# A SURVEY OF ILLICIT BREW CONSUMPTION AND ITS EFFECTS ON SOCIOECONOMIC STATUS IN THE HOUSEHOLDS OF MUMIAS DIVISION, KAKAMEGA COUNTY, KENYA.

**BY**

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## DECLARATION

I, the undersigned, hereby declare that this thesis is my original work and has not been presented for a degree in any other university. No part of this thesis may be reproduced without the authority of the author and Moi University.

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## DEDICATION

I dedicate this work to my father Wilson Omumali for his financial support, wife Josephine Aluoch and my two sons for their moral support and encouragement.

This work would not have been complete without the input of my supervisors, I say thank you.

Finally my friends and collegues, your contributions to this work was invaluable.

May the Almighty God bless you all.

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## ABSTRACT

**Introduction**

Alcohol use affects approximately 1.3 billion people and contributes to 3.5% of global health problems and disability (WHO 2004). In Kenya, 60% of alcohol consumed is illicit brew (Nacada,2002) despite being declared illegal in 1978 through a presidential decree. Mass incidences of blindness, massive death, low standards of education, poverty and deteriorating health conditions directly affect the consumers and society at large.The Alcohol Control Act of 2010 has been enacted to regulate the quality and hours of alcohol consumption. This survey assessed the socioeconomic effects of alcohol consumption in the household in Mumias Division.

**Objective:** To survey consumption of illicit brew and determine social and economic effects of the brew on households Mumias division, Kenya.

**Study area:** Mumias division, Western province, Kenya. Sugar cane farming is the main economic activity in the area.

**Study design:** Cross sectional survey. All data collection was done at a point in time

**Study population**. A total of 353 respondents took part in the study.

**Sampling:** Stratified random sampling was used in selection of household heads and the key informants sampled purposively.

**Data collection tools**: face to face interview, structured questionnaires, observation and focus group discussions (FGDs).

**Data Analysis:** Frequencies, percentages. Chi-square test and logistic regression was done using SPSS statistical software.

**Data presentation:** tables, pie charts, bar charts.

**Results:** Most (64.6%) of the respondents were male, (77.1%) of whom consumed alcohol and of these, 33.3% consumed home made brew. Age, education level, employment and income level were all independently significantly associated with consumption of illicit brew ($p<0.05$). Multivariate logistic regression indicated that adjusting for all other factors including education, age, employment and income levels were significant factors predicting consumption of illicit brew (all $p<0.05$)

**Conclusion:** Illicit brew consumption had effects on both the user and non user and contributed to the social and economic problems in the household. Low level of education, lack of employment, low income and age were predicting factors leading to illicit brew consumption.

**Recommendations** Illicit brew and related problems arose out of complex relationship between the consumer, alcohol, culture and social, political, economic and physical environment. Policies, programs and other initiatives should be established to strengthen individual ability, family and community to economic and social empowerment as tools to fight alcoholism.

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## DEFINITION OF TERMS

**Alcohol:** Is a colorless organic compound containing hydroxyl group (OH) as the only functional group. Used in the text to refer to both certified and illicit alcohol

**Alcoholism:** Frequent drinking of alcohol over a period of time which develops into addiction.

**Busaa:**Traditional brew in western Kenya made from fermented maize, millet and sorghum.

**Changa'a:**Illicit alcoholic drink, popular in Mumias distilled from maize,millet and molasses.

**Domestic violence:** Any physical, mental, or sexual harm committed in the home or family against family members such as the spouse, children, or parent.

**Drinking pattern:** Refers to the frequency, quantity and circumstances surrounding alcohol consumption.

**Extended family:**Family group that consists of parents,children and close relatives living in close proximity.

**Harmful consumption:** A pattern of alcohol consumption that cause damage to physical or mental health.

**Hazardous consumption:** A pattern of alcohol consumption with a risk of harmful consequences to the drinker and others. Also refers to heavy or pathological drinking.

**Household:** A group of people living together as a family, eating from the same pot and sharing the household resources.

**Illicit brew:** Home made alcoholic drinks, which are outlawed or banned in Kenya and whose manufacture, sale and consumption is an offence (GOK, 1992).

**Morbidity:** A measure of disease burden in a community over a period of time.

**Poverty:** Lack of basic needs, or lack of access to food, clothes, housing, water, and healthcare in a population over a period of time.

**Unrecorded alcohol:** Consumption of alcohol that is not part of official national statistics such as homemade alcohols, smuggled and cross border shopping alcohols

## ABBREVIATIONS

| | |
|---|---|
| **BAC** | Blood Alcohol Concentration |
| **CBO** | Community Based Organization |
| **CNS** | Central Nervous System |
| **DALYs** | Disability Adjusted Life Years |
| **DF** | Degree of Freedom |
| **FGD** | Focus Group Discussion |
| **GoK** | Government of Kenya |
| **HIV/AIDS** | Human Immuno-Deficiency Virus/Acquired Immune-Deficiency Syndrome |
| **ILO** | International Labour Organization |
| **NACADA** | National Campaign Against Drug Abuse |
| **NGO** | Non-Governmental Organization |
| **OH** | Hydroxyl group |
| **SENDU** | Southern Africa Development Community (SADC) Epidemiology Network on Drug Use |
| **OR** | Odds Ratio |
| **STDs** | Sexually Transmitted Diseases |
| **STIs** | Sexually Transmitted Infections/Diseases |
| **TB** | Tuberculosis |
| **US** | United States of America |
| **WHO** | World Health Organization |

# CHAPTER ONE

## 1.0 INTRODUCTION

### 1.1 Background

The effects of alcohol are more devastating in developing countries, with an estimated 1.3 billion people living on less than 1US dollar a day. These countries are already faced with problems of malnutrition, infectious diseases and drought, consuming alcohol makes them even poorer (Murrey and Lopez, 1966).

The alcohol industry in Kenya came into the spotlight when advertising companies were asked to pull down billboards carrying alcohol advertisements near schools and colleges which were apparently associated with alcohol consumption among students. Thereafter an alcoholmeter alcoblow or *vuta pumzi* came into use scattering alcohol consumers in all directions from town centres. Illicit alcohol even without advertisement enjoys a significant market share despite the fact that it is categorized as illegal. However, little information is available on the contribution of alcohol to a wide range of physical and mental health conditions and social problems that affect drinkers, their families and the society at large.

Traditionally people drunk alcohol for religious reasons and it was believed that spirits of the dead entered the fermented brews and on drinking the person who became intoxicated was in touch with the gods and the drink freed him/her from the inner self (Mengich, 1986). Up to now people pour little alcohol on ground to appease the ancestors before they start drinking and also remember their forefathers who were consumers of alcohol.

Alcohol drinkers believed alcohol was the source of power and was used for shaping power struggle in many parts of the Africa including East Africa (Willis, 2002). In African traditional societies alcohol was drunk during ceremonies and organized beer parties where its manufacture and quality was controlled (Ogutu, 1980). Over time the consumption of unconventional alcoholic beverages has increased in many countries including Kenya.

**1.2 Illicit brew in Kenya**

The Traditional Liquor Ordinance Cap 106 of 1930 (GoK, 1948) prohibits the manufacture, sale and consumption of intoxicated fermented brews and distilled spirit in Kenya. *Busaa* is a popular local brew in western Kenya manufactured through fermentation of yeast, millet and maize. However fermented traditional brews can only be brewed and drunk on special temporary permit during ceremonies under Traditional Liquor Act Cap 122 of 1971 (GoK,1992).The Kenyan government banned the brewing, drinking and selling of illicit alcohol in 1978 through a presidential decree after considering the obvious consequences of illicit brew. Despite the ban, the illicit brew industry has flourished, sometimes with fatal results when some brewers lace the brew with chemicals such as methanol.

In the year 2000 in Nairobi illicit alcohol fortified with methanol killed 121 people, 495 were hospitalized and 20 blinded. The incidence led to the restriction of illicit alcohol distillation and the unlicensed sale of alcohol (East Africa Standard august 6, 2000, Nordwall, 2000).More recently in July 2010 in Kibera slum 23 people died, 6 blinded and several hospitalized after consuming illicit brew. People consume illicit brew without considering the consequences on the household. In Nyeri wives

demonstrated against illicit brew that allegedly cause impotence in their men. The men on the other hand have argued that they cannot afford certified brews because they are very expensive (Daily Nation May 22,2007). The government targets the formal alcohol industry for generating revenue and regulation. The resultant effect has been mushrooming of informal brews that are not taxed and regulated. The most affected are the highly populated and low-income areas where open and disguised unemployment such as prostitution is widespread. Ultimatums and the arbitrary arrest of the consumers and producers have failed to control the hazardous practice of drinking illicit brew. The practice has however continued as the people blame the government for not providing employment and legalizing the brew. This habit has resulted into corruption and increase in number of the offenders convicted in prison for illicit brew drinking and brewing in Kenya as shown below.

**Table 1: No of people imprisoned between (2002-2006) by Liquor Act in Kenya.**

| YEAR | MALE | FEMALE | TOTAL |
|---|---|---|---|
| 2002 | 22,789 | 4,500 | 27,289 |
| 2003 | 21,585 | 5,147 | 26,732 |
| 2004 | 24,567 | 5,257 | 29,824 |
| 2005 | 21,528 | 5,747 | 27,275 |
| 2006 | 31,112 | 588 | 31,700 |

Source:GoK,(2007).The Economic Survey. National Bureau of Statistics.

The Kenyan government has been under pressure from local politicians, businessmen and other organizations (Oloo, 2005) to lift the ban on the illicit brew. In 2007 the government temporarily attempted to lift the ban on illicit brew through a Ministerial

statement resulting in booming business for the brewers and sellers but with catastrophic health and socio-economic consequences to the consumers and their families (Daily Nation May 22, 2007). In 2010, the Alcohol Control Act 2010 was enacted to control drinking and selling of alcoholic drinks. The Act legalized the illicit brews by providing conditions for brewing. The aim was to ensure that illicit brews are properly brewed and conformed to the prescribed standards.

