NATIONAL AUTHORITY FOR THE CAMPAIGN AGAINST ALCOHOL AND DRUG ABUSE

SURVEY TO ESTABLISH THE STATUS OF *SHISHA* AND *KUBER* USE IN THE COUNTRY

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EXECUTIVE SUMMARY

According to the World Health Organization, the number of deaths per year due to tobacco related diseases is about 5 million. In Kenya, the current use of tobacco among the population aged 15-65 years stands at 9.1% with cigarette smoking being the most common form of tobacco in Kenya where 8.6% of the population are current users. Non communicable diseases kill more than 36 million people each year. In terms of attributable deaths, the leading NCD risk factor globally is raised blood pressure (to which 13% of global deaths are attributed) followed by tobacco use (9%). In light of these challenges and given the increasing consumption of tobacco, particularly among the youth, and the emerging tobacco products like shisha and kuber, the study sought to assess the status of shisha and kuber use in Kenya. The survey was conducted in the eight regions of Kenya namely; Nairobi, Central, Eastern, North Eastern, Rift Valley, Nyanza, Western and Coast. In total, 17 counties were covered in the survey. The target population constituted the sub-group population of youth who smoke shisha or chew smokeless tobacco e.g. kuber and snuff. A total of twenty one (21) Focus Group Discussions (FGDs) were conducted across the 8 regions. The FGDs gave insights of the possible sources, sale and consumption of shisha, kuber and other forms of smokeless tobacco in the country. Samples of shisha were collected at the point of use, in pubs, cafes and restaurants. For kuber and other forms of smokeless tobacco, the samples were collected from the retail shops and alcohol selling outlets.

According to the findings, shisha had no local names being an emerging drug that is relatively new in the Kenya market. Availability of shisha was mostly in the urban centres of major towns like Nairobi, Nakuru, Eldoret, Kisumu and Mombasa. However, it was more popular in Nairobi followed by Mombasa. The use of shisha varies from region to region. Participants reported that the use was higher in the urban centres of major towns compared to the rural regions of the country. It was also reported that majority of those using shisha were aged between 18-35 years. It was also more common among students of higher institutions of learning. Shisha smoking was also very popular in home parties especially among the young people, both male and female. In terms of education, majority of those using shisha are educated, employed and mostly from the affluent in society. Further, because of its cost, it is not easily accessible.

Kuber is known by a number of local names namely: *dawa*, *dose*, *ndovu*, *pembe*, *cuba*, *tambuu*. Kuber has penetrated every corner of this country and it was readily available both in the rural and urban areas. There were two types of kuber; those that were packaged in sachets and those that were mixed from a number of ingredients and were commonly referred to as *tamboo*.

Unlike shisha, the use of kuber and other forms of smokeless tobacco like snuff is widespread, both in the rural and urban areas in Kenya. Participants reported that majority of those using kuber and other forms of smokeless tobacco were aged between 14-25 years. It was also very common among school going children and users go unnoticed because the smell resembles that of a mouth freshener. Chewing of kuber and other forms

of smokeless tobacco was more common among the less educated, unemployed and mostly the poor. Kuber was also commonly used by groups like the boda boda operators. Kuber use was also very common among commercial sex workers (CSW).

A total of 100 samples were collected across the country. Among these samples, 24% were shisha, 22% formulated kuber/ tamboo 22% snuff, 18% kuber (others) and 14% kuber. According to laboratory results, the average level of nicotine in mg/g of sample collected shows that kuber has the highest level at 4.41mg/g followed by snuff at 3.95mg/g, kuber (others) at 3.52mg/g, formulated kuber/ tamboo at 3.49mg/g while shisha had the least levels of nicotine at 0.9mg/g. Among all the 100 samples tested for heroin/opiates, 25% were positive. In terms of individual samples, shisha had the highest samples contributing 19% of the total positive samples followed by formulated kuber/ tamboo contributing 4% and finally kuber (others) at 2%. For snuff and kuber (original sachet) samples, they were all negative for heroin. In terms of marijuana/ bhang, among all the 100 samples tested, 1% (one sample) was positive. However, according to the findings, none of all the samples collected tested positive for cocaine or amphetamines.

