WHO), 2010). In African countries prevalence of hazardous alcohol use has been reported to reach up to 41.3% and 18.3% among men and women respectively. Men in the age group 20 – 54 years were highly associated with risky drinking (Pengpid, Peltzer and van der Heever, 2011). In Tanzania, the prevalence of alcohol use in the urban areas was estimated to be 17.2% and men are the most affected group engaging in hazardous alcohol use behaviors (Mbatia *et al.*, 2009). Furthermore, the literature indicates a 39.2%

prevalence of alcohol use among health science students in the Morogoro region (Kureh *et al.*, 2022).

Healthcare workers especially doctors have a crucial role in promoting public health through role modeling, educating, and treating alcohol-related harms (Fleming *et al.*, 2000; Marlatt and Witkiewitz, 2002). However, their lifestyle and their attitudes toward alcohol will affect such roles. The degree of effort a doctor makes in activities to prevent hazardous alcohol use in patients will depend on several factors; an important one of these being his individual use (Rosta, 2002).

There have been conflicting reports about alcohol consumption levels among doctors across different regions of the world. Some reports indicate a higher prevalence than the general population (Sebo *et al.*, 2007) while others indicate that doctors have lower consumption than the general population (Issa *et al.*, 2013). In Tanzania, Information on alcohol use, drinking patterns, and predictors of alcohol use among doctors is limited.

This study aims to assess the prevalence of alcohol use, and factors associated with hazardous drinking among medical doctors in Dar-es-salaam. Findings from this study will show the current magnitude of the problem and give insights on how to combat hazardous drinking and promote wellbeing of medical doctors.

1.3 Conceptual framework.

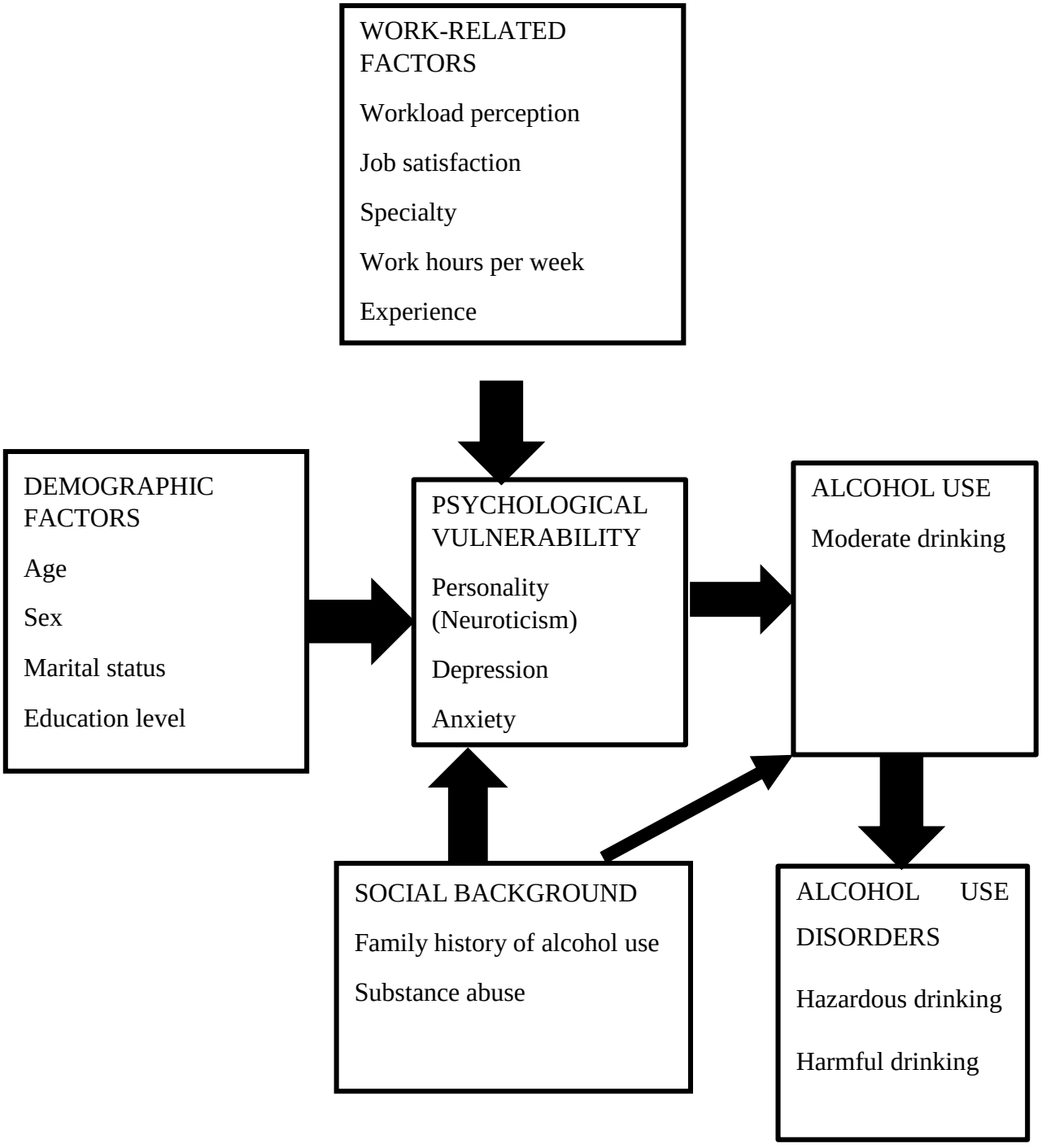


Figure 1: Schematic diagram illustrating interaction of several factors that lead to observed alcohol use patterns among medical doctors.

From the literature, alcohol use among medical doctors has been associated with several factors such as demographic characteristics, social background and work-related factors. These factors acting on individual psychological vulnerability facilitate/precipitate indulgence to alcohol consumption behaviors. Social circumstances such as ceremonial events can also influence alcohol consumption since it is considered as part of some society norms to drink alcohol in such events. Alcohol use may manifest as normally acceptable behaviors (e.g moderate drinking) or unacceptable ones such as hazardous drinking. The later usually develop as the result of alcohol addiction among moderate drinkers.

1.4 Rationale

Promoting public health requires a multifaceted approach. One of the recommended approaches is to strengthen health system which is made up of six building blocks known as the health workforce, service delivery, health information system, financing, governance and access to essential medicine. This can be possible through identifying and tackling challenges under each block. Doctors make up a significant portion of health workforce. Their wellbeing can possibly translate to improved health services to the public. Result from this study will produce current magnitude of alcohol use patterns such as moderate, and hazardous drinking among medical doctors in Dar es Salaam. Furthermore, it will provide insight and allow more research aiming at promoting health behaviors among doctors and other healthcare professionals as it explores the factors associated with hazardous drinking among medical doctors.

1.5 Research questions

1.5.1 Broad research question

What is the prevalence of alcohol use, and factors associated with hazardous drinking among medical doctors in Dar-es-salaam region?

1.5.2 Specific research questions

1. What is the prevalence of alcohol use among medical doctors in Dar-es-salaam region?
2. What are the socio-demographic factors associated with hazardous alcohol use among medical doctors in Dar-es-salaam region?
3. What are the work-related factors associated with hazardous alcohol use among medical doctors in Dar-es-salaam?