National response to these problems requires research based evidence on health and social problems attributed to alcohol consumption and the implementation of effective policies to address these problems in the country. The purpose of the study was to examine consequences of illicit alcohol consumption on socioeconomic status of households in Mumias division

Illicit brew accounts for 60% of alcohol consumed in Kenya (Nacada, 2006) locally manufactured in homes, back street factories or imported into the black market from neighboring countries by unscrupulous businessmen and drunk by people of various ages who cannot afford conventional drinks such as wine, vodka and whisky.

The challenges of illicit brew in Kenya lie in predisposing factors. On one hand the illicit brews are the preferred drinks among the Kenyans of low socioeconomic status in both rural and urban areas because they are potent and affordable, costing as little as ten shillings besides being a source of livelihood for brewers, dealers and retailers. By coded word of mouth, consumers are able to trace areas where illicit brew is sold. Brewers use non- conventional means to enhance the drinks potency and attract client. Often the producers and dealers add other substances like methanol and formalin to the

brew to quicken the fermentation process, make it more potent, also increase the quantity to get high profits. Some of the additives include bhang, rats, poisonous snakes and dirty water.

The brand names attributed to illicit brew by the consumers describes the quality, reasons and effects of the drink. Names like power drink, ten ten *kumikumi*, kill me quick, lion's tears *machozi ya simba* are used by consumers of illicit brew (Oloo, 2005).For only ten shillings the consumer can afford a glass of illicit brew.

Unless the real issues associated with illicit brew to health and socioeconomic status is identified and sufficiently addressed using a participatory approach, it is likely that the country will experience acute and chronic effects since is at the centre of lives of many Kenyans.

It is important that as a nation we analyze related harm, where and when it occurs, who is affected by it, more importantly what can be done to counter alcohol abuse and misuse in Kenya (Nacada, 2002).This study aimed at establishing the extent to which illicit brew is consumed and the consequences it has on the social and economic status of the consumers of Mumias Division. The study recommends, population based sustainable strategies and interventions to reduce negative effects of illicit brew in Mumias division and in the country at large.

**1 .3 Research questions**

1. Does consumption of illicit brew have a bearing on the socioeconomic status among households of Mumias Division?

2. What are the social and economic factors that are linked to illicit brew consumption?
3. Which types of illicit brews are consumed and to what extent is the consumption of each type in Mumias Division?

**1.4 Problem statements**

Documentary evidence reveals that Western province ,where Mumias division is found is the leading province with cases of domestic violence in the country with 73% of the women having experienced domestic violence, compared to the national average of 49%.(GoK,2004).

The number of households involved in sugarcane farming as a primary economic activity dropped from 40% to 27% in 4 years between 1992-1996 (Owour, 1997).According to the Kenya economic survey 2003, per capita income in the area is Ksh.50 per person per day with 60% of the population living below the poverty line. Unpublished records at Mumias police station shows an average of 1,200 people are arrested and charged in court yearly of illicit brew drinking and brewing. However, the effects of the illegal brew on socioeconomic status of the households in the division has not been analyzed and effectively addressed.

**1.5 Justification**

Many countries have not given alcohol serious attention accorded to other addictive drugs like tobacco, bhang and cocaine, besides relative neglect of the consequences arising out of alcohol consumption. There is also no reliable population based data available about consumption of illicit alcohol in rural communities.

Due to inadequate information available in the public domain on alcohol consumption, many young people start drinking without knowing the consequences of the illicit brew consumption. Illicit brew has profound effects on health and causes secondary socio-economic, environmental and political problems.

Illicit brew has been associated with domestic violence and increase in moral decay. In Nyeri women have been up in arms blaming the brew for making their men impotent (East Africa Standard December 14, 2004). By providing data on effects, prevalence, social and economic determinants of alcohol consumption will enable the country develop sustainable strategies and intervention to counter negative effects of illicit brew.

The data will also assist in developing National alcohol policy to protect the producers, dealers, consumers and families against alcohol consumption. Community based organizations (CBO) and Non governmental organizations (NGO) will also benefit from the study in their efforts of service provision to the community on alcoholism.

### 1.6.0 Main objective

To determine social and economic effects of illicit brew on households in Mumias Division.

### 1.6.1 Specific objectives

1. To determine prevalence and types of illicit brew consumed in Mumias division
2. To establish social factors associated with illicit brew in Mumias Division
3. To determine economic effects of illicit brew consumption in Mumias division

# CHAPTER TWO

## 2.0 LITERATURE REVIEW

### 2.1 Background

For developing nations, the upsurge in alcohol consumption raises concerns on whether a drinking nation can develop or collapse in drunken stupor. Alcohol in whichever form is the most liberally used drug or psychoactive substance, followed by tobacco, bhang, miraa, inhalants and prescription drugs (NACADA, 2002). The degree of production and consumption of alcohol in most continents is unrecorded (Willis, 2002). The overall estimates of unrecorded alcohols consumed in African countries is 50% (WHO, 2004a) of all alcohol consumed. However in another study on unrecorded consumption of alcohol of 1500 households in Karnataka state estimated the prevalence of alcohol use as 30% of all adult males and 1% of adult females in the state (Benegal, 2003).

Alcohol has been associated with numerous health and social problems for many years. The World Health Organization (WHO, 2002) estimates alcohol to be fourth leading factor for death and disability globally, almost at par with tobacco. Chronic and acute health consequences of harmful use of alcohol are social problems linked to alcohol intoxication and dependence (Babor, 2003). The problems associated with occasional use of alcohol include domestic violence, road accidents, occupational accidents, physical and mental health disorder.

### 2.2 The impact of alcohol consumption

Alcohol use causes 3.5% of all global death and disability in the world (Murray and Lopez, 1996). Worldwide 5% of all deaths of people aged between 5 years and 29

years in 1990 were attributable to alcohol use (Murray and Lopez, 1997). However, according to WHO 4% of global health burden measured as Disability Adjusted Life Years (DALYs) and 3.2% of all death in the year 2000 were attributable to alcohol (WHO, 2002). Increase in alcohol consumption by a community or a nation tends to increase alcohol related health and social problems.

Alcohol is related to more than 60 medical conditions and has been associated with diseases including stroke, myocardial, infarction, cirrhosis, depression and accidents such motor vehicle accidents, drowning, poisoning, and self inflicted injuries and suicide (Room and Rhem, 2005, Babor, 2003). In India a significant relationship exists between alcohol and risky sexual behaviour leading to HIV/AIDS and other Sexually Transmitted Diseases (STDs), (WHO, 2005).

Drinking of alcohol has a major impact on food security in areas where home made alcohol is the only source of income, 50% percent of grain harvest of household is used to brew alcohol, (Dorji, 2005). The International Labour Organization (ILO) estimated 20 to 25% of workplace accidents to involve intoxicated people which are a major impediment to productivity, (http: ILO, 2007).

(Gururaj, 2004a) observed that with the growing consumption of alcohol, hospital admission rate due to acute effects of alcohol consumption were increasing. Studies indicate that nearly 20 to 30% of hospital admissions were directly and indirectly due to alcohol related problems (Gururaj, 2006). Alcohol use can result in harmful mental health consequences for individuals, families and societies. These consequences include alcohol dependence, dementia, cognitive dysfunction, hallucination, paranoid

state, anxiety, depression and phobia associated with heavy and chronic or dependent drinking (Ritsun, 1991). However (Rehm, 2004) observed that many of the admissions were for co-morbid conditions where alcohol use disorders are part of morbidity and so it was not clear how much role alcohol contributed in psychiatric morbidity resulting in admission. In another study done by SENDU (Southern Africa Development Community(SADC) and Epidemiology Network on Drug Use) in Mauritius and Swaziland revealed that alcohol played a significant role in treatment demand in both general and psychiatric hospitals, with 62% of admissions in psychiatric hospital in Swaziland and 80% in Mauritius related to alcohol as the primary substance used (SENDU, 2004).

The major risk factor for alcohol associated problems is quantity and frequency of alcohol consumed. Patterns of drinking are considered an important predictor of alcoholism particularly the frequency of drinking large amounts and experience of intoxication (Midanik, 1995).

**2.3 Extent of illicit brew**

Little is known about levels and patterns of consumption of alcohol in African countries (Obot, 2000, Room, 2002) even in other parts of the world there is less information about contribution of alcohol to physical and mental conditions and social problems that affect drinkers. (Nacada, 2006) estimates that 60 percent of alcohol used in Kenya is illicit and has permeated all parts of the country. A typical drinking pattern such as pay day drinking is quite common in many countries. The pattern of drinking and volume consumed are both significant. Frequent drinking of alcohol over a period of time develops into drinking problem referred to as addiction, alcoholism or alcohol

dependence (Mengich, 1986). The author defines alcoholism as repeated drinking to a level that individual compromises any condition of health, work and interpersonal relationship. Hazardous pattern of drinking is where alcohol is drunk excessively, such as on weekends or “pay day,” they can cause death when a certain blood alcohol concentration (BAC) is exceeded (Nacada, 2002).

Early childhood exposure to alcohol and favorable parental attitudes to alcohol are considered to increase vulnerability to drinking in adolescence also parental alcohol problems have been found to increase the risk of alcoholism in their children (Fergusson, 1994, Parker and Harford, 1987). The environment surrounding the individual can be a determinant of alcohol consumption (Skog, 1991). The author notes that an individual living in ‘dry’ environment tend to become light drinker or abstains whereas the same individual living in “wet” area could become heavy drinker. When alcohol is easily available and convenient to purchase, consumption and alcohol related problems are usually high (Edwards, 1994).