Recommendations

Based on the findings of this study, the following is recommended:

1. The Tobacco Control Act, 2007 provides for protection of the health of persons under the age of eighteen years by preventing their access to tobacco products. The Act also provides for strict adherence to the packaging requirements for all types of tobacco products. This therefore calls for the relevant agencies to enforce these provisions of the Act to deter access, availability and affordability of tobacco products among the underage.

2. Students are citizens and potential future consumers, and with respect to these roles it is appropriate for the Ministry of Education to consider utilizing official information provided by the Ministry of Health to integrate instruction on the health consequences, addictive nature and mortal threat posed by consumption of tobacco in subjects taught in public and private schools at all levels of education, including informal and non-formal as well as indigenous learning systems.

3. Under schedule 1 of the Narcotic Drugs and Psychotropic Substance (Control) Act of 1994, heroin (diacetylmorphine) and cannabis/ bhang have been listed under the first schedule of narcotic drugs in Kenya. These are prohibited substances and therefore call for seizure of all tobacco products adulterated with these narcotic drugs. There is need for the relevant agencies to undertake regular market surveillance to protect the health of the public from potential harm associated with the consumption of these narcotic drugs without their knowledge.

4. The enforcement agencies should regulate the smokeless tobacco products such that they are only permitted if the importers and manufacturers satisfy the legal and regulatory requirements for these products.

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ABBREVIATIONS AND ACRONYMS

CSWs	Commercial Sex Workers
FCTC	Framework Convention on Tobacco Control
FGDs	Focus Group Discussions
NACADA	National Authority for the Campaign Against Alcohol and Drug Abuse
NCDs	Non-Communicable Diseases
NIDA	National Institute on Drug Abuse
WHO	World Health Organization

CHAPTER ONE: INTRODUCTION

1.1Background

Every year, the use of tobacco products is responsible for a heavy death toll and severe human diseases worldwide. The number of deaths per year due to tobacco related diseases is about 5 million and if the smoking patterns continue, about 10 million deaths are expected to occur each year due to tobacco smoking by the year 2020 (WHO, 2007). The same source estimates that about half of the people that smoke today (about 650 million people) will be killed by their tobacco use, unless they quit smoking. Smokeless tobacco products (STP) like kuber are used without combustion and this eliminates the danger of direct exposure of toxic combustion compounds to the lung and other tissues of the user and the people within the environment. But the use of STP may result in other health hazards, local or systemic according to the way of administration and to the content of various toxic products, including nicotine and tobacco-specific nitrosamines.

Tobacco use and exposure comes in both smokeless and smoking forms. Smokeless tobacco is consumed in un-burnt forms through chewing or sniffing and contains several carcinogenic, or cancer-causing compounds. Smokeless tobacco has been associated with oral cancer, hypertension, heart disease and other conditions. Smoking tobacco, by far the most commonly used form globally, contains over 4,000 chemicals, of which 50 are known to be carcinogenic. There are currently about 1 billion smokers in the world (WHO, 2011).

1.2Tobacco use in Kenya

In Kenya, the current use of tobacco among the population aged 15-65 years stands at 9.1%. Cigarette smoking is the most common form of tobacco in Kenya with 8.6% of the population being current users. Other commonly used forms include sniffed/ chewed tobacco (0.7%), kuber (0.3%) and shisha (0.2%). In terms of geographical distribution, North Eastern region has the highest prevalence of current tobacco users at 16.1% followed by Nairobi (14.4%) and Central (10.2%) regions. Statistics from a survey conducted in 2012 also established that in Kenya, 4.5% or approximately 900,000 of the population between 15-65 years are dependent on tobacco use (NACADA, 2012).