1.6 Research Objectives

1.6.1 Broad objective

To determine the prevalence of alcohol use, and factors associated with hazardous drinking among medical doctors in Dar-es-salaam region.

1.6.2 Specific objectives

1. To determine the prevalence of alcohol, use among medical doctors in Dar-es-salaam region.
2. To determine the social demographic factors associated with hazardous alcohol use among medical doctors in Dar-es-salaam.
3. To determine work-related factors associated with hazardous alcohol use among medical doctors in Dar-es-salaam.

1.7 Literature review

1.7.1 Prevalence of alcohol use among medical doctors.

The proportion of alcohol use among doctors across the globe varies widely (Wilson *et al.*, 2022) with some regions ranking higher than others. The European continent is leading in this regard with Germany having the highest level of alcohol consumption and the proportion of drinkers. More than 90% of German's medical doctors consume alcohol regularly. The prevalence of moderate drinking is 70.7% while that of hazardous drinking is 18.9% (Rosta, 2008). Although the consumption of alcohol among doctors in German is widespread, majority of doctors do consume alcohol responsibly.

In other European countries, the prevalence of alcohol use among the medical doctors remains high although it is relatively low as compared to Germany. In Switzerland 66% of doctors use alcohol and 30% are hazardous drinkers (Sebo *et al.*, 2007) while in United Kingdom 53% of doctors consume alcohol and only 5% are hazardous drinkers(Medisauskaite and Kamau, 2019). These figures indicate that Switzerland has the highest proportion of Hazardous drinkers (45%) among the current drinkers while United Kingdom has the least (9.4%).

In other regions such as Western Pacific and America the prevalence of hazardous alcohol use is less than 16 % (Hughes *et al.*, 1992; Nash *et al.*, 2010) a relatively a low magnitude compared to many parts of Europe.

Although significant in proportion, the prevalence of alcohol use among doctors In Africa is less than that observed in Europe. A cross sectional study in Ekiti State University teaching hospital indicate that 30.3% of doctors were current drinkers and 7.3% were hazardous drinkers (Obadeji *et al.*, 2015). Another study in similar setting, University of Ilorin teaching hospital reported 30.3% prevalence of current drinkers whereby 23% were moderate drinkers and 6.6% were hazardous drinkers (Issa *et al.*, 2013).

In Tanzania, several studies on alcohol use have been done on general population. A study conducted in Northern Tanzania showed that prevalence of alcohol abuse reaches up to 22.8% (Mitsunaga and Larsen, 2008). A study conducted in Temeke district, Dar-es salaam showed that prevalence of alcohol consumption is 22% (Chande and Salum, 2007) Another study done in two settings of Dar es salaam, Ilala and Mtoni Saba saba indicated that

prevalence of alcohol use was 17.2% and that of hazardous drinking was 5.7% (Mbatia *et al.*, 2009). A study closer to this was done among health science students in Ifakara indicating that prevalence of alcohol use was 39.2% and AUD prevalence was 16.4% (Kureh *et al.*, 2022).

1.7.2 Socio-demographic factors associated with hazardous alcohol use among medical doctors.

Across Europe, age above 40 years is highly associated with alcohol use than age 40 years and below. Being male is significantly associated with hazardous drinking (Rosta, 2008). This is further supported by study done in Norway where being a male and having 45 years or above among doctors is highly associated with hazardous drinking in contrast to the opposite that is female sex and younger age (Rosta and Aasland, 2005). In Switzerland a study of 1784 physicians indicated that being male, aged 45 to 65 years and living alone were highly associated with hazardous drinking (Sebo *et al.*, 2007). Similar trend can be said about doctors in America where males tend to drink more than females. Not only that but also older doctors were likely to qualify as hazardous drinkers than younger doctors (McAuliffe *et al.*, 2011)**.**

In Western Pacific, several factors in excess of those previously identified in other regions. These were being Australian trained doctor, having neurotic or extrovert personality and being solitary medical practitioner and failing to pursue continuous medical education (CME). All these together with being male and old age between 40-49 years were significantly associated with hazardous drinking (Nash *et al.*, 2010).

In Africa, a study done in Nigeria unlike previous studies in other regions identified that younger doctors are more likely to practice hazardous alcohol use. However alcohol use was more associated with male gender similarly to other studies (Issa *et al.*, 2013). Contrary to this, another study in similar setting of Nigeria conformed to the pattern identified in other regions of the world. From the study it shown that age above 40 years is associated with hazardous alcohol use (Obadeji *et al.*, 2015).

1.7.3 Work-related factors associated with hazardous drinking among doctors.

Several work-related factors have been associated with hazardous drinking among doctors. These are such as experience, medical specialty, work hours, workload perception, and psychological wellbeing. In Germany it is reported that surgeons are more likely to engage in hazardous drinking compared to doctors from non-surgical specialty (Rosta, 2008). Similar to this, a study in Norway also indicated that female surgeons are more likely to be involved in frequent moderate alcohol consumption, frequent binge drinking, and hazardous drinking than female doctors from non-surgical specialty (Rosta and Aasland, 2005).

In United Kingdom, alcohol abuse has been used as a coping mechanism against occupational distress that doctors experience in their career. Psychological distress and having more experience in practicing medicine increase the odds of doctors to engage in hazardous drinking (Medisauskaite and Kamau, 2019). Another study in Australia demonstrated that long work hours is significantly associated with psychiatry morbidity among medical doctors(Nash *et al.*, 2010). Poor psychological wellbeing in turn may lead to increased risk of hazardous drinking

In Africa, A different association is observed in Nigeria, where being a doctor in obstetrics and gynecology department is highly associated with increased risk of hazardous alcohol use. Not only that but also heavy workload and psychological distress have shown significant association with hazardous drinking(Issa *et al.*, 2013; Obadeji *et al.*, 2015).

Despite of some evidence of alcohol use disorders among doctors across the globe. The magnitude of alcohol use and related disorders among healthcare workers especially doctors remain unknown across the entire country. The same can also be said about the factors associated with alcohol use disorders.

CHAPTER TWO

2.0 METHODOLOGY

2.1 Study design

This study was an analytical cross-sectional study.

2.2 Study area

Government hospital located in Dar-es-salaam region starting from regional level upward. Being the most populated city in Tanzania, Dar-es-salaam has 3 regional referral hospital that is Amana, Mwananyamala, Temeke, and the National Referral Hospital, Muhimbili (MNH). Being the national hospital MNH has the highest number of medical doctors ~300, followed by Mwananyamala 96, Amana 88, and Temeke 80 medical doctors thus making up a total of 564 medical doctors. These figures were obtained from the sampling units list obtained from hospitals during data collection.

2.3 Study population

Doctors employed or practicing in the regional referral and tertiary government hospitals in Dar es salaam region.

2.4 Study sample

The sample size was obtained from the following formula;

$$n = \frac{Nz^2p\,(1-p)}{\varepsilon^2\,(N-1) + Z^2\,P\,(1-P)}$$

Where

N = study population size, 564 medical doctors

n = Minimum required sample size

z = standard normal deviate at 95% confidence interval (Z= 1.96)

p = Proportion of the target population (doctors) involved in alcohol use from previous studies, 30.3% (Obadeji *et al.*, 2015).