**2.4 Factors associated with illicit brew**

The immigrants in Puerto Rico, Dominican islands Columbia drunk heavily to face challenges of social rules, languages and lifestyle (Escando’n and G’alvez, 2005). To some, drinking makes them overcome shyness and demands of responsibilities. However some drink in pursuit of fun, happiness and oblivion. Few people simply drink strong alcohol to get drunk (WHO, 2005).

The misconception about the medicinal value of alcohol is one of the reasons for drinking. Some research suggests that moderate intake of alcohol prevents heart attack

(WHO, 2005). In western Kenya people believe that *chang'aa* treats typhoid fever and common cold, while to others the objective is psychosocial.

Young people may start drinking because their parents drink or brew alcohol (Wanyoike, 2003). While among teenagers, peer pressure pushes them to drink. Young people in Focus Group Discussions (FGDs) on alcohol claimed that they wanted to get drunk deliberately and excessive drinking was facilitated by factors such as free drinks and drinking competitions (Odejide, 2005). Low levels of literacy and awareness contributes to illicit brew consumption since many consumers are not aware of the effects (WHO, 2006).

In India cheap drinks from molasses and jaggeries are the main reason for drinking (Babiker, 1995). Cultural beliefs associated with illicit brew acts as proactive factors in highlighting consumption. In Kenya, traditional brews are part of entertainment as it's observed in ethnic night out such as Luo night, Luhya night, Mug'ithi night. Among most Kenyans illicit brew is the best option for its economic value and potency, a small measure of ten shilling *kumikumi* puts you in "a good mood''. Politicians take their followers to a drinking spree to win their favour. Traditionally women were the main producers of illicit brew and became addicted as a result of repeated testing of the quality of the brew (Willis, 2001). Drinking in women is due to disappearing stereotypes about feminity, increasing social and economic dependency (WHO, 2005). Regardless of the reasons people have to make informed decision on whether to drink or not drink.

### 2.5. Alcohol consumption and morbidity

Alcohol consumption has health and social consequences via intoxication (drunkenness), alcohol dependence and other biochemical effects of alcohol. As mentioned earlier alcohol poisoning and excessive drinking causes deaths, blindness, cancer, CNS, kidney and liver disorders. Accidents and diseases are common among drinkers (Escando'n and G'alvez, 2005). This results into disability and diseases that renders consumers unproductive and loss of employment. The global burden of diseases study in 1997 estimated that alcohol was responsible for 47.4 million DALYs in the world in 1990 (WHO, 2006).Where illicit brew is drunk, chronic illness, poverty and day to day hardship are likely to drive consumers to suicide.

Alcoholics have little care for themselves and their families. Drunkards refuse to use condoms or incorrectly use condoms leading to risky sexual behaviour and HIV/AIDS (WHO, 2005). They are unlikely to provide adequate nutrition, clothing, shelter, sanitation and prevention measures to diseases like malaria and respiratory infections for themselves and their families (Kimalu, 2004) and also search for proper medical services.

Rural population compared to urban populations experience high rates of alcohol related problems yet they are less likely to receive treatment (http: Rural Healthy, 2008). People in the rural area drink alcohol frequently and suffer high levels of alcohol related injuries which is a public health concern.

### 2.6 Social effects of alcohol consumption in the household.

A study in the United States revealed that abusive men with severe alcohol problems were violent and inflicted serious injuries on their partners (Frieze, 1978). In the same

study 10-14% of married women were reported to have been sexually harassed. Alcohol causes sexual dysfunction in both men and women leading to low libido in women and impotence in men resulting in frustration, promiscuity, marital problems and divorce (Nacada, 2002). Health effects of illicit brew on the drinkers including loss of sight and reproduction dysfunction carries social stigma. Sexual dissatisfaction associated with alcoholism in the family can cause family separation leading to single parenthood and STI/HIV AIDS as couples seek sexual fulfillment out of marriage.

Alcohol related assaults are associated with consumption of large amounts in a particular session. In Kenya cases of domestic violence are high among heavy drinkers than moderate drinkers (WHO, 2004b). Domestic violence is determined by the number of times a family member has been assaulted or emotionally hurt. Men's consumption increases risk of assault to their female counterparts, (Leonard, 1985). Studies in many countries have shown an association between harmful consumption of alcohol and social consequences including death from road accidents, domestic violence, HIV infection and disorders which require medical attention. Drinking impairs performance as a parent or a contributor to the household. Time spent drinking competes with the time needed to carry on family life.

**2.7 Economic aspect of alcohol consumption**

Economic loss to the society resulting from harmful alcohol consumption includes cost to health care, social welfare and criminal justice systems, lost productivity and reduced economic development (WHO, 2004). People who are addicted to drinking spend most of their income on the drink; sell personal items, household goods and even family land to satisfy their addiction. Poverty is high among illicit brew drinkers; they

spend most of their time in drinking dens causing economic losses to their households by bribing the police and payment of court fine, (Babiker, 1995). There is reduced economic productivity and workforce size as a consequence of death and premature retirement, absenteeism from sickness, injuries and accidents.

A study in Bangalore India, showed that 9.5% of the drinkers sent their children under 15 years to work to supplement family income (WHO, 2005), and food security was affected by diversion of food grain to the brewing of alcohol facilitating hunger and poverty. A study conducted in 11 districts in Sri Lanka examining the link between alcohol and poverty found that 7% of the men said that alcohol expenditure was greater than their income, (Baklien, 2001).

Death of breadwinners from alcohol related accidents and diseases affect the family finances in terms of loss of income and cost of funeral expenses (Kimalu, 2004). Substance abuse, crime, corruption, unprotected sex and rapid spread of HIV/AIDS are associated with illicit alcohol consumption especially in slums.

The woman's role changes when the husband is the illicit brew drinker, because she must feed the family by looking for employment outside the home such as prostitution, farm labour, brewing and selling of illicit brews. However there is lack of data on economic impact of illicit brew consumption on households in Kenya.

The Kenyan government is committed to provision of free primary and secondary education. However drinking of illicit brew and related practices like prostitution, child labour and domestic violent affects the education of children in the household. Alcohol

contributes to unruly behaviour among the youth in institutions of learning causing strikes, theft, violence and destruction of property (Wanyoike, 2003, Mckean, 2005). Children of alcohol drinkers more often have problems in school. The stressful environment at home prevents them from studying. Their school performance may also be affected by inability to express themselves. Often these children have difficulty in establishing relationships with teachers and classmates. They tend more often to repeat the academic year or drop out of school. A Unites States government survey, "Exposure to Alcoholism in the Family", shows that 30 percent of young women who didn't complete high school had grown up in families with alcoholic parents (Berger, 1993). Some children have such behavioral problems as lying, stealing, fighting, and truancy. These children live in extremely unstable home environments. They never know what to expect from an alcoholic parent. Because they are unable to predict their parent's mood, they don't know how to behave themselves.

**2.8 Health problems of alcohol consumption**

Alcohol consumption contributes to chronic and acute health problems because of its direct toxic effects on organs such as liver cirrhosis, intoxication properties resulting in accidents and injuries and its dependence (Babor, 2003). Alcohol is a significant cause of morbidity and mortality and breeds of hosts of secondary problems. Whether legal or illegal, there is a causal relationship between alcohol consumption and more than 60 types of diseases and injuries (WHO, 2006).The specific alcohols found in the illicit brew are methanol, propanol and butanol which are toxic to body organs (Yassi, 2001). Effects of ethanol consumption include false sense of relaxation, loss of inhibition, and lack of coordination, blurred vision and slurred speech depending on the concentration of the alcohol in the blood. Some people experience headache, nausea, vomiting

suicide accidents and sexual assaults (Nacada, 2002). Children born as a result of unplanned conception due alcohol intoxication tend to have little parental care which negatively affects their health.

Methanol consumption can cause blurred vision and ultimate blindness or sudden death (Yassi, 2001). Clinical features observed among the victims of the brew are, blindness, kidney and liver damage due to toxic liquor. Samples of the illegal “mathenge”(a local brew in Embu) analyzed by government chemist revealed that it contained methonal,cresols (a harmful disinfectant) and sugar (Achoki,2000). A study in Bangalore, India, estimated 20-30% of esophageal cancer is due to alcohol consumption (WHO, 2005). The alcohol affective syndrome is another consequence of alcoholism where the probability of having suicidal thoughts is about two times among drinkers while attempted suicide is four times. Foetal alcohol syndrome and Foetal alcohol effects are major sources of illness and behavioral disorders among drinkers.