1.3 Rationale

Non communicable diseases kill more than 36 million people each year. In terms of attributable deaths, the leading NCD risk factor globally is raised blood pressure (to which 13% of global deaths are attributed) followed by tobacco use (9%). The onset of smoking coincides with the early-through-middle adolescent development stages. This is significant as young people may not fully understand the consequences of smoking. Further, there is a link between the onset of smoking and adolescent development and 90% of all adult smokers begin the deadly addiction as teenagers.

In light of these challenges and given the increasing consumption of tobacco, particularly among the youth, and the emerging tobacco products like shisha and kuber, the study

sought to assess the status of shisha and kuber use in Kenya. Findings from this study will provide evidence that may be used to guide the development of public education and awareness programs and support the development of a regulatory legal framework for abuse of tobacco products in Kenya.

1.4 Objectives

1.4.1 General objective

To establish the status of shisha and kuber use in the country

1.4.2 Specific objectives

a. To establish the sources of *shisha* and *kuber* in the country
b. To identify the selling outlets for *shisha* and *kuber* in the country
c. To establish consumption of shisha and *kuber* in the country
d. To collect random samples of *shisha* and *kuber* across all major towns in the country
e. To screen collected sampled for heroin, cocaine, marijuana and amphetamine contamination

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Tobacco use has long been a leading contributor to premature death, and causes about 9% of deaths worldwide (World Health Organization). Presently, the burden of tobacco use is greatest in high-income countries (18% of deaths are attributable to tobacco use), intermediate in middle-income countries (11%), and lowest in low-income countries (4%)(World Health Organization). However, because rates of smoking are increasing in many low-income and middle-income countries (and decreasing in most high-income countries), the proportion of deaths from tobacco use could increase in low-income and middle-income countries as the number of tobacco-attributable deaths increases (WHO, 2011). According to WHO, nearly 6 million people die from tobacco-related causes every year (WHO, 2011). If present patterns of use persist, tobacco use could cause as many as 1 billion premature deaths globally during the 21st century (WHO, 2011).

Although most of the tobacco that is consumed throughout the world is in the form of manufactured cigarettes, it is also smoked in other products, such as cigars, cigarillos, pipes, water pipes, kreteks (clove cigarettes), bidis (tobacco in a tendu or temburni leaf that is tied with a cotton thread), and papirosy (cardboard tube-tipped cigarettes) (Ericksen*et al*., 2012). Water pipes are commonly used in Middle Eastern countries and some Asian countries.

Regardless of the differences between smokeless tobacco products, they all contain nicotine, a highly addictive chemical, and cause equivalent nicotine levels in the blood as smoking cigarettes. Smokeless tobacco products are as addictive as cigarettes and can cause the same type of dependence, which makes quitting smokeless tobacco very difficult (HHS, 1986). Smokeless tobacco use during youth can lead to a lifetime of addiction to smokeless tobacco or, frequently, to cigarettes, as the nicotine addiction created by smokeless use ultimately leads to habitual smoking. Evidence shows that adolescent boys who use smokeless tobacco products have a higher risk of becoming cigarette smokers within four years (Tomar, 2003). Considering that smokeless tobacco products still contain varying levels and types of carcinogens (Stepanov, 2006) and cause other types of health risks compared to cigarettes, the only way to reduce an individual tobacco users' health risks to the maximum extent possible is to quit using tobacco entirely with evidence-based treatments that have been scientifically documented to help people quit using tobacco (e.g., nicotine gum and patch, telephone-based behavioral counseling/quit lines) (Henley *et al*., 2007).

