PSYCHOSOCIAL RISK FACTORS ON HARMFUL ALCOHOL USE AMONG

PEOPLE LIVING IN INFORMAL SETTLEMENT IN NAIROBI

BY

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Declaration

This research thesis is my original work and has not been presented for a degree in any other University or any other award.

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Approval

The undersigned certify that they have read and hereby recommend for acceptance of University of Nairobi a research thesis entitled "psychosocial risk factors of harmful alcohol use among people living in informal settlement in Nairobi."

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Abstract

Background: The growth of the informal settlements has resulted in many, and complex socio-economic and environmental consequences. Informal settlements are characterized by congestion, high levels of unemployment, inadequate social services, extreme poverty, insecurity, crime, and hopelessness. By their very nature, informal settlements are replete with poor environmental factors that predispose their inhabitants to poor health outcomes. Experts suggest that poor living conditions and drug abuse are interrelated problems. Poor housing or homelessness can contribute to alcohol dependence or can make it more difficult to manage the problem.

Aim of the Study: To determine the prevalence rate of harmful alcohol use among people taking alcohol in Babadogo slum. To investigate the psychosocial risk factors contributing to harmful alcohol use among people taking alcohol in Babadogo slum. The study also determined the impact of socio-demographic factors on harmful alcohol use among people taking alcohol in Babadogo slum.

Methodology: The study adopted a descriptive survey design. It was conducted in Babadogo slum Kasarani Constituency, Nairobi. Study targeted households with individuals consuming alcohol (both male and female). Systematic random sampling was used to select households; every third household was selected on a random start between 1 and the sampling interval, 3. Researcher moved to the next household if the selected household did not have an individual consuming alcohol. Data from structured questionnaires was quantitatively analyzed by SPSS for Windows version 20.0. Differences in variables by group were evaluated using t-tests and ANOVA for continuous variables. Chi-square analyses were used to examine bivariate associations between categorical variables and presentation of results was by tables.

Findings of the Study: The results show that most of the respondents (66.3%) were at high-risk of alcohol dependence amongst people consuming alcohol in Babadogo slums. Several socio-demographic factors were significantly correlated to risk level of alcohol dependence. These were: gender ($p = 0.079$), marital status ($p = 0.009$), level of education ($p = 0.000$), monthly household income ($p = 0.000$), onset age of drinking alcohol ($p = 0.004$), and frequency of parent alcohol use ($p = 0.000$). The results also revealed that there was a strong significant association ($p = .000$) between the most common psychosocial stressors determined and harmful alcohol use among people consuming alcohol in Babadogo slum.

Recommendations: Study recommends that: specific treatment approaches targeting psychosocial stressors might play a central role in the prevention and treatment of harmful alcohol use; treatment approaches should contain important stress management components as cognitive restructuring, coping skills, and problem-solving skills; and treatment programs should recognize the importance of social support systems in managing psychosocial stressors.

Abbreviations/Acronyms

ACE   -   Adverse Childhood Experiences

APA   -   American Psychiatric Association

APHRC   -   African Population and Health Research Centre

AUDIT   -   Alcohol Use Disorders Identification Test

DALY   -   Disability-Adjusted Life Years

DSM   -   Diagnostic and Statistical Manual of Mental Disorders

GDP   -   Gross Domestic Product

KENSUP   -   Kenya Slum Upgrading Programme

MDG   -   Millennium Development Goals

NACADA   -   National Campaign Against Drug Abuse

NSDUH   -   National Survey on Drug Use and Health

OECD   -   Organisation for Economic Co-operation and Development

UN   -   United Nations

UNODC   -   United Nations Office on Drugs and Crime

WHO   -   World Health Organization

CHAPTER ONE: INTRODUCTION

1.1   Background to the Study

Globally, the UNODC estimates that between 155 and 250 million people (3.5% - 5.7% of the population aged 15-64) used illicit substances at least once in 2008. Consequently it is estimated that there were between 16 and 38 million 'problem drug users' in the world the same year. While drug use has stabilized in the developed world, there are signs of an increase in drug use in the developing countries (UNODC, 2008). Study by NACADA (2011) stipulates that 14.2% of the Kenyan population aged 15-65 is currently consuming alcohol, Miraa (5.5%), bhang (1%), cocaine (0.2%) and heroin (0.1%). According to WHO (1994) substance abuse is persistent or sporadic drug use inconsistent with or unrelated to acceptable medical practice. The characteristic of urban slums makes people in informal settlements vulnerable to this multi-dimensional problem. UN Habitat (2007) explain that living in these settlements often poses significant social problems for example, access to health and other services may be limited; overcrowding can contribute to stress, violence and increased problems of alcohol dependence, drugs and other social problems.

Urban areas offer opportunities for employment, social interaction, cultural learning and creativity. However, cities are often also centres of inequality acting as localities of exclusion and marginalization (UN Habitat, 2007).A defination of informal settlement by OECD (2001) is areas where groups of housing units have been constructed on land that the occupants have no legal claim to, or occupy illegally. It is characterised as unplanned settlements and areas where housing is not in compliance with current planning and building regulations (unauthorized housing). The income of households in informal settlements is usually low and, above all, irregular. In addition to their primarily informal-sector incomes, the residents of

these settlements suffer from multiple disadvantages: public services are inadequate, access to health care, education and socio-political decision-making processes are limited and the protection of public security is seldom guaranteed by public authorities this is according to (GTZ, 2011).

Studies on housing situation across Africa is a key determinant of quality of life that can be measured at individual, household, and community levels and human rights in the cycle of human life. It is postulated that housing is unique among consumer goods in its pervasive economic, social, and psychological significance. The physical and social environments, within the house and the neighbourhood support family functioning (Bertrand, 1999; Halla & Majani, 1999; Kamau, 2002; and Magigi, 2004). They also found that land degradation, Informal housing development poses a key development challenge for city planners, managers, policies improvement for pro-poor growth and budget in response to recognition of the real needs for settlement planning and management. However, haphazard housing development, poor sanitation, poor access to infrastructure utility and facility, resource depletion, fear of eviction due to land insecurity and therefore increased shocks (vulnerability) are some challenges to settlers. Kamau (2002) and Magigi (2004) concluded that poor institutional coordination and policy enforcement in land development and management and socio-economic activities beyond planning needs affect family functioning. In addition, social capital and networking and adopting land regularization were noted to be important factors in reducing housing risks and other vulnerability indicators.

Study by UN Habitat (2007) explain that more people live in urban centres than in rural areas experience more economic, social, and psychological problems. In particular, urban informal settlements are characterized by congestion, high levels of unemployment, inadequate social services, extreme poverty, insecurity, crime, and hopelessness (UN-

HABITAT, 2008). Rapid urbanization and inadequate capability to cope with the housing needs of people in urban areas have contributed to the development of informal settlements. According to GTZ (2011) 924 million people, around 30% of the urban population worldwide, lived in informal settlements that is, about 43% of the urban population in developing countries. It is estimated that this number will increase to 2 billion in the next 30 years, if no countermeasures are undertaken. Study show that the general health of any family is directly related to the quality of housing they enjoy. Many people living in informal settlements suffer ill-health including addiction to alcohol and substance abuse due to poor living conditions (UN Habitat, 2007).

Human settlement challenges in the urban areas can be traced from the 1920's when almost all Africans lived in unregulated settlements emanating from the colonial apartheid type policies (NACHU, 1999). Recently, the Kenya Government has set up a Programme KENSUP in collaboration with UN-Habitat to upgrade informal settlements and in fact there is a detailed statement of intent complete with a mission statement, strategies and scope of targeted operational areas. Despite these efforts by the government and stakeholders to upgrade informal settlements, it still remains a challenge in the face of the government (Nabutola, 2005).

According to APHRC (2002) Nairobi typifies the current urban population boom and associated urban health and poverty problems. Such rapid urbanization has resulted in high rates of unemployment, poverty and poor health outcomes among the most disadvantaged of the city's residents. Generally, income levels are low for most slum residents. Many of them tend to rely on petty businesses and casual jobs for survival. Slum dwellers contend that the little and unreliable income, and the difficult living conditions limit their access to basic services, thereby exposing them to a variety of problems such as alcohol and substance abuse

(Ibid, 2002). Hopefully, this study will add momentum to the government and stakeholders in the quest to address alcohol dependence among people living in informal settlement. The study will attempt to do so by offering an analysis of the psychosocial risk factors of alcohol dependence.

1.2   Statement of the Problem

Drake (2002) point out that the availability of alcohol and the fact that it is legal contribute to its widespread abuse among people living in informal settlement. Okungu (2010) identified that hundreds of people living in informal settlements have either been blinded or bereaved by illicit brews. The loss of traditional values and social structures, broken homes, political, economic and social marginalisation and a lack of future perspectives generally put people living in informal settlement at a higher risk of alcohol and drug abuse. In addition, living in poverty makes it harder to recover from alcohol and drug abuse problem once it has developed, as access to health services is limited (GTZ, 2012).

The growth of the informal settlements has resulted in many, and complex socio-economic and environmental consequences. The epidemiological profile of the informal settlements reflects their poor living conditions (Caldwell & Caldwell, 2002). Such settlements are created through a process of unassisted self-help and tend to have two or more of the following characteristics when they are initially created: (i) most houses are self-built by the families occupying them using initially temporary building materials, (ii) the settlements are illegal in some way, (iii) the settlements are underserviced, and (iv) are mostly occupied by people living in situations of poverty (Gilbert & Gugler, 1992).According to them also poor living conditions and drug abuse are interrelated problems. Alcohol use is one of the most common health risk behaviours among people living in poor conditions. According to

Donovan (2004) one of the most consistent risk factors for adolescent drinking is percieved parental approval.According to him also in his journal adolescent alcohol initiation,a review of psychosocial risk factors, jounal of adolescent health 35(6),529,he points out some common risk factors as

(a) Age of onset

(b) Youth perception that parents approve of their alcohol or drug use

(c) Peers engaging in problem behaviours

(d) Early and persistent problem behaviours,risk taking and high sensation seeking

(e) Parental monitoring or perception of monitoring

(f) Parent or older sibling alcohol use or perception of use

(g) Low perception of harm

(h) Strong parent and adolescent relationship and family cohesion

(i) The access and availability of alcohol

(j) Poor school achievement and low school bonding.

He also points out that 51% of people living in poor conditions have had at least some experience with alcohol. These poor living conditions accompanied with harrowing accounts of bereavement, mental health problems, self-harm, domestic violence, physical and sexual abuse, loneliness and isolation further emphasises the enduring cost of this abuse upon the persons' well-being .According to (Taggart, *et al*., 2006). Available evidence indicates that the poor in many urban centres in sub-Saharan Africa engage in alcohol use and abuse. The case of Nairobi is no different. The growth of informal settlement' population has out-paced its health and social services resulting in high rates of unemployment, poverty as well as alcohol use and abuse among people living in informal settlements in Nairobi (APHRC, 2002).

Apparently the knowledge of practices and literature on psychosocial risk factors of alcohol dependence among people living in informal settlement is scarce. Existing research offers limited systematic accounts of informal settlement and alcohol dependence. This study addresses this gap by exploring analytically psychosocial risk factors of harmful alcohol use among people living in informal settlement.