ε = Margin of error at 5% (0.05) and non-response rate of 10%

$$n = \frac{564*1.96^2*0.3\,(1-0.3)}{0.05^2\,(564-1) + 1.96^2*0.3(1-0.3)}$$

$$n = 205$$

The minimum sample size was 205 doctors

Adjusted sample size (n_a) = $\boldsymbol{n}$ ***1/R**

R = response rate (0.9)

n_a = 205.1/0.9

n_a = 228

Therefore, a sample size of 228 doctors was studied.

The sample size for:

Muhimbili National Hospital was (300/564) *228 = 121 Medical doctors.

Amana regional referral hospital was (88/564) *228 = 36 medical doctors

Mwananyamala regional referral hospital (96/564) *228 = 39 medical doctors

Temeke regional referral hospital was (80/564) *228 = 32 medical doctors

2.5 Sampling procedure

The hospitals were purposely sampled due to their high number of medical doctors as compared to lower-level hospitals. Not only that but also the level of these hospitals guaranteed presence of diverse medical specialties and diverse working conditions. Within the hospitals, study participants were selected using simple random sampling technique. The list of all doctors in each hospital was obtained and arranged alphabetically. Each doctor was assigned a serial number. A random number generator was used to select the study participants. Then, the selected doctors were approached for consent procedures.

Inclusion Criteria

This study included doctors who were practicing medicine in the selected hospitals in Dar-es-salaam at the time of the study.

Exclusion criteria

Doctors who were absent from work during the study period e.g on holiday, sick leave, or study leave.

2.6 Study variables

Exposure variables

These were the individual constructs of Socio-demographic and work-related factors. The socio-demographic factors included age in years, sex, marital status, level of education, and family history of alcohol use. These were assessed by question 1 – 5. The work-related factors included years of experience, specialty/department of work, work hours per week, job satisfaction, and workload perception. These were assessed by question 6 -10.

Intermediate variable: psychological wellbeing (good and poor)

Psychological wellbeing status was obtained from the general health questionnaire (GQH section). It has a total of 12 questions each one having 4 options. Scores from each question were obtained by using Likert scale that is 0 = better than usual, 1 = same as usual, 2 = less than usual, and 3 = much less than usual. During analysis the score were added to get a total score in each questionnaire, then the mean score (10) and standard error of mean (0.322) were calculated. From there, the upper limit of the mean (10) was used as the cutoff point between good (≤10) and poor (>10) psychological wellbeing.

Outcome variables

Alcohol use patterns (Moderate drinking, and hazardous drinking).

Like GHQ part, the scores in AUDIT section were also added to get total scores in each questionnaire. However, the mean score was not calculated instead those who scored ≤ 8 were categorized as moderate drinkers while those with higher scores were categorized as hazardous drinkers.

2.7 Data collection

Data was collected using a self-administered questionnaire whereby selected doctors were given a questionnaire to fill in on their own. After obtaining the list from the Human resource department and selecting participants using simple random sampling, the researcher approached the respective heads of departments and asked the permission to meet the selected respondents. The informed consent process followed, and the respondents were given a questionnaire to fill in. Once the questionnaire was filled the researcher or assistant collected them. The whole process of data collection took about one month between November and December 2023. It was conducted by the principal investigator and 2 research assistants. These research assistants were tutors from Muhimbili Institute of Health and Allied Sciences. They were trained on the data collection procedure before going to the field for actual collection process.

2.8 Tools

Semi-structured, self-administered validated questionnaires developed in English and later translated in Kiswahili were used in this study. The questionnaires had 3 sections; socio-demographic and work related characteristics, 12 items general health questionnaire (GHQ) (Montazeri *et al.*, 2003; Hystad and Johnsen, 2020) and alcohol use identification test (AUDIT) 10 items questions (Babor *et al.*, 2001). Both the English and Kiswahili questionnaires were adopted with some modification made on socio-demographic and work-related characteristics section.

2.9 Validity and Reliability Issues

The pretest was conducted with the potential respondent to check for faults in wording questions and lack of clarity of questionnaires. The researcher selected a group of ten respondents from MUHAS. The questionnaire was distributed to the respondent who filled and returned them to the team. Pretesting responses were not included in the study analysis.

2.10 Data analysis

Data from the filled questionnaires were manually entered into Statistical Package for Social Sciences (SPSS) version 23 template and analyzed. Descriptive statistics was used to provide distribution of participants' characteristics, level of psychological well-being, and prevalence of alcohol use. Chi-square test was used to assess the association between exposure variables and outcome variable. In every exposure variable whenever more than 20% of the expected cells had less than 5 counts Fischer exact test was used. Variables showing a significance level of <20% were included in the binary logistic regression model to assess the association between the exposure variables and alcohol use patterns. A p-value of <0.05 was considered significant.

CHAPTER THREE

3.0 RESULTS

3.1 Participants characteristics.

A total of 215(94%) doctors responded to questionnaires handed to them while 13 (6%) did not consent. With the mean age of 35.6 ± 0.5 years, majority of the participants 63 (29.4%) were 31 – 35 years followed closely by age group 26 – 30 years 61 (28.5%). Males contributed to 55% of the study participants. More than half of doctors 123 (58%) were married while 65 (30.7%) were single. Most of the doctors had attained bachelor's degree 150(71.4%) while 46 (21.9%) had master's degrees. Among the participants, 176 (82.2%) acknowledged having a close relative/family member who was using alcohol while the rest 38 (17.8%) denied it.

Most doctors 68 (32.9%) had work experience of 5 - 8 years with a few respondents having worked for more than 12 years (15.5%). The Internal medicine department and Obstetrics and gynecology department contributed 27% of the respondents each followed by the Surgery and Pediatric departments with 19.1% and 19.5% respectively. With the mean of 54.5 ± 0.96 work hours per week, most doctors 56 (29.6%) reported working 65 - 65 hours per week and the least 31 (16.4%) reported working more than 65 hours per week. About half of doctors 112 (53.3%) perceived their job as heavy. A higher proportion of doctors 156 (73.9%) were satisfied with their jobs while 55 (26.1%) were not. Lastly, majority of doctors 122 (56.7%) were doing well psychologically while the rest 93 (43.3%) had poor psychological well-being.

Table 1: Descriptive statistics of study participants. (n=215)

Variable	Frequency (%)
Age groups	
26 – 30	61 (28.5)
31 – 35	63 (29.4)
36 – 40	48 (22.4)
> 40	43 (20)
Sex	
Female	97 (45)
Male	118 (55)
Marital status	
Single	66 (30.7)
Married	124 (58)
Divorced	16 (7.5)
Widow/widower	9 (3.8)
Education level	
MD	165 (76.6)
Mmed	50 (23.4)
Family history of alcohol use	
Yes	177 (82.3)
No	38 (17.7)
Years of experience	
1 – 4	64 (29.8)
5 – 8	71 (33)
9 – 12	47 (21.9)
> 12	33 (15.3)
Medical specialty	
Surgery	41 (19.1)
Obstetrics and gynecology	58 (27)
Internal medicine	58 (27)
Pediatrics	42 (19.5)
Emergency medicine	16 (7.4)
Work hours per week (mean = 54.5 ± 0.96)	
36 – 45	59 (27.4)
46 – 55	57 (26.5)
56 – 65	64 (29.8)
> 65	35 (16.3)
Workload perception	
Heavy	115 (53.5)
Not heavy	100 (46.5)

Job satisfaction	
Satisfied	159 (74)
Not satisfied	56 (26)
Psychological wellbeing	
Good	122 (56.7)
Poor	93 (43.3)

3.2 Prevalence of alcohol use among medical doctors.

Majority of doctors 120 (55.8%) were current drinkers, that is they have consumed alcohol within past 12 months while 96 (44.2%) were abstainers. Among the current drinkers 80 (66.7%) were hazardous drinker while 40 (33.3%) were moderate drinkers. This translates to "of all participant doctors 37.2% were hazardous drinkers and 18.6% were moderate drinkers.