2.2Tobacco Control Initiatives

In order to tackle the tobacco epidemic, a wide range of measures is required. Evidence from nations that have witnessed a decline in smoking shows that a combination of the following is needed: mass media health education programmes; a ban on all forms of tobacco advertising and promotion; vivid health warnings on tobacco products; regular increases in tobacco taxation; restrictions on smoking in public places and the workplace

and better consumer information and help for smokers who wish to quit (World Bank Group, 2003). In addition, in countries where tobacco is grown, crop diversification should be introduced wherever possible. Countries that have been able to introduce a comprehensive set of measures have dramatically reduced smoking prevalence and as a consequence also lowered cancers, heart disease, circulatory diseases and respiratory diseases. In recognition of the global health impact of tobacco, the World Health Organization has launched the Tobacco Free Initiative and has taken the lead in developing the world's first global tobacco control treaty – the Framework Convention on Tobacco Control.

2.3Framework Convention on Tobacco Control

The Framework Convention on Tobacco Control (FCTC) was ratified on 27 February 2005 and is a legally-binding international treaty. It is the world's first public health treaty. The FCTC is like other international treaties such as the Rights of the Child and the Landmine Treaty. Over 100 countries have ratified the treaty, representing close to 70% of the world's total population (Le Gales-Camus, 2005). The objective of the FCTC is 'to protect present and future generations from the devastating health, social, environmental and economic consequences of tobacco consumption and exposure to tobacco smoke (WHO, 2003).' The FCTC sets out minimum standards required by the signatories. Countries will be encouraged to implement measures that are stronger than those set out in the treaty.

Significantly all parties are required to undertake a comprehensive ban on all direct and indirect tobacco advertising, promotion and sponsorship within 5 years of ratifying the treaty. The FCTC states that warning labels should occupy at least 50% of the surface area of cigarettes packs and that descriptors such as 'light' or 'mild' be prohibited (Framework Convention Alliance for Tobacco Control, 2005).

The FCTC also urges the strict regulation of tobacco product contents; higher tobacco taxes; global coordination towards the elimination of tobacco smuggling; and the promotion of smoking prevention, cessation and research programs. All parties will also be required to implement effective measures to protect non-smokers from tobacco smoke in workplaces, public transport and indoor public places. The FCTC has given new impetus to enact or strengthen legislation in many countries and also mobilized communities around the world to do more about tobacco control and smoking related issues.

2.4 The Tobacco Control Act, 2007

The object and purpose of this Act is to provide a legal framework for the control of the production, manufacture, sale, labeling, advertising, promotion, sponsorship and use of tobacco products, including exposure to tobacco smoke, in order to –

a. Protect the health of the individual in light of conclusive scientific evidence implicating tobacco production, use and exposure to tobacco smoke and tobacco products, in the incidence of debilitating illness, disease, disability and death;

b. Protect the purchasers or consumers of tobacco products from misleading and deceptive inducements to use tobacco products and consequent dependence on them; and inform them of the risks of using tobacco products and exposing others to tobacco smoke;

c. Protect the health of persons under the age of eighteen years by preventing their access to tobacco products;

d. Inform, educate and communicate to the public the harmful health, environmental, economic and social consequences of growing, handling exposure to and use of tobacco and tobacco products, and tobacco smoke;

e. Protect and promote the right of non-smokers to live in a smoke-free environment;

f. Protect and promote the interest of tobacco growers by providing viable alternative crops;

g. Adopt and implement effective measures to eliminate illicit trade in tobacco including smuggling, illicit manufacturing and counterfeiting;

h. Promote and provide for rehabilitation and cessation programmes for consumers of tobacco products;

i. Promote research and dissemination of information on the hazardous effects of tobacco production and use including exposure to tobacco products and tobacco smoke, in particular the health risks including addictive characteristics of tobacco consumption and exposure to tobacco smoke.

The following health messages shall be displayed on every package containing a tobacco product, sign or advertisement stipulated under the provisions of this Act:–Smoking harms people next to you; Tobacco use kills; Tobacco harms your unborn baby; Tobacco use causes cancer; Tobacco use causes heart disease; Tobacco use causes lung disease; This product can cause gum disease and tooth loss (includes smokeless tobacco products); This product can cause mouth cancer (includes smokeless tobacco products); This product is not a safe alternative to cigarettes (for smokeless tobacco products); Tobacco use causes impotence; Tobacco uses causes miscarriages; Tobacco use causes infertility in women; Tobacco use causes mental retardation in children.