1.3   Aim and Objectives

1.3.1   Aim

The aim of the study was to determine the psychosocial risk factors of harmful alcohol use among people living in informal settlement in Nairobi.

1.3.2   Objectives

In this study the objectives were to:

1) To determine the prevalence rate and psychosocial risk factors of harmful alcohol use among individuals consuming alcohol in informal settlement in Nairobi.

2) To determine the association between socio-demographic factors and harmful alcohol use among individuals consuming alcohol in informal settlement in Nairobi.

3) To identify the effect of psychosocial risk factors on harmful alcohol use among individuals consuming alcohol in informal settlement in Nairobi

1.4   Research Questions

This study sought to answer the following research questions:

1) What is the prevalence rate of harmful alcohol use among individuals consuming alcohol in informal settlement in Nairobi?

2) What is the association between socio-demographic factors and harmful alcohol use among individuals consuming alcohol in informal settlement in Nairobi?

3) What is the effect of psychosocial risk factors for harmful alcohol use among individuals consuming alcohol in informal settlement in Nairobi?

4) What are the psychosocial risk factors for harmful alcohol use among the individuals living in informal settlements in Nairobi?

1.5   Justification

Legislation on substance abuse has been vociferated loudly but still appears to be a mirage. Consequently, the study contributes to the advancement of knowledge about psychosocial risk factors of harmful alcohol use among people living in informal settlements. Findings of the research acts as the latest update to policy makers, assisting them with the understanding and raising awareness of the impact of informal settlements on alcohol dependence. The findings of the study will also help policy makers to design interventions strategies to help address the prevalence of alcohol consumption among people living in informal settlements. Finally, the study forms the basis on which other future studies could be developed.

1.6   Scope and Limitations

This study limits itself to Nairobi county slum targeting households with individuals using alcohol in informal settlement in Babadogo slum. Slum settlements are largely the result of rapid urbanization amidst declining economies and poor governance. In Nairobi, the capital city, over half of the residents live in slum settlements or slum-like conditions, without proper access to sanitation or affordable clean water (Ndugwa, et al., 2010). The growth of the city's

population has out-paced its health and social services resulting in high rates of unemployment, poverty and poor health outcomes among the poorest of the city's residents (APHRC, 2002). Nairobi tops the list of areas with highest consumption of alcohol with 19 per cent, followed by Coast Province at 18.7, Central at 18 and Nyanza 17.

The factor of accessibility of people who engage in harmful alcohol use due to a feeling of guilt and infringement of their privacy was a problem that was addressed. The researcher sought to assure respondents that the information provided will be treated with confidence and that they will remain anonymous. Another dimension of difficulty in accessibility of participants was that residents of informal settlements are particularly vulnerable to crime. The responses by state officials to crime occurring in informal settlements is limited because of the lack of vehicle access to many parts of settlements, lack of access to telephones, lack of street lighting, and difficulties in locating street addresses(Napier, 2000). To minimize this barrier to access, the study identified at least two key informants who lived in Babadogo slum and were familiar to the local residents. The key informants assured the researcher accessibility to people living in the area as well as assure the researcher security during primary data collection.

1.7   Definition of Terms

Socio-demographic Factors: Socioeconomic characteristics of   a population expressed statistically,   such   as   age, sex, education level, income level,   marital status, occupation, religion, average size of a family, average age at marriage, and residence.

Psychosocial: Relating to risk factors that are both social and psychological in origin. The main sets of themes the study will focus on are (a) autonomy and control, (b) involvement, participation and empowerment, (c) social capital, social cohesion, trust and belonging, (d)

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social support (including specific types of support: e.g. emotional), social networks and receiving positive feedback (e) social diversity and tolerance, (f) vulnerability, security or safety, and (g) demands, role conflicts or role imbalance.

Psychosocial stress: Refers to acute or chronic events of psychological or social origin which challenge the homeostatic state of biological systems.

Psychosocial Stressors: They include, but are not limited to, exposure to adverse environments and life experiences such as natural disasters, crowding or isolation, relative position in a social hierarchy, stigma and discrimination, catastrophic/traumatic events (for example, violent conflict), loss of job, disease, family violence, deprivation, child abuse, adverse social environments or situations (e.g., being a chronic caregiver to an ailing family member), and detrimental parental behaviours.

Alcohol Dependence: As described in the DSM-IV TR, is a psychiatric diagnosis (a substance related disorder DSM-IV TR) describing an entity in which an individual uses alcohol despite significant areas of dysfunction, evidence of physical dependence, and/or related hardship.

Informal Settlements: Informal settlements are residential areas that do not comply with local authority requirements for conventional (formal) townships. They are, typically, unauthorised and are invariably located upon land that has not been proclaimed for residential use. They exist because urbanisation has grown faster than the ability of government to provide land, infrastructure and homes.

Slum: A slum, as defined by the United Nations agency UN-HABITAT, is a run-down area of a city characterized by substandard housing and squalor and lacking in tenure security.

CHAPTER TWO: LITERATURE REVIEW

2.1 Overview and Prevalence of Alcohol and Alcohol Dependence

Alcohol is widely used and enjoyed in the society. It is associated with many aspects of social and cultural life and its use has become deeply woven into national identity. Alcohol use accompanies many life events and rites of passage; christenings, first communions and weddings are often celebrated with alcohol, and alcohol is often part of the ritual of wakes and funerals (Mongan, *et al.*, 2007). Drinking alcohol can be a highly pleasurable activity; the desire for its positive, short-term effects, including increased enjoyment, euphoria and the general expression of positive mood, is probably what motivates most people to drink in the first place. Alcohol has traditionally been recommended by medical practitioners for alleviating pain, for stress relief (Keane, 2007).

Against this backdrop, however, it is important to remember that alcohol is no ordinary commodity, it is a toxic substance, it is an intoxicant and it is also a drug of dependence. According to WHO (2004) there are about 2 billion people worldwide who consume alcoholic beverages and 76.3 million with diagnosable alcohol use disorders. From a public health perspective, the global burden related to alcohol consumption, both in terms of morbidity and mortality, is considerable in most parts of the world. Alcohol consumption has health and social consequences via intoxication (drunkenness), alcohol dependence, and other biochemical effects of alcohol. In addition to chronic diseases that may affect drinkers after many years of heavy use, alcohol contributes to traumatic outcomes that kill or disable an individual at a relatively young age, resulting in the loss of many years of life due to death or disability (WHO, 2004).

Study by WHO (2002) promulgated that Alcohol causes 1.8 million deaths (3.2% of total) and a loss of 58.3 million (4% of total) of Disability-Adjusted Life Years (DALY). Unintentional injuries alone account for about one third of the 1.8 million deaths, while neuropsychiatric conditions account for close to 40% of the 58.3 million DALYs. The burden is not equally distributed among the countries. For example, Rehm (2003) explained that alcohol consumption is the leading risk factor for disease burden in low mortality developing countries and the third largest risk factor in developed countries. Mugisha, *et al.* (2003) stipulates that drug abuse continues to inhibit the country's social-economic growth. Alcohol is still the most commonly abused substance with 39 per cent of Kenyans aged between 15 and 65 years being addicts. They further note that unrecorded alcohol consumption in Kenya is estimated to be 5.0 litres pure alcohol per capita for population older than 15 for the years after 1995.

Many of the studies reviewed use different terms for alcohol dependence, including 'alcohol misuse', 'alcohol abuse', 'risky drinking' and 'problem drinking'. Definitions of alcohol dependence may look at the quantity of alcohol consumed, the symptoms being experienced, or patterns of drinking behaviour (Burke, *et al*., 2006). Many of the alcohol studies use definitional criteria from the Diagnostic and Statistical Manual Fourth Edition (DSMIV TR), and earlier DSMIII-R, a mental health diagnostic tool that separates alcohol abuse from alcohol dependence. Alcohol dependence is characterised by withdrawal symptoms and continued use, despite adverse psychological or physical consequences. Alcohol abuse is associated with hazardous use, role impairment, and legal or social problems (APA, 1994).

For the purposes of this review, the term 'alcohol dependence' will be used as it includes a consideration of whether the amount of alcohol consumed is above recommended levels, the pattern of drinking, and the impacts on both the lives of parents and any children within the

family (Tunnard, 2002). Alcohol dependence is considered a multi-factorial health disorder that often follows the course of a relapsing and remitting chronic disease. Unfortunately in many societies alcohol dependence is still not recognized as a health problem and many people suffering from it are stigmatized and have no access to treatment and rehabilitation (UNODC/WHO, 2008). Relevant in this study are four patterns of alcohol dependence identified by Laybourn, *et al*. (1997):

1. Constant, opportunistic drinking (daily, and at any time)

2. Binge drinking (where periods of sobriety are punctuated by bouts of drinking lasting days or weeks and where the gaps become shorter as the drinking worsens)

3. Nightly drinking (daily but limited to evenings only)

4. Routine heavy drinking (where there is a settled routine of drinking only at the weekend or only on weekdays).

The above study defines harmful alcohol use using criteria specified in the American Psychiatric Association's, which include such symptoms as recurrent alcohol use resulting in physical danger, trouble with the law due to alcohol use, increased tolerance to alcohol, and giving up or reducing other important activities in favour of alcohol use.

2.2   Impact of Socio-demographic Factors on Alcohol Dependence

The relationship between socio-demographic factors and alcohol dependence among people living in informal settlements merits attention for several reasons. The difficulties faced by people living in informal settlements particularly in developing countries are often exacerbated by poverty, limited access to education, and unstable social contexts. Such circumstances can constitute pressures toward engaging in problem behaviours (Ndugwa, et al., 2010).

Much of the literature on relationship between socio-demographic factors and alcohol dependence has come from western societies, and theories about alcohol dependence have largely been tested on individuals living in those settings (for example, Cnum, *et al.*, 1993 and Burke, *et al.*, 2006). However, linkage of informal settlements to socio-demographic factors and alcohol dependence has not yet been widely employed to account for variation in alcohol dependence among people in sub-Saharan Africa, more particularly those that live in urban informal settlements (commonly called slum settlements) and are exposed to the extreme poverty and dangers that characterize such settings. In this section, the literature explores the relationship between socio-demographic and alcohol dependence with emphasis on people living in informal settlements.

Gender

Study by Burke, *et al.* (2006) suggests that disruptive behaviour, such as aggressiveness, hyperactivity and mental health problems, are particularly apparent in male with alcohol dependence. While female with alcohol dependence have been found to exhibit more behavioural problems when compared to male with alcohol dependence (Loukas, *et al.*, 2003). In general, however, female tend to display more internalising problems, such as poor self-concept, eating disorders, anxiety and depression. For example, in a study of social competence in children, Hussong, *et al.* (2005) found that girls rather than boys from families with parental alcohol misuse showed deficits in social competence in early childhood. This was particularly evident in those children with paternal rather than maternal alcohol misuse, and those whose parents had recent alcohol misuse as opposed to parents who had recovered from alcohol misuse.

In contrast to these findings, some studies do not produce evidence to support the findings that alcohol dependence is related to gender. For example, Hussong, *et al.* (2005) found that gender differences were minor, and concluded that gender does not play an important role in moderating prevalence of alcohol use and abuse among people living in informal settlements.