3.3 Association between participants' characteristics and hazardous drinking.

Table 2, illustrates the association between social-demographic characteristics, work factors, psychological wellbeing and drinking patterns of study participant. From the table, it is indicated that level of education ($p = 0.04$) and psychological wellbeing ($p < 0.001$) of doctors has significant association with their drinking habits.

Table 2: Association between participants' characteristics and drinking patterns by chi square and Fischer exact test (n = 120)

Doctors' characteristics	Drinking pattern Moderate (%)	Hazardous ((%)	P value
Age			
26 – 30	10 (26.3)	28 (73.7)	0.269
31 – 35	9 (27.3)	24 (72.7)	
36 – 40	8 (38.1)	13 (61.9)	
> 40	13 (46.4)	15 (53.6)	
Sex			
Females	17 (41.5)	24 (58.5)	0.157
Males	23 (29.1)	56(70.9)	
Marital status			
Single	12 (34.3)	23 (65.7)	
Married	25 (35.2)	46 (64.8)	0.218*
Divorced	0	7 (100)	
Widow/widower	3 (47.9)	4(57.1)	

Education level			
MD	27 (31)	60 (69)	0.04
Mmed	13 (39.4)	20 (60.6)	
Experience (years)			
1 – 4	10 (33.3)	30 (66.6)	
5 – 8	9 (27.3)	24 (72.7)	0.087
9 – 12	9 (30)	18 (70)	
> 12	12 (60)	8 (30)	
Medical specialty			
Surgery	5 (16.7)	25 (83.3)	
Obstetrics/Gynecology	16 (48.5)	17 (51.5)	0.072
Internal medicine	11 (35.5)	20 (64.5)	
Pediatrics	5 (25)	15 (75)	
Emergency medicine	3 (50)	3 (50)	
Work hours/week			
36 – 45	16 (41)	23 (59)	
46 – 55	11 (37.9)	18 (62)	0.561
56 – 65	9 (26.5)	25 (73.5)	
> 65	4 (22.2)	14 (77.5)	
Workload perception			
Heavy	18 (29)	44 (71)	0.293
Not heavy	22 (37.9)	36 (62.1)	
Job satisfaction			
Satisfied	32 (36)	57 (64)	0.387
Not satisfied	8 (25.8)	23 (74.2)	
Having a close relative that drinks			
Yes	38 (35.2)	70 (64.8)	0.331
No	2 (16.7)	10 (83.3)	
Psychological wellbeing			
Good	33 (47.1)	37 (52.9)	<0.001
Poor	7 (14)	43 (86)	

* Fischer exact test value.

Further exploration of the relationship between doctors' characteristics and their drinking behaviors was done. All independent variables from Table 2 that showed a significance level of <20% were subjected to binary logistic regression model to eliminate any possibility of having results by chance and to show the strength of the association. The results showed that years of experience ($p = 0.02$), medical specialty ($p = 0.04$) and psychological wellbeing ($p < 0.001$) have statistical significant association with doctor's alcohol use patterns.

The odds of doctors with experience of 1 – 4 years to engage in hazardous drinking are 3.87 higher than those with > 12 years of experience with the 95% CI of 1.26 – 11.9. The odds of

doctors with 5 – 8 years of experience to engage in hazardous drinking are 3.26 higher than those with > 12 years of experience with the 95% CI of 1.02 – 10.4. The odds of doctors working in Obstetrics and gynecology specialty to engage in hazardous drinking are lower than those in surgical specialty (OR = 0.21, 95% CI (0.07 – 0.69) p = 0.01). The odds of doctors with poor psychosocial wellbeing to engage in hazardous drinking are 5.41(95% CI = 2.12 – 13.79) higher than those with good psychosocial wellbeing.

When adjusted to account for other predictor variables, all the odds ratio values increased, suggesting a strong association of each predictor variable (experience, medical specialty, and psychological wellbeing) to outcome variable (drinking pattern). From the Table 3, the following can be said; the odds of doctors with 1- 4 years of experience to engage in hazardous drinking are 9.26 (95% CI = 1.73 – 49.48) higher than those with > 12 years of experience, given that other variable are constant. Again, the odds of doctors with 5 – 8 years of experience to drink hazardously are 6.24 (95% CI = 1.27 – 30.78) higher than those with > 12 years of experience, given that other variables are constant. The odds of doctors in Obstetrics and gynecology specialty to engage in hazardous drinking are lower than those in surgical specialty (OR = 0.17, 95% CI (0.03 – 0.92), p = 0.04). The odds of doctors in Internal medicine specialty to engage in hazardous drinking are lower than those in surgical specialty (OR = 0.18, 95%CI (0.03 – 0.95) p = 0.043). Lastly, the odds of doctors with poor psychological wellbeing to be hazardous drinkers are 10.11(95% CI = 2.77 – 36.95) higher than doctors with good psychological wellbeing, given other factors are constant.

Table 3: Binary logistic regression model with drinking patterns (moderate and hazardous drinking) as dependent variable (n =120).

Doctors' characteristics	Drinking pattern (n = 120)			Crude Odds ratio		Adjusted Odds ratio
	Moderate	Hazardous	P-value	(95% CI)	P-value	(95% CI)
Sex						
Females	17 (42.5)	24 (30)		1		1
Males	23 (57.5)	56 (70)	0.16	1.77 (0.8 - 3.91)	0.387	0.6 (0.19 - 1.9)
Education level						
MD	27 (31)	60 (69)	0.323	1.56 (0.64 - 3.82)	0.342	0.53 (0.14 - 1.96)
Mmed	13 (39.4)	20 (60.6)		1		1
Experience (years)						
1 - 4	10 (33.3)	30 (66.6)	0.018	3.87 (1.26 - 11.9)	0.009	9.26 (1.73 - 49.48)
5 - 8	9 (27.3)	24 (72.7)	0.046	3.26 (1.02 - 10.4)	0.024	6.24 (1.27 - 30.78)
9 - 12	9 (30)	18 (70)	0.112	2.67 (0.79 - 9)	0.165	3.01 (0.64 - 14.27)
> 12	12 (60)	8 (30)		1		1
Medical specialty						
Surgery	5 (16.7)	25 (83.3)		1		1
Obstetrics and gynecology	16 (48.5)	17 (51.5)	0.01	0.21 (0.07 - 0.69)	0.04	0.17 (0.03 - 0.92)
Internal medicine	11 (35.5)	20 (64.5)	0.1	0.36 (0.11 - 1.22)	0.043	0.18 (0.03 - 0.95)
Pediatrics	5 (25)	15 (75)	0.473	0.6 (0.15 - 2.42)	0.959	1.05 (0.16 - 6.97)
Emergency medicine	3 (50)	3 (50)	0.09	0.2 (0.03 - 1.29)	0.182	0.2 (0.02 - 2.15)
Psychological wellbeing						
Good	33 (49.3)	37 (50.7)		1		1
Poor	7 (15.3)	43 (84.7)		5.41 (2.12 - 13.79)		10.11 (2.77 - 36.95)

CHAPTER FOUR

4.0 DISCUSSION

It has been observed that the significant proportion of medical doctors consume alcoholic drinks. Among the current drinker higher proportion of medical doctors engage in hazardous drinking. Psychological wellbeing and level of experience have significant association with doctors drinking patterns.