**2.9.2 CONCEPTUAL FRAMEWORK.**

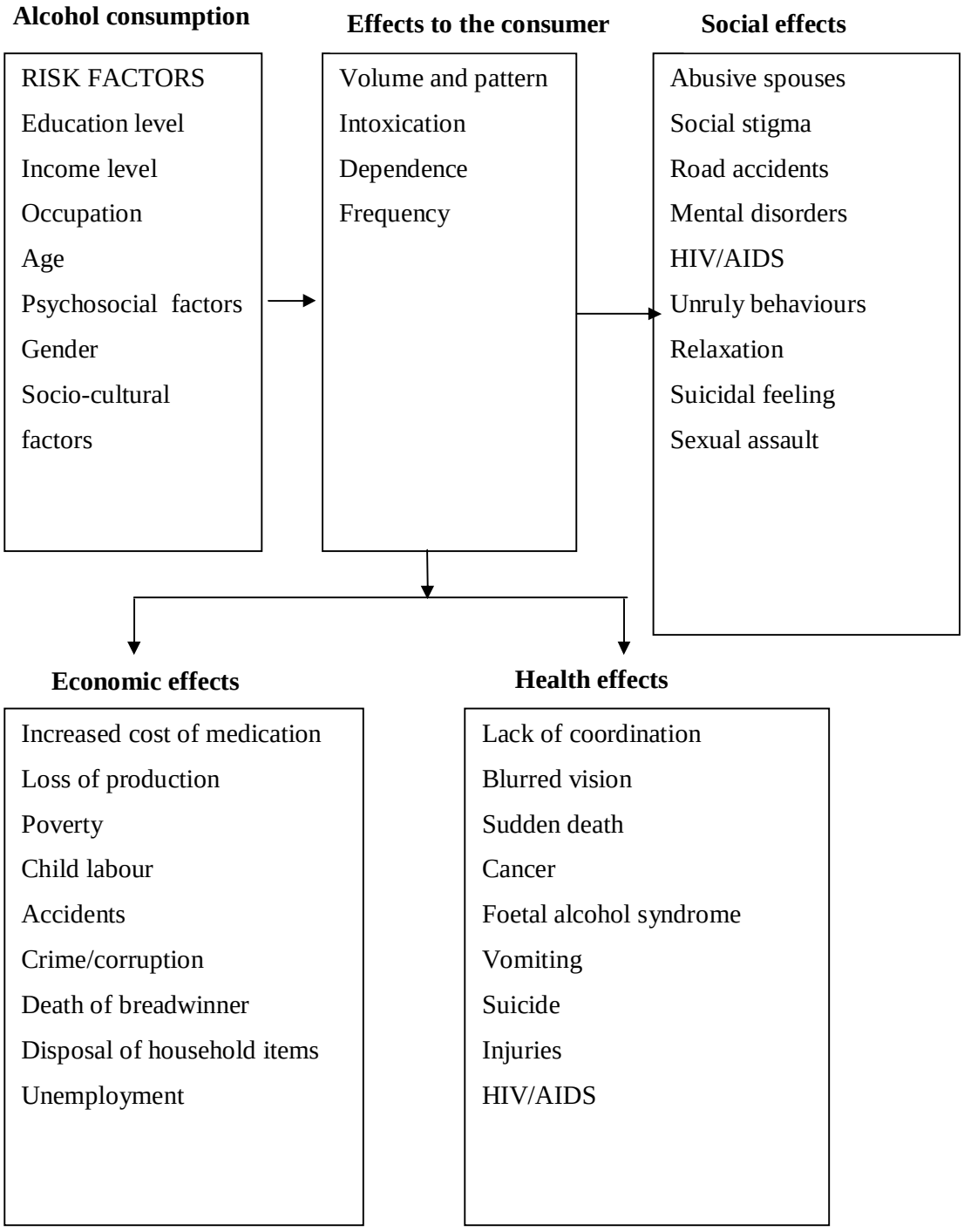


**Fig 2.9.2: Adapted conceptual frame work (WHO, 2005).**

The scheme in figure 2.9 above shows the pathway through which the consumption of illicit brew can affect the economic and social status of the individuals and how these can influence the overall socioeconomic status of the household and the community.

The effects of illicit brew to the consumers are noticeable in all aspects: physical, psychological, social and economical (WHO,2005).

The problems of illicit brew consumption are due to:

-The pattern and volume of the brew consumed.

-Drinking of the alcohol to intoxication/drunkenness.

-Alcohol dependence

-Biochemical /toxic effects of the brew.

-Illegal status of the brew.

The problems related to illicit brew consumption can be broadly be looked at 3 levels: individual, family (household) and community/society level.

The effects on the above levels overlap. For instance, when a drinker is hospitalized or arrested due illicit brew consumption his/her family undergoes emotional and psychological suffering associated with the sickness besides the financial burden incurred on treatment /legal process. (Kimalu, 2004).

# CHAPTER THREE

## 3.0 METHODOLOGY

### 3.1 Study area

Mumias Division in Mumias District, Kakamega County is one of the most densely populated county in Kenya predominantly rural. Mumias district has 3 divisions namely: shianda, South wanga and Mumias division. The Mumias division has one location (Nabongo) with five sub locations namely: Matawa with population size 10,500, Lureko with 12,600 people, Ekero,13,300 people, Nuclear with10,800 persons and Township with16,400 persons. The major ethnic group in the area is Luhya. Mumias District has a population of about 198,227, with an estimated population of 62,940 people in Mumias Division in 12,103 households (KNBS, 2008).In the study the number of the households was used as the study population size. Literacy level in the district is 58.5% with poverty level of 51.6%.

Sugarcane is the main cash crop grown in the area."Boda boda"(bicycle) and motorcycle are the common mode of transport . Subsistence farming of maize, beans and millet is practiced in the area. The area was ideal for the study because of locally available materials for illicit brew production and the high number of people consuming illicit brew. Cultural practices such as circumcision also encouraged the use of illicit brew in the area.

### 3.2 Study design

Cross sectional survey study design was employed to study the target population. Data was collected at a point in time (snapshot). It enabled the investigator to determine associations between variables of interests and analysis of multivariate variables.

### 3.3 Sampling method

Stratified random sampling was employed to divide the households into 5 administrative boundaries strata based on the existing sub locations (strata). Proportionate random sampling based on the population size in each sub location (see sampling framework in the appendix) was done to select households for the study. The number of the household in the sub-location was divided by the total number of the household in the division, and then multiplied by the total sample size of 373 to get the number of the study households in every sub-location. A list of households in the sub-location obtained from the Sub-chief was randomized by computer program (Excel) and the study households selected by proportionate simple random sampling.

In the study the household head who was the respondent was taken as the father or mother of the household. In absence of both parents of the household children of the household above 18 years without established households of their own were selected randomly into the study.

Key informants included provincial administration, education, health, police and probation officers who were sampled purposively. This technique allowed the researcher interview respondent with relevant information with respect to the objectives of the study (Mugenda and Mugenda, 1999), the cases were handpicked because they were informative.

### 3.4 Sample size determination

According to (Kathuri and Pal's, 1993), for a known population size (N) of 12,103 the sample size(S) required is 373.

The following formula for proportions was applied to confirm the sample size required.

$n = \frac{Np(1-p)}{(N-1)D + p(1-p)}$ where N=population size

Where $D = \frac{(\text{Margin of Error})^2}{Z^2_{\alpha/2}}$ Z=z score D=margin of error

$D = \frac{(0.05)^2}{(1.96)^2} = 0.000651$ n=sample size

$n = \frac{12103(0.5)(0.5)}{12102(0.000651) + (0.5)(0.5)}$

$= 372.24$

Therefore the required sample size for the study was 373.

The five assistant chiefs from the five sub locations, medical officer of health, education officer and police officer from Mumias, police station participated in the study as key informants.

Focus Group Discussion (FGD) groups were constituted in each stratum to discuss prepared topics. Each group had an average of 8 peoples which comprised of: the village elder, opinion leader, women representative, youth wing, illicit brew brewer and consumer.

**3.5 Data collection**

Trained and competent research assistants fluent in English, Kiswahili and luhya language assisted the main researcher with data collection. Data was collected by use of questionnaires, interviews, Focus Group Discussions (FGDs) and observation. Direct observation on the type of housing, hygiene conditions and physical health of

the household members was also done to verify and complement information given at interviews and the questionnaire.

**Questionaire:** Self administered structured questionnaire was given to household head for respond. Illiterate household heads were assisted to fill the questionaire by the research assistants touching on illicit brew consumption, income, employment, education, domestic violence and sugarcane farming.

**Interviews:** The main researcher held face to face interviews with the key informants and chaired the discussion of the FGDs. The study had five groups of discussions formed within the study area. Every sub-location had one group of atleast 8 members composed of sub chief, village elders, youth leader, two women representatives, and illicit brew consumers. The assistant chief mobilized the members for the meeting in his office.

Secondary data (number of people arrested due to illicit brew drinking/brewing) from existing records at Mumias police station was also collected.

### 3.6 Data analysis

The data collected from the questionnaires was cleaned, coded and entered into the computer using Epidata, data entry software. It was then exported to SPSS V.16 for statistical analysis.

Frequency tables were generated for categorical variables while measures of central tendency for mean and median were generated for continuous variables after

performing normality test. Data from FGDs was analyzed qualitatively by use of themes with regard to objectives of the study.

The chi-square test of association was used to check the relationship between categorical variables. Mann Whitney U-test was used for continuous variables. Multivariate logistic regression was used to predict demographic, social and economic factors associated with illicit brew consumption.

P-value of less than 0.05 was considered statistically significant.

### 3.7 Limitations of the study

Inadequate finance and lack of enough time was a limitation to this study .Time could not allow determine health effects as one of the socioeconomic factor since it required follow-up study of the cases. The household is a private institution, in situation where the household head was unwilling to disclose certain information concerning the household that is perceived to be private was a limitation in the study. Household incomes was a sensitive issue which many respondents were unwilling to talk about or were not aware of how much they earn. In that case absolute accuracy could not be realized and therefore estimation of income was used.

### 3.8 Inclusion criteria

Households within Mumias division with a household head aged 18 years and above who agreed to participate voluntarily by signing consent form were eligible for the study.

### 3.9 Exclusion criteria

A child of a household above 18 years with his/her own household/homestead was excluded. Also households headed by minors aged below 18 years were excluded from the study. In addition household heads with an obvious mental problem were excluded from the study. Visitor/s in the household were also exempted from the study.

### 3.10. Ethical considerations

Approval from Institutional Research and Ethics Committee (IREC) of Moi university/Moi teaching and Referral Hospital (MTRH) was obtained prior to commencement of the study. A study permit from the Ministry of Health and Education was obtained before the study commenced. Provincial administration was informed of the study.