Most studies examining outcomes for children of parents who misuse alcohol have focused on paternal alcohol misuse or have not distinguished between paternal or maternal alcohol dependence (Keller, *et al.,* 2005). This may be due to the fact that women are less likely to engage in alcohol misuse. Consequently, in studies where there are more males than females with alcohol dependence, there may be insufficient statistical power to detect the impact of maternal drinking. To date, there is no clear evidence that maternal alcohol dependence has a greater or lesser impact on children than paternal alcohol misuse.

Age

Recent research has focused on the association between the age at which a person first uses alcohol and alcohol problems later in life.[1] Delaying the onset of alcohol use has been proposed as a strategy to prevent alcohol dependence or abuse in adulthood (Grant, *et al.*, 2001). Study by NSDUH (2004) found that almost 74 percent of adults aged 21 or older reported that they had started using alcohol before the age of 21. This group of 74 percent consists of persons aged 21 or older who first used alcohol before the age of 12 (4 percent), persons who first used alcohol between the ages of 12 and 14 (14 percent), persons who first used alcohol between the ages of 15 and 17 (33 percent), and persons who first used alcohol between the ages of 18 and 20 (22 percent). Among adults aged 21 or older, 12 percent reported that they had never used alcohol, and about 14 percent reported that they had first used alcohol after they had reached age 21 (NSDUH, 2004).

Yet another Study by Grant, *et al.* (2001) found that the odds of alcohol dependence decreased by 5% in 1989 and 9.0% in 1994 for each year drinking onset was delayed. In 1994, the odds of alcohol abuse increased by 7.0% with each decreasing year of age at drinking onset, while age at drinking onset was not related to alcohol abuse in 1989.

Socioeconomic status

There is minimal evidence of a direct causal link between socio-economic status and alcohol dependence. Rates of alcohol dependence in one study were found to be significantly higher in families with lower socio-economic status compared with those families from higher socio-economic status (for example, Ellis, *et al.,* 1997). In general, a lower socioeconomic status (SES) is related to a lower health status, more health problems, and a shorter life expectancy among people living in informal settlements. Although causal relations between SES and alcohol dependence are unclear, lifestyle factors play an intermediate role.

However, in families living in informal settlements where parents misuse alcohol, children may not have their basic needs met because severe or continuous problem drinking is generally associated with missed days off work, job loss, alcohol related medical costs, inability to pay bills and costs to purchase alcohol and as a consequence, lower financial security (Tunnard, 2002).

Level of education

The linkage between education and the risk of alcohol dependence require a sharpened focus on the personal and behavioural characteristics of individuals, achievable only by constraining the influence of community-level or macro-social risk factors (Keller, *et al.*, 2005). For example, it is plausible that persons of lower educational achievement and

socioeconomic status are more likely to live in neighbourhoods with more retail outlets for alcoholic beverages (such as bars and late hour liquor stores) and where there might be more relaxed community norms about drinking to excess (Burke, *et al.*, 2006).

Cnum, *et al.* (1993) postulated that individuals who had dropped out of high school were 6.34 times more likely to develop alcohol abuse or dependence than were individuals with a college degree. For those who had entered college but failed to achieve a degree, the estimated relative risk was 3.01. Study by Oers, *et al.* (1998) showed that abstinence decreased significantly by increasing educational level for both sexes. For men, excessive drinking, and notably very excessive drinking, was more prevalent in the lowest educational group. For women, no significant relation between educational level and prevalence of excessive drinking was found. The current study will not measure these community-level risk factors directly, but it will use the approach of post-stratification. This approach will be implemented due to a lack of prior knowledge about education and the risk of alcohol dependence in the study area.

Occupation

Wiley (2010) stipulate that occupation and the work environment, three common paradigms present themselves. First, the work-stress paradigm is the combination of alienation (for example, low-skill jobs, boredom, or unsatisfying work) and work stress (for example, social conflicts or demanding workload). Second, the social control paradigm relates integration and regulation (for example, setting one's own schedule and little or no regulation of work until the completed product) to alcohol use. Third, the culture and availability paradigm relates individual work cultures and degree of availability (physically or through social permission)

to alcohol use (for example, restaurant workers often have easy physical access to alcohol and permissive work cultures) (Frone, 2008).

Study conducted by Wiley (2010) to determine the relationship between occupation and alcohol dependence found that the Arts and Entertainment occupations predicted significantly higher risk of heavy alcohol consumption when entered into a single predictor model but did not predict significantly higher risk when entered into a model with the personality variables. This indicates that Arts and Entertainment occupations and personality do not account for completely unique variance. He concluded that the increased risk in Arts and Entertainment occupations fits with the social control paradigm, which theorizes that jobs with less regulation will have higher levels of alcohol use. Overall, the results suggested that occupation is important predictors of alcohol consumption, and account for unique variance in alcohol consumption.

Marital status

Malyutina, et al. (2004) investigated changes in the distribution of alcohol consumption by education and marital status in Russia during the period of societal transformation after 1990. With respect to marital status, divorced and widowed men tended to drink most, but the pattern was inconsistent, and the difference between divorced and married men also narrowed over time. Among women, alcohol intake increased between the first and last survey. Malyutina, et al. (2004) found that divorced men had high rates of frequent drinking and a high mean dose per drinking occasion, but there were no differences in the proportion of binge drinkers by marital status. Data on women were also inconsistent. Overall, it was found no overwhelming evidence of a high risk of heavy drinking in unmarried persons.

Other studies reveal that marriage is, in general, associated with better health and that unmarried subjects are more likely to be engaged in unhealthy behaviours, such as smoking, heavy drinking and poor diet (Hajdu *et al*., 1995;Robles and Kiecolt-Glaser, 2003). Study by Power *et al*. (1999) found that alcohol consumption is, in general, higher in unmarried subjects but add that the available data are inconsistent. Malyutina, et al. (2004) conclude that levels of drinking were, in general, highest in divorced and, particularly in widowed men. This contrasts with the above mentioned studies in a national sample, in which the prevalence of frequent drinking and binge drinking was similar in divorced and married subjects.

Parental alcohol misuse

A considerable amount of research has examined the impact of parental alcohol misuse on children's development. The research reveals that children can and do suffer from a range of maladaptive outcomes spanning all areas of development, including the cognitive, behavioural, psychological, emotional and social domains (Grekin, *et al*., 2005, Obondo, 1998). Children themselves report feeling socially excluded, frequently being left alone, having a sense of not being loved, and having feelings of low self-worth. They may also take on responsibility for caring for their parent/s.

However, children and families living with parental alcohol dependence are not a heterogeneous group. Families differ according to the composition of risk factors that contribute to outcomes, and studies show that not all children experience adverse outcomes. One exception is the epidemiological research that supports an association between the excessive consumption of alcohol by pregnant women and the risk of fatal alcohol syndrome and its effects (Ellis, *et al.*, 1997).

Literature reveals that several other risk factors are strong and consistent predictors of alcohol dependence among people living in informal settlements, including being male, divorced, separated or never married, younger, and having an early history of antisocial behaviours and marijuana use (Grekin, *et al*., 2005; and Burke, *et al.*, 2006). Most research now supports explanatory models in which the outcomes for children are not only dependent on parental alcohol dependence but on the aggregation of factors such as family demographics, individual characteristics, family interaction, and the psychological functioning of both parents. The current study will examine the association between socio-demographic factors and alcohol dependence among people living in informal settlements in Nairobi.

2.3   Psychosocial Stressors and Alcohol Dependence

An individual social environment has been recognized as one of the most significant influences on a variety of subsequent behavioural outcomes, including substance use (Nation & Heflinger, 2006). Family environments with high levels of adversity, including violence, stress, and parental drug use, ineffective communication and discipline, and poor sibling relationships, have been linked to alcohol dependence (Madu & Matla, 2003). Studies examining the relationship between adversity in childhood and behavioural outcomes later in life, the ACE study investigated the effects of abuse, neglect, and household dysfunction on substance use problems in adolescence and adulthood (Skeer, *et al.*, 2009). Using retrospective reports, findings indicated that exposure to such adverse family environments was significantly associated with alcohol dependence initiation in early adolescence (prior to age 14) and in mid-adolescence (between ages 15 and 17), alcohol abuse in adulthood and illicit drug use problems in adolescence (Dube, *et al.*, 2006). Walter, *et al.* (2005) suggest that at the starting point of alcohol consumption psychological relief due to the stress-reducing effects of alcohol is often assumed. A vicious circle begins, perpetuating psychosocial

distress and reinforcing the anxious or depressive symptoms related to emerging distress syndromes. Associated frequent co-morbidities during the progression are other substance-related disorders, anxiety and affective disorders. Following alcohol dependence severe somatic and psychosocial consequences have to be anticipated (Ibid, 2005). Shelton & Harold (2008) echoes similar sentiments by opining that psychosocial stress, distress and psychological effects can be understood as an important developmental process of prolonged alcoholism. Symptoms of distress may be a first relevant evidence of high and hazardous alcohol consumption. Previous studies indicate that people living in informal settlements use alcohol as a means of coping with economic stress, job stress, and marital problems, often in the absence of social support, and that the more severe and chronic the stressor, the greater the alcohol consumption (Pohorecky, 1991). Study that link stress to alcohol dependence argue that people living in informal settlements are likely to use alcohol in response to stress appears to depend on many factors, including possible genetic determinants of drinking in response to stress, an individual's usual drinking behaviour, one's expectations regarding the effect of alcohol on stress, the intensity and type of stressor, the individual's sense of control over the stressor, the range of one's responses to cope with the perceived stress, and the availability of social support to buffer the effects of stress (Sadava & Pak, 1993) .Other previous studies suggest that a possible mechanism for the relationship between adverse experiences and alcohol dependence is that people living in informal settlements use alcohol as a maladaptive means of coping with stress induced by adverse family and social environments. For example, Rhodes and Jason (1990) demonstrated that poor family environments (that is, poor parental relationships, a high degree of family problems) were significantly associated with a higher level of drug use. The association between adverse social environments and indicators of psychological stress has been substantiated, as in a recent study, Shelton & Harold (2008) found that inter-parental conflict

and insecurity was significantly associated with both internalizing and externalizing problems. Additionally, indicators of psychological stress have been found to predict the development of alcohol dependence (Fergusson, *et al.*, 2008).

A previous study by UNCHS (2001) recognized that a number of previous studies have made important contributions to an understanding of the dynamics of urban informal settlements in Africa. It is evident that definitions of informal settlement within 'formal' cities as used in other country contexts are inappropriate to capture the shades of settlements occurring in many African cities. At the same time, it is clear that residents are regularly exposed to the harsh realities of spatial and environmental marginalisation as well as drug use and abuse that accompany living in informal settlements (Napier, 2000). There are a number of important points of departure for an understanding of the psychosocial stressors and their role in alcohol harmful use among people living in informal settlement. A study by World Economic and Social Survey (2008) points out that given the numbers of people moving to urban areas and the capacity of public and private institutions to supply land for settlement, it is not possible for the majority of the population, and especially low income groups to have tenure security by using centrally registered rights. The absence of an adequate formal response to the growth of informal settlements can be linked to a series of factors including the increase in urban poverty and the impacts of structural adjustment as well as excessive use of alcohol in cheap beer dens (Napier, 2000).