CHAPTER THREE: METHODOLOGY

3.1 Study area

The survey was conducted in the eight regions of Kenya namely; Nairobi, Central, Eastern, North Eastern, Rift Valley, Nyanza, Western and Coast. In total, 17 counties were covered in the survey.

3.2 Study design

A cross-sectional study was conducted using both quantitative and qualitative data collection methods. While the dominant methodological approach in contemporary drugs research remains quantitative, there has been increasing receptivity to the use of qualitative methods as a means of understanding and responding to drug use (Agar, 1980; 1995; 1999).

3.3 Target population

The target population constituted the sub-group population of youth who smoke shisha or chew smokeless tobacco e.g. kuber and snuff.

3.4 Sampling technique

The survey relied on non-probability sampling methods given that shisha and kuber are drugs common in the urban areas (NACADA, 2012). All the eight regions namely: Nairobi, Central, Eastern, North Eastern, Rift Valley, Nyanza, Western and Coast were sampled purposively to ensure that people with different cultural, economic and socio-demographic characteristics were included in the survey. From each of the sampled regions, 17 counties were purposively selected from the eight regions. From the 17 counties, 21 sub-Counties were purposively selected taking into account unique features like proximity to an urban setting where shisha and kuber were most prevalent. From each sub-County, one location was randomly selected. The FGDs were held at the sub-location with a venue provided by the area Provincial Administration. Mobilization of participants for the FGDs was conducted by the area chief where priority was given to youth currently using shisha or any form of smokeless tobacco.

Sampling of shisha and kuber and other forms of smokeless tobacco was conducted at the sub-County level where they were readily available. After purchase of the samples, they were labeled and packaged in an envelope. The samples were then delivered to the Government Chemist for laboratory analysis.

Table 1: Focus Group Discussion Sites

Region	Sampled County	Sampled District	Sampled Location
Nyanza	Kisumu	Kisumu Town East	Town
	Kisii	Kisii Central	Nyatieko
	Siaya	Siaya	Siaya Township
Nairobi	Nairobi	Lang'ata	Nairobi West
		Kasarani	Githurai
		Westlands	Kilimani
Central	Nyeri	Nyeri Central	Mukaro
	Nyandarua	Nyandarua North	OL Kalou
North Rift Valley	Uasin Gichu	Eldoret West	Kibulgeny
	West Pokot	Pokot Central	Kapenguria
South Rift Valley	Nakuru	Nakuru	Municipality
	Kajiado	Kajiado Central	Township
Eastern	Makueni	Makueni	Wote
	Isiolo	Isiolo	Central
Western	Trans-Nzoia	Trans-Nzoia West	Municipality
	Busia	Busia	Township
Coast	Mombasa	Kisauni	Kisauni
	Kilifi	Bahari	Mtwapa
		Malindi	Malindi
North Eastern	Garissa	Ijara	Ijara
			Masalani

3.5 Sampling procedure

Participants were recruited on the basis of their willingness to participate in the study. Participants who met the inclusion criteria and consented to participate in the proposed study were considered.

3.6 Sampling

The country was divided into 9 regions namely: Nairobi, Coast, North Eastern, Eastern, Central, South Rift, North Rift, Nyanza and Western. A total of twenty one (21) Focus Group Discussions (FGDs) were conducted across the 9 regions. The FGDs gave insights on the possible sources, sale and consumption of shisha, kuber and other forms of smokeless tobacco in the country.

Samples of shisha were collected at the point of use, in pubs, cafes and restaurants. For kuber and other forms of smokeless tobacco, the samples were collected from the retail shops and alcohol selling outlets.

