PREVALENCE OF ALCOHOL ABUSE AMONG POLICE OFFICERS AT THE MAJOR BARRACKS, DAR ES SALAAM, TANZANIA

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Master of Science Clinical Psychology Dissertation
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CERTIFICATION FOR EXAMINATION

The undersigned certifies that he has read and hereby recommends for examination of dissertation entitled ***Prevalence of Alcohol abuse among Police Officers at the major Barracks, Dar es Salaam, Tanzania***, in fulfillment of the requirements for the degree of Master of Science in Clinical Psychology of Muhimbili University of Health and Allied Sciences.

_____

Prof. G. P. Kilonzo

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Date: _____

CERTIFICATION ON AWARD

The undersigned certifies that he has read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled Prevalence of Alcohol Abuse among Police Officers at the major Barracks, Dar es Salaam, Tanzania, partial fulfillment of the requirements for the degree of Master of Science Clinical Psychology of Muhimbili University of Health and Allied Sciences.

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DEDICATION

This work is dedicated to my lovely wife Adventina Koku Mushumbusi who prayed tirelessly, counseled, encouraged and supported me in the whole process of this study.

ABSTRACT

Background: The Tanzania Police Force (TPF) has an immense responsibility in terms of providing a safe and secure environment for every individual residing in the Republic of Tanzania. Environmentally, the work is exciting and boring, challenging and tiresome, rewarding and frustrating, unpredictable and regular. Organizationally, officers may have to contend with rigid command structures, unreasonable policies and procedures, and inequitable treatment by superiors (Murtagh, 2010). These taxing working conditions add tremendous stress to the lives of police officials and increase the risk of alcohol misuse more so than other professional groups and members of the public (Govender, 2008).

Police officers may deal with job related stress, by turning to hazardous alcohol consumption as a coping mechanism (Murtagh, 2010). The extent to which Tanzanian police officers drink alcohol at hazardous, harmful or dependent levels is unknown since no research has been conducted among them.

Objectives: To assess the prevalence of hazardous, harmful, as well as dependent drinking among police officers.

Materials and method: A cross sectional study was conducted among police officers. Data was collected using interviewer administered Alcohol Using Disorders Identification Test (AUDIT) questionnaire and demographic data form.

Results: This study found that, the prevalence of hazardous alcohol drinking among police officers at Kilwa Road police barracks is 14.8% and levels of harmful and dependent drinking are 4.4% and 2.4% respectively.

Conclusion and Recommendations: From this study it can be concluded that alcohol consumption is problematic among police officers**.** There is need to establish a training program for police counselors who will be able to identify police officers at risk and offer early interventions. Further studies may focus on predictors of hazardous, harmful, and dependent alcohol abuse among police so that more appropriate interventions can be put in place.

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LIST OF ACRONYMS

AUDIT	Alcohol Use Disorders Identification Test
DCP	Deputy Commissioner of Police
FBI	Federal Bureau of Investigation
GDP	Gross Domestic Product
IGP	Inspector General of Police
IRB	Institutional Review Board
MAST	The Michigan Alcohol dependence Screening Test
MUHAS	Muhimbili University of Health and Allied Sciences
NHMRC	National Health and Medical Research Council
KRPB	Kilwa Road Police Barracks
OC	Officer Commanding
PGO	Police General Orders
PI	Principle Investigator
PTSD	Post Traumatic Stress Disorder
RPC	Regional Police Commander
SPSS	Statistical Package for Social Sciences
TPF	Tanzania police force
UK	United Kingdom
USA	United States of America
WHO	World Health Organization
ZPC	Zonal Police Commander

DEFINITION OF TERMS

Sensible drinking: Is a level of alcohol drinking which does not lead to social, psychological or physical harm to the user or others and it includes somebody whose drinking revolves around social occasions while maintaining control with predictable settings and amounts of drinks (Malulu, 2003). Sensible drinking limits is up to 21 units a week for a man and up to 14 units a week for a woman and this should be spread evenly over the week (Kilonzo and Mbatia, 1996).

Alcohol misuse: Alcohol misuse refers to any mental, physical, or social harm resulting from excessive alcohol use (Mwanjali, 2009).

Abuse: Use of any drug, usually by self-administration, in a manner that deviates from approved social or medical patterns (Sadock & Sadock, 2005).

Hazardous use: Use of alcohol that will probably lead to harmful consequences to the user, either to dysfunction or to harm; similar to the idea of risky behavior (Saunders et al. 1993).

Harmful drinking: Edwards et al (1981) defines harmful drinking as the use of more than four standard drinks five times a week for men and three standard drinks four times a week for women which results in adverse mental or physical effects.

Dependent use: is a cluster of physiological, behavioral, and cognitive phenomenon in which the use of alcohol takes on a much higher priority for the individual than other behaviors. These phenomena include increased desire to use alcohol with impaired control, persistent use despite harmful consequences, a higher priority given to alcohol use than any other obligations, increased alcohol tolerance, and a physical withdrawal reaction when alcohol use is discontinued (Barbor et al. 2001)

A brief intervention: is a time limited (approximately 5 minutes) interaction or conversation between a practitioner and client focused on addressing hazardous alcohol use (Saunders et al. 1993).

Alcohol Use Disorders Identification Test (AUDIT)

The AUDIT is a screening test for hazardous, harmful or dependent use of alcohol that was developed by WHO in 1989 (WHO/MNH/DAT/89.4) and updated in 1992 (WHO/PSA/92.4). This instrument has scores ranging from 0 to 40. A score between 8 and 15 indicates hazardous alcohol consumption; a score between 16 and 19 indicates harmful alcohol drinking and a score between 20 and 40 indicate dependent alcohol use (Babor et al. 2001)

Measure of unit of Alcohol:

1 bottle or can of 330cc of beer. One standard bottle of (500 ml.) of Safari beer is roughly equivalent to 2 units of alcohol (Kilonzo & Mbatia, 1996).

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Problems related to alcohol and particularly to its excessive use rank among the world's major public health problems and constitute serious hazards for human health, wellbeing and existence (Negl, Kandpa & Rawata, 2003). It has a substantial global impact on public health and is the second greatest risk to health and well-being in developed countries (Graeme et al. 2011). The World Health Organization (WHO, 2011) reported that 4% of all deaths worldwide are contributed to alcohol use and one out of ten people (2.5 million people worldwide) between the ages of 15 and 29 die from situations related to alcohol use. This is a dilemma in the developing as well as the developed countries. According to the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV) (2000), 90% of adults have at least one negative experience in their lives (60% of males and 30% of female) have had at least one negative event happen as a result of alcohol intake.

Excessive alcohol consumption can pose substantial risk and cause harm to the individual and to the population at large. Moreover, repeated heavy drinking actually causes physical and mental harm with consequences of undesirable drinking marked by illness and distress to the target subjects and to the people around them, including family and friends. In addition it can lead to hospital admission, prolonged disability, and early death, with subsequent economic loss to the community and to the nation (Kawada, Inagaki, & Kuratomi, 2010).

Adverse effects of alcohol use are related to pattern and level of drinking. WHO (1992) defines hazardous drinking to be the level of alcohol consumption or pattern of drinking that, should it persist, is likely to result in harm to the drinker. Harmful drinking is defined as alcohol use that has already resulted in adverse mental or physical effects (Edwards, Arif & Hodgson, 1981). Dependent alcohol drinking refers to a pattern of compulsive alcohol use and

the presence of three or more major areas of impairment, such as tolerance or withdrawal, related to alcohol occurring within the same twelve months (Sadock & Sadock, 2005).

The social-economic cost involved in alcohol abuse is massive. Alcoholic intoxication resulting in violence is an old issue dating back to the dynastic periods of Egypt when drunken sprees lead to violence. This has been confirmed by a number of studies from different societies. Wife battery as a result of alcohol dependence is also common (Desjarlais, 1995) and a strong link was found between alcohol use, prostitution and theft in East Africa (Acuda, 1985). Alcohol abuse affects human values badly like broken marriages, ruined careers and neglected children (Malulu, 2003).

Police and alcohol use

Some research hypothesizes that alcohol provide stimulation for police officers during the periods of time that they are off duty (Bonifacio, 1991). In other words, the job duties of police officers are highly stimulating; therefore, officers may choose to consume alcohol when they are off duty and under stimulated. According to Miller (2006), alcohol consumption may be referred to as a "vacuum activity" because it spreads out to fill the time and space when a police officer is not stimulated by other activities. Like most people, situations in which police officers are likely to consume alcohol include: festivities and celebrations which is a common response to promotions, retirement, holidays, and completion of additional training/certifications (Lindsay & Shelly, 2009).

Balch and Skolmick (1977) indicate that police officers because of the nature of their work tend to be suspicious, conservative and alienated as personalities which may influence their alcohol use. Also Twersky-Glasner (2005), describes personality characteristics associated with police officers as machismo, bravery, authoritarianism, cynicism and aggressiveness. He further suggests that suspiciousness and cynicism may result in an officer feeling isolated and unwilling to confide in others when they have problems (Kureczka, 2002), which can result to alcohol dependence going unnoticed and untreated.

Nature of work and working environment can be a great challenge to officers and act as precipitants to alcohol use and abuse among them.

Gillan, (2009) and Govender (2008) state that, police officers are significantly affected by alcohol abuse due to the nature of their work and the frequent use of alcohol in an attempt to cope with stress, boredom, loneliness, and the lack of other recreational activities. While there are numerous ways in which individual police officer may deal with job related stress, many turn to alcohol as a coping mechanism (Murtagh, 2010).