4.1 Characteristics of study participants.

From the study, majority of the participant were aged between 31 – 35 years and those with above 40 years were the least. This finding is similar to findings in the study done in Nigeria where only 20 % of doctors were aged above 40 years (Issa *et al.*, 2013; Obadeji *et al.*, 2015). Such observation can probably be explained by the population structure of most developing countries. From the 2022 census, Tanzania still has pyramidal shaped population structure whereby majority of its citizen are youth (Ministry of Finance and Planning et al., 2022)) similar to our study sample which contained many young medical doctors and few old ones. Contrary to this, is the study conducted in Australia where most medical doctors were aged above 40 years (Nash *et al.*, 2010). This is probably due to their population structure considering that Australia is a developed country.

Furthermore, Male participants were more dominant in number as compared to females. This finding is similar to findings in other several studies (Rosta, 2008; Issa *et al.*, 2013; Obadeji *et al.*, 2015). Men dominance in medicine is likely to be attributed by culture that favors masculine stereotype in medical professional (Rosta and Aasland, 2005). Alcohol use appears to be a common behavior in the community since majority of medical doctors admitted having a family member/close relative that uses alcohol.

4.2 Prevalence of alcohol use among medical doctors.

Despite of the awareness on numerous adverse effects, alcohol consumption appears to be widely acceptable behavior among medical doctors in Dar es Salaam, Tanzania. Similar to many western countries, current drinker's prevalence of 55.8% and hazardous drinkers prevalence of 37.2% from this study is close to that of Switzerland where 66% of doctors were current drinkers and 30% were hazardous drinkers (Sebo *et al.*, 2007). This observation is possibly due to the factors such as culture and accessibility of alcohol. Tanzania being the

country where alcohol use is acceptable and even highly regarded in some cultures, doctors have high access to alcoholic drinks that is further compounded by their good level of income (Sebo *et al.*, 2007). In some developed countries where alcohol drinking culture is prevalent, prevalence of alcohol use among medical doctors is high up to 90.5% (Rosta, 2008).

Although few studies about alcohol use have been done in Africa, both of them indicate that medical doctors have low prevalence of alcohol use and hazardous drinking (Issa *et al.*, 2013; Obadeji *et al.*, 2015) compared to the findings from this study. The observed high prevalence of alcohol use and hazardous drinking among medical doctors in Tanzania as compared to other African countries appears to replicate a similar observation of high alcohol use among medical students in Tanzania in comparison to other African countries (Kureh *et al.*, 2022).

In comparison to the general population, medical doctors in Dar es Salaam have twice higher prevalence alcohol use and hazardous drinking compared to general population. In Sub Saharan Africa prevalence of current drinkers and hazardous drinker is estimated to be 27.1% and 13.8% respectively (Belete *et al.*, 2024). This difference may be attributed by the income level whereby medical doctors have higher income than general population.

4.3 Association between socio-demographic characteristics and hazardous drinking.

Despite that the highest proportion of hazardous drinkers were younger doctors and of male gender, this relation was statistically insignificant just like the remaining social demographic factors (i.e marital status, family history, and level of education). This observation is similar to that of the study done in Ilorin Teaching hospital, Nigeria (Issa *et al.*, 2013). With exception of age, another study displayed similar non-significant relationship in all other factors mentioned earlier (Obadeji *et al.*, 2015).

On the contrary, In German studies showed that age and sex was significantly associated with alcohol use patterns. Being a male doctor over 40 years can be a risk factor for hazardous drinking (Rosta, 2008)). Similar observation was made whereby older male doctors were more likely to engage in hazardous drinking (Nash *et al.*, 2010). The observed association between male and alcohol use could be attributed by cultural factors that do not support female drinking alcohol. Biological difference between men and women may also contribute to the observed trend (Issa *et al.*, 2013).

Furthermore, the difference between findings observed in this study and those in Germany and Australia may be on account of sample size that was used in each study. With large sample size it is more likely to find a statistically significant effect.

4.4 Association between the work-related factors and hazardous drinking.

From the study, it was found that level of experience, medical specialty, and psychological wellbeing were significantly associated with hazardous alcohol use among doctors that participated in the study. Doctors with few years of experience were more likely to be engaged in hazardous drinking when compared to their more experienced counterpart. This finding is in keep with what has been reported earlier by Issa *et al*. in Nigeria. This could be ascertained by the reason that these doctors may turn to alcohol use as a coping strategy to their stressful work environment characterized by fear of failure (Gossop *et al.*, 2001). Not only that but also absence of effective health programs against alcohol abuse among doctors may contribute to such observation (Sebo *et al.*, 2007).Contrary to this is the study done in German where older doctors who probably have much higher experience were more likely to drink hazardously as compared to a younger cohort (Rosta, 2008).

Doctors working in surgical department are more likely to indulge in hazardous drinking unlike those working in other specialties. This association has been noted in several other studies. In Germany, doctors working in surgical specialty were more likely to be associated with hazardous drinking than non-surgical specialty (Rosta, 2008). In Norway, Female surgeons were more likely to drink frequently and engage in hazardous drinking more than female doctor in other specialties (Rosta and Aasland, 2005). This may be attributed by the stressful or demanding nature of surgical specialty. Conditions such as long work hours, exhaustion and sleep deprivation due to night on call can act as stressors that usually manifest as burnout among doctors in surgical department (Campbell *et al.*, 2001).

Last, poor psychological wellbeing has shown to be strongly associated with hazardous drinking. Several other studies have demonstrated similar relationship between poor psychological wellbeing and hazardous drinking (Nash *et al.*, 2010; Obadeji *et al.*, 2015). It is understandable that medical professional is subjected to immense training during collage years and pressure to perform during career life. Fear of failure and lack of coping mechanism among medical doctors has the potential to lead to poor psychological wellbeing and hence increasing the risk of hazardous drinking among them.