3.7 Research instruments

Qualitative data was captured using focus group discussion guides. This elicited rich qualitative data that aided the deeper understanding of the trends of substance abuse. One focus group discussion (FGDs) with 8 - 10 participants each was conducted in each of selected Counties with shisha, kuber or other forms of smokeless tobacco users. The individual responses were captured both electronically by use of a digital tape recorder and in writing. The interviews were conducted in Kiswahili, the language acceptable to all. Employing this method within quantitative research enriches the findings rather than contaminating its methodological quality (Ong, 1993).

The Authority engaged the Government Chemist to undertake sampling of shisha, kuber and forms of smokeless tobacco. A sampling form was used to capture the sample number, date of sampling, the County, sub-County, Location and nearest market, product name, description, manufacturer, dealer, method of sampling and size of the sample.

3.8 Data analysis

Data from the FGDs was collected through note taking and audio taping. Soon after the interviews, field notes were reviewed where major ideas, concepts, or issues raised by participants were documented. After completing the field notes, the audiotape was reviewed alongside the notes taken to ensure that they provided an accurate and comprehensive reflection of the discussion. This involved listening to the audiotape several times, comparing it with the field notes and amending the notes until they provided a thorough and descriptive representation of the discussions.

Once the field notes accurately represented the discussions that occurred in each interview, the process of content analysis was used to elicit common themes between discussions. The notes were later scrutinized, comparing them and looking for ideas that occur several times for categories or themes. Major and minor categories were identified. Links among categories were revealed. As the "big picture" emerged, data was fitted into another category or into two. The researcher worked through all transcripts in this way. The notes and categories were then reviewed and major themes emerged. The researcher was careful to constantly countercheck the ideas back with their original notes and data. The researcher continued with this process until the findings accurately represented the data. At this stage re-listening to the audio recordings was also done to identify illustrative examples which were used to demonstrate the meaning of the themes from the participants' perspectives.

For the samples of shisha and kuber collected across the country, they were handed over to the Government Chemist for analysis. Each of the samples was tested to determine the following parameters: nicotine levels, heroin (opiates), cocaine, marijuana and amphetamines. The results from each test were recorded either as positive (presence of an adulterant) or negative (no presence of an adulterant).

CHAPTER FOUR: RESULTS OF QUALITATIVE DATA

4.1 Introduction

The rapid situation assessment of shisha and kuber use covered all the eight regions of the country; Rift Valley (West Pokot, Nakuru, Uasin Gishu and Kajiado); Western (Trans Nzoia and Busia); Nyanza (Kisumu and Kisii); Nairobi; Eastern (Makueni and Isiolo); Coast (Mombasa and Kilifi); and North Eastern (Garissa).

4.2 Patterns of usage of shisha and kuber

4.2.1 Shisha

Shisha is a form of flavored, washed tobacco that is smoked and different from normal rolling tobacco or cigarettes because it is wet, not dry and is not lit, but heated using coal. The vaporized gas is inhaled and is quickly and effectively delivered into the bloodstream by absorption in the lungs.

Shisha being an emerging drug had no local names. Availability of shisha was mostly in the urban centres of major towns like Nairobi, Nakuru, Eldoret, Kisumu and Mombasa. However, it was more popular in Nairobi followed by Mombasa.

The use of shisha varies from region to region. Participants reported that the use was higher in the urban centres of major towns compared to the rural regions of the country. It was also reported that majority of those using shisha were aged between 18-35 years. It was also more common among students of higher institutions of learning. Shisha smoking was also very popular in home parties especially among the young people, both male and female. It was reported that "*the people who smoke shisha a lot are ladies. Most of the time you will find young ladies smoking it, they like it very much more than men and their numbers are always higher than men any time you get to the shisha clubs*.".

In terms of education, majority of those using shisha are educated, employed and mostly from the affluent in society. Further, because of its cost, it is not easily accessible.

4.2.2 Kuber

Kuber is a smokeless tobacco similar to snuff. Portions of it are placed between the cheek and the gum and then chewed. The excess saliva that is produced is usually spitted out. Although kuber vendors classify it as a mouth freshener, surprisingly enough, it can get one very high.