The nature of work and working environment as explained above can also be a great challenge and a precipitant to alcohol abuse among Tanzania Police officers. The Tanzania Police Force (TPF) has an immense responsibility in terms of providing a safe and secure environment for every individual residing in the Republic of Tanzania. Members of this organization conduct their duties under difficult and often dangerous conditions.

This study intended to determine the proportion of police officers involved in hazardous, harmful and dependent alcohol consumption among Tanzania Police Officers at Kilwa Road police barracks.

Research has shown that patients with hazardous levels of alcohol consumption are very much amenable to simple counseling and advice with a significant proportion reducing their level of consumption to safe level or reaching abstention, while those with harmful level of drinking are very difficult to manage (Babor & Grant, 1992). If a significant proportion of police officers are consuming alcohol at hazardous level, as would be expected, a program can be set up for training police health service providers including: assistant medical officers, clinical officers, social workers and mental health nurses to provide the necessary counseling and advice.

It was therefore expected that the study results would provide data supporting the application of the intervention to be used at the primary health care level as police officers from all over the country have access to services at that level. This intervention has many positive benefits.

It is non-stigmatizing compared to specialized services. A technique used for early identification is simple and methods of interventions are clear. It is also brief and does not consume much time of professionals with busy schedules.

This study was considered important, especially considering the fact that the results of treating the established and heavily dependent drinker have usually been poor. By the time a client presents himself or her for help, dependence has already been established and disability is severe and alternatives have to be sought. Hence more emphasis has to be placed on early detection and prevention. Given the extent of alcohol consumption and associated problems, prevention should be every individual's responsibility.

1.2 Problem statement

Police officers are more vulnerable to alcohol abuse as a result the nation is more vulnerable to unlawful events and the nation's security is at stake. Alcohol abuse prevalence among the police officers is reported to be generally higher than the general population (Gillan, 2009). Police officers just like ordinary citizens, consume alcohol for a variety of reasons, and research has shown that law enforcement officers have a high potential for alcohol abuse and even dependence (Kohan & O'Conner, 2002). Alcohol abuse adverse effects for the officers and jeopardize the safety of the nation.

Kurke and Scrivner (1995) state that, research agrees that hazardous alcohol use among police officers is a concern that would benefit from substantial expert consideration. The understanding of the prevalence of hazardous alcohol drinking among law enforcers is given more meaning by having knowledge of police officers' vulnerability to alcohol abuse.

The environment of police work leaves the officers vulnerable and from moment to moment it can change from being exciting and boring, challenging and tedious, rewarding and frustrating, unpredictable and routine (Murtagh, 2010). Organizationally, police officers may have to contend with rigid command structures and inequitable treatment by superiors. In such

circumstances it is obvious that officers often experience a great deal of job related stress (Murtagh, 2010).

According to Davey, Obst, and Sheehan (2000a), police work is one of the most stressful occupations accompanied with events of grief from victims, families, and violent people who would like to do harm or kill them. Furthermore, law enforcers are highly susceptible to excessive use of alcohol more so than other members of the general public because of the many negative aspects associated with the profession (Davey, Obst & Sheehan, 2000a).

Kgalema (2002) suggests that when conventional coping strategies fail (exercises, relaxation, psychological counseling and social support), one must find alternatives. In the case of police officers, a common choice is alcohol, and alcoholism is a consequence.

Research indicates that alcohol use by police officers in the United States (US) is thought to be two times that of the general population, with 20% of the police officer population abusing alcohol (Lindsay, Taylor & Shelley, 2008). According to Sutton, (2011), 25% of police officers suffer from alcohol dependency, but alcohol use among police officers is likely underestimated. Whether it is hazardous, harmful or dependency, it is appropriate to note that alcohol consumption among police officers is indeed a problem (Sutton, 2011).

Comparatively the situation is not different in military community as it is evidenced that alcohol use within the UK Armed Forces has received limited attention and therefore little is known about the epidemiology of alcohol use among the security forces (Fear et al. 2007). To understand the nature of the problem it was imperative to examine the prevalence of hazardous, harmful and dependent alcohol consumption among police officers.

The investigator intended to address the problem of alcohol use by identifying hazardous, harmful or dependent levels of drinking among Tanzania police officers. To date no research has been conducted among the Tanzania police force on patterns of drinking. This study aimed at addressing the deficit.

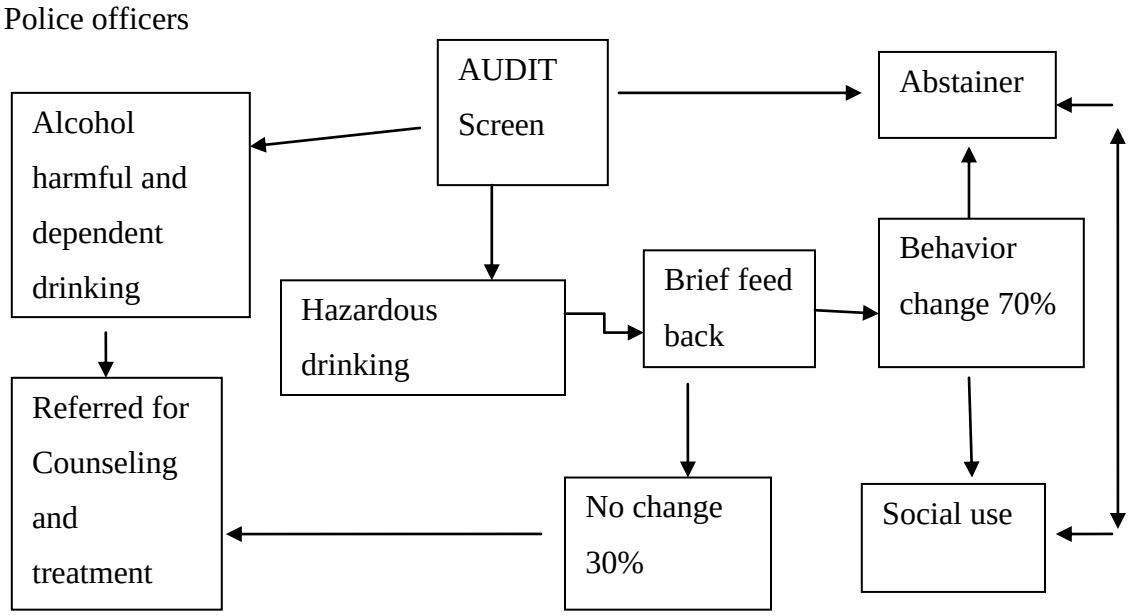
1.3 Rationale of the study

Research indicates that alcohol consumption among police officers is indeed a problem (Sutton, 2011). The rationale for this study was to determine the prevalence of hazardous, harmful and dependent alcohol consumption among police officers at the major barracks, Dar es Salaam, Tanzania.

There is evidence that early intervention is effective in the prevention of alcohol related problems (Barbor et al. 2001). This study was expected to help in detection and suggest for intervention at an early stage in those police officers with a hazardous, harmful and dependent levels of alcohol consumption. In a developing country like Tanzania, this is very important due to lack of professionals as well as rehabilitation services. Early detection and intervention will enable the user to receive professional assistance before social and medical consequences have become irreversible. In the final analysis this will save time, money and effort and the country will have more effective police force.

There appears to be a tendency for law enforcement agencies to ignore, deny, and even rationalize alcohol abuse among police officers (Sutton, 2011).

1.4 Conceptual framework



The study intended to identify police officers who are likely to have hazardous, harmful and dependent levels of alcohol consumption, who received brief feedback and five minutes of simple advice on the safe limits of alcohol consumption as well as the danger related to alcohol abuse. The objective of the study was to assess the prevalence of the mentioned levels of alcohol consumption among study participants.

1.5 Study objectives

1.5.1 Broad objective

To assess the prevalence of alcohol abuse among police officers at the major barracks, Dar es Salaam region, Tanzania.

1.5.2 Specific objectives:

1. To assess the prevalence of hazardous drinking among police officers.
2. To assess the prevalence of harmful drinking among police officers.
3. To assess the prevalence of dependent alcohol consumption among police officers

1.5.3 Research questions

What is the prevalence of hazardous drinking among Tanzania police officers?

What is the prevalence harmful drinking among Tanzania police officers?

What is the prevalence dependent alcohol consumption among Tanzania police officers?

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Global patterns of alcohol consumption.

Alcohol carries a lot of cultural significance; it is used on social occasions and also in religious ceremonies throughout the world. In some countries it is frowned upon; in others, banned altogether. Reasons for drinking range from a need for relaxation, for pleasure, and to accompany celebrations, to 'drowning of sorrows', to habit, followed by compulsion in some cases (Sutton, 2011).

Culture and social customs often encourage alcohol use in a diversity of social purposes (Kinney, 2006). Alcohol has been historically used for setting disputes, evoking courage in a battle, contract resolution, festivities or celebrations, and as an aphrodisiac (Pacific Academy of the Healing Arts, 2010). In many parts of the world, drinking alcoholic beverages is a common feature of social gatherings (Mayowo, Ebirim & Chikere, 2011).

While alcohol use is deeply embedded in many societies, recent years have seen changes in drinking patterns across the globe: rates of consumption, drinking to excess among the general population and heavy episodic drinking among young people are on the rise in many countries (Mayowa, Ebirim & Chikere, 2011).

In traditional African societies alcohol consumption outside of ceremonially sanctioned occasions was condemned and regarded as something foreign to local cultures. But, alcohol consumption has now become very much associated with the concept of "Westernization" and "modernity" (Malulu, 2003). In fact, it is now a sign of social sophistication and a symbol of prestige. Today regular and recreational alcohol consumption has gradually spread to most of the communities in spite of the past social stigma and serious cultural reservations. Most of the

developing countries have now set up their own breweries and distilleries, and the tax on alcohol is a major source of revenue for many of them.