4.5 Study limitation and mitigation.

The study was subjected to interviewee/study participant's bias. Doctors with hazardous alcohol use were likely to under report hazardous drinking behavior since they feel exposed and uncomfortable. However, the use of self-administered questionnaire helped in minimizing such bias by the doctors.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATION

5.1. Conclusion

Alcohol use appears to be an integral part of life style of many medical doctors. Unfortunately, it is closely accompanied by undesired behaviors such as hazardous drinking appears to dominate among the medical doctors who drink alcohol. Poor psychological wellbeing may play a significant role in predicting hazardous drinking among medical doctors. While there is no doubt about doctor's knowledge about alcohol effects, to some extent their attitude and consumption behaviors does not reflect their knowledge. This stands as a red flag not only to doctors' wellbeing but also to other health professionals. The community is at more disadvantage due to underperforming human resource in health sector and lack of good role modelling in health-related behaviors. With several factors being associated with observed trends of alcohol use among doctors, it remains unclear, why they engage in such behaviors. Health system strengthening efforts may gain a boost through further exploration of unanswered questions/gaps that are yet to be worked out.

5.2. Recommendations

The following are suggested based on the findings from this study.

i. Hospitals should design Health programs to promote, protect, and restore psychological wellbeing. This will enable doctors to cope with everyday stresses that may arise from their demanding work and other aspects of their lives. Furthermore, these programs should also be incorporated in health training institution so as to prepare future doctors to learn and work well hence increasing their productivity.

Further research should be done to assess the factors that are associated or lead to hazardous drinking among doctors working in surgical specialty.

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APPENDICES

Appendix I: Consent Form

RESEARCH TITLE: PREVALENCE OF ALCOHOL USE, DRINKING PATTERNS AND ASSOCIATED FACTORS AMONG MEDICAL DOCTORS IN DAR ES SALAAM.

I am confident that I am well informed about the research study to be conducted with the tittle mentioned above.

After discussion, I am well aware of the study aim and benefits of involving in the study. I have been assured that no potential risk or adverse outcome that will be associated with the study. Information collected are confidential and will only be used for the purpose of this study. No personal identity is required.

I understand that my participation in this research is voluntary. I am free to decline or withdraw from the research at any point in time.

CONTACT: For any enquiry about the research I can contact George Gerald Misana, Masters of Public health postgraduate student at Muhimbili University of Health and Allied sciences via mobile Phone number 0734709707, email: georgemichu260@gmail.com

For any further inquiry or complaints, I can contact office of Research and publications MUHAS P.O. Box 65001

I understand that information collected from my participation will be used for the purpose of the study and can be used for publication in scientific journals. Ii consent for it to be used for that purpose.

Participant signature

…….

Date:…….

Appendix II: Questionnaire

QUESTIONNAIRE ON PREVALENCE OF ALCOHOL USE, DRINKING PATTERNS AND ASSOCIATED FACTORS AMONG MEDICAL DOCTORS IN DAR ES SALAAM.

QUESTIONNAIRE NO: ……

PART A:

1. What is your age? …….
2. What gender are you?

   ☐ female

   ☐ Male

3. What is your marital status?

   ☐ Single

   ☐ Married

   ☐ Divorced

   ☐ Widow/Widower

   ☐ Other, (specify)……..

4. What is the highest level of education you have attained? …….
5. Do you have any close relative/family member that uses alcohol?

   ☐ Yes

   ☐ No

6. How long have you been practicing medicine? …….
7. Which department are you working?

   ☐ Surgery

   ☐ Obstetrics and gynecology

   ☐ Internal medicine

   ☐ Pediatrics and Child health

   ☐ Other (specify)…….

8. How many hours do you work in a week? ……

9. How do you perceive your work load?
   - ☐ Heavy
   - ☐ Not heavy
10. Are you satisfied with your work?
   - ☐ Satisfied
   - ☐ Not satisfied

PART B

Please read this carefully:

We should like to know how your health has been in general, over the past few weeks. Please answer ALL the questions on the following pages simply by underlining the answer which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those that you had in the past.

It is important that you try to answer ALL the questions.

Have you recently:

11. Been able to concentrate on whatever you are doing?
    Better than usual, Same as usual, Less than usual, Much less than usual
12. Lost much sleep over worry?
    Not at all, No more than usual, Rather more than usual, Much more than usual
13. Felt that you are playing a useful part in things?
    More so than usual, Same as usual, Less useful than usual, Much less useful
14. Felt capable of making decisions about things?
    More so than usual, Same as usual, Less so than usual, Much less capable
15. Felt constantly under strain?
    Not at all, No more than usual, Rather more than usual, Much more than usual
16. Felt you couldn't overcome your difficulties?
    Not at all, No more than usual, Rather more than usual, Much more than usual
17. Been able to enjoy your normal day-to –day activities?
    More so than usual, Same as usual, Less so than usual, Much less than usual
18. Been able to face up to your problem?

More so than usual, Same as usual, Less able than usual, Much less able

19. Been feeling unhappy and depressed?

    Not at all, No more than usual, Rather more than usual, Much more than usual

20. Been losing confidence in yourself?

    Not at all, No more than usual, Rather more than usual, Much more than usual

21. Been thinking of yourself as a worthless person?

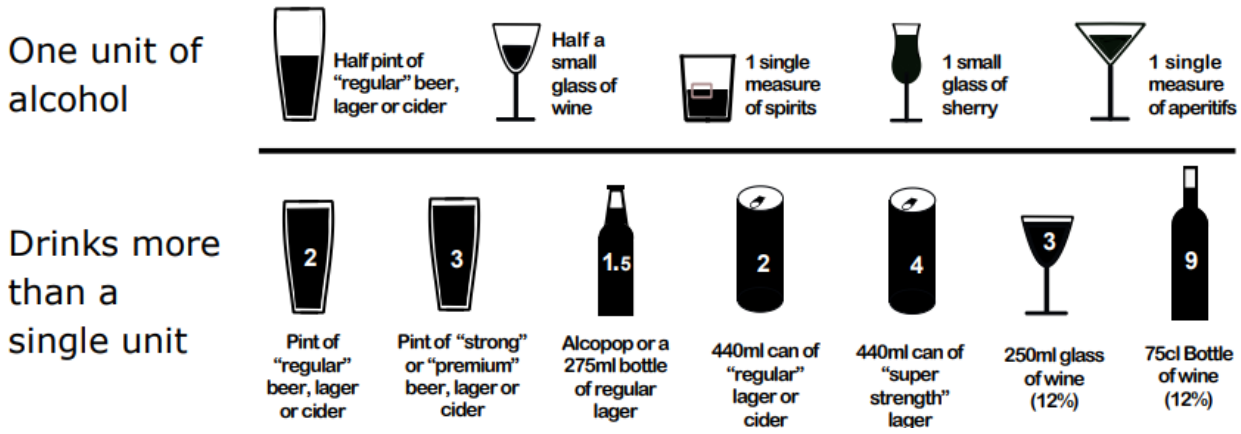
    Not at all, No more than usual, Rather more than usual, Much more than usual

22. Been feeling reasonably happy, all things considered?

    More so than usual, Same as usual, Less so than usual, Much less than usual

PART C

Alcohol unit reference



NOTE: A pint equals to 500mls

Alcohol units = 0.079 *Volume (mls) * % alcohol

	Place an X in one box that best describes your answer to each question.						
	Questions	0	1	2	3	4	
22.	How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week	
23	How many drinks (units) containing alcohol do you have on a typical day when you are drinking?	1or 2	3 or 4	5 or 6	7 to 9	10 or more	
24	How often do you have six or more drinks (units) on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
25.	How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
26.	How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	

27.	How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
28.	How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
29.	How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
30.	Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year	
31.	Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year	

Appendix III: Fomu Ya Idhini

UTAFITI KUHUSU KUENEA KWA UNYWAJI POMBE, MITINDO YAKE NA SABABU ZINAZOHUSIANA NAZO MIONGONI MWA MADAKTARI MKOANI DAR ES SALAAM.