Kuber is known by a number of local names namely: *dawa*, *dose*, *ndovu*, *pembe*, *cuba*, *tambuu*. Kuber has penetrated every corner of this country and it was readily available both in the rural and urban areas. There were two types of kuber; those that were packaged in sachets and those that were mixed from a number of ingredients and commonly referred to as *tamboo*.

The use of kuber and other forms of smokeless tobacco like snuff is widespread, both in the rural and urban areas in Kenya. Participants reported that majority of those using kuber and other forms of smokeless tobacco were aged between 14-25 years. It was also very common among school going children and users go unnoticed because the smell tastes like a mouth freshener. Chewing of kuber and other forms of smokeless tobacco was more common among the less educated, unemployed and mostly the poor. Kuber was also commonly used by groups like the boda boda operators. A participant reported that "*the youth are completely getting swallowed in the use of this kuber especially the bodaboda riders. Some cannot even operate when they haven't used it*." Kuber use was also very common among commercial sex workers (CSW). It was reported that kuber gives CSW courage and helps them cope with guilt by making prostitution appear normal to them.

4.3 Reasons for using shisha and kuber

There were varied reasons given by users of *shisha* and *kuber,* some of which border more towards myths as opposed to facts.

4.3.1 Shisha

The reasons for using *shisha* were as follows:

- It is good for relaxation and passing time
- It enhances sexual appetite
- It is a good alternative to cigarette smoking
- It has a sweet sensation due to availability of different flavours like strawberry, vanilla, lemon, watermelon, citrus, guava, mint chocolate etc. making it taste better than cigarettes
- It is more stimulating than cigarette smoking
- It is not very addictive compared to cigarette smoking
- Shisha smoking makes one to look classy because it is perceived as drug for the rich. "*When one uses it, they are seen as people who have swaga*." "*People who use shisha are ranked as high class*."

4.3.2 Kuber

The reasons for using *kuber* were as follows:

- It gives courage to casual labourers making them to work harder
- It provides temporary solutions to problems
- Chewing kuber is a good leisure activity and also helps to alleviate stress
- It makes one feel good and relaxes the mind, "*kwa raha zako*"
- It helps somebody to stay awake
- It gives you increased sexual appetite
- It is cheap and very easily accessible
- It is easy to conceal when one is using it and cannot be detected even when used in school
- It is medicinal and believed to heal illnesses like fever, flu and cough
- It is less harmful than cigarettes

- It prevents one from getting pregnant. "*I know of some women who use kuber as a way of family planning. They tell me that they are told by people that they will not get pregnant when they use it*."

4.4 Combinations with other drugs of abuse

The use of one or more drugs in combination to kuber or shisha to achieve a higher stimulation was reported by the users.

4.4.1 Shisha

The most commonly reported a psychoactive substance used in combination with shisha was *khat/ miraa*. Others included alcohol, bhang, heroin and cigarettes.

4.4.2 Kuber

The most commonly reported psychoactive substances used in combination with kuber were *khat/ miraa*, alcohol, cigarettes, prescription drugs ("tap tap"), bhang, strong black coffee ("*kahawa chungu*")

4.5 Effects of using shisha and kuber

4.5.1 Shisha

The most commonly reported effects of using *shisha* were as follows:

- It leads to blockage of the airways due to heavy smoke inhalation
- It causes chest pains
- It leads to loss of sleep
- It causes forgetfulness
- It causes general body weakness
- It causes high blood pressure
- It is very addictive and causes headaches
- It leads to excessive talking
- It makes the user feel "high"
- It causes reddening of the eyes
- It causes sexual desire. "*When I use it with coffee special, it makes me stay erect throughout*."