For centuries alcoholic drinks, namely local brews, have been consumed in most African communities for various social and cultural functions such as offering thanksgiving after harvest, marriage, birth, initiations, death and for intercession with ancestral spirits (Kilonzo & Pitkanen, 1992).

The same pattern has been observed in Tanzania over the past 30 years or so. Alcoholic beverages are increasingly being produced for commercial purposes and taken for recreational use. In settings where there are few recreational facilities, drinking may be the main source of recreation accompanied by increased harmful patterns of alcohol use (Kilonzo, 1989).

2.2 Prevalence of alcohol consumption in the general population

WHO (2001) reports that globally 140 million people are alcohol dependent and that 400 million drink excessively and cause accidents and injuries. It estimates that alcohol causes a net harm of 4.4 per cent of the global burden of disease, and that the beneficial effects of alcohol are small compared to the detrimental effects (Bich et al. 2009).

A study "conducted in New Zealand, involving 5113 individuals (2332 males and 2781 females) aged 14-65 years indicated that 85% of the people surveyed were drinkers" (WHO, 2004). A study done in UK including one hundred and three individuals indicated that 36% were identified by the AUDIT to be drinking hazardously or harmfully (McCusker et al. 2002).

Studies have shown that there are social differences among alcohol users. A study conducted in India by Bich et al (2009) showed that the highest prevalence of individuals ever to use alcohol was among Christians (61.2%) and the lowest prevalence was among Muslims (9.4%). Results also indicated that the prevalence of individuals ever to use alcohol was 26% and

27.1% among illiterates and those with primary education, respectively. Additionally it was indicated that people who did not go to school or didn't complete primary education were more likely to drink in comparison to people who graduated from high school or University.

According to Marmot et al (2003), drinking patterns are important predictors of risk, a person who drinks two drinks every evening and another drinking only on Friday and Saturday nights, but consuming seven drinks on each of these evenings, the difference in their patterns makes a difference in their risk for social, casualty and long term health consequences. Prevalence of alcohol dependence in any society is directly related to the per capita consumption of alcohol. Overall per capita consumption appears to be related to the price and availability of alcohol. If alcohol is cheap and widely available, per capita consumption is high and alcohol related problems are common (Murray & Bernadt, 1980).

Tanzanian studies show that a high proportion of Dar es Salaam residents appear to be nondrinkers of alcohol (Kilonzo et al. 2004) This was evident in another study in which prevalence of alcohol use in Dar es Salaam was 17.2% (Mbatia et al. 2009). Another study done in Temeke district, Tanzania indicated that the prevalence of alcohol consumption was 22% (Salumu & Hassan, 2007).

2.3 Alcohol consumption and gender

Gender related differences in alcohol consumption are grounded in the ways each culture distinguishes between male and female roles (Kerr-Correa et al. 2008). Consistently, women were more likely to be lifetime abstainers than men. Studies have concluded that gender differences in drinking might be biologically influenced. However, substantial variation in these differences in drinking patterns among countries may suggest that they are strongly influenced by socio-cultural factors (Kerr-Correa et al. 2008). In brief, compared with women throughout the world, men are more likely to drink, consume more alcohol, and cause more problems by doing so (WHO, 2005).

Research has suggested several possible reasons for universal gender differences in drinking behavior might arise. If women have lower rates of gastric metabolism of alcohol than men or smaller volumes of body water in which alcohol is distributed women may need to consume less alcohol than men to derive the same effects.

Furthermore, women may be more likely than men to experience unpleasant acute effects of alcohol (such as hangover symptoms) or may not enjoy risky and poorly controlled behavioral effects of alcohol as much as men, characteristics which might inhibit women's drinking (WHO, 2005). A study done in Spain on gender differences in hazardous alcohol consumption showed that males drank more frequently with a high intake of alcohol, and were more likely to be hazardous drinkers (Alvarez & Carmen de Rio, 1994).

A study done in the UK armed forces revealed that 67% of men and 49% of women had an AUDIT (Alcohol Use Disorder Identification Test) score of 8+ (defined as hazardous drinking), compared to 38% of men and 16% of women in the general population (Fear et al, 2007). Another study done in Asian region indicated that the prevalence of female alcohol consumption was smaller in comparison with men (Bich et al. 2009).

A study of the Ministry of Health, New Zealand (2006/2007) indicates that male drinkers (29.2 percent) were significantly more likely than female drinkers (13.0 percent) to have a potentially hazardous drinking pattern.

Another study conducted by Catalan (2002) revealed that a greater proportion of AUDIT cases were male. In a study conducted by Davey, Obst and Sheehan (2000b) it was indicated that 65% of the sample scored in the low risk of hazardous alcohol consumption range, 32% (33% of males and 24% of females) scored in the at risk for harmful alcohol consumption range and 3% scored in the range indicating risk of alcohol dependence (AUDIT scores).

A study carried out in Zambia indicated that the prevalence for consumption of alcohol was 20.7% (37.9% of males and 12.2% of females) and sex was found associated with alcohol consumption, with females being 68% (Nzala et al. 2007).

There are many inconsistencies in studies concerning the differences in the prevalence and pattern of alcohol use between male and female genders. Although, no significant gender differences in the proportion of alcohol users were documented in a study of 247 respondents in Uganda, other studies show a significant difference in alcohol use by gender (Welcome, Razvodovsky & Pereverzevl, 2010

Mbatia et al (2009) states that males (8.7%) were significantly more likely to report alcohol hazardous use compared to females (3.5%).

2.4 Alcohol consumption by marital status

Studies have shown that the highest consumption of alcohol is generally among single, separated or divorced young men (Wright et al. 2001). Another study conducted in Russia indicated that divorced and widowed men tend to drink most, but the pattern was inconsistent, and the difference between divorced and married men also narrowed over time (Malyutin et al. 2003). Mbatia et al (2009) also indicated that, those widowed or no longer had married, had the highest rates of lifetime alcohol use, but married people were more likely to report current use.

2.5 Alcohol consumption by age

The proportion of adult drinkers with a potentially hazardous drinking pattern is highest among those aged 15–24 years and declines at older ages (Ministry of Health, New Zealand, 2006/2007). Mbatia's study in Dar es Salaam indicated that the prevalence of both lifetime and recent alcohol use was highest among older aged groups (Mbatia et al, 2009)

2.6 Prevalence of alcohol consumption among police officers

2.6.1 Why do police officers use alcohol?

According to Territo and Vetter (1981), police officers are likely to consume alcohol for the same reasons others do: to relieve stress or enhance social bonding with colleagues. Therefore, officers are likely to utilize alcohol as a coping mechanism and/or a means for social support.

A study conducted by Lindsay and Shelly (2009) concluded that “fitting in” was the most cited reason for drinking among police officers in the hazardous risk group; thus, it is hypothesized by some to be the leading causal variable in alcohol consumption by many police officers. Kurke and Scrivner (1995), report that there exists a police culture that fosters attitudes of conservation, machismo, and suspiciousness. Bechr, Johnson and Nieva (1995) attributed drinking alcohol to aggressive police subculture. Additionally, Fenlon, Davey and Mann (1997) note that peer pressure and covering up for officers who have a drinking problem is often seen in police culture. These environmental and social values serve to protect officers but unfortunately they can lead to unresolved alcohol problems.

According to Sutton (2011), police officers just like ordinary citizens, consume alcohol for a variety of reasons, and research has shown that law enforcement officers have a high potential for alcohol abuse and even dependence. Alcohol availability is a known risk factor for increased alcohol use in the general population (Farley et al. 2009). Likewise, the easy availability of alcohol, ritualized drinking opportunities, and inconsistent policies contribute to a work culture that facilitates heavy and binge drinking in the police population (Cunradi & Ames, 2004). Alcohol availability is more marked in law enforcer community and it is evidenced by the provision of subsidized price for beer to police officers as an incentive.

2.6.2 Alcohol abuse among police officers

Researchers in US have suggested that around 25% of the police force show alcohol related problems (Bonifacio, 1991), many drink on duty (Raalte, 1979), and have higher rates of consumption than the general population (Violanti, 1999). A study done by Richmond, Wodak, and Kehoe (1998) indicated that 48% of male officers and 40% of female officers drank excessively or engaged in hazardous or harmful drinking in the previous 3 months. A study conducted in Uganda revealed that 19.2% of police respondents met the criteria for alcohol use disorder, while 26% met criteria for alcohol use problems (Madrama & Ovuga, 2006).

2.6.3 Police professional vulnerability to alcohol use and abuse

Police officers are significantly affected by alcohol abuse due to the nature of their work and frequently use alcohol in an attempt to cope with stress, boredom, loneliness, and the lack of other recreational activities (Gillan, 2009). Police work involves many contrasts. It is exciting and boring, challenging and tiresome, rewarding and frustrating, unpredictable and regular and organizationally, officers may have to contend with rigid command structures, unreasonable policies and procedures, and inequitable treatment by superiors (Murtagh, 2010). With a job description such as this, it is understandable that police officers often experience a great deal of job related stress. Some researchers consider police work to be one of the most stressful occupations. While there are numerous ways in which individual officers may deal with job related stress, many turn to hazardous alcohol consumption as a coping mechanism (Murtagh, 2010).

Ballenger et al (2010) suggests that one of the important occupational hazards of police work is frequent exposure to traumatic incidents and the resulting risk of developing symptoms of posttraumatic stress disorder (PTSD). Significant evidence demonstrates that rates of alcohol use disorders are significantly higher in individuals with PTSD, compared with trauma-exposed individuals without PTSD, and non exposed community samples, raising concerns about PTSD related alcohol co-morbidity in police officers. A study conducted among American adults; amid those with a lifetime history of PTSD, an estimated 52% of men and 28% of women have a history of co-morbid alcohol abuse or dependence (Ballenger et al. 2010). Problematic drinking could be due to various factors, a study among the military personnel revealed that excessive drinking was related to age and marital status (Fertig & Allen, 1996).