The purpose of the study was explained to the participants in the language they understood before seeking consent. Participants were treated with respect and dignity and informed of their rights. They were assured that the information given would be kept confidential and only used for the purpose of this study. The benefit of the study was explained to the participants who were assured that no risk posed to them. Literate respondents signed the consent form.

# CHAPTER FOUR

## 4.0 RESULTS

### 4.1 Socio demographic characteristics.

A total of 353(94.6%) respondents aged 18 years and above took part in the study. The 20(5.4%) participants pulled out of the study before completion for various reasons. The respondents consisted of 228(64.6%) males. The majority 185(52.2%) were aged between 28-37 years. There was no significant difference in the gender of the respondent. However, there was a significant difference in the age group of the respondents.

Most of the participants 119 (34.2%) had attained primary level education, 94 (27.0 %) and 69 (19.9%) had secondary and tertiary education respectively, while 66(19.0%) of the population had no formal education.

The study population consisted of 217 (61.5%) married, 44 (20.6%) single, 73 (12.5%) widowed and 19 (5.4%) separated. In the study large part of the population 299 (70.5%) were Christians. Unemployment was predominant in the area with 75.1% of the respondents unemployed. Other sources of income in the households included jua kali 96(28.2%), subsistence farming 170(50.1%), sugarcane farming 103(30.4%) and others (boda boda, business, touting) 49(14.5%).

Table 2 below shows the demographics characteristics of the respondents

**Table 4.1: Demographic characteristics of the respondents**

| Characteristic | N | Percentage (%) |
|---|---|---|
| Gender Male | 228 | 64.6% |
| Female | 125 | 35.4% |
| Age (years) | | |
| 18-27 | 83 | 23.5% |
| 28-37 | 185 | 52.2% |
| 38-47 | 59 | 16.7% |
| >47 | 26 | 7.6% |
| Marital status | | |
| Married | 217 | 61.5% |
| Single | 73 | 20.6% |
| separated | 19 | 5.4% |
| Widowed | 44 | 12.5% |
| Level of education | | |
| None | 66 | 19.0% |
| Primary | 119 | 34.1% |
| Secondary | 94 | 27.0% |
| Tertiary | 69 | 19.9% |
| Religion | | |
| Christian | 246 | 70.5% |
| Muslim | 104 | 29.5% |
| Employment | | |
| Employed(formal) | 86 | 24.9% |
| Unemployed(self) | 259 | 75.1% |

## 4.2 EDUCATION

Among the households of the illicit brew consumers' school attendance by the children of the household was as shown in table 4.2 below.

**Table 4.2: Children school attendance (N=353)**

| School level | N | % |
|---|---|---|
| Pre primary | 82 | 25.3 |
| Primary | 66 | 20.4 |
| Secondary | 89 | 27.5 |
| Not in school | 87 | 26.8 |

Reasons given by the household heads above in regard to the children not attending school were as follows: lack of school fees (17.8%), non performance (10.6%), rudeness (3.7%), sickness (2.5%) and others (4.9%).

However, discussions with Education officer revealed that some parents deliberately refused to take their children to school or did not school pay fees or buy books for the children based on the assumption that primary school education was free of charge. Other parents involved their children in the business of illicit brew and child labour.

## 4.3 Drinking of Alcohol

Alcohol consumers comprised 270(77.1%) of the study population, of which, 33.3% consumed home made brew, 15.6% consumed factory made brew while 51.1% drunk both home made and factory brew. Many of the consumers (79.5%) had taken alcohol for more than 3 years, 13.1% for 2 years and 7.5% for less than a year. More males 146(64.0%) consumed illicit brew than females. However, in the same households

32.8% of the other members also took alcohol apart from the household head as follows: mother (54.4%), father (42.7%), sons (53.8%) and daughters (3.8%).

Most of the drinkers (54.7%) drunk daily, while 32.6% drunk on a weekly basis and 7.6% monthly. When asked where they got their alcohol from, 29.0% of the respondents said they brewed while 71.0% bought alcohol for drinking.

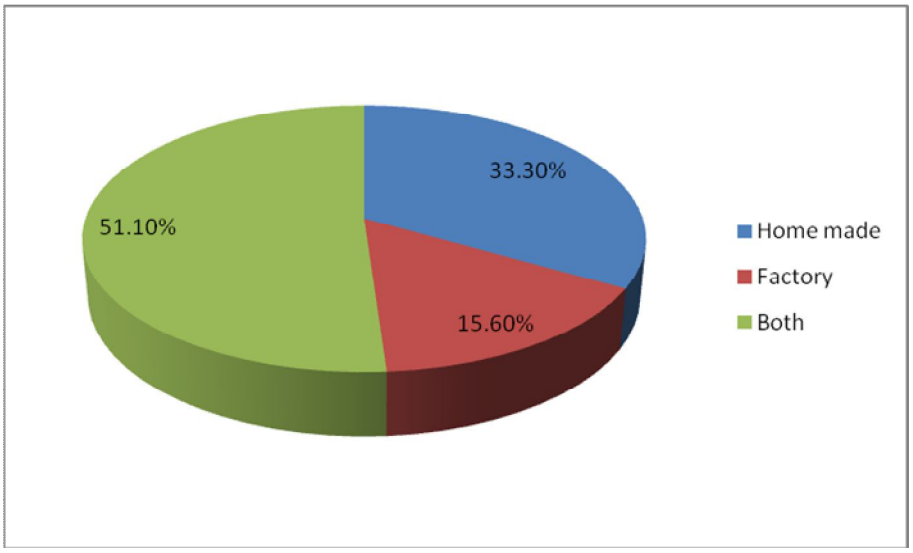


**Figure 4.3: The types of alcohol consumed by the respondents.**

**4.4 Reasons for taking alcohol.**

The participants who were asked why they take alcohol had varied reasons to give as summarized in the figure 4.4 below

**Table 4.4: Reasons for consuming alcohol by the participants.**

| Reason | Percentage |
|---|---|
| Addiction | 1.3% |
| Peer pressure | 13.7% |
| Release stress and forget problems | 39.6% |
| Socialize/pleasure/make friends | 33.0% |
| Get drunk | 1.3% |
| Medication | 11.1% |
| Don't know | 10.1% |

### 4.5 Injuries sustained as a result of drinking

Among the 231(65.4%) drinkers who sustained injuries while drunk. The causes of the injury was varied as follows: Motor vehicle 17(4.8%), bicycle 44(12.5%), assault 29(8.2%), fight 38(10.8%) and fall 100(28.3%). Hospital staff in St. Mary' Mission Hospital at Casualty & Emergency Unit confirmed that most of the injured patients received were either drunk or were involved in an accident associated with drunk driver/cyclist. While admission cases comprised of approximately forty percent of alcohol drinkers .

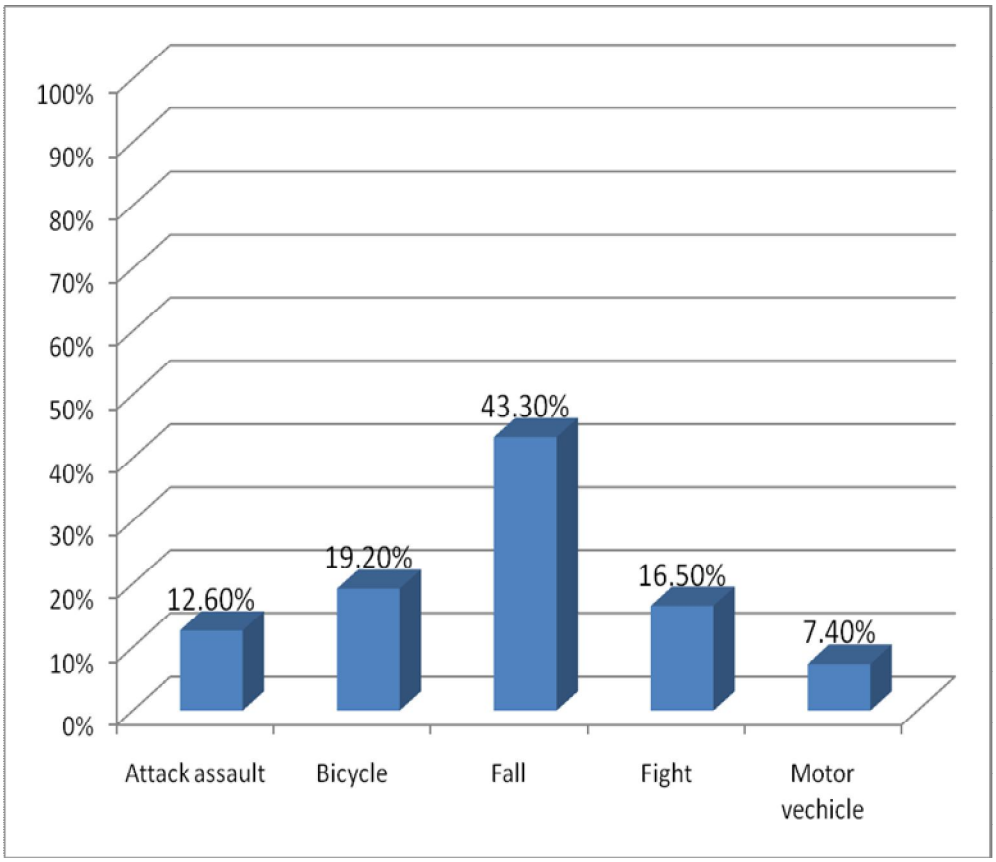


**Figure 4.5: Types of injuries sustained while drunk**

### 4.6 Domestic violence

The respondents who consumed alcohol in the study reported that the causes of domestic violence in their household were varied as follows: sleeping out (51.8%), fighting (47.5%), spousal assault (26.2%), family member abuse (35.2%) and sold household items (40.8%)

Owing to the illegal nature of the brew, 186(72.4%) of the consumers admitted to have been arrested either for brewing or drinking the illicit brew .The daily occurrence booking report from Mumias police station recorded 368 people who had been arrested for brewing or drinking illicit in the month of April –June 2009.