Ninaamini nimeelezwa vizuri kuhusiana na utafiti wenye kichwa cha habari tajwa hapo juu.

Baada ya majadiliano, ninafahamu vizuri malengo na faida za utafiti huu. Nimehakikishiwa kuwa hakuna madhara yanayotokana na utafiti huu. Taarifa zitakazokusanywa zitatumika kwa ajili ya malengo ya mradi huu tuu. Pia hakuna utambulisho binafsi unahitajika.

Ninaelewa kuwa ushiriki wangu ni wa hiari. Ninaruhusiwa kukataa kushiriki au kijitoa katika utafiti katika hatua yoyote wajkati wowote.

MAWASILIANO: Kwa maulizo yoyote kuhusu utafiti huu naweza kuwasiliana George Gerald Misana, mwanafunzi wa shahada ya uzamili katika Afya ya Umma kutoka chuo kikuu cha Afya na Sayansi shirikishi Muhimbili kupitia simi namba 0734709707, baruapepe georgemichu260@gmail.com

Kwa maulizo Zaidi au malamiko ninaweza kuwasiliana na ofisi ya Tafiti na machapisho MUHAS SLP. 65001.

Ninaelewa kuwa taarifa zinazokusanywa kutokana na ushiriki wangu zitatumika kwa madhumuni ya utafiti na zinaweza kuchapishwa kwenye majarida ya tafiti za kisayansi.

Ninakubali taarifa hizi zitumike kwa namna hii.

Sahihi ya mshiriki

……..

Tar:……

Appendix IV: Dodoso La Utafiti

MASWALI YA DODOSO LA UTAFITI KUHUSU KUENEA KWA UNYWAJI POMBE, MITINDO YAKE NA SABABU ZINAZOHUSIANA NAZO MIONGONI MWA MADAKTARI MKOANI DAR ES SALAAM.

NAMBA YA DODOSO ……

SEHEMU A

1. Una umri gani? …….
2. Wewe ni jinsia gani?

   ☐ ME

   ☐ KE

3. Ni ipi hali yako ya ndoa?

   ☐ sijaoa/sijaolewa

   ☐ Nimeoa/nimeolewa

   ☐ Talaka

   ☐ Mjane/Mgane

   ☐ Nyingine (Orothesha)……

4. Umefikia kiwango gani cha elimu? ……
5. Je, una ndugu/mwanafamilia anayetumia kinywaji cha pombe?

   ☐ Ndio

   ☐ Hapana

6. Ni kwa muda gani umekuwa ukifanya kazi ya udaktari? ……..
7. Unafanya kazi katika idara gani?

   ☐ Upasuaji

   ☐ magonjwa ya Uzazi

   ☐ Tiba ya ndani

   ☐ Watoto

   ☐ nyingine (orodhesha) ……

8. Huwa unafanya kazi kwa saa ngapi katika wiki? ……..
9. Je, unadhani/unafikiri vipi kuhusiana na uzito wa kazi yako?

   ☐ Nzito
   ☐ Sio nzito

10. Je, unaridhishwa na kazi yako?

    ☐ Ndio, ninaridhika
    ☐ Hapana, siridhiki

SEHEMU B

Tafadhali soma kwa makini:

Tungependa kujua namna hali yako ya Afya imekuwa kiujumla katika wiki chache zilizopita. Tafadhali jibu maswali yote katika kurasa zifuatazo kwa kupigia mstari jibu ambalo linaeleza vizuri hali yako. Kumbuka kuwa tunahitaji kujua kuhusu changamoto/malalamiko ya sasa na hivi karibuni, sio changamoto/malalamiko yaliyopita.

Hivi karibuni:

11. Unaweza kuwa makini katika vyote unavyofanya?
    Vizuri kuliko kawaida, kama kawaida, chini ya kawaida, Kidogo sana kuliko kawaida
12. Umepoteza usingizi juu ya hofu?
    Hapana kabisa, Si zaidi ya kawaida, Kupita kawaida, Zaidi sana kuliko kawaida.
13. Umejihisi kuwa na mchango muhimu katika vitu?
    Zaidi kuliko kawaida, Kama kawaida, Chini ya kawaida, Chini sana ya kawaida.
14. Umejihisi una uwezo wa kufanya maamuzi?
    Zaidi kuliko kawaida, Kama kawaida, Chini ya kawaida, Chini sana ya kawaida.
15. Je, hivi karibuni umejihisi kuwa katika hali ya mvutano?
    Hapana kabisa, Si zaidi ya kawaida, Kupita kawaida, Zaidi sana kuliko kawaida.
16. Umejihisi kuwa huwezi kushinda magumu yako?
    Hapana kabisa, Si zaidi ya kawaida, Kupita kawaida, Zaidi sana kuliko kawaida.
17. Umeweza kufurahia shughuli zako za kila siku?
    Zaidi ya kawaida, Kama kawaida, Chini ya kawaida, Chini sana ya kawaida

18. Unaweza kukabili matatizo yako hivi karibuni?

    Zaidi ya kawaida, Kama kawaida, Chini ya kawaida, Chini sana ya kawaida

19. Umekosa furaha aukuwa na huzuni?

    Hapana kabisa, Si zaidi ya kawaida, Kupita kawaida, Zaidi sana kuliko kawaida.

20. Umekuwa unapoteza kujiamini?

    Hapana kabisa, Si zaidi ya kawaida, Kupita kawaida, Zaidi sana kuliko kawaida.

21. Umejiona kama mtu asiyefaa kitu?

    Hapana kabisa, Si zaidi ya kawaida, Kupita kawaida, Zaidi sana kuliko kawaida.

22. Umekuwa ukihisi furaha, ukizingatia mambo yote?

    Hapana kabisa, Si zaidi ya kawaida, Kupita kawaida, Zaidi sana kuliko kawaida.

SEHEMU C

Tafadhali weka alama ya **X** katika kisanduku cha jibu lako.							
		0	1	2	3	4	
23.	Mara ngapi unatumia kinywaji kilicho na kilevi?	Hakuna	Kila mwezi au chini ya mwezi	Mara 2 hadi 4 kwa mwezi	Mara 2 hadi 3 kwa wiki	4 au Zaidi kwa wiki	
24.	Kwa siku ya kawaida unatumia vinywaji vingapi vyenye kilevi unapokuwa unakunywa?	1 au 2	3 au 4	5 au 6	7 hadi 9	10 au zaidi	
25.	Mara ngapi unatumia vinywaji sita au zaidi kwa mara moja?	Haijawahi kutokea	Chini ya kila mwezi	Kila mwezi	Kwa wiki	Kila siku au karibu kila siku	
26.	Mara ngapi katika mwaka uliopita uligundua huwezi kuacha kunywa mara ukiashaanza?	Haijawahi kutokea	Chini ya kila mwezi	Kila mwezi	Kwa wiki	Kila siku au karibu kila siku	
27.	Mara ngapi katika mwaka uliopita ulishindwa kufanya inavyotarajiwa kutoka kwako kwa sababu ya kunywa?	Haijawahi kutokea	Chini ya kila mwezi	Kila mwezi	Kwa wiki	Kila siku au karibu kila siku	
28.	Mara ngapi katika mwaka uliopita ulihitaji kinywaji cha	Haijawahi kutokea	Chini ya kila mwezi	Kila mwezi	Kwa wiki	Kila siku au karibu kila siku	