2.6.4 Adverse outcomes of the police drinker

Alcohol abuse can be evidenced by several adverse outcomes to the police drinker.

Silverberg (2000) states that the effects of alcohol abuse among police officers include: reduced work performance endangering safety and welfare of the public, higher rates of

absenteeism; late for work; register more sick leave; increase the cost of health care benefits; lack of motivation; increased need for supervision; and setting a poor role model. McNeill (1996) states that police officer's involvement in excessive alcohol consumption can impede reaction time; impair thinking and co-ordination to become sluggish and may lead to aggressive behavior particularly in the presence of threat.

Further research suggestion is that in order to understand the nature of the problem, it is important to examine the pattern of alcohol consumption among police officers (Sutton, 2011).

2.6.5 Hazardous alcohol use among police officers

Researchers state that law enforcers are more vulnerable to hazardous alcohol consumption compared to the rest of the population. The United States law enforcement occupation is thought to have one of the highest abuse rates of alcoholic beverages (Lindsay, 2007).

However, it is hard to develop a clear picture of the extent of alcohol abuse within the police profession. According to Murtagh (2010), the unwillingness of police officers to fully disclose information about drinking behaviors may contribute to this difficulty. For that reason, hazardous alcohol consumption reported by police officers are most likely underestimates of the problem.

In developing countries despite the fact that the overall use of alcohol at the population level is relatively low, with high abstention rate, drinking patterns among those who do drink are often hazardous (Patel, 2007).

The prevalence of hazardous alcohol use (AUDIT score greater than 8) in Tanzania was found to be 5.7% as revealed by a study done in Ilala and Temeke municipalities, Dar es Salaam region (Mbatia et al. 2009).

The situation in Tanzania police force has been unknown since no study has been conducted in the past to determine the prevalence of hazardous alcohol consumption among police officers.

2.6.6 Harmful alcohol consumption among police officers

A study done among Mississippi Police officers revealed that 18.2% of the officers scored above an 8 on the AUDIT instrument, which labeled them at or above a hazardous risk level for alcohol problems (Lindsay, 2007). However, a study done among Mississippi state police officers revealed that 70 percent of the officers either abstained from alcohol or drank less than once a month (Lindsay, Taylor & Shelley, 2008). Another study among Australian police officers indicates that, the 18- to 25-year old age group reported the highest levels of frequency and quantity of alcohol consumed of which twenty-five percent of officers reported having drunk whilst on duty (Davey, Obst & Sheehan, 2000a). He further reported that 30% of the sample scored in the risk of harmful consumption category on the AUDIT.

A study done among police officers in Australia, by using Alcohol Use Disorders Identification Test (AUDIT) indicated that 33% of male officers and 24% of female officers showed harmful consumption (AUDIT score = 8–12) . Furthermore, AUDIT scores that indicated likely alcohol dependence (score = 13+) were reported in 3% of male officers and 2.5% of female officers (Ballenger et al. 2010)

2.6.7 Dependent alcohol consumption among police officers

A study done among Massachusetts police officers, revealed that 23% of the participants had overall alcohol screen scores that indicated alcohol dependence and seventy-eight percent of the respondents had scores that indicated hazardous drinking behaviors (Murtagh, 2010). A study done in USA show that, alcohol abuse among police officers approximately doubles that of the general population where 1 in 10 adults abuses alcohol (Gillan, 2009). Another study done in Australian police service revealed that 3% scored in alcohol dependent category on the AUDIT (Davey, Obst & Sheehan, 2000b).

Another study done in Uganda by Madrama and Ovuga (2006) revealed high levels of alcohol dependence among the Uganda Police officers, which has resulted in poor mental health; poor

work output and forced retirement. Furthermore, the study revealed that 19.2%) met criteria for alcohol use disorder, and 26.0% met criteria for alcohol use problems.

2.6.8 Alcohol consumption by age of police officer

A study done among the Australian Police force revealed that the 18 to 25 years age group recorded higher average alcohol consumption, higher rates of risky drinking behavior, higher rates of adverse consequences from drinking alcohol and higher total AUDIT scores than other age groups (Davey, Obst & Sheehan, 2000a).

2.7 The alcohol screening instrument

The World Health Organization (WHO) Alcohol Use Disorders Identification Test (AUDIT) is a ten item "core" screening instrument which contains three questions on the amount and frequency of drinking, three questions on alcohol dependence and four on problems caused by alcohol (Saunders et al, 1993). World Health Organization states that, for the first eight questions there are five options, and each one is scored from 0-4 and for items nine and ten, there are three possible answers, and a score of 0, 2, and 4 is allocated. The score range is from 0 to 40 and a total score of 8 or more on the questionnaire suggests a pattern of hazardous or harmful alcohol consumption (Saunders et al.1993).

CHAPTER THREE

3.0 MATERIALS AND METHODS

3.1 Description of study area

The study was conducted at Kilwa Road police barracks. The barracks is based in Dar-es-Salaam region, which is one of the regions making the Republic of Tanzania. The main reason for selecting the Kilwa Road police barracks is that apart from being the largest barracks in the region, it is situated in the residential area accommodating most of the police officers working at various police stations in Dar es Salaam region.

The Republic of Tanzania is a developing country in East Africa. It is situated 4 degrees south of the equator and it covers approximately 945,000 square kilometres (Tanzania National Bureau of standards, 2003). Tanzania has frontiers to the following countries: North: Kenya and Uganda, West: Rwanda, Burundi, and Democratic Republic of Congo, South West: Zambia and Malawi, South: Mozambique and East: Indian Ocean.

The United Republic of Tanzania, was formed in 1964, and is a union between the then Tanganyika and the Zanzibar Islands. Tanzania occupies 886,100square kilometres with population estimated to be 34,444,000 people (Tanzania National Bureau of statistics, 2003).

Dar es Salaam region lies on the eastern part of Tanzania. It is bounded by the Cost region on the North, West and South while the Indian Ocean occupies its Eastern border. Dar es Salaam is the smallest region in the country covering an area of 1,129 square kilometers. But it is the largest city in the country, with the biggest port, business capital and the largest population size of about 3 million people (Dar es Salaam City Council, 2004).The region is subdivided into three administrative districts namely Temeke, Kinondoni and Ilala.

Temeke district is the south most of the three districts with Kinondoni located to the far North of the city, and Ilala being located in the down town of Da es Salaam. To the East is Indian Ocean and to the South and West is the Coastal region. The 2002 Tanzania National Census reports that the population of Temeke District was 768,451 with an area of 768.5 square kilometers. The Kilwa Road police barracks, a study area is situated in Temeke District.

Historically Tanzania Police Force (TPF) can be traced as back as the German and British colonial periods. During the British era, policing was predominantly in urban areas and few rural areas with colonial investments such as plantations (TPF, 2010). The policing aimed at protecting colonial interests rather than providing safety and security to the public. After independence, changes were made in the TPF whereby the law enforcement within free Tanganyika was the priority. Basically, the structure of the force remained the same except the native Africans were promoted to higher ranks and positions replacing the Europeans as an "Africanization" policy (TPF, 2010).

Since then the police force has been serving the people of the Republic of Tanzania with the vision of being a professional, modern, and community centered force that plays a pivotal role in achieving sustainable public safety and security for political and economic prosperity of the nation. The mission of TPF is to ensure public safety and security by maintaining law and order, detecting and preventing crime, apprehending and guarding offenders in the Republic of Tanzania (TPF, 2006).

The administration, control and command of the TPF are vested in the Inspector General of Police (IGP). The Dar es Salaam special police zone is headed by the Deputy Commissioner of Police (DCP) who is responsible for policing activities in Dar es Salaam (TPF, 2010). The special zone of Dar es salaam is comprised of three special police regions: Ilala, Kinondoni and Temeke that are under the command of Regional Police Commanders (RPCs). The Kilwa Road police barracks which is the study area is situated along the Kilwa road, Chang'ombe division, Kurasini ward, Temeke district, Dar es Salaam region.

3.2 Study population

Study population included police officers staying at Kilwa road police barracks that were present in the study period and consented to participate in the study.

3.3 Study design

The study design was a cross sectional descriptive study.

3.4 Inclusion criteria

Inclusion criteria: All police officers who were available at the barracks during the study period and consented to participate in the study.

3.5 Sample size estimation

A formula as illustrated below was used to calculate study sample size.

$N=Z^2PQ/D^2$

Where:

N=desired size of the sample

Z=standard normal deviation, a constant (1.96) set at 95% confidence level

P=proportion of individuals with the attribute under study (prevalence)

Q=proportion of individuals without the attribute under study (1-P)

D=precision error (marginal error) set at 0.05 or 5%

A study done in Dar es Salaam, Tanzania revealed that the prevalence of alcohol use (AUDIT score greater than 8) was 17.27 % (Mbatia et al. 2009). Hence 17.27% is a reasonable figure to take for the purpose of determining the sample size.

Taking a prevalence of 17.27%, N= (3.8416)(0.1727)(0.828)/0.0025 = 220. The sample size was adjusted for possible non-responders by adding 10% of the sample which totals to 242. A total number of 250 officers were interviewed.

3.6 Sampling procedure

A systematic sampling method was used to select study elements from a register book containing the names of all police officers residing at the police barracks. This is an equal probability method in which every k^{th} element in the sampling frame was selected, where k, the sampling interval was calculated as: k = N/n, where n is the sample size, and N is the population size. The target population was 1085 and the study sample size was 250 (k = 1085/250). Therefore, every 4^{th} person in the register was included in the study sample. A systematic sample of 250 police officers was drawn from a random starting point from the police residential register.