In addition, the broader set of voluntary associations to which people in informal settlements subscribe also assist in the assimilation of negative urban lifestyle like alcohol use and abuse (Tostensden *et al*, 2001). In this context of rapid urbanisation, growing income poverty and human poverty, and a lack of appropriate responses by governments in the country are important psychosocial risk factors for alcohol harmful use among people living in informal

settlement in Nairobi (Mitullah, 2003).According to him consequently, overlaid onto an understanding of informal settlements in Nairobi, are a large amount of emerging information about the social and health impacts on residents of living in such settlements, and the impacts in turn of such settlements on alcohol harmful use.

In its report on Sustainable Development and Healthy Environments it is argued that environmental threats to human health can be divided into "traditional" hazards, associated with lack of development, and "modern" hazards associated with unsustainable development (WHO, 1999). In the dimension of environmental threat is that residents of informal settlements are particularly vulnerable to alcohol use and abuse. Overcrowding and lack of privacy within informal housing can lead to higher levels of drug use and abuse because children are likely to copy parents and family members as well as neighbours who engage in alcohol and substance abuse (Landman & Lieberman, 1999). In addition, the responses by state officials to curb the prevalence of illicit drugs (chang'aa) in informal settlements is limited because of the lack of vehicle access to many parts of settlements, lack of access to telephones, lack of street lighting, and difficulties in locating street addresses. Lack of reporting of crime like drinking illicit brew because of distance to police stations and fear of retribution (both from perpetrators and officials), also means that a large proportion of illicit brew dealers remains hidden. In many ways the occupants of informal settlements are particularly vulnerable to alcohol harmful use and the impacts on the people living in informal settlement can be dire.

In sum, literature has established that psychosocial risk factors may influence harmful alcohol use when alternative resources are lacking, when alcohol is accessible, and when the individual believes that alcohol will help to reduce the stress (Jennison, 1992). Literature reveals that few studies have attempted to link these two pathways to determine if

psychosocial stressors lead to alcohol dependence through living in informal settlements. Further, there is no literature relating psychosocial stressors and informal settlements to alcohol dependence. In addition, there are no studies that have attempted to quantify the extent to which the relationship between alcohol dependence and informal settlements is attributable to psychosocial stressors. The current study will determine how psychosocial risk factors contribute to harmful alcohol use among people living in informal settlements in Nairobi.

2.4   Conceptual Framework

Figure 1 shows an illustration of the relationship between independent and dependent variables.
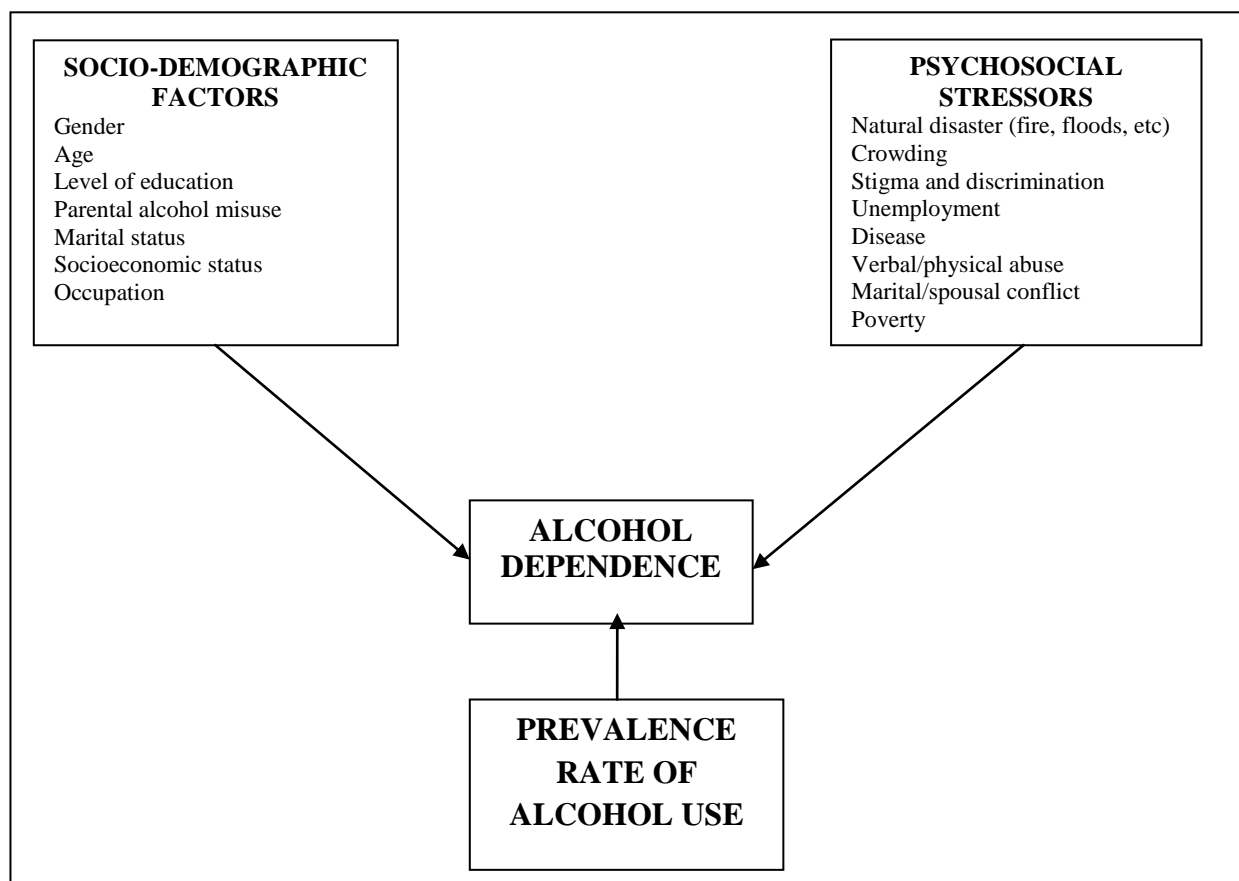
Figure 1: Conceptual framework
Source: Nabule [(author) 2014]

CHAPTER THREE: RESEARCH DESIGN AND METHODS

3.1   Research Design

The study used a descriptive survey design to determine the psychosocial risk factors of harmful alcohol use among people living in informal settlement in Nairobi. Descriptive survey employed survey technique to collect data about harmful alcohol use in informal settlement. These data was used to recommend specific strategies for mitigating harmful alcohol use among people living in informal settlement. It involved gathering data that described behaviours of people living in informal settlement in relation to harmful alcohol use, and then organize, tabulate, depict, and describes the data collected.

3.2   Study Location

The study was conducted in Babadogo slum Kasarani Constituency, Nairobi. Babadogo slum is characterized by poor or lack of basic infrastructure such as roads, sanitation, and clean and affordable water. There are also notable low education levels, greater mobility and a higher sense of insecurity compared to non-slum areas within Nairobi. Babadogo slum is located 12 kilometres from the Nairobi city centre (APHRC, 2012). The slum was developed in 1978 on land originally owned by an individual called Baba Dogo and on what was left by the City Council as a reserve land on the banks of the Nairobi and Gitathuru rivers. The slum is the administrative location of Kasarani Division in Nairobi province. Houses are built in rows with an average of six dwelling units (rooms) per structure. Babadogo is one of the most congested slum areas of Nairobi with over 250 dwelling units per hectare. The Nairobi Refuse Dump site is situated to the east and south east of the slum settlement (APHRC, 2012). Kasarani Constituency is an electoral constituency in Kenya. It is one of eight constituencies of Nairobi Province. Kasarani constituency has common boundaries

with Kasarani Division of Nairobi. The entire constituency is located within Nairobi City Council area. The constituency has an area of 86 km².
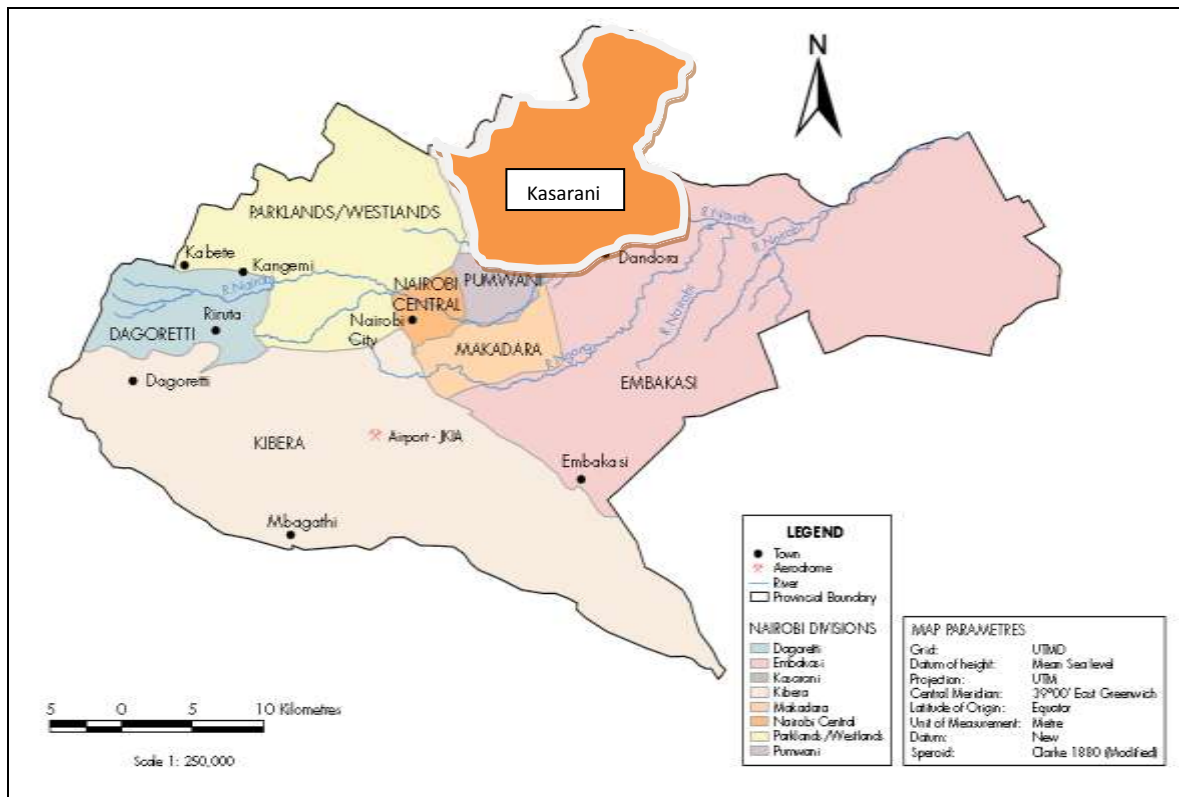
Figure 2: Map of Nairobi with Kasarani constituency highlighted in orange

3.3   Target Population

The study targeted households with individuals consuming alcohol (both male and female) who had lived in Babadogo slum for the past twelve months. These participants were important source of information because they provided quantitative as well as qualitative data. Individuals using alcohol were knowledgeable on the issue of psychosocial stressors and harmful alcohol use among people living in informal settlements.