The records at Mumias police station showed 193 persons had been prosecuted in court over illicit brew offences between February –October 2010 as shown in the table 4.6.

**Table 4.6: Summary of illicit brew offences**

| Month | Cases(persons)/ | Quantity(litres) |
|---|---|---|
| February | 92 | 120 |
| April | 38 | 50 |
| July | 30 | 30 |
| October | 33 | 68 |

**Source: Mumias police station records 2010**

**4.7 Focus Group Discussions.**

In focus group discussions, it was reported that little effort was done by the law enforcers to curb illicit brew, some brewers allegedly pay protection fees to the police in advance. While those that are arrested not all of them are taken to court for prosecution. It was reported during the discussion that some of the consumers were police officers; therefore it became complicated for the police to execute arrest on their colleagues.

Discussions with the key informants revealed that atleast sixty percent of the household heads possessed land, bicycle and radio as durable assets. It was observed that bicycle was the most used mode of transport for goods and services.

Majority of households lived in dwellings made of grass thatched roofs, mud walls and cow dung as flooring material. The household used wood fuel as the most common source of energy.

Sugarcane farming was the major economic activity in the area however, amongst the illicit brew consumer only 28.3% cultivated sugarcane. In the focus group discussions participants reported that most of the drinkers leased their farms to other people who planted sugarcane while other consumers sold part of their land and were left with small pieces not adequate for sugarcane and subsistence farming therefore risking food security in the region.

**4.9 Association between social, economic and illicit brew.**

Age, education level, employment and income level (all $p<0.05$) were all significantly associated with consumption of illicit brew as shown in the table 4.9 below

**Table 2.9: Bivariate analysis: Association between social, economic and illicit brew**

| Characteristic | Illicit Brew | | Chi-square | Df | p-value |
|---|---|---|---|---|---|
| | Yes | No | | | |
| Gender: Male | 146 | 31 | 1.5 | 1 | 0.289 |
| Female | 82 | 11 | | | |
| Age: 18-27 | 34 | 17 | | | |
| 28-37 | 75 | 6 | 17.3 | 3 | 0.001* |
| 38-47 | 63 | 8 | | | |
| >47 | 56 | 11 | | | |
| Education: Primary | 92 | 8 | | | |
| Secondary | 49 | 11 | 71.9 | 3 | 0.001* |
| Tertiary | 28 | 21 | | | |
| No education | 59 | 2 | | | |
| Marital status: Married | 145 | 28 | | | |
| Single | 37 | 6 | 3.1 | 3 | 0.375 |
| Separated | 14 | 5 | | | |
| Widowed | 32 | 3 | | | |
| Self employment | 184 | 14 | | | |
| Formal employment | 44 | 28 | 4.0 | 1 | 0.001* |
| Income:<Kshs.3000 | 102 | 6 | | | |
| Kshs.3000-6000 | 84 | 10 | 36.2 | 4 | 0.001* |
| Kshs.7000-10,000 | 25 | 14 | | | |
| Kshs.11,000-20,000 | 8 | 6 | | | |
| Over Kshs.21,000 | 9 | 6 | | | |

* Significant

### 4.9.1 Multivariate analysis

Multivariate logistic regression indicated that adjusting for all other factors: education, age, employment and income levels were significant factors predicting consumption of illicit brew (all $p<0.05$), as shown in the table below.

**Table 4.9.1: Multivariate analysis (predictors of illicit brew consumption)**

| Factor | OR: 95% CI | p-value |
|---|---|---|
| Education | | <0.001* |
| Primary | 0.404(0.165-0.988) | 0.047* |
| Secondary | 0.129(0.053-0.312) | <0.001* |
| Tertiary | 0.072(0.029-0.180) | <0.001* |
| Age | | 0.001* |
| 18-27 | 0.393(0.165-0.938) | 0.035* |
| 28-37 | 2.455(0.856-7.039) | 0.095 |
| 38-47 | 1.547(0.581-4.119) | 0.383 |
| Income(Ksh). | | 0.002* |
| <3000 | 3.187(1.166-8.714) | 0.024* |
| 3000-6000 | 2.000(0.737-5.430) | 0.174 |
| 7000-10000 | 0.893(0.306-2.603) | 0.836 |
| 11000-20000 | 1.143(0.0290-4.507) | 0.893 |
| Employment | | <0.001* |
| (self employment) | 2.256(1.369-3.719) | 0.001* |

Key * =Significant

From table 4.9.1 above, illicit brew consumers with tertiary level of education had 93% lower chances of taking illicit brew compared to those without formal education.

With regard to the age, those consumers between 28-37years old were almost 3 times more likely to drink illicit brew compared to those above 47 years old.

The unemployed drinkers were almost 2 times more likely to consume illicit brew than the employed consumers.

Consumers of the illicit brew with income level between Kshs.3000-6000, were 2 times more likely to consume illicit brew compared to those with above Kshs.20,000 income. While those earning between Kshs.7,000-10,000 had 10.7% higher chances of taking illicit brew in compared to consumers of income level more than Kshs.20,000.

# CHAPTER FIVE

## 5.0 DISCUSSION, CONCLUSION AND RECOMMENDATION

## 5.1 DISCUSSION

### 5.1.0 Sociodemographic characteristics

More households were headed by males in the study area and the findings were similar to those of the Kenya Demographic and Health Survey of 2008-09 (KDHS, 2009). Most of the illicit brew consumers were male household heads; the results were similar to those reported by (Benegal, 2003) in Karnataka state on unrecorded consumption of alcohol in the household which showed a higher prevalence of alcohol use among male adults. The high number of the respondents taking illicit alcohol concurred with the finding of the study done by (Nacada, 2002) that alcohol was the most liberally used psychoactive substance with over 60% consumers. Affordability of the brew was a major for its popularity besides being easily available.

Women were the major producers of the brew and became addicted as a result of repeated testing of the quality of the brew.(Wills,2001).Drinking of illicit brew in the area could be linked to the availability of the raw materials molasses from sugarcane used in making of the illicit brew *busaa/chang'aa* as mentioned earlier since many people were involved in subsistence farming of beans, maize and millet and sugarcane farming .

Drinking of illicit brew, had a major impact on food productivity and consumption, in household where home made brew was produced, 50% of the grain harvest was used to brew alcohol (Dorji, 2005).Food security was affected by diversion of food grain to the brewing of alcohol facilitating hunger and poverty (WHO, 2005). The low level of

literacy and awareness would have contributed to illicit brew consumption since many consumers are not aware of the effects of drinking illicit brew (WHO, 2006).

### 5.1.1 Factors associated with consumption of illicit brew

**AGE**

From the results, the likelihood of drinking the illicit brew increased with the age of an individual. The result were in agreement with the findings of a study done in US which recorded that the earlier the age at which people begun drinking, the more likely they were to become alcohol dependent later in life (Grant & Dawson, 1997).

Activities of an individual tended to be influenced by friends' characters that were in most cases of the same age group or social class. Peer pressure pushed people to drink while others start drinking because their parents drunk (Wanyoike, 2003). In Focus Group Discussion many young men of age between 30-40 years admitted that their drinking habits had gradually slowly changed from occasional to frequent drinking. Frequent drinking of alcohol over a period of time develops into drinking problem referred to as addiction, alcoholism or alcohol dependence (Mengich, 1986). The author defines alcoholism as repeated drinking to a level that individual compromises any condition of health, work and interpersonal relationship.

There was evidence from the finding that drinking of alcohol started at a young age (18-27yrs) and was continuous up to adulthood (28-37 yrs). Among the youth alcohol use began as "experimentation" often initiated in peer groups. Data from Karnataka in India showed a drop from a mean age of 28 yrs to 20 yrs (Benegal, 2003).

The age at which people started drinking was shown to predict their experience of alcohol related problems later in life. Young people moved from “experimentation” to regular consumption and some to harmful consumption of alcohol,(Fergusson,1994).

Age of initiation of alcohol drinking in Mumias division was subject to many cultural factors. The attitude of the Mumias community in this study towards alcohol consumption particularly among young males was accepted as a sign of “growing up” and encouraged young people to start drinking at an early age. Traditional beer *Busaa* was prepared during circumcision period and served to the initiates in seclusion to signify transformation from childhood to adulthood. Drinking *busaa* also symbolized the acceptance of the traditions and customs of the community by the initiates as it was considered a traditional brew. The findings in this study were similar to a study done in Nepal that showed in some communities, alcohol use among children and adolescent was condoned as being ‘part of culture’ however the youth who cannot control their consumption easily became prey to serious adverse effects of alcohol (Vijay, 2001).

Brand names linked to illicit brew such as “power drink”, “kill me quick” and *machozi ya simba* tended to appeal to the youth and lured them to drinking of the illicit brew . In addition the drinks were affordable costing between ten to twenty shillings as compared to certified brew that retailed at one hundred shillings. To the marketers, the names were designed to make the product an integral part of the lifestyle of the young people and to create an intimate relationship between the user and the product. In this study many consumers reported that with only twenty shilling you a person got a glass of *chang’aa* which puts one in the “right moods”.

**EDUCATION**

People with low education level were more vulnerable to illicit brew consumption and were more likely to suffer from its negative effects than those with higher education. The results were in agreement with (WHO, 2006) which showed that low level of education and awareness contributed to drinking of illicit brew because many consumers were not aware of the effects. Where illicit brew was drunk, poverty and day to day hardship was common. Poverty was an impediment to achieving Millennium Development Goals (MDG 2) "Achieve universal primary education". High rate of poverty in rural areas limited educational opportunities because of high demand for child labour, low levels of parental education and lack of access to quality schools. In this study lack of school fee was a limiting factor to children's education in the area as shown by high number of unemployed respondents who spent a lot of time drinking the illicit brew instead of engaging in productive work that could generate income.