3.7 Data collection instrument

3.7.1 Screening instruments for alcohol use

A number of screening instruments for excessive alcohol intake have been developed and are widely employed in the West.

The MAST (The Michigan Alcohol dependence Screening Test) is a 25-item questionnaire requiring 25 minutes to complete. It includes questions concerning previous experience with interventions. In addition, some of the questions in MAST concern dependency, which occurs very late in an individual drinking habits, whereas the focus of this study was on hazardous, harmful and dependent levels of alcohol consumption. MAST also attempts to distinguish between “normal” and “abnormal” drinkers, without focusing on drinking pattern (Selzer, 1971).

The CAGE is another screening test for patients who have alcohol use problems. The CAGE enquires on need for cutting down on drinking, annoyance with criticisms about drinking, guilt about drinking, and using alcohol as an eye opener. It can be self-administered, and consists of four questions, which only takes one minute to complete. Although it is highly sensitive and specific it does not screen for levels of alcohol consumption (Saunders et al. 1993).

The AUDIT is another screening test for hazardous, harmful or dependent use of alcohol that

was developed by WHO in 1989 (WHO/MNH/DAT/89.4) and updated in 1992 (WHO/PSA/92.4). It was developed and validated in six industrial and developing countries (Australia, Bulgaria, Kenya, Mexico, Norway, and USA). A second edition of a guide for its use in primary health care is currently in use (WHO/MSD/MSB/01.6a).

According to Malulu (2003), AUDIT was employed in Dar es Salaam in calculating units of alcohol of traditional alcoholic beverages based on concentration of alcohol and volumes of drinking vessels.

The AUDIT is a ten-item "core"-screening instrument, which contains three questions on the amount and frequency of drinking, three questions on alcohol dependence and four on problems caused by alcohol. For the first eight questions there are five possible answers, and each one is scored from 0-4. For items nine and ten, there are three possible answers, and a score of 0, 2 and 4 is allocated. The range of possible score is from 0 to 40.
A score of 8 to 15 suggest hazardous drinking and above this harmful drinking. A score of above 20 suggest more severe dependency calling for further diagnostic evaluation and management (Barbor et al. 2001). Additionally, Barbor et al (2001) suggest that scores of 8 to 15 are most appropriate for simple advice focused on the reduction of hazardous drinking. Scores of 16 to 19 suggest brief counseling and continued monitoring. Scores of 20 and above warrant special attention.

This instrument was selected because it reflects a multidimensional approach to alcohol. With this instrument, social problems, which are recognized very early in the client's drinking behavior, can be easily detected. This allows early intervention, which in turn, reduces the treatment cost.

In order to support this questionnaire, a demographic data form was added. This intended to lessen the intensity of the core questionnaire which the study subjects may possibly find very intrusive and hence, increase information biases.

3.7.2. Demographic data form

The demographic data form was designed for social demographic information and it was brief and clear. It covered age, gender, marital status, level of education and religion.

3.8 Selection and training of research assistants

Two research assistants who were fluent in Kiswahili, one was a qualified nurse and another was clinical officer were recruited. They were trained on the study protocol, research procedures, study instruments and data collection procedures.

3.9 Pre-test of instrument

Prior to the main study, a pre-test of the instrument was conducted with 20 participants in early December 2011 at Kijichi police line, in order to assess the applicability of the questionnaire items and time used to complete it. Questions that were found unclear (Kiswahili version) were refined.

3.10 Ethical considerations

3.10.1 Ethical clearance

Ethical clearance was sought from the Muhimbili University of Health and Allied Sciences Research and Publication Committee (Appendix No 11.3). Permission was also sought from the Inspector General of Police (IGP).

All participants were informed both verbally and through an informed consent form about the purpose of the study and requested to participate. Participants were informed that acceptance or refusal to participate in the study had no consequence to their fate in any way in the police force.

Furthermore, participants were informed that they were free to withdrawal at any time from the study and free to decline to answer any question if they felt uncomfortable. Participants

were also assured of confidentiality and questionnaires were anonymous and as such the researcher did not ask or record name, rank, force number or working station of participants at any time.

The participants were also informed about some direct personal benefits such as getting feedback on the interview results and incase any drinking problem he would benefit from simple advice and counseling, which consisted of five minutes about healthy drinking. Study participant were also informed that incase of more serious problem like dependent alcohol use they would be referred to a psychiatrist for further assessment and treatment. The information was only to be used for interventions by a non police provider. Participants completed written informed consent forms (Appendix No 11.7)

3.11 Data entry and analysis

Immediately after data collection, all questionnaires were checked for completeness. All questionnaires were complete and included for analysis. The data obtained was stored by the principle investigator in an office in a secure environment.

SPSS (Statistical package for social sciences) version 15 was used for data entry, data cleaning and analysis. The data was extracted from the questionnaires and filled on dummy tables. It was then analyzed by using the computerized Statistical Package of Social Sciences (SPSS) for the windows version 15 to determine the prevalence of hazardous, harmful or dependent drinking among the study subjects.

CHAPTER FOUR

4.0 RESULTS

4.1 Socio-demographic characteristics of study participants

A total of two hundred and fifty police officers were interviewed. The study results show that there were more males (64%) than females. The majority of study participants (34.6%) were aged between 26-35 years and married (59.6%). Majority of respondents (54.8%) had secondary school (Form Four) level of education and more than 68.4% were of the Christian religion.

4.2 Social demographic characteristics distribution by gender.

4.2.1 Age distribution by gender

Table 1 below shows that the majority of participants belonged to the age group of 26-35 years (36.4%), of these 61.5% were males and 38.5% were females. Minority of participants belonged to the age group 46 and above years (16.4%) of these males were 73.2% and females were 26.8%. The age group of 25 years and below carried a percetage of 34.8% and of these 71.7% were males whereas 28.3% were females. The study results show further that 28.8% belonged to the age range of 36-45 years of which 63.9% were males and 36.1% were females.

4.2.2 Marital status by gender

Results shown in table 1 indicate that the majority of parcipants were married (59.6%), of these 73.% were males while 26.2% were females. The separated participants were 2.4% of these 33.3% were males and 66.7% were females. Divorced and widowed participants were of similar proportions (1.6% each), of these 25% were males and 75% were females in each category.

4.2.3 Educational level by gender

Study results in table 1 indicate that majority of parcipants completed Form four education level (54.8%), of these 68.6% were males and 31.4% were females. 26.8% had completed Standard Seven of which 59.7% were males and 40.3 were females. Form Six level of education formed 11.2% of the participants of these 76.6% were males and 21.4 were females. University level consisted of 7.2% of the participants and of these males and females had similar protportions (50% each).

4.2.4 Religion by gender

Study results in table 1 indicate that majority of study participants were of christian religion (68.4%) of these 66.7% were males and 33.3% were females. Muslims were 31.2% of the study participants of these 64.1% were males and 35.9% were females. Traditional religion consisted of 0.4% of the study participants and all of them were males.

Table 1: Frequency distribution of social-demographic characteristics by gender

	Total (%)	Gender	
	N= 250	Male N= 165 (%)	Female N= 85 (%)
Age in years			
≤25	46(18.4)	33(71.7)	13(28.3)
26-35	91(36.4)	56(61.5)	35(38.5)
36-45	72(28.8)	46(63.9)	26(36.1)
≥46	41(16.4)	30(73.2)	11(26.8)
Marital status			
Single	87(34.8)	51(58.6)	36(41.4)
Married	149(59.6)	110(73.8)	39(26.2)
Separated	6(2.4)	2((33.3)	4(66.7)
Divorced	4(1.6)	1(25)	3(75)
Widowed	4(1.6)	1(25)	3(75)
Education level			
Std seven	67(26.8)	40(59.7)	27(40.3)
Form four	137(54.8)	94(68.6)	43(31.4)
Form six	28(11.2)	22(76.6)	6(21.4)
University	18(7.2)	9(50)	9(50)
Religion			
Christian	171(68.4)	114(66.7)	57(33.3)
Muslim	78(31.2)	50(64.1)	28(35.9)
Traditional	1(0.4)	1(100)	0

4.3 The prevalence of hazardous, harmful and dependent alcohol consumption among participants (AUDIT score)

4.3.1 The prevalence of hazardous, harmful and dependent alcohol consumption by age

Study results in table 2 below indicate that most of participants below 25 years were non drinkers (73.91%) while social drinkers were 13.04%, hazardous drinkers were estimated to be 8.7% , harmful drinkers were indicated to be 2.17% and dependent drinkers were indicated to be 2.17%.

Study results futher indicate that most of the participants were of the age group of 26-35 (36.6%). Non drinkers in this age group were indicated to be 45.05%, social drinkers were estimated to be 35.16%, hazardous drinkers were estimated to be 14.29%, harmful drinkers wre estimated to be 1.1%, and dependent drinkers were indicated to be 4.4% .

Furthermore, results indicate that non drnkers in the age group of 35-45 years were 47.22% whereas social drinkers were 29.17%. Hazardous drinkers were estimated to be 13.89% while harmful drinkers were estimated to be 8.33% and dependent drinkers were indicated to be 1.39%.

Additionally, results indicate that non alcohol drinkers in the age group of 46 and above years were 29.27% while social drinkers were 39.02%. Hazardous drinking level in this age group was estimated to be 24.39% wheras harmful level was 7.32%. The results show that there was no dependent alcohol consumption in the age group of 46 and above years. The result indicate further that a high proportion of participants aged 26-35 years were using alcohol (54.95%). Study results indicate that there is a statistically highly significant relationship between alcohol consumption and age (p value < 0.05).