3.4   Sample Size Determination

The sample size was determined by adopting the standard formula, that is, $N = Z^2pq/d^2$ as used by Cochran.

n   =   the minimum sample size (if the target population is greater than 10,000)

Z   =   the standard normal deviate at the required confidence level 1.96 which corresponds to 95% confidence interval

p   =   the proportion of the target population estimated to have characteristics being measured. In this study, the proportion in the target population was 32% (NACADA, 2011).

q   =   the proportion of the remaining population calculated by subtracting p from 1 (1-p)

d   =   the level of statistical significance or degree of freedom which is 0.05

Using a confidence of 95% that corresponds to the normal standard deviate of 1.96 and the minimum error set at 0.05, the calculated required sample size was therefore as shown below:

Sample size desired = 1.96^2x 0.32x 0.68/ 0.05^2

n= 334.37 = 334

The study therefore, used a sample size of 334. The figure included households with individuals consuming alcohol (both male and female) in Babadogo slum.

3.5   Sampling Procedure

Babadogo slum in Nairobi County was purposively sampled because of its high proportion of individuals engaging in alcohol consumption in this area (Ndugwa, *et al.*, 2010) and it is located in a wide area of informal settlement. Systematic random sampling was used to select households with individuals consuming alcohol (both male and female). Systematic random sampling ensured that each household with individual consuming alcohol in Babadogo slum had an equal (and non-zero) chance of selection (Gilbert, 2005). A sampling fraction was worked out; every third household was selected on a random start between 1 and the

sampling interval, 3. After using the inclusion and exclusion criteria, researcher was able to select the appropriate household to participate in the study. Researcher skipped the third household and move to the next household if it happened that the household did not meet the inclusion criteria. Household that had more than one individual consuming alcohol, a random sample was done to select one participant from the same household.

3.6   Data Collection Procedure and Methods

3.6.1   Procedure

The researcher first conducted a feasibility of the study to examine how households were located in Babadogo Slum. The researcher identified Babadogo Police Station as the central starting point; from the police station the researcher moved North then East, South and East, South and West
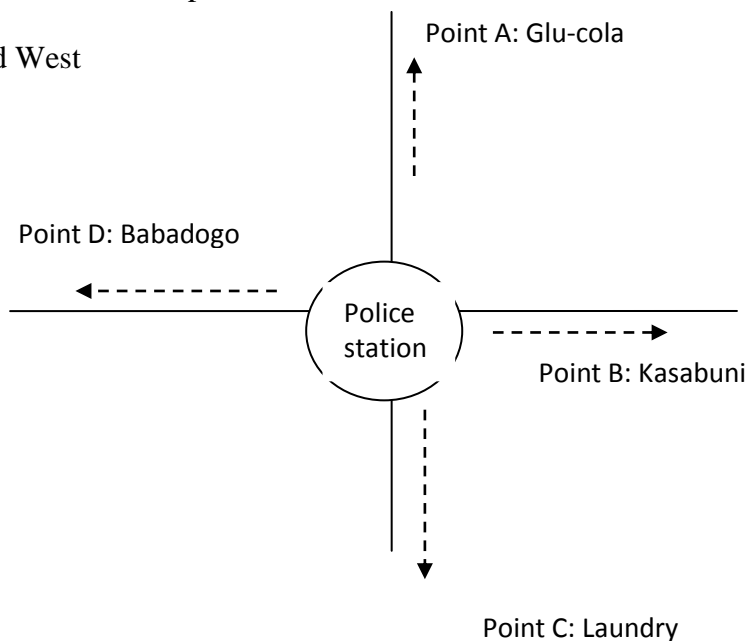
Figure 3: Data collection procedure at Babadogo slum

It also provided a mechanism for the researcher and the participants in target location to collaborate more productively.The structured questionnaire was pre tested before the survey to ensure the clarity of the questions. The pre-test was done in the same location to check for wording, content, and to refine the questions.

3.6.2   Structured Questionnaire

The study first used the Alcohol Use Disorders Identification Test (AUDIT) to screen for excessive drinking among people consuming alcohol in Babadogo slum. The AUDIT questions were administered by the researcher. Respondents with AUDIT scores below 8 were the cut off score after screening. Respondents scoring 8 and above were considered to be engaging in excessive drinking.

Table 3. 1: AUDIT cut-off points

AUDIT Total score	Risk level
0 – 7	**Low-risk**
8 – 15	**Risky** or **hazardous level.** Moderate risk of harm. May include some clients currently experiencing harm (especially those who have minimised their reported intake and problems).
16 – 19	**High-risk** or **harmful level.** Drinking that will eventually result in harm, if not already doing so. May be dependent.
20 or more	**High-risk** Definite harm, also likely to be alcohol dependent. Assess for dependence. **Almost certainly dependent.**

Structured questionnaire was also used to collect primary data for the study. The questionnaire had mostly close-ended questions that were convenient, easy and took less time to answer. Options were available to the respondents from which they ticked options that best describe the study objectives. These were used by the researcher to collect quantitative data on: the impact of socio-demographic factors on alcohol dependence; how psychosocial stressors in informal settlements; and challenges facing health professionals and other policymakers in addressing psychosocial risk factors of alcohol dependence among people living in informal settlements.

3.7   Data Analysis and Presentation

Data from structured questionnaires was quantitatively analyzed by SPSS for Windows version 20. The closed and open questions were variably coded then the raw data entered and eventually analyzed and presented in frequency and percentage outcomes or tables. Differences in variables by group were evaluated using t-tests and analysis of variance (ANOVA) for continuous variables. Chi-square analyses were used to examine bivariate associations between categorical variables. .

3.8   Variables

This study had both dependent and independent variables. The dependent variable was assumed to be affected by the independent variable. Therefore, the dependent variables for this study was harmful alcohol use, independent variables on the other hand were the psychosocial risk factors in informal settlement. Factors like crowding, unemployment,stigma and discrimination, and crime were expected to have an impact on alcohol harmful use among people living in informal settlement.

3.9   Inclusion and Exclusion Criteria

An inclusion and exclusion criteria was used to identify households with respondents to participate in the study.

Inclusion criteria included:

- All households with family members that have lived in Babadogo slum for the past twelve months;
- All households with adults over the age of 18 years,
- At least one member of the family having a drink containing alcohol and,
- All households willing to participate in the study.

The exclusion criteria included:

- All households with family members that have lived in Babadogo slum for less than twelve months,

- All households without a family member over 18 years and

- All households unwilling to participate in the study.

3.10   Ethical Considerations

To adhere to ethical codes, permission and authority to conduct the study was sought from the Ethics and Research Committee of KNH, Department of Psychiatry, University of Nairobi, and the Ministry of Education.

An informed consent was presented to the respondents whereby they were asked to consent to their participation after being explained to about the purpose of the study.