	kwanza asubuhi ili kuweza kuendelea na shughuli zako baada ya kunywa sana?						
29.	Mara ngapi katika mwaka uliopita ulijihisi kuwa una hatia au kujilaumu baada ya kunywa?	Haijawahi kutokea	Chini ya kila mwezi	Kila mwezi	Kwa wiki	Kila siku au karibu kila siku	
30.	Mara ngapi katika mwaka uliopita hukuweza kukumbuka kilichotendeka usiku uliopita kwa sababu ulikunywa?	Haijawahi kutokea	Chini ya kila mwezi	Kila mwezi	Kwa wiki	Kila siku au karibu kila siku	
31.	Je, umejaruhiwa au mtu mwingine kujeruhiwa kwa sababu ya kunywa kwako?	Hapana [0]	Ndiyo, lakini si kwa mwaka uliopita [2]		Ndiyo kwa mwaka uliopita [4]		
32.	Je, ndugu yako au rafiki yako au daktari au mhudumu wa afya mwingine ameguswa na kunywa kwako au kupendekeza upunguze kunywa kwako?	Hapana [0]	Ndiyo, lakini si kwa mwaka uliopita [2]		Ndiyo kwa mwaka uliopita [4]		

Appendix V: Ethical Clearance letter

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/1912 Date: 18/09/2023

MUHAS-REC-09-2023-1912
GEORGE GERALD MISANA
SHOOL OF PUBLIC HEALTH AND SOCIAL SCIENCES
MUHAS

RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED: PREVALENCE OF ALCOHOL USE, DRINKING PATTERNS AND ASSOCIATED FACTORS AMONG MEDICAL DOCTORS IN DAR ES SALAAM

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: 18/09/2023
EXPIRATION DATE OF APPROVAL: 18/09/2024

STUDY DESCRIPTION:
Purpose:
The purpose of this cross-sectional analytical study is to determine the prevalence of alcohol use, drinking patterns, and associated factors among medical doctors in Dar es Salaam.

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-%2014844.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. 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)
9. The PI is required to ensure that the findings of the study are disseminated to relevant stake holders.
10. 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

Muhimbili University of Health and Allied Sciences
DIRECTOR
Research, Publications & Innovations
Box 65001

Appendix VI: Permission to collect data at MNH

THE UNITED REPUBLIC OF TANZANI

MINISTRY OF HEALTH

MUHIMBILI NATIONAL HOSPITAL

In reply please quote;

Ref. No.: MNH/CRTCU/Perm/2023/534 Date: 30th October 2023

Head of Department
- Internal Medicine
- Paediatrics and Child Health
- Obstetrics and Gynaecology
- Emergency Medicine
- Surgery

Muhimbili National Hospital

RE: RE: PERMISSION TO COLLECT DATA AT MNH.

Name of Student	**George Gerald Misana**
Title	**"Prevalence of Alcohol Use, Drinking Patterns and Associated Factors Among Medical Doctors in Dar es Salaam".**
Institution	Muhimbili University of Health and Allied Sciences
Supervisor	Dr. Linda S. Paulo (MUHAS)
Co – Supervisors	Dr. Deus Buma (MNH)
Period	20th October, 2023 to 30th December, 2023

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. Deus Buma** (MNH) supervisor.

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

Sincerely,

Dr. Jessie Mbwambo
Head of Clinical Research, Training and Consultancy Unit

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

c.c DSS, DMS
c.c Dr. Deus Buma
c.c George Gerald Misana

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

Appendix VII: Temeke Regional Referral Hospital



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/9/9/02/42 **Tarehe: 24/10/2023**

Ndg. George Gerald Misana
Muhimbili University of Health and Allied Sciences
S.L.P 65001,
DAR ES SALAAM.

YAH: OMBI LA KUFANYA UTAFITI KUHUSU "PREVALENCE OF ALCOHOL USE, DRINKING PATTERNS, AND FACTORS ASSOCIATED WITH IT AMONG DOCTORS IN DAR ES SALAAM" (RESEARCH)

Tafadhali husika na somo tajwa hapo juu.

Nimepokea barua yako ya tarehe 17 Oktoba, 2023 kuhusu ombi lako la kufanya Utafiti (Research) katika Taasisi yetu, kuhusu **"Prevalence of Alcohol use, drinking patterns, and factors associated with it among Doctors in Dar es Salaam".**

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.

Asante kwa ushirikiano.

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



Nakala: CSCO

- ***Tafadhali hakikisha taarifa ya utafiti inabaki hospitalini***

Appendix VIII: Mwananyamala Regional Referral Hospital

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. 59/240/01/63

DATE: 24st Oct, 2023

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

RE: GEORGE GEALD MISANA, TO CONDUCT HIS RESEARCH IN MWANANYAMALA REGIONAL REFERRAL HOSPITAL

The captioned subject refers

2. May you be informed that your prescribed request for your bonafide student **George Gerald Misana,** to conduct his Research in our Institution through your letter referred **No. HD/MUH/T.812/2022** dated **11th October, 2023**, ***Tilled " Prevalence of Alcohol Use, Drinking patterns and Associated Factors Among Medical Doctors in Dar es Salaam. from 06th November and 13November,2023"***. is asserted.

3. The Institution charges **50,000/=**, as a Research fee. The payments are to be made upon reporting.

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

Thanks.

Dr. Atugonza Kyalusi
Ag. RESEARCH COORDINATOR
FOR: MEDICAL OFFICER INCHARGE
MWANANYAMALA REGIONAL REFERRAL HOSPITAL

COPY:
Head of Paediatric Department,
Head of Surgery
Head of Gynecology &Obsetrics
Head of Interna Medicien - **MWANANYAMALA REGIONAL REFERRAL HOSPITAL**

Student - **George Gerald Misana**

Appendix IX: Amana Regional Referral Hospital

UNITED REPUBLIC OF TANZANIA
MINISTRY OF HEALTH

DAR ES SALAAM REGION
ADDRESS: "HEALTH"
PHONE: 022 – 2861903
IN REPLY PLEASE QUOTE

AMANA REGIONAL
REFERRAL HOSPITAL
P.O. BOX. 25411
DAR ES SALAAM.

REF. NO. MOHCDGEC/ARRH/R.1/VOL XVI/110

26/10/2023

Director of Postgraduate Studies,
MUHAS,
P O B ox 65001,
DAR ES SALAAM.

Re: PERMISSION FOR DATA COLLECTION

Refer to your letter dated 11th October, 2023 which requested us to allow George Gerald Misana to conduct research and collect data in our institution.

We are here to acknowledge your request with the following conditions, that he must submit the results of his research after completion of analysis in order the hospital to make use of data's to solve hospital problems.

Regards

Dr. Rose Ntambuto
For: MEDICAL OFFICER INCHARGE
AMANA REGIONAL REFERRAL HOSPITAL