Table 2: Frequency distribution of levels of drinking by age

Age in years	N (%)	Level of drinking					
		Non drinker	Social drinker	Hazardous	Harmful	Dependent	p value
≤25	46	6(13.0)	6(13.0)	4(8.7)	1(2.2)	1(2.2)	
26-35	91	41(45.1)	32(35.2)	13(14.3)	1(1.1)	4(4.4)	
36-45	72	34(47.2)	21(29.1)	10(13.9)	6(8.3)	1(1.4)	0.005
≥46	41	34(47.2)	16(39.0)	10(24.4)	3(7.3)	0	

4.3.2 Hazardous, harmful and dependent alcohol consumption by gender

Study results in table 3 below show that non drinkers males were indicated to be 56.2% while non drinkers in females were estimated to be 43.8%. Social drinkers were estimated to 73.3% in males while 26.7%. were females. Harmful and dependent alcohol drinkers were exclusively males.

Overall, 38.8% of males and 12.8% of females (male/female ratio 3.03) were identified as alcohol users. A total of 67.6% of males and 32.4% of females were hazardous alcohol users (male/female ratio 2.07). Results indicate that there is a statisticall highly significant relationship between alcohol consumption and gender (p value < 0.01)

Table 3: Frequency distribution of alcohol consumption by gender

Level of drinking	N (%)	Male	Female	p value
Non drinker	121(48.4)	68(56.2)	53(43.8)	
Social drinker	75(30.0)	55(73.3)	20(26.7)	
Hazardous	37(14.8)	25(67.6)	12(32.4)	0.003
Harmful	11(4.4)	11(100)	0	
Dependent	6(2.40)	6(100)	0	

4.3.3 Hazardous, harmful and dependent alcohol consumption by marital status

Study results in table 4 below indicate that majority of participants were married (59.6%) of whom 14.6% were non drinkers whereas 33.56% accounted for social drinkers. Hazardous alcohol consumption in the married group was 15.4% whereas harmful and dependent levels were 6.04% and 3.36% respectively. Participnts who were divorced or widowed although their number was low in the study sample, AUDIT score indicated high prevalence of hazardous alcohol consumption among them (25% and 75% respectively). In single participants majority of them were non drinkers (65.56%), social drinkers were 20.69% and low prevalence levels of hazardous, harmful and dependent alcohol consumption (11.49%, 1.15% and 1.15% respectively. Study results results indicate that there is a statistically highly significant relationship between alcohol consumption and marital status (p value < 0.01).

Table 4: Frequency distribution of levels of alcohol consumption by marital status

Marital status	N (%)	Level of drinking				
		Nondrinker	Social drinker	Hazardous	Harmful	Dependent
Single	87(34.8)	57(65.5)	18(20.7)	10(11.5)	1(1.2)	1(1.2)
Married	149(59.6)	62(41.6)	50(33.6)	23(15.4)	9(6.04)	5(3.4)
Separated	6(2.4)	1(16.7)	5(83.3)	0	0	0
Divorced	4(1.6)	1(25)	1(25)	1(25)	1(25)	0
Widowed	4(1.6)	0	1(25)	3(75)	0	0

Chi square = 39.6355 p value = 0.001

4.3.4 Hazardous, harmful and dependent alcohol consumption by education level

Study results in table 5 indicate that the majority of the standard seven participants were non drinkers (37.3%) while social drinkers were estimated to be 32.8%. Hazardous alcohol users were 17.9% whereas harmful and dependent drinkers were estimated to be 7.5% and 4.5% respectively.

Furthermore, results indicate that participants with form four level of education had highest proportion of non drinkers (54.7%). Social drinkers in this group were estimated to be 27.01% while hazardous and harmful alcohol users were estimated to be 12.4% and 3.7% respectively. Lowest proportion of alcohol consumption was estimated in the dependent alcohol consumption level (2.19%).

Results indicate that majority of the participants with Form six which is the advanced level of secondary education were non drinkers (46.4%) while social alcohol users were estimated to be 35.7%. Hazardous alcohol users were indicated to be 14.3% while there was none in the dependent level.

Majority of the participant with University education level were non drinkers (44.4%) whereas social drinkers were estimated to be 33.3% in this group. Hazardous drinkers were estimated to be 22.2% while there were neither harmful nor dependent alcohol users in this group. Results indicate that there is no statistically significant relationship between alcohol consumption and educational level (p value > 0.05).

Table 5: Frequency distribution of levels of alcohol consumption by education

Education	N (%)	Level of drinking				
		Nondrinker	Social drinker	Hazardous	Harmful	Dependent
Standard seven	67	25(37.3)	22(32.8)	12(17.9)	5(7.5)	3(4.5)
Form four	137	75(54.7)	37(27.0)	17(12.4)	5(3.7)	3(2.2)
Form six	28	13(46.4)	10(35.7)	4(14.3)	1(3.6)	0
University	18	8(44.4)	6(33.3)	4(22.2)	0	0

Chi square = 10.2974 p value= 0.590

4.3.5 Hazardous, harmful and dependent alcohol consumption by religion

Study results in table 6 below indicate that 43.9% were estimated to be Christian non drinkers and 57.7% were Muslim non drinkers. 31.6% were estimated to be Christian social drinkers while 26.9% were estimated to be Muslim social drinkers. Study results indicate that 17.5% were estimated to be Christian hazardous drinkers whereas 8.9% were estimated to be Muslim hazardous users. Furthermore, results indicate that 4.1% and 1.3% were Christian harmful and dependent alcohol drinkers respectively. Results show that 5.1% and 1.3% were estimated to be Muslim harmful and dependent drinkers respectively.

Study results indicate that there is no statistically significant relationship between alcohol consumption and religion (p value > 0.05).

Table 6: Frequency distribution of levels of alcohol consumption by religion

Religion	N (100%)	Level of drinking				
		Nondrinker	Social drinker	Hazardous	Harmful	Dependent
Christian	171	75(43.86)	54(31.6)	30(17.5)	7(4.1)	5(2.9)
Muslim	78	45(57.69)	21(26.9)	7(8.97)	4(5.1)	1(1.3)
Traditional	1	1(100)	0	0	0	0

Chi square = 6.9651 p value = 0.540

CHAPTER FIVE

5.0 DISCUSSION

This study primarily set out to determine the prevalence of hazardous, harmful and dependent alcohol consumption among police officers at Kilwa Road police barracks, in Dar es Salaam region. The large proportion of males among participants reflects the functional predominance of males among police officers.

5.1 Prevalence of hazardous alcohol consumption among study participants

Study results indicate that the prevalence of hazardous alcohol drinking among survey participants was two times higher than the prevalence of hazardous alcohol drinking in the general population in urban Dar es Salaam (Mbatia et al. 2009). This level of drinking however is lower than that found in other studies for example a study done among US police officers using AUDIT instrument; showed hazardous drinking level that was five times greater than the general population (Murtagh, 2010).

5.1.1 Prevalence of hazardous drinking by age

The study results indicate that a high proportion of participants aged below 45 years were using alcohol. This suggests that the probability of drinking alcohol among study participants is high. This is probably because most of them have the capacity to buy alcohol which is easily available in police welfare canteens at subsidized price. The stress associated with police work may be part of the explanation and literature elsewhere shows a high association between post traumatic stress disorder (PTSD) and police drinking (Ballenger, 2010).

Results showed that the drinking habit was associated with age in the sense that most of participants aged 26-35 years were alcohol users. Furthermore, results show that the highest proportion of hazardous alcohol consumption was indicated in the age group of 26-35 years. The results contrast with another study done in Australia among police officers using AUDIT

in which the 18- to 25-year old age group reported the highest levels of frequency and quantity of alcohol consumed (Davey, Obst & Sheehan, 2000a). On the other hand the results are comparable with a study done in Dar es Salaam using AUDIT instrument in which elevated rates of hazardous drinking were found among participants aged 25–34 (Mbatia et al. 2009).

5.1.2 Prevalence of hazardous alcohol consumption by gender

Study results show that prevalence of hazardous drinking was higher in male participants compared to females (AUDIT score of 8-15). This is probably because policemen are assigned to more stressful jobs such as arresting dangerous criminals or guarding banks compared to women police thus influencing their drinking behavior. The results are comparable to a study done in the UK armed forces which revealed that men had more proportions of hazardous alcohol use than women by using an AUDIT (Alcohol Use Disorder Identification Test) score of 8+ which is defined as hazardous drinking (Fear et al. 2007). Study results indicate that there is a statistically highly significant association between alcohol consumption and gender (p value < 0.01).

5.1.3 Prevalence of hazardous alcohol use by level of education

Study results indicate that high proportion of hazardous alcohol users were shown in participants whose educational level was Form four down to Standard seven. A low proportion of hazardous drinking was indicated in higher educational levels (Form Six and University educational levels). The results indicate that there is no statistically significant relationship between alcohol consumption and level of education ($p > 0.05$). The results are similar to another study done by Riala et al, (2002), in which alcohol misuse and dependence in the United States of America (USA) was found to be associated with dropping out of high school or failure to achieve a college degree.

Another study done in Asian region indicates that people who did not go to school or didn’t complete primary education are more likely to drink in comparison to people who graduated from high school or University (Bich et al. 2009). But the results are different from a study

done by Riala et al (2002) in which a general survey in Holland revealed that the problem of drinking was not related to educational level. WHO reports that the prevalence of individuals ever to use alcohol was high among illiterates and those with primary education, respectively (Bich et al. 2009).