3.11   Research Methodology Flow Chart

```
┌─────────────────────────────────────────────────────────────┐
│ Study on psychosocial risk factors of harmful alcohol use    │
│ among people living in informal settlement in Nairobi.       │
└─────────────────────────────────────────────────────────────┘
                           │
                           ▼
        ┌──────────────────────────────────┐
        │       Objective of the Study      │
        └──────────────────────────────────┘
                           │
                           ▼
┌─────────────────────────────────────────────────────────────┐
│ Determine the prevalence rate of harmful alcohol use among   │
│ individuals consuming alcohol in informal settlement in      │
│ Nairobi.                                                     │
└─────────────────────────────────────────────────────────────┘
                           │
                           ▼
┌─────────────────────────────────────────────────────────────┐
│ Determine the association between socio-demographic factors  │
│ and harmful alcohol use among individuals consuming alcohol  │
│ in informal settlement in Nairobi.                           │
└─────────────────────────────────────────────────────────────┘
                           │
                           ▼
┌─────────────────────────────────────────────────────────────┐
│ Identify the effect of psychosocial stressors on harmful     │
│ alcohol use among individuals consuming alcohol in informal  │
│ settlement in Nairobi.                                       │
└─────────────────────────────────────────────────────────────┘
                           │
                           ▼
              ┌────────────────────────┐
       ┌──────│    Collection of Data   │──────┐
       │      └────────────────────────┘       │
       ▼                                        ▼
┌──────────────────┐                  ┌────────────────────┐
│ Inclusion &      │                  │ Literature review  │
│ Exclusion        │                  │ on: Published books,│
│ criteria         │                  │ reports, journals &│
└──────────────────┘                  │ internet source    │
       │                              └────────────────────┘
       ▼                                        │
┌──────────────────┐                            │
│ Consent Form     │                            │
│ (YES, inclusion) │                            │
└──────────────────┘                            │
       │                                        │
       ▼                                        │
┌──────────────────┐                            │
│ Administer       │                            │
│ Questionnaire/   │                            │
└──────────────────┘                            │
       │                                        │
       ▼                                        ▼
          ┌────────────────────────┐
          │      Analyzing Data      │
          └────────────────────────┘
                      │
                      ▼
          ┌────────────────────────┐
          │       Discussion         │
          └────────────────────────┘
                      │
                      ▼
          ┌────────────────────────┐
          │       Conclusion         │
          └────────────────────────┘
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Figure 4: Research Methodology Flow Chart

Source: Nabule [(author) 2014]

CHAPTER FOUR: FINDINGS

4.1   Introduction

This chapter presents the results of the findings of the research study. Presentation of data analysis and the discussion of the findings of the study were based on the themes developed from the objectives of the study.

4.2   Response Rate

The sample size of the target population was 334 households. A number of households, 85, who were initially targeted in the study location, could not be reached. This was largely due to security issue and time constraint. Babadogo slum is an area where incidence of insecurity is high. It was therefore, not advisable to work in the late hours. Some experts and researchers stipulate that it is acceptable to get a response rates of 70% and above (Baruch, 1999; Haycock, 1992; and Henig, et al., 1995). The response rate for this study was therefore higher than the average rate of academic surveys recommended by experts.

4.3   Socio-Demographic Data

Most of the respondents (82.7%) were male with the remaining respondents (17.3%) being female. Data reveals that 46.09% respondents were married followed by 28.4% respondents who were single with the remaining 16.87% respondents and 8.64% respondents who were separated and widowed, respectively. Most of the respondents (54.2%) level of education was High School followed by respondents (34.9%) with no formal education. The results are shown in Table 4.1:

Table 4. 1: Socio-Demographic data

	Frequency	Percent		Frequency	Percent
Name of village/settlement			**Highest level of education**		
Laundry	80	32.1%	No formal education	87	34.9%
Glu-Cola	55	22.1%	High school	135	54.2%
Kasabuni	78	31.3%	College/University	21	8.4%
Other	36	14.5%	NR	6	2.4%
No. of yrs residing in the area			**Monthly household income (KShs)**		
Less than 2 yrs	10	4.0%	Less than 5,000	66	26.5%
2 yrs and above	239	96.0%	5,000 - 10,000	45	18.1%
Age			10,001 - 20,000	70	28.1%
18 yrs - 25 yrs	19	7.6%	20,001 - 30,000	31	12.4%
26 yrs - 33 yrs	91	36.5%	30,001 and above	13	5.2%
34 yrs - 41 yrs	83	33.3%	NR	24	9.6%
42 yrs and above	50	20.1%	**Onset age of drinking alcohol**		
NR	6	2.4%	Less than 13 yrs	47	18.9%
Gender			13 yrs – 18 yrs	99	39.8%
Male	206	82.7%	19 yrs and above	103	41.4%
Female	43	17.3%	**Parent alcohol use**		
Marital status			Yes	173	69.5%
Married	112	45.0%	No	76	30.5%
Single	69	27.7%	**Frequency of parent alcohol use**		
Widowed	21	8.4%	More than monthly	4	1.6%
Separated	41	16.5%	Monthly	11	4.4%
NR	6	2.4%	Weekly	48	19.3%
			Daily or almost daily	97	39.0%

4.4   Prevalence Rate of Alcohol Harmful Use

Data suggest that most of the respondents, 66.3% are at high-risk or almost certainly dependent on risk level of alcohol dependence followed by 14.9% respondents at risky or hazardous level then 12% respondents at high-risk or harmful level. A sample population of 6.8% respondents is at low-risk of alcohol dependence. The results are shown in Table 4.2:

Table 4. 2: Respondent's risk level of alcohol dependence

Risk level	AUDIT Total score	Frequency	Percent
Low-risk	0-7	17	6.8
Risky or Hazardous level	8-15	37	14.9
High-risk or harmful level	16 – 19	30	12.0
High-risk/almost certainly dependent	20 or more	165	66.3
Total		**249**	**100.0**

4.5 Association between Socio-Demographic Factors and Harmful Alcohol Use

Results of the current study using univariate analysis of variance found out that several socio-demographic factors were significantly correlated to risk level of alcohol dependence. These socio-demographic factors are: gender (p = 0.079), marital status (p = 0.009), level of education (p = 0.000), monthly household income (p = 0.000), onset age of drinking alcohol (p = 0.004), and frequency of parent alcohol use (p = 0.000). The results are shown in Table 4.3.

Table 4. 3: Socio-demographic factors association on risk level of alcohol dependence

Dependent Variable: Risk level of alcohol dependence					
Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	67.916[a]	22	3.087	7.109	.000
Intercept	75.968	1	75.968	174.947	.000
Settlement	2.380	3	.793	1.827	.147
Year of residing	1.012	1	1.012	2.332	.130
Age	1.796	3	.599	1.379	.254
Gender	1.365	1	1.365	3.143	.079
Marital status	5.345	3	1.782	4.103	.009
Level of education	12.451	2	6.225	14.336	.000
Monthly income	15.285	4	3.821	8.800	.000
Onset age of drinking	5.104	2	2.552	5.877	.004
Frq of parent drinking	13.978	3	4.659	10.730	.000
Error	43.858	101	.434		
Total	1494.000	124			
Corrected Total	111.774	123			

a. R Squared = .608 (Adjusted R Squared = .522)

Table 4.3 shows that the R^2 value (0.608) means that 60.8% of all variance to risk level of alcohol dependence can be accounted for by the linear regression model, and the remaining 39.2% of the variance may be caused by other factors, measurement errors, or a nonlinear relationship between risk level of alcohol dependence and socio-demographic factors.

4.6 The Effect of Psychosocial Stressors on Harmful Alcohol Use

The respondents mention only one psychosocial stressor in Babadogo slum that they perceived to be most important. Table 4.4 shows that most of the respondents perceive unemployment (17.9%) as the most common psychosocial stressor followed closely by crime (16.4%), poverty (15.7%) and marital spousal conflict (13.4%). Other most common psychosocial stressors include: natural disaster (9%), crowding (6%), stigma and discrimination (4.5), disease (6%), and verbal/ physical abuse (9%).

Table 4. 4: Most common psychosocial stressors in Babadogo slum

Psychosocial stressors	Frequency	Percent
Natural disaster	3	1.2
Crowding	24	9.6
Stigma and discrimination	16	6.4
Crime	12	4.8
Unemployment	44	17.7
Disease	48	19.3
Verbal/physical abuse	16	6.4
Marital/spousal conflict	24	9.6
Poverty	36	14.5
Other	26	10.4
Total	**249**	**100.0**

Respondents were further asked whether the psychosocial stressors in Babadogo slum contributed to the use of alcohol. Table 4.5 shows that most of the respondents (58.2%) feel

that psychosocial stressors contribute to the use of alcohol with a significant number of respondents (30.9%) saying psychosocial stressors does not contribute to the use of alcohol

Table 4. 5: Psychosocial stressors contributed to the use of alcohol

	Frequency	Percent
Yes	145	58.2
No	77	30.9
No Response	27	10.8
Total	249	100.0

Figure 4.1 shows that Marital/Spousal conflict has the highest mean score of risk level of alcohol dependence followed by poverty, disease, unemployment, and verbal/physical abuse. The results are shown in Figure 5.
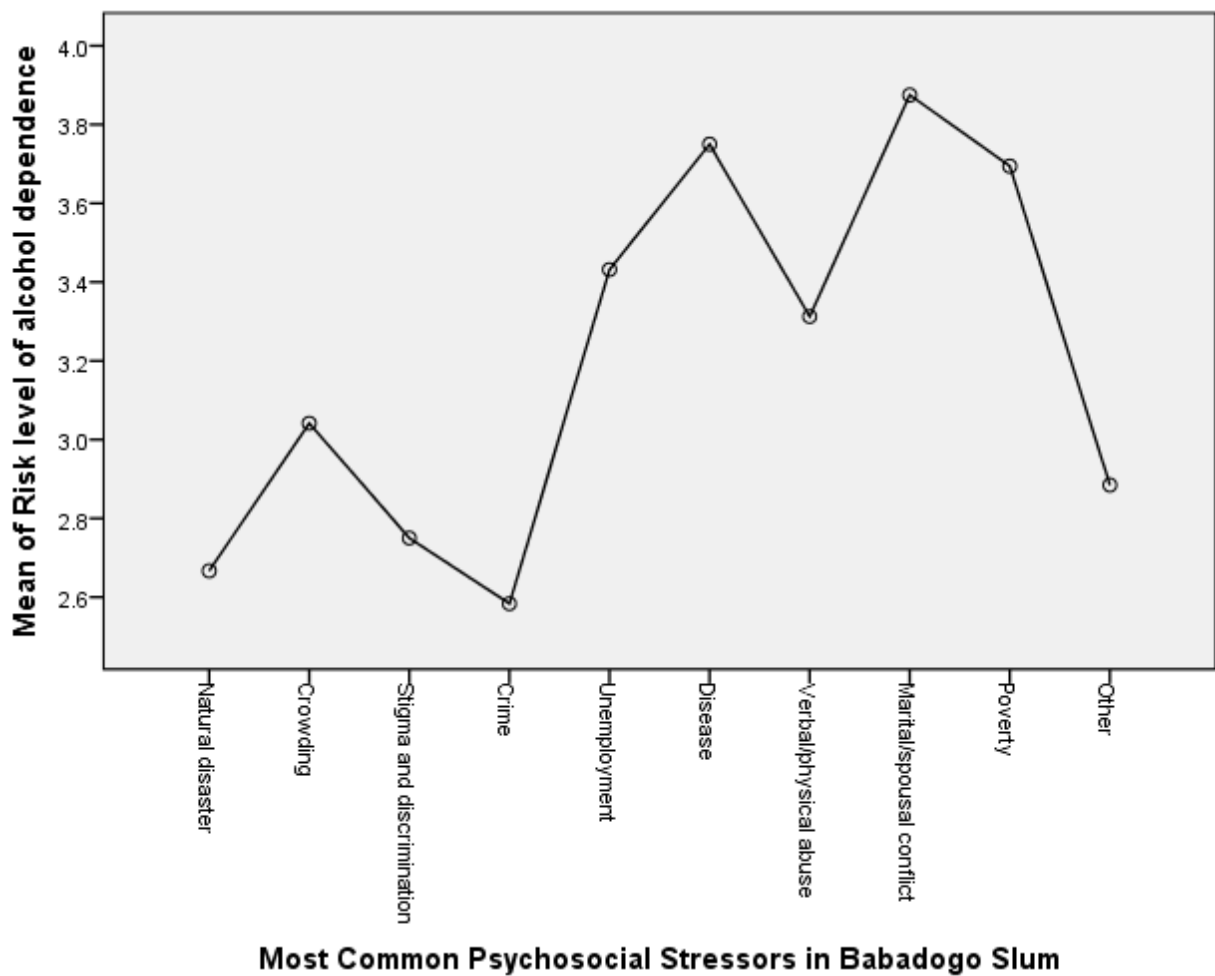

Figure 5: Means plot for psychosocial stressors and risk level of alcohol dependence

Results of the study using univariate analysis of variance found out that the most common psychosocial stressors in Babadogo slum were highly significantly correlated to risk level of alcohol dependence (p = 0.000). The R^2 value (0.174) means that 17.4% of all variance to risk level of alcohol dependence can be accounted for by the linear regression model, and the remaining 82.6% of the variance may be caused by other factors, or a nonlinear relationship between risk level of alcohol dependence and most common psychosocial stressors. The results are shown in Table 4.6.

Table 4. 6: Test of psychosocial stressors effect on risk level of alcohol dependence

Dependent Variable: Risk level of alcohol dependence

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	40.822[a]	9	4.536	5.597	.000
Intercept	1392.710	1	1392.710	1718.486	.000
Psychosocial Stressors	40.822	9	4.536	5.597	.000
Error	193.692	239	.810		
Total	3075.000	249			
Corrected Total	234.514	248			
a. R Squared = .174 (Adjusted R Squared = .143)					

CHAPTER FIVE: DISCUSSION

5.1   Discussion

The current study established that Babadogo slum is characterized by congestion, high levels of unemployment, inadequate social services, extreme poverty, insecurity, crime, and hopelessness. These are characteristic supported by other studies (for example, Kimani-Murage & Ngindu, 2007) conducted in the informal settlements of Nairobi. The aim of the study was to determine the prevalence, associated socio-demographic and psychosocial stressors that may be associated harmful alcohol use among people living in informal settlement in Nairobi.

5.1.1   Prevalence Rate of Harmful Alcohol Use in Informal Settlement

This study established that most of the respondents were at high-risk of alcohol dependence. Majority of people consuming alcohol being at high-risk of alcohol dependence is due to easy access to illicit brew in Babadogo slum and susceptibility to psychosocial stressors. In addition, no special facilities exist for treatment and rehabilitation of alcohol dependence and the area has few demand reduction programmes.

Other studies support this notion that majority of people living in informal settlements are susceptible to psychosocial stressors and are at high-risk of alcohol dependence. For example, NACADA (2011) found out that there is high level of alcohol addiction in the informal settlements.

Contrary to the results of the current study, Babor *et al.* (2001) stipulates that in community surveys, most patients will score under the cut-offs and may be considered to have low risk of alcohol related problems. Alcohol is the most commonly used substance worldwide. It is