Poverty also pushed children to child labour such as selling illicit brew and other forms of child labour.

(Ferusson, 1994) noted that early childhood exposure to alcohol and favorable parental attitudes to alcohol were considered to increase vulnerability to children drinking at adolescence. In this study community attitude toward alcohol permitted alcohol to a boy child at an early age during circumcision which affected the education of males in the area as evidenced by high number male of drinkers.

Research carried out among a group of teenagers on schooling and academic performance (Leader, 2004) showed that drinkers remembered 10% less of what they studied than non drinkers. The study also showed a direct correlation between absenteeism from school and a likelihood of dropping out of school. This study was in agreement with the findings as indicated by number of the children not attending school due to various reasons.

Family stability can affect children performance in school. Domestic violence and parental neglect in the family bears psychological impact on the children which affects their education (Leader,2004). From the study rudeness of the children in school was due to indiscipline, lack of parental guidance and influence of drunkards' behaviours in the surroundings.

**UNEMPLOYMENT**

The association between unemployment and illicit brew in Mumias Division could be attributed to low level of education of the consumers with over 50% who had primary and informal education. The study data showed that few people had skills, training and knowledge to enable them get formal employment. The employed people's income supported both the immediate family and extended family. Alcoholics compromise any condition of health, work and interpersonal relationship with alcohol consumption (Mengich,1986). Many alcohol consumers in the study had developed drinking problem of alcoholism having taken alcohol for more than 3 years. This study was in agreement with the findings of (Mengich,1986) that frequent drinking of alcohol over a period of two years developed into the drinking problem referred to as addiction, alcoholism or alcohol dependence.

The finding of this study also corresponded with the results of the previous studies which demonstrated that association between heavy drinking and unemployment (Klingeman & Gmel, 2001). (Klingeman & Gmel, 2001) noted that people with alcohol dependence and problem drinkers had higher rates of sickness and absenteeism than other employees. Many alcohol consumers had sustained injury while drunk and depending on the nature of the injury, the victim could succumb to an acute or chronic health condition with subsequent absence from his/her usual duties.

The causal association with heavy drinking could lead to unemployment as suggested by (Mustonen & Simpura, 1994), or loss of work as a result of increased drinking (Claussan,1999). This study demonstrated the association between illicit brew consumption and unemployment was well established from the finding of the study.

The major concerns of alcoholism on employment include reduced productivity, absenteeism, safety, employee relationship. All these factors contribute to unemployment

**INCOME**

Low income for the respondents in the division contributed to many respondents consuming illicit brew. Among the consumers, illicit brew was the best option because of its affordability, availability and potency. An income over ksh.10,000 minimized the likelihood of consuming illicit brew because they could afford to buy certified alcoholic drinks besides fulfilling other financial commitments.

The economic consequences of expenditure on alcohol were significant especially in areas of high poverty. Besides money spent on alcohol, the drinker also suffers other adverse effects including low wages due to absenteeism and decreased productivity, unemployment, morbidity, accidents and legal cost of alcohol related offences.

Financial problems of the drinkers which included lack of money to sustain drinking, buy food items for the family, paying school fees and loss of job prompted addicted drinkers to sell personal items, household goods and even family land to satisfy their addiction.

Many respondents whose income was less <ksh.11000 drunk daily and their monthly expenditure on illicit brew was more than their income. The results corresponded to the finding of the study conducted in Sri Lanka examining the link between alcohol and poverty which reported that 7% of the men said that alcohol expenditure was greater than their income, (Baklien,2001).

Given the low socioeconomic status of most rural communities, a large amount of family income was spent on alcohol leaving very little money for food, education, housing and health. Household dwellings and possession reflected socioeconomic status. In this study more than fifty percent of the households lived in houses made of cow dung floor which signified low socioeconomic status floors consistence with finding ( KDHS, 2009). However, it was beyond the scope of this study to compute the wealth index of the area.

### 5.1.2 Drinking of illicit brew.

*Busaa* was used to a larger extent than *chang'aa* because of being a traditional brew, hence used to fulfill cultural practices. In FGDs some participants argued that *busaa*

was the preferred drink because of its nutritional value and was less potent than *chang'aa,* therefore widely used in parties and ceremonies for socializing and pleasure. The reason given for the popularity of home made brew among respondents was that certified brew cost more whereas illicit brews cheaper readily available.

*Chang'aa* was more potent and refined than *busaa* though it carried heavy financial penalty when caught by the authorities and a result, offenders reported more willingness to bribe the law enforcer's. The study reported that a low number (than 1.3%) of illicit brew drinkers used *Chang'aa* with the rest taking *busaa*.

The major risk factor for alcohol related problems was frequency and quantity of alcohol consumed (Midanik, 1995). Among participants many had taken alcohol for more than 3 years with over 50% of the consumers drinking on daily basis an average of 1litre per person. However, this study did not determine long term chronic health effects of alcohol use since there was no follow up of the participants and therefore recommended a longitudinal study to be done in future. However the acute health consequences of alcohol consumption including intentional and unintentional injuries could be linked to alcohol considering the high percent of people who sustained injuries while drunk.

Most of the motor vehicle and bicycle accidents involved drunk motorcycle, vehicle or cyclists who either lost balance/control of the bicycle/vehicle or had blurred vision hence incurred a crash. Assault and fighting among the alcoholics was due to aggression, provocation, unresolved arguments and man-woman friendship. Effects of alcohol consumption include false sense of relaxation, loss of inhibition, and lack of

coordination, blurred vision and slurred speech depending on the concentration of the alcohol in the blood. Some people experience headache, nausea, vomiting suicide accidents and sexual assaults (Nacada, 2002).

From the results, it's evidenced that many people have been arrested for either brewing or drinking the illicit brew. However, in FGDs discussions majority of the respondents agreed that the business of illicit brew still flourished as some of the traders and consumers of the brew were law enforcers. Other people argued that illicit brew was not illegal and therefore arresting the consumers is corruption since not all of them are taken to court. National Annual Economic Survey done between 200-2006 in Kenya showed a high number of convicts are sent to prison annually (RoK,2007).

### 5.1.3 Domestic violence

The results corresponds with the finding of a study done in the United States on abusive men, which showed abusive men with alcohol problems were more violent and frequently inflicted both physical and emotional injuries to their spouses, (Frieze, 1978).

In this study the circumstances under which the assault occurred could not be directly linked to alcohol. The findings could only show a strong association between alcohol partner violence than non-partner violence which could be due to ease of access, with partners having more contact and thus more opportunities for violent encounters. This finding suggested that alcohol may have played a direct precipitating role in domestic violence. It can only be said that since alcohol dependant individuals were intoxicated

more frequently than non dependant individuals, the observed association between spousal abuse and intoxication occurred simply by chance.

General attitude of a particular community or society toward alcohol use could be the source of domestic violence in the household. This implied that certain communities were more tolerant to excessive illicit brew consumption and ignored the transient problems related to alcohol use, whereas other communities were intolerant. In this study, verbal abuse (assault) of the wife by her husband who was under the influence of alcohol was tolerated as culturally acceptable phenomenon among the Mumias community.

Intoxication stops one from thinking clearly and acting sensibly. It puts the person and other people at risk of harm from other adverse effects for example injury due to fall, fight or assault. It is for this reason that coercive sexual activity, domestic violence and perpetuation of poverty are linked to alcohol consumption.

**5.2 Conclusion**

The study concluded that, alcohol consumption impacted negatively on the household. Social and economical consequences such as injuries, unemployment, poverty and domestic violence are all public health concerns associated with illicit brew. The negative effect of illicit brew consumption affects both the users and non users in the community. Predisposing factors to illicit brew consumption included: low socioeconomic status, cultural practice, the environment and laxity of the law enforcement agencies.

The best way to approach the issue is not by declaring it illegal and arbitrary arrests but address the underlying factors linked to illicit brew including provision of education for all, employment; create opportunities for income generation through self employment. Therefore, population based policy strategies can be effective in protecting and promoting public health and safety.

### 5.3 Recommendations

Illicit brew and related problems arise out of a complex relationship between the individual consumer, alcohol, and cultural norms, social, political, economic and physical environment. Policies, programs and other initiatives established should strive to promote healthy living, strengthen individual ability, family and community to economic and social empowerment.

This study recommends the following strategies

1. Provide information and awareness campaign to the society on illicit alcohol related health and social-economic problems through schools, community based organization, churches & mosques and Non governmental organization.
2. Establish and strengthen community resource and rehabilitation centres with adequate facilities, information, education and communication materials to counsel and offer assistance to those already affected by alcohol.
3. Community actions in collaboration with sectors like local government, provincial administration, police, health, media; NGO's and CBO should strive to establish activities aimed at alleviating poverty.

This study recommends that, further studies should be done by researchers to determine the contribution of illicit brew consumption to health problems.

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# APPENDICES

## APPENDIX I

## QUESTIONAIRE FOR THE HOUSEHOLD HEAD

**Household Data**

1. Gender Male ☐ Female ☐

2. Age 18-27 - ☐ 28-37 ☐

38 –47 ☐ above 47 ☐

3. Marital Status Married ☐ Widowed ☐

Single ☐ Separated ☐

4. Number of Children _____

5. Education background: Primary ☐ Secondary ☐ College ☐

University ☐ No education ☐

6. Religion _____

**School Attendance**

7.How many children under 18 years are in the household _____

8.How many are attending school. Pre-Primary _____

Primary _____

Secondary _____

Not Attending School _____

Reason for not attending school?

a) Lack of School Fees ☐ b) Defiant ☐ e) Others ☐

c) Not performing well ☐ d) Sickness ☐

**Drinking of illicit brew**

9. Do you drink alcohol**?** Yes ☐ No ☐

10. If yes which one; i) Home made ☐ ii) Factory made ☐ iii) Both ☐

11. How long have you been drinking?

Less than 1 year ☐ 2years ☐ Over three years ☐

12. Do other members of this household drink alcohol Yes ☐ or No ☐

13. If yes please state whether Mother, father, Son or Daughter and the type of drink

type of the drink

i……..

ii……..

iii……..