5.1.4 Prevalence of hazardous alcohol consumption by religion

Study results show higher prevalence of hazardous drinking among Christian participants compared to Muslim participants. The study results indicate that there was no statistically significant relationship between religion and alcohol consumption (p value > 0.05). The result is comparable with Bich's (2009) findings which indicated that highest prevalence of alcohol consumption was among Christians (61.2%) and lowest prevalence was among Muslims (9.4%) in the general population.

5.2 Prevalence of harmful alcohol consumption

Study results indicate that participants had high levels of harmful drinking proportions although contrasting with other studies for example a study done among police officers in USA indicated that they had an AUDIT score with an alarming proportion which was six times higher (Davey, Obst & Sheehan, 2000a). Furthermore, study results indicated that, all participants who fall in the category of harmful drinking by AUDIT screening were males contrasting with results in a report by Ballenger (2010), among Australian police officers showing that harmful alcohol drinking was estimated by AUDIT score in both males and females.

5.3 Prevalence of dependent alcohol consumption

Study results indicate that according to AUDIT scores there is raised prevalence of dependent alcohol consumption. The results are comparable with study results in other studies for example a study done among Australian police officers by using AUDIT score, revealed similar prevalence of dependent alcohol consumption (Davey, Obst & Sheehan, 2000b).

5.4 Limitations of the study

This is the first study of its kind to be done in Tanzania Police Force; consequently there was no pre-existing information retrievable regarding the prevalence of hazardous, harmful and dependent alcohol consumption among police officers. For this reason, there was no information and relevant experience to build on in conducting the study and formulating the implications of the findings.

Developing a clear picture of the extent of alcohol abuse within the police profession is very difficult. The unwillingness of police officers to fully disclose information about drinking behaviors could be a possible source of bias (Murtagh, 2010). The reasons for non disclosure are many and varied.

The scope of the study had to be of necessity limited in terms of sample size and geographical area covered due to constraints of time and resources.

Although the study used a validated data collection instrument and the sampling design representing the study area, there are some limitations. The survey was done at Kilwa Road Police barracks, and hence the results can only be generalized to the sampled population and not the entire police force.

The principle researcher is a senior police officer and may have been a source of bias although he is not familiar with the study site.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATION

6.1 Conclusion

It is justifiable to conclude from these findings that the prevalence of ***hazardous*** alcohol consumption among police officers at Kilwa Road police barracks is high compared to hazardous drinking prevalence in urban Dar es Salaam but low when low compared to Australian and United States of America police officers.

It also justifiable to conclude from the results that the prevalence of ***dependent*** alcohol consumption among police officers at Kilwa Road police barracks is low compared to Australian police.

It can further be concluded that hazardous, harmful and dependent alcohol consumption is influenced by age, sex, and marital status.
Finally this is an important study as it has created a very significant link with the Department of Psychiatry and has opened a door for further studies in Tanzania Police Force.

6.2 Recommendations

Establishment of a training program for medical and social worker staff among the police officers who can identify and provide the necessary counseling and advice to police officers who engage in hazardous, harmful or dependent alcohol consumption

Further studies may focus on predictors of hazardous, harmful and dependent alcohol use among police officers so that appropriate intervention can be put in place. A way to further our understanding of the degree of stress and trauma police officers encounter on a day to day basis may be to explore the prevalence of PTSD among police officers. Stress reduction and trauma focused intervention may possibly be healthier and more adaptive ways of managing a very stressful occupation.

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11.0 APPENDICES

11.1 Questionnaire (English Version)

Thank you for agreeing to me about hazardous, harmful and dependent alcohol use among police officers. The information you provide will help in preparing a report with recommendations on intervention.

Demographic information

Identification number ……

1. Sex: Male/Female

2. Age: Years.

3. **Marital Status:**

Single [ ]

Married [ ]

Separated [ ]

Divorced [ ]

Widowed [ ]

4. Religion

Christian [ ]

Moslem [ ]

Traditional [ ]

5. Level of Education

Primary school education [ ]

Secondary school education [ ]

University [ ]

6. How often do you have a drink containing alcohol?

Never [ ]

Monthly or less [ ]

Two to four times a month [ ]

Two to three times a week [ ]

Four or more times a week [ ]

7. How many drinks containing alcohol do you have on a typical day when you are drinking?

1 or 2 [ ]

3 or 4 [ ]

5 or 6 [ ]

7 or 9 [ ]

10 or more [ ]

8. How often do you have six or more drinks on one occasion?

Never [ ]

Less than monthly [ ]

Monthly [ ]

Weekly [ ]

Daily or almost daily [ ]

9. How often during the last year have you found it difficult to get the thought of alcohol out of your mind?

Never [ ]

Less than monthly [ ]

Monthly [ ]

Weekly [ ]

Daily or almost daily [ ]

10. 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 [ ]

11. How often during the last year have you been unable to remember what happened the night before because you had been drinking?

Never [ ]
Less than monthly [ ]
Monthly [ ]
Weekly [ ]
Daily or almost daily [ ]

12. 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 [ ]

13. 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 [ ]

14. Have you or someone else been injured as a result of your drinking?

No [ ]

Yes, but in the last year. [ ]

Yes, during the last year [ ]

15. Has a relative or friend or a doctor or other health worker, been concerned about your drinking or suggested you cut down?

No [ ]

Yes, but in the last year. [ ]

Yes, during the last year [ ]

11.2 Questionnaire (Kiswahili Version)

Asante kwa kukubali kuongea nami kuhusu viwango mbali mbali vya unywaji wa pombe kwa askari polisi. Taarifa utakazozitoa zitasaidia kuandika ripoti itakayowezesha kushauri juu ya maingilio kwa watakao onekana kuwa na unywaji usio salama.

Taarifa binafsi

1.Jinsia

Mwanaume [ ]

Mwanamke [ ]

2. Umri (miaka) [ ]

3. Hali ya ndoa [ ]

Sijaoa [ ]

Sijaolewa [ ]

Nimeoa [ ]

Nimeolewa [ ]

Tumetengana [ ]

Nimeachika [ ]

Mjane [ ]

4. Dini

Mkristo [ ]

Muislamu [ ]

Ya kienyeji [ ]

5. Kiwango cha elimu

Darasa la saba [ ]

Kidato cha nne

Kidato cha sita [ ]

Chuo kikuu [ ]

6. Ni mara ngapi unakunywa kinywaji chenye kilevi?

Sijawahi kamwe [ ]

Mara moja kwa mwezi au pungufu ya hapo [ ]

Mara mbili mpaka nne kwa mwezi [ ]

Mara mbili hadi tatu kwa wiki [ ]

Mara nne au zaidi kwa wiki [ ]

7. Ni vinywaji vingapi vyenye kilevi unavyokunywa katika siku maalum?

1 au 2 [ ]

3 au 4 [ ]

5 au 6 [ ]

7au 9 [ ]

10au zaidi [ ]

8 Ni mara ngapi umekunywa vinywaji 6 au zaidi vyenye kilevi katika tukio moja?

Sijawahi kamwe [ ]

Chini ya mara moja kwa mwezi [ ]

Kila mwezi [ ]

Kila wiki [ ]

Kila siku au karibu kila siku [ ]

9. Ni mara ngapi kwa kipindi cha mwaka mmoja uliopita umeona ugumu wa kuondoa wazo la kunywa pombe katika mawazo yako?

Sijawahi hata mara moja [ ]

Chini ya mara moja kwa mwezi [ ]

Kila mwezi [ ]

Kila wiki [ ]

Kila siku au karibu kila siku [ ]

10. Ni mara ngapi katika kipindi cha mwaka mmoja uliopita umeona ni vigumu kuacha kunywa pombe baada ya kuaanza kunywa?

Sijawahi kuona hivyo hata mara moja [ ]

Chini ya mara moja kwa mwezi [ ]

Kila mwezi [ ]

Kila wiki [ ]

Kila siku au karibu kila siku [ ]

11.Ni mara ngapi katika kipindi cha mwaka mmoja uliopita ulishindwa kukumbuka matukio ya usiku wa jana yake kwa sababu ulikuwa umekunywa usiku huo?

Haijatokea hata mara moja [ ]

Chini ya mara moja kwa mwezi [ ]

Kila mwezi [ ]

Kila wiki [ ]

Kila siku au karibu kila siku [ ]

12. Ni mara ngapi katika kipindi cha mwaka mmoja uliopita ulihitaji kinywaji chenye kilevi asubuhi ili kujiweka sawa baada ya kipindi cha kunywa sana?

Haijawahi kunitokea hata mara moja [ ]

Chini ya mara moja kwa mwezi [ ]

Kila mwezi [ ]

Kila wiki [ ]

Kila siku au karibu kila siku [ ]

13. Ni mara ngapi katika kipindi cha mwaka uliopita ulijisikia kujuta au kujilaumu baada ya kunywa pombe?

Haijatokea hata mara moja [ ]

Chini ya mara moja mwezi [ ]

Kila mwezi [ ]

Kila wiki [ ]

Kila siku au karibu kila siku [ ]

14. Je, umewahi kuumia au mwingine yeyote kuumia ikiwa ni matokeo ya kunywa pombe kwako?

Hapana [ ]

Ndio, lakini sio katika kipindi cha mwaka mmoja uliopita [ ]

Ndio, ni kipindi cha mwaka mmoja uliopita [ ]

15.Je una jamaa au rafiki au daktari au mfanyakazi yeyote wa afya, ambaye anaguswa kuhusu unywaji wako au ametokea kukushauri kupunguza?

Hapana [ ]

Ndio, lakini sio katika kipindi cha mwaka ummoja uliopita [ ]

Ndio, ni kipindi cha mwaka mmoja uliopita [ ]

11.3 Ethical clearance

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
DIRECTORATE OF POSTGRADUATE STUDIES

P.O. Box 65001
DAR-ES-SALAAM
TANZANIA
Telefax: 255-022-2150465
Telegrams: UNIVMED

E-MAIL dpgs@muhas.ac.tz
TEL: (255-022)-2150302-6 Ext. 207
Direct line: 2151378

Ref. No. MU/PGS/SAEC/Vol. VI/ 61

25th October, 2011

Zephania L. Mushumbusi
MSc. Clinical Psychology,
School of Medicine
MUHAS.

Re: APPROVAL OF ETHICAL CLEARANCE FOR A STUDY TITLED "THE PREVALENCE OF HAZARDOUS, HARMFUL AND DEPENDENT ALCOHOL CONSUMPTION AMONG POLICE OFFICERS AT THE MAJOR POLICE BARRACKS, DAR ES SALAAM REGION"

Reference is made to the above heading.

I am pleased to inform you that, the Chairman has on behalf of the Senate approved ethical clearance for the above-mentioned study.

Thus ethical clearance is granted and you may proceed with the planned study.

Please liaise with bursar's office to get your research fund.

Prof. Z. Premji
DIRECTOR, POSTGRADUATE STUDIES

/emm

cc: Vice Chancellor, MUHAS
cc: Deputy Vice Chancellor-ARC
cc: Dean, School of Medicine.

11.4 Introduction letter to IGP

Zephania L. Mushumbusi- SSP,
MSc. Clinical Psychology,
School of Medicine,
MUHAS,
P. O. Box 65001,
DAR ES SALAAM.

Reference No. PF/MUHAS/1

The Inspector General of Police,
Police Head quarters,
P O. Box 9141,
DAR ES SALAAM.

UFS: Supervisor,
Prof. G. Kilonzo,
School of Medicine,
MUHAS.

Recommended
MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
DEPARTMENT OF PSYCHIATRY
P O Box 65293
DAR ES SALAAM

Dear Sir,

RE: REQUEST FOR PERMISSION TO CONDUCT A STUDY TITLED THE PREVALENCE OF HAZADOUS, HARMFUL AND DEPENDENT ALCOHOL CONSUMPTION AMONG POLICE OFFICERS AT THE MAJOR POLICE BARRACKS, KILWA ROAD, DAR ES SALAAM.

Reference is made to the above heading.

I have the great honor to forward my request to your office regarding the study stated above. The study will be in partial fulfillment of the requirements for the award of the

degree of MSc Clinical Psychology. The data collection period is 15 days commencing on 7th November 2011.

The study objectives are:

1. To assess the prevalence of hazardous alcohol use among police officers
2. To find out the prevalence of harmful drinking among police officers
3. To identify the prevalence of dependent alcohol consumption among police officers.

Looking forward for your highly needed and dependable assistance.

Yours faithfully,

SSP

Zephania L. Mushumbusi- SSP

11.5 Permission letter from IGP

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF HOME AFFAIRS
TANZANIA POLICE FORCE

Telegrams: "MKUUPOLISI"
Telephone: (022) 2110734
Fax No. (022) 2136556

OFFICE OF THE
Inspector General of Police,
P.O Box 9141,
Dar es Salaam
TANZANIA

Ref: Na HQ/PF/14151/140 **15th November, 2011**

Zephania L. Mushumbusi – SSP
Msc. Clinical Psychology,
School of Medicine
MUHAS,
P. O. Box 65001,
DAR ES SALAAM.

YAH: REQUEST FOR PERMISSION TO CONDUCT A STUDY TITLED THE PREVALENCE OF HAZARDOUS, HARMFUL AND DEPENDENT ALCOHOL CONSUMPTION AMONG POLICE OFFICERS AT THE MAJOR POLICE BARRACKS, KILWA ROAD, DAR ES SAAM

May I draw your attention to the above mentioned subject. Reference is made to your letter Ref No. PF/MUHAS/1 on the same subject.

Permission is granted to you to conduct the said research project on the signified location on the specified Research topic. Upon receipt of this letter, contact the Dar es salaam Zonal Commander for the way forward.

N. M. Mpembela - DCP
For: **INSPECTOR GENERAL OF POLICE**

For: INSPECTOR GENERAL OF POLICE
TANZANIA

Cc: Zonal Police Commander
P. O. Box 9140,
DAR ES SALAAM - Assist him in everyway possible

11.6 Written Informed Consent (English Version)

Introduction

Greetings Madam/Sir

My name is Zephania L. Mushumbusi; I am a student pursuing master's degree in Clinical Psychology at the University of Health and Allied Sciences. I am conducting a study titled the Prevalence of hazardous, harmful and dependent alcohol consumption among police officers at Kilwa road police barracks, Dar es Salaam region**,** as part of my degree award fulfillment.

Purpose of the study

I will interview police officers residing at Kilwa Road police barracks about their alcohol use behavior.

I would like to find out the prevalence of hazardous, harmful and dependent alcohol consumption among police officers.

Participants

If you agree to participate I will interview you following a standard questionnaire. Before you begin this process I will ask you to sign a consent form indicating your willingness to participate.

Confidentiality

Your name, force number, rank or working station will not appear on any form/document. Instead an identification number will be used in the questionnaire and in the computer where all information will be entered.. All the information we collect from you will be confidential and will only be used for the purpose of this study. No one else other than the researchers involved in the study will have access to this information. Only the investigator will access this consent form.

Benefits and risks

There will be some direct personal benefits to you such as getting feedback on the interview results and in case you are found with minor drinking problems you will benefit from simple advice and counseling, which consist of five minutes about healthy drinking. If you are found with no drinking problem you receive advice on healthy drinking. In case you are found with serious drinking problems you will be referred to a Psychiatrist at Muhimbili National

Hospital for further assessment and treatment. Also the overall study results will provide information on the recommendations for alcohol abuse interventions.

Voluntary participation and rights to withdrawal

Your participation is voluntary and you have the right to discontinue from participating in this study at any time. Whatever your decision may be, it will not involve penalty or loss of any benefit to which you are otherwise entitled.

Contact Person

If you have questions about this study, please do not hesitate to contact:

Mr. Zephania Mushumbusi,

Principal Investigator; MUHAS,

Department of Psychiatry,

P.O. Box 65001,

Dar es Salaam.

Mobile phone: 0713239463

OR

If you have questions about your right as a participant, you may contact

Prof. M. Aboud,

Chairman of the Senate Research and Publication committee,

P.O. Box 65001,

Dar es Salaam.

Signature

Do you agree?

Participant agrees……Participant does not agree……..

I,…….have understood the above information and questions have been answered to my satisfaction. I agree willingly to participate in this study.

Number of the participant…….

Signature/Finger print of the participant:……

Signature of witness:……

11.7 Written Informed Consent (Swahili Version)

Jina langu ni Zephania Mushumbusi.

Ninatokea chuo kikuu cha tiba na afya Muhimbili katika idara ya afya na magonjwa ya akili. Ninafanya utafiti kuhusu viwango vya utumiaji pombe kwa askari polisi wanaoishi kambi ya polisi barabara ya Kilwa, mkoa wa Dar es Salaam.

Kwakuwa utafiti huu ni wa sayansi ya tiba unapaswa kufaamu yafuatayo kabla ya kushiriki:

Dhumuni la Utafiki huu

Kama nilivyo sema hapo awali dhumuni ni.kufanya utafiti kuhusu viwango vya utumiaji pombe kwa askari polisi wanaoishi kambi hii.

Namna ya kushiriki

Ushiriki wako kwenye utafiti huu ni wa hiyari kabisa na unaweza kukataa kushiriki au kusitisha mahojiano au majadiliano wakati wowote. Kukataa kushiriki hakutahingilia haki ya kupata ushauri wowote uutakao toka kwetu au kuathiri mustakabali wako kikazi kwa namna yoyote ile na bado jambo hili litabaki siri.

Usisite kuhuliza swali lolote pale unapoona kuna sababu. Kama ukikubali kushiriki mahojiano yataendeshwa kwa kutumia dodoso maalum.

USIRI

Huhitajiki kutaja jina lako, namba yako ya kijeshi au cheo chako. Taarifa zako utakazozitoa hazitawekwa hadharani kwa namna yeyote ile kwa hiyo ushiriki wako hautafahamika. Mwisho wa ufafiti taarifa hizi zitafungiwa na baadaye kuharibiwa baada ya kuwekwa na kutunzwa kwenye mfumo wa electroniki

Kumbuka

Majibu yatayopatikana yatakuwa ya manufaa kwa askari mmoja mmoja binafsi, na jeshi lote la polisi kwa ujumla kwani yatawawezesha kupata ushauri nasihi wa dakika tano. Ikiwa utakuwa na matatizo madogo yatokanayo na unywaji pombe utapewa ushauri nasihi na ikiwa utakuwa na matatizo makubwa utapewa rufaa ya kumwona daktari bingwa hospitali ya Muhimbili kwa ajili ya vipimo na tiba..

Ukikutwa bila tatizo utapewa ushauri kuhusiana na unywaji salama, madhara ya unywaji usio salama na vizuizi vya unywaji wa pombe.

Nani wa kumuuliza

Kama una maswali zaidi ambayo ungependa kuuliza kuhusiana na utafiti huu, tafadhali wasiliana na:

Mtafiti Mkuu

Zephania Mushumbusii,

Idara ya magonjwa ya akili

Chuo Kikuu cha afya Muhimbili au

Prof. M. Aboud.

Mwenyekiti wa kamati ya utafiti na machapisho ya chuo

S.L.P. 65001 Dar es salaam, Tanzania.

Unakubali Kushiriki?.....

Mshiriki amekubali……

Nimesoma au nimeeleweshwa kuhusu yaliyomo humu ndani. Maswali yangu yamejibiwa. Nakubali kushiriki katika utafiti huu.

Sahihi…….