legal in most countries and society, the media sometimes portrays drinking as acceptable and fashionable, and adolescents whose family members drink excessively may think this behavior is acceptable and after trying alcohol, they may go on to develop harmful alcohol use disorders such as abuse or dependence. This is similar to other studies done locally and internationally. A study done by Kuria M. W 1996 on drug use among urban and rural secondary schools students in Kenya East Africa Medial journal 1996 vol73, 5, 339 and that of Mathai AM 1989 among the university students found alcohol to be the most frequently abused substance.

Carlos M et al America journal of psychiatry, 1997, 154, 1305-1307 in their study of psychiatry co-morbidity in psychiatric hospitalized young adults with substance use disorder found that alcohol use were the most prevalent (70%) with alcohol dependence specifically established in 63.3%

5.1.2 Association between Socio-Demographic Factors and Harmful Alcohol Use

The current study indicates that males are more likely to drink alcohol, consume higher amounts of alcohol and are more likely to be at high-risk of alcohol dependence in comparison with females. Using univariate analysis of variance it was established that there was a slight significant association between harmful alcohol use and gender of respondent, $p = 0.079$ ($p < 0.05$). These findings are consistent across different countries and cultures (McKee, *et al*., 2000; and Sieri, *et al*., 2002). On the other hand, study by Cook *et al.* (2011) found no interactions between gender and the other socio-demographic variables considered in their analysis, indicating that the effects of other variables on drinking do not differ strongly by gender.

The current study also posits that marital status, p = 0.009 (< 0.05) was significantly correlated to harmful alcohol use. Other studies (Burke *et al.*, 2006; and Caswell *et al.*, 2003) found similar results to the current study, for example, with respect to marital status, divorced and widowed men tended to drink most. In contrast, study by Cook *et al.* (2011) found that marital status showed no evidence of an association with either AUDIT dimension. Individuals who are not married may engage in harmful alcohol use because they do not have a lot of responsibilities on their hand particularly, family commitments.

Several studies have demonstrated the extent of the level of education and high-risk of alcohol dependence (Burke, *et al.*, 2006; and Keller, *et al.*, 2005). The current study confirms that level of education and high-risk of alcohol dependence in Babadogo slum had a significant association (p = 0.000). Most of the respondents living in Babadogo slum were persons of lower educational achievement.

The current study, like another study (Cook, *et al.*, 2011) identified a higher risk of excessive drinking amongst persons with lower monthly household income. Other studies have shown an inconsistent relationship between alcohol intake and parental social position (Wiley, 2010), and still others have found no or even inverse SES gradients in adolescent alcohol consumption (Halme, *et al.,* 2008).

The current study found that there was a significant association between onset age of drinking alcohol and harmful alcohol use, p = 0.004 (p < 0.05). Respondents who started consuming alcohol at an earlier age were at high-risk of alcohol dependence. The current study also established that frequency of parent alcohol use had a high significant association to harmful alcohol use (p = 0.000). Parents who drink alcohol daily or almost daily were at high-risk of alcohol dependence compared to parents who drink it weekly or monthly. These results are

inconsistent with other studies, for example, Rintaugu et al (2012) found out that selected demographic factors of age, gender and parental SES does not significantly mitigate the reasons for consumption of alcohol.

5.1.3   The Effect of Psychosocial Stressors on Harmful Alcohol Use

The current study revealed that substantial poverty and insecurity cases have been attributed to psychosocial stressors. For instance, majority of the respondents in Babadogo slum experience psychosocial stressors like unemployment, crime, poverty and marital spousal conflict. The current study established that individuals who always experience psychosocial stressors are more likely to be to be at high-risk of alcohol dependence. Other studies (for example, Azagba & Sharaf, 2011; and Ng & Jeffery, 2003) support this finding by stipulating that psychosocial stressors can induce several unhealthy behaviours such as smoking and excessive alcohol use.

The current study found out that majority of the respondents felt that psychosocial stressors contribute to the use of alcohol. Studies (for example, Koob & Le Moal, 1997; and Ayyagari & Sindela, 2010) support this finding by stipulating that informal settlement is susceptible to psychosocial stressors. The current study found out that in terms of correlation between harmful alcohol use and psychosocial stressors, most common psychosocial stressors (natural disaster, crowding, stigma and discrimination, crime, unemployment, disease, verbal/physical abuse, marital/spousal conflict, and poverty) , p = 0.000 (p < 0.01) were highly significantly correlated to harmful alcohol use.

There is a strong significant association between harmful alcohol use and most common psychosocial stressors experienced by person consuming alcohol at Babadogo slum. Other clinical and naturalistic studies have assessed the influence of psychosocial stressors on

drinking behaviour and the development of alcoholism, and found that drinking problems is closely related to stressful experiences (for example, Seeman & Seeman,1992). Our finding that marital/Spousal conflict and poverty had the highest mean score of risk level of alcohol dependence, is also supported by findings that severe stress (defined as life adversity posing either a high personal threat or chronic coping demands) which occurred prior to and independent of alcohol use was related to high-risk alcohol dependence (NACADA, 201I; and Kuria, *et al.*, 2012).

5.2   Conclusion

The aim of the current study was to determine the psychosocial risk factors on harmful alcohol use among people living in informal settlement in Nairobi. The results show that most of the respondents were at high-risk of alcohol dependence amongst people consuming alcohol in Babadogo slums. Several socio-demographic factors were significantly correlated to risk level of alcohol dependence. The results also revealed that there was a strong significant association between the most common psychosocial stressors determined and harmful alcohol use among people consuming alcohol in Babadogo slum. Harmful alcohol use has serious psychological and social effects amongst people living in informal settlement making its prevention and control a public health priority.

5.3 Recommendations

While understanding the psychosocial risk factors of harmful alcohol use among people living in informal settlement in Nairobi, several recommendations have been proposed. There is no alcohol treatment program on site in Babadogo slum. The specific treatment approaches targeting psychosocial stressors might play a central role in the prevention and treatment of harmful alcohol use.

1. Treatment approaches should contain important stress management components as cognitive restructuring, coping skills, and problem-solving skills.

2. Treatment programs should recognize the importance of social support systems in managing psychosocial stressors and therefore encourage individuals misusing alcohol to attend such self-help groups as Alcoholics Anonymous and/or to recruit support from friends and family

3. Investment in research to identify low cost interventions is crucial to avoid the far higher long term cost of continued neglect of the urban poor in the developing world.

4. Effective interventions are needed to reduce harmful alcohol use in these communities specifically community based interventions comprising primary prevention ,detection and treatment

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Appendices

Appendix I: Project Timeline

	Core Activities	Month 1 (March)	Month 2 (April)	Month 3 (May)	Month 4 (June)	Month 5 (July)
1.	Consolidation of literature	××××××				
2.	Proposal writing	××××××				
3.	Designing and developing research instruments		××××××			
4.	Research induction and training		××××××			
5.	Pre-testing		××××××			
6.	Finalizing of research instruments		××××××			
7.	Main field data collection			××××××	××××××	
8.	Data processing and analysis					××××××
9.	Report writing					××××××

Appendix II: Budget

NO	ITEMS	QUANTITY	COST IN UNIT (KSH)	TOTAL (KSH)
	Stationary & Equipment			
1	Printing papers	5 reams	400	2,000
2	Ball points	1 packet	9	450
3	Pencils	8	20	160
4	Erasers	8	5	40
5	Flash disk	1	2000	2000
6	Note books	8	50	400
7	Pocket files	8	30	240
8	Stapler	1	400	400
9	Staples	1 packet	200	200
	Research Proposal Development			
10	Printing of draft proposal	5 copies	500/copy	2,500
11	Printing final proposal	5 copies	500/copy	2,500
12	Binding Research proposal	5 copies	150/copy	750
	Thesis Development			
13	Printing of draft thesis	10 copies	800/copy	8,000
14	Binding thesis (hard cover)	7 copies	400/ copy	2,800
15	Photocopying - interview schedule + consent form			10,000
	Fieldwork			
16	3 Research assistants	14 days	1,000/day	25,200
	Communication			
17	Consultancy (statistician)	-	-	10,000
18	Dissemination costs	-	-	25,000
19	Contingency (10%)	-	-	9,264
GRAND TOTAL				101,904

Appendix III: Informed Consent Form

Informed Consent Form for People Living in Babadogo Slum

This informed consent form is for people living in the Babadogo slum and who we are inviting to participate in the research, titled "Psychosocial Risk Factors of Alcohol Harmful Use among People Living in Informal Settlements in Nairobi".

Name of Principle Researcher: David Nabule Ndakalu

Name of Organization: University of Nairobi

Name of Project: Psychosocial Risk Factors of Alcohol Harmful Use among People Living in Informal Settlements in Nairobi.

This Informed Consent Form has two parts:

- Information Sheet (to share information about the study with you)
- Certificate of Consent (for signatures if you choose to participate)

You will be given a copy of the full Informed Consent Form

Part I: Information Sheet (Informed Consent Expectations)

Introduction

I am David Nabule Ndakalu from the University of Nairobi, Department of Psychiatry. I am doing research on alcohol harmful use which is very common in Nairobi County and in this region of Babadogo Slum. I am going to give you information and invite you to be part of this research. You do not have to decide today whether or not you will participate in the research. Before you decide, you can talk to anyone you feel comfortable with about the research.

This consent form may contain words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you have questions later, you can ask them of me)

Purpose of the research

The availability of alcohol and the fact that it is legal contribute to its widespread abuse among people living in Babadogo Slum. I want to find ways to stop this from happening. We believe that you can help us by telling us what you know both about Factors contributing to alcohol use and abuse in general. I want to learn what people who live or work here know about the factors contributing to alcohol use.

Type of Research Intervention

This research will involve your participation in responding to questions that will take about 15 minutes.

Participant Selection

You are being invited to take part in this research because we feel that your experience as residence of Babadogo Slum can contribute much to our understanding and knowledge of factors contributing to alcohol dependence among people living in informal settlements.

Voluntary Participation

Your participation in this research is entirely voluntary. It is your choice whether to participate or not.

Benefits

There will be no direct benefit to you, but your participation is likely to help us find out more about how to prevent and treat alcohol use and abuse in your community.

Confidentiality

The research being done in Babadogo Slum may draw attention and if you participate you may be asked questions by other people in the area. I will not be sharing information about you to anyone outside. The information that I collect from this research project will be kept private. Any information about you will have a number on it instead of your name. Only the researchers will know what your number is and I will lock that information up with a lock and key. It will not be shared with or given to anyone except the University of Nairobi, Department of Psychiatry.