14. What are your reasons for drinking alcohol?

……

……

……

15. How often do you drink? Daily ☐ Weekly ☐ Monthly ☐ Yearly ☐

16. Where or how do you get alcohol drink? I brew ☐ buy ☐

If you brew which one? _____

17. Have you ever been arrested for drinking / Brewing Alcohol? Yes ☐ No ☐

a) If yes how many times……..…….....

b) If no how do you escape arrest

……

……

……

c) Do you think the Sub-chief knows you drink? Yes ☐ No ☐

☐

18. Does any other member of this household produce/sell illicit brew? Yes ☐ No

If Yes which one? …….

**Household Income**

19. Are you employed? Yes ☐ No ☐

20. On average what is your monthly income.

< Kshs. 3000 ☐ Kshs 3000 – 6000 ☐ Kshs 7000 – 10,000 ☐

Kshs11, 000 – 20,000. ☐ Over 21,000

21. How much do you think you spend on alcohol in a day? Kshs._____

22. What are the other activities that generate income to this household?

Jua kali ☐

Subsistence farming ☐

Casual labour ☐

Sugarcane farming ☐

Others (Specify)…….

23. a) Have you had an injury while drunk ? Yes ☐ No ☐

b) What was the mode of the injury?

Motor Vehicle ☐ Bicycle Attack assault ☐

Fight ☐ Fall ☐ Machine ☐

**Domestic Violence**

24.Did any of the following things happen to you when drunk?

Sold households items/exchange for drinking Yes / No

Drunk and Slept out Yes / No

Engaged in fighting Yes / No

Assault your Spouse Yes / No

Beat / Slapped family member Yes / No

| | |
|---|---|
| Abused Family Member | Yes / No |
| Killed Someone | Yes / No |

Others(specify)……

**APPENDIX II**

**CONSENT FORM**

STUDY TITLE

A SURVEY OF THE ILLICIT BREW CONSUMPTION AND ITS EFFECTS ON SOCIOECONOMIC STATUS IN THE HOUSEHOLDS IN MUMIAS DIVISION, WESTERN PROVINCE KENYA.

INVESTIGATOR**:** ISAAC WERE,
SCHOOL OF PUBLIC HEALTH, MOI UNIVERSITY,
P.O BOX 4606, Tel: 0724 154 318
ELDORET.

Purpose and background:

I am a Masters student at Moi University, School of Public Health conducting a research to determine the effects of illicit brew consumption on socioeconomic status of household in Mumias division. This study is an academic requirement for a Master of Public Health degree program.

I kindly request for your assistance in responding to the attached questionnaire for my data collection. All the information will remain confidential and only used for purpose of this study. The findings and recommendation of the study will benefit the people of Mumias division, community based organization and the government of Kenya.

Your participation is entirely voluntary and you have the right withdraw from the study any time. If you consent, please indicate by signing this form.

For the participant: I willingly accept to participate in the study.

Signature…….. Date……..

**APPENDIX III**

**FOCUS GROUP DISCUSSIONS GUIDELINE QUESTIONS**

1. HOW DOES THIS COMMUNITY VIEW ILLICT BREW CONSUMPTION

Probe for:

- How prevalence is the consumption of the illicit brew in the area.
- In your opinion why do some people choose to drink the illicit brew while others do not drink?
- Which types of the illicit brews are consumed in Mumias division?
-From your own observation, which is the most common type of the illicit brew used in this region?
-Do the availability of the raw material for the manufacture of the illicit brew affects food security in Mumias area.

2. WHAT ARE THE SOCIAL AND ECONOMIC FACTORS ASSOCIATED WITH CONSUMPTION OF THE ALCOHOL IN THIS AREA

Probe for:

-Age at which illicit consumption brew begin.
-Do you think education determines whether a person takes illicit brew or not.
-In this area is the marital status of an individual have any influence on consumption of illicit and do we
-remarked difference in drinking habit among the married and the unmarried drinkers.
-Does peer pressure influence alcohol drinking.
-In your own judgement, can poverty make a person to drink illicit brew.

3.IN YOUR VIEWS, WHAT ARE EFFECTS OF ILLICIT BREW CONSUMPTION IN THE HOUSEHOLD IN REGARD TO

-Schooling of the children
-Accidents associated with consumption of the alcohol
-Household income and expenditures
-Sugarcane farming
-Domestic violence
-Sugarcane farming

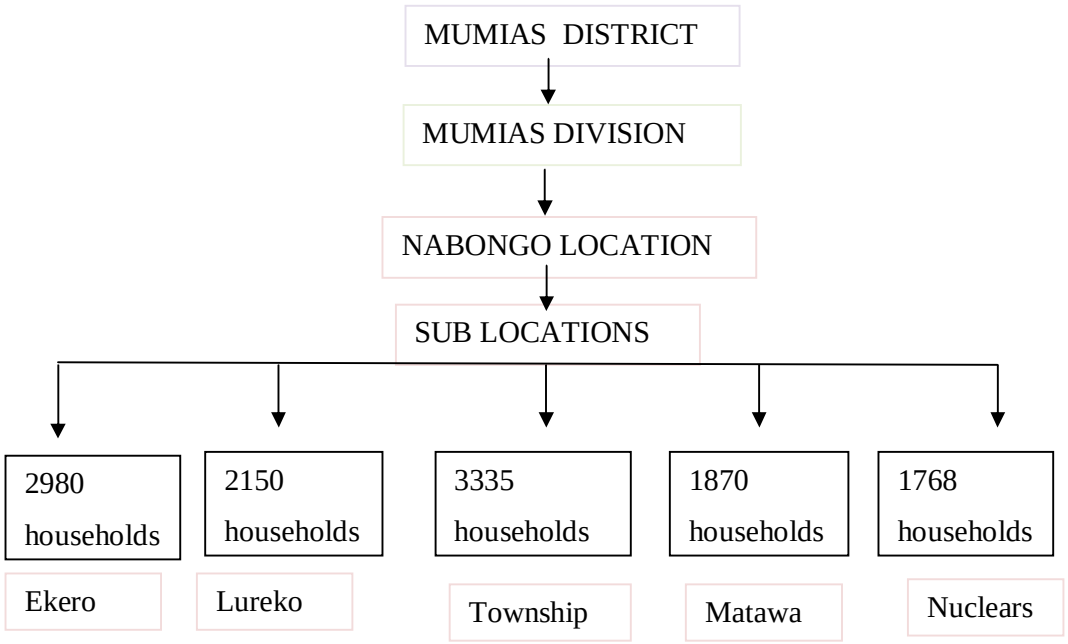
**APPENDIX IV: TABLE FOR DETERMINING SAMPLE SIZE**

The table for determining sample size (S) chosen randomly from a given finite population(N) .(Kathuri and Pals,1993)

| N | S | N | S | N | S |
|---|---|---|---|---|---|
| 10 | 10 | 220 | 140 | 1200 | 291 |
| 15 | 14 | 230 | 144 | 1300 | 297 |
| 20 | 19 | 240 | 148 | 1400 | 302 |
| 25 | 24 | 250 | 152 | 1500 | 306 |
| 30 | 28 | 260 | 155 | 1600 | 310 |
| 35 | 32 | 270 | 159 | 1700 | 313 |
| 40 | 36 | 280 | 162 | 1800 | 317 |
| 45 | 40 | 290 | 165 | 1900 | 320 |
| 50 | 44 | 300 | 169 | 2000 | 322 |
| 55 | 48 | 320 | 175 | 2200 | 327 |
| 60 | 52 | 340 | 181 | 2400 | 331 |
| 65 | 56 | 360 | 186 | 2600 | 335 |
| 70 | 59 | 380 | 191 | 2800 | 338 |
| 75 | 63 | 400 | 196 | 3000 | 341 |
| 80 | 66 | 420 | 201 | 3500 | 346 |
| 85 | 70 | 440 | 205 | 4000 | 351 |
| 90 | 73 | 460 | 210 | 4500 | 354 |
| 95 | 76 | 480 | 214 | 5000 | 357 |
| 100 | 80 | 500 | 217 | 6000 | 361 |
| 110 | 86 | 550 | 226 | 7000 | 364 |
| 120 | 92 | 600 | 234 | 8000 | 367 |
| 130 | 97 | 650 | 241 | 9000 | 368 |
| 140 | 103 | 700 | 248 | 10000 | 370 |
| 150 | 108 | 750 | 254 | 15000 | 375 |
| 160 | 113 | 800 | 260 | 20000 | 377 |
| 170 | 118 | 850 | 265 | 30000 | 379 |
| 180 | 123 | 900 | 269 | 40000 | 380 |
| 190 | 127 | 950 | 274 | 50000 | 381 |
| 200 | 132 | 1000 | 278 | 75000 | 382 |
| 210 | 136 | 1100 | 285 | 100000 | 384 |

N=Population size, S=Sample size. The sample proportions will be within plus or minus 0.5 of the population proportion with 95% level of confidence (Kathuri and Pals,1993)

**SAMPLING FRAMEWORK**




**Sample size determination**

2980/(12103) x 373 =92, 2150/(12103)x373=66, 3335/(12103)x373=103

1870/(12103)x373=58, 1768/(12103)x373=54

## A MAP OF MUMIAS DISTRICT