4.5.2 Kuber

The most commonly reported effects of using *kuber* were as follows:

- It causes intoxication and can easily give a blackout
- It results to reddening of the lips
- It leads to tooth decay and staining of the teeth
- It affects the mouth by causing swells and burns the gum leading to gum disease
- It loosens the gums causing the teeth to fall off
- It causes severe headaches
- It causes loss of appetite

- It leads to loss of libido
- It causes weakening of the joints
- It causes faster heart beat
- It leads to loss of weight
- It leads to ulcers due to its strong burning acidic effect. "*Whenever is use kuber, I wake up feeling a burning sensation in the stomach*."
- It causes dizziness and confusion
- It is very addictive and one cannot perform daily tasks without using it. "*I am a living example of a kuber user and I can take you to all corners where you can find the strongest one, leave alone the common kuber*."
- It causes hallucination. "*It is like dreaming big things like I want to buy a plot yet I cannot afford it by any means*."
- It causes bowel disturbance. "*If I use it, it makes me want to use the toilet frequently*."
- It increases the desire to have sex but reduces sexual performance. "*Kuber gives one the urge to have sex but makes the body weak, so one cannot do much*."
- It leads to excessive talking. "*One becomes a chatter box*."
- It makes the user to laugh all the time
- It causes excessive sweating
- It causes unconscious dripping of saliva
- It causes thirst making the user to use a lot of water
- It causes memory loss
- It causes withdrawal effects

"*I have personally used kuber and shisha and I can tell those who have not used that these things are bad. They have deadly effects on the human body and I wouldn't advise or encourage anyone to use them*."

4.6 Sources of shisha and kuber

Understanding the sources of drugs is critical towards suppressing supply thereby regulating use and abuse among potential users.

4.6.1 Shisha

The major sources or areas where shisha was commonly purchased included shisha clubs, bars, recreation centres, sports clubs and known dealers.

4.6.2 Kuber

The major sources where kuber was commonly purchased included Indian retail shops, market centres, candy shops, miraa selling outlets, kiosks and bodaboda/ matatu terminus.

4.7 Access of shisha and kuber by underage children

Availability of drugs or accessibility of drugs is one of the factors contributing to the increasing drug abuse among the underage children. Hence, accessibility of drugs is an

issue that requires immediate attention so that actions can be taken to minimize or eliminate possible negative effects.

4.7.1 Shisha

It was reported that shisha was not easily accessible to underage children because it is mostly used in the bars or clubs. The Alcoholic Drinks Control Act, 2010 outlaws access of underage children to places where alcohol is sold or stored. However, it was reported that shisha is accessible to teenagers when it is used in the homes during parties.

4.7.2 Kuber

Kuber was reported to be the most easily accessible drug by underage children at the moment. With only ksh 10, you can purchase your dose of the drug. Kuber is therefore very affordable even to school going children. Further, kuber is usually sold to anyone provided you can afford to buy. It is also readily available and can be purchased in village kiosks, market centres and other areas which are accessible to all. To echo the issue of accessibility, a participant reported that "shisha and kuber are part of people's lives here because they're sold everywhere without fear." Another participant reported that "kuber it is very easy for children below 18 years to access the shop which sells it because they have no restriction."

CHAPTER FIVE: RESULTS OF LABORATORY ANALYSIS

5.1 Introduction

The samples for *shisha* and *kuber* were collected across the country. Each of these samples was tested for nicotine level and the presence of the following adulterants: heroin (opiates), cocaine, marijuana/bhang and amphetamines. The results from each test were recorded either as positive (presence of an adulterant) or negative (no presence of an adulterant). The samples collected were categorized into five types depending on their characteristics and similarities. According to Table 2, the samples were categorized as shisha, kuber (sachet labeled kuber), kuber others (chewing tobacco in sachet but not labeled kuber e.g. Ganpati and Gutkha), formulated kuber/ tamboo (kuber that is not packaged in a sachet) and snuff tobacco. A total of 100 samples was collected across the country. Among these samples, 24% were shisha, 22% formulated kuber/ tamboo 22% snuff, 18% kuber (others) and 14% kuber.