Part II: Certificate of Consent

I have been invited to participate in research about psychosocial risk factors of alcohol dependence among people living in informal settlements.

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have asked has been answered to my satisfaction. I consent voluntarily to be a participant in this study

Print Name of Participant_____

Signature of Participant _____

Date _____

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Participants who are illiterate should include their thumb print as well)

Print name of witness_____   Thumb print of participant

Signature of witness   _____

Date _____

Statement by the researcher/person taking consent

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

 A copy of this ICF has been provided to the participant.

Print Name of Researcher/person taking the consent_____

Signature of Researcher /person taking the consent_____

Date _____

Appendix IV: The Alcohol Use Disorders Identification Test

"I am going to ask you some questions about your use of alcoholic beverages during this past year." Explain what is meant by "alcoholic beverages" by using local examples of beer, wine, vodka, etc. Code answers in terms of "standard drinks". Place the correct answer number in the box at the right.

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

   0   Never   ( )

   1   Monthly or less   ( )

   2   2 to 4 times a month   ( )

   3   2 to 3 times a week   ( )

   4   4 or more times a week   ( )   [ ]

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

   0   1 or 2   ( )

   1   3 or 4   ( )

   2   5 or 6   ( )

   3   7, 8 or 9   ( )

   4   10 or more   ( )   [ ]

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

   0   Never   ( )

   1   Less that monthly   ( )

   2   Monthly   ( )

   3   Weekly   ( )

   4   Daily or almost daily   ( )   [ ]

Skip to Questions 9 and 10 if Total Score for Questions 2 and 3 = 0

4. How often during the last year have you found that you were not able to stop drinking once you had started?

   0   Never   ( )

1	Less that monthly	( )	
2	Monthly	( )	
3	Weekly	( )	
4	Daily or almost daily	( )	☐

5. How often during the last year have you failed to do what was normally expected from you because of drinking?

0	Never	( )	
1	Less that monthly	( )	
2	Monthly	( )	
3	Weekly	( )	
4	Daily or almost daily	( )	☐

6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?

0	Never	( )	
1	Less that monthly	( )	
2	Monthly	( )	
3	Weekly	( )	
4	Daily or almost daily	( )	☐

7. How often during the last year have you had a feeling of guilt or remorse after drinking?

0	Never	( )	
1	Less that monthly	( )	
2	Monthly	( )	
3	Weekly	( )	
4	Daily or almost daily	( )	☐

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

0	Never	( )
1	Less that monthly	( )

2	Monthly	( )	
3	Weekly	( )	
4	Daily or almost daily	( )	☐

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

0	No	( )	
2	Yes, but not in the last year	( )	
4	Yes, during the last year	( )	☐

10. Has a relative or friend or a doctor or another health worker been concerned about your drinking or suggested you cut down?

0	No	( )	
2	Yes, but not in the last year	( )	
4	Yes, during the last year	( )	☐

Record total of specific items here ☐

Appendix V: Structured Questionnaire for People Living in Babadogo Slum

Introduction

This questionnaire is aimed at collecting information on *"psychosocial risk factors of alcohol harmful use among people living in informal settlements in Nairobi."* The information you give will be of benefit to the researcher in accomplishing academic goal. You are kindly requested to answer the questions according to the instructions given. Do not write your name anywhere in the questionnaire. Note that there is no right or wrong answer.

Socio-demographic Factors

Respond to each item by ticking (√) on the appropriate response or write answers where appropriate

1. Name of village/settlement: _____

2. How many years have you been a residing in Babadogo slum? _____

3. Age: _____

4. Gender:

   Male ( )

   Female ( )

5. Marital status:

   Married ( )

   Single ( )

   Widowed ( )

   Other (Specify) _____

6. Highest level of education: _____

7. How much is your monthly household income (in KShs)? _____

8. At what age did you start drinking alcohol? _____

9. Did one or both of your parent/guardian drink or use to drink alcohol?

   Yes ( )

   No ( )

   Not sure ( )

10. If YES to question 8, how often did your parent/guardian drink alcohol?

More than monthly   ( )

Monthly   ( )

Weekly   ( )

Daily or almost daily   ( )

Psychosocial Stressors and Alcohol Dependence

11. Have you experienced any adverse events in the past twelve months?

Never   ( )

Occasionally   ( )

Always   ( )

12. Taking into account your own experiences or impressions of Babadogo Slum, what are the challenges that you have experienced in the past year?

_____
_____
_____
_____
_____
_____
_____
_____

13. Thinking of the most recent challenge you had in person, what do you think is common in Babadogo slum?

Natural disaster (e.g. fire, flood, etc)   ( )

Crowding   ( )

Stigma and discrimination   ( )

Crime   ( )

Unemployment   ( )

Disease   ( )

Verbal/physical abuse   ( )

Marital/spousal conflict   ( )

Poverty   ( )

Other (please specify) _____

14. Which of the above factor(s) (*Question 13*) affected you as a person?

_____
_____
_____
_____
_____
_____
_____
_____
_____

15. Describe how the factor(s) has affected you as a person?

_____
_____
_____
_____
_____
_____
_____
_____
_____

16. Did the factors above (Question 13) contribute to your use of alcohol?

     Yes   ( )

     No   ( )

17. If YES to Question 26, describe how these factors contributed to your use of alcohol?

_____
_____
_____
_____
_____
_____
_____

18. Do you have any suggestions/comments for risk factors of alcohol dependence among people living in informal settlements in Nairobi?

_____
_____
_____
_____
_____
_____
_____

_____**END OF QUESTIONNAIRE**_____

Thank you for sparing your time to fill out this questionnaire

Appendix VI: How to Score and Interpret the AUDIT

The World Health Organization's Alcohol Use Disorders Identification Test (AUDIT) is a very reliable and simple screening tool which is sensitive to early detection of risky and high risk (or hazardous and harmful) drinking. It has three questions on alcohol consumption (**1 to 3**), three questions on drinking behaviour and dependence (**4 to 6**) and four questions on the consequences or problems related to drinking (**7 to 10**).

The **Supplementary Questions** do not belong to the AUDIT and are **not** scored. They provide useful clinical information associated with the client's perception of whether they have an alcohol problem and their confidence that change is possible in the short-term. They act as an indication of the degree of intervention required and provide a link to counselling or brief intervention following feedback of the AUDIT score to the client.

Scoring the AUDIT

- The columns in the AUDIT are scored from left to right.
- **Questions 1 to 8** are scored on a five-point scale from **0, 1, 2, 3**, and **4.**
- **Questions 9 & 10** are scored on a three -point scale from **0, 2** and **4.**
- Record the score for each question in the **"score"** column on the right, including a zero for questions **2 to 8** if 'skipped'.
- Record a total score in the **"TOTAL"** box at the bottom of the column. The maximum score is 40.

Consumption score

Add up **questions 1 to 3** and place this sub-score in the adjacent single box in the far right column (maximum score possible = 12). A score of 6 or 7 may indicate a risk of alcohol-related harm, even if this is also the total score for the AUDIT (e.g. consumption could be over the recommended weekly intake of 28 for men and 14 for females in the absence of scoring on any other questions). Drinking may also take place in dangerous situations (e.g. driving, fishing/boating). Scores of 6 to 7 may also indicate potential harm for those groups more susceptible to the effects of alcohol, such as young people, women, the elderly, people with mental health problems and people on medication. Further inquiry may reveal the necessity for harm reduction advice.

Dependence score

Add up **questions 4 to 6** and place this sub-score in the adjacent single box in the far right column (maximum score possible = 12). In addition to the total AUDIT score, a secondary 'dependence' score of 4 or more as a subtotal of questions 4 to 6 suggests the possibility of alcohol dependence (and therefore the need for more intensive intervention if further assessment confirms dependence).

Alcohol-related problems score

Any scoring on **questions 7 to 10** warrants further investigation to determine whether the problem is of current concern and requires intervention.

AUDIT Total score	Dependence score	Risk level	Possible Interventions
0 – 7	below 4	**Low-risk**	- Use 'Right Mix' materials to reinforce low-risk drinking, particularly for those who previously had alcohol problems or whose circumstances may change. - Harm reduction advice may be appropriate for those in susceptible groups (see 'Consumption Score' above)
8 – 15	below 4	**Risky** or **hazardous level.** Moderate risk of harm. May include some clients currently experiencing harm (especially those who have minimised their reported intake and problems).	- Brief Intervention - feedback of AUDIT and harm reduction advice may be sufficient Ideally also: - setting goals and limits - a motivational interview - self-monitoring of drinking - use of "The Right Mix" self-help guide
	4 or more	Assess for dependency	Counselling may be required.
16 – 19	below 4	**High-risk** or **harmful level.** Drinking that will eventually result in harm, if not already doing so. May be dependent.	- Brief Intervention (all components) is a minimum requirement. - Assessment for more intensive intervention. - Counselling using CBT principles and motivational interviewing in individual sessions and/or in groups.
	4 or more	Assess for dependence	Follow-up and referral where necessary.
20 or more	below 4	**High-risk** Definite harm, also likely to be alcohol dependent. Assess for dependence.	- Further assessment preferably including family and significant others. - More intensive counselling and/or group program. - Consider referral to medical or specialist services for withdrawal management. - Pharmacotherapy to manage cravings. - Relapse prevention, longer-term follow-up and support.
	4 or more	**Almost certainly dependent.** Assess for dependency.	

Appendix VII: Correlations table

		AUDIT	1	2	3	4	5	6	7	8	9	10
1. Name of village/settlement	Pearson Correlation	.084										
	Sig. (2-tailed)	.186										
	N	249	249									
2. How many years have you been a residing in Babadogo slum?	Pearson Correlation	.058	.158*									
	Sig. (2-tailed)	.358	.012									
	N	249	249	249								
3. Age of respondent	Pearson Correlation	-.073	.155*	.158*								
	Sig. (2-tailed)	.257	.015	.014								
	N	243	243	243	243							
4. Gender of respondent	Pearson Correlation	.178**	-.177**	.093	-.219**							
	Sig. (2-tailed)	.005	.005	.141	.001							
	N	249	249	249	243	249						
5. Marital status of respondent	Pearson Correlation	.148*	.079	.128*	.286**	.064						
	Sig. (2-tailed)	.021	.218	.047	.000	.318						
	N	243	243	243	237	243	243					
6. Highest level of education	Pearson Correlation	-.021	.191**	-.058	.190**	-.112	.132*					
	Sig. (2-tailed)	.740	.003	.365	.003	.082	.043					
	N	243	243	243	237	243	237	243				
7. Monthly household income (in	Pearson Correlation	.076	.085	-.024	-.018	-.336**	-.394**	.229**				

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KShs)	Sig. (2-tailed)	.258	.202	.722	.791	.000	.000	.001					
	N	225	225	225	219	225	219	219	225				
8. At what age did you start drinking alcohol?	Pearson Correlation	-.162*	-.032	-.076	-.030	.133*	-.168**	-.106	.075				
	Sig. (2-tailed)	.010	.618	.234	.646	.035	.009	.099	.261				
	N	249	249	249	243	249	243	243	225	249			
9. Did one or both of your parent/guardian drink or use to drink alcohol?	Pearson Correlation	.075	.167**	.002	.107	-.280**	.128*	.009	.028	-.165**			
	Sig. (2-tailed)	.240	.008	.971	.096	.000	.046	.885	.682	.009			
	N	249	249	249	243	249	243	243	225	249	249		
10. How often did your parent/guardian drink alcohol?	Pearson Correlation	.182*	-.014	-.138	-.029	-.067	.177*	.222**	-.244**	-.005	.c		
	Sig. (2-tailed)	.021	.860	.082	.724	.398	.025	.006	.004	.951	.000		
	N	160	160	160	154	160	160	154	136	160	160	160	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

c. Cannot be computed because at least one of the variables is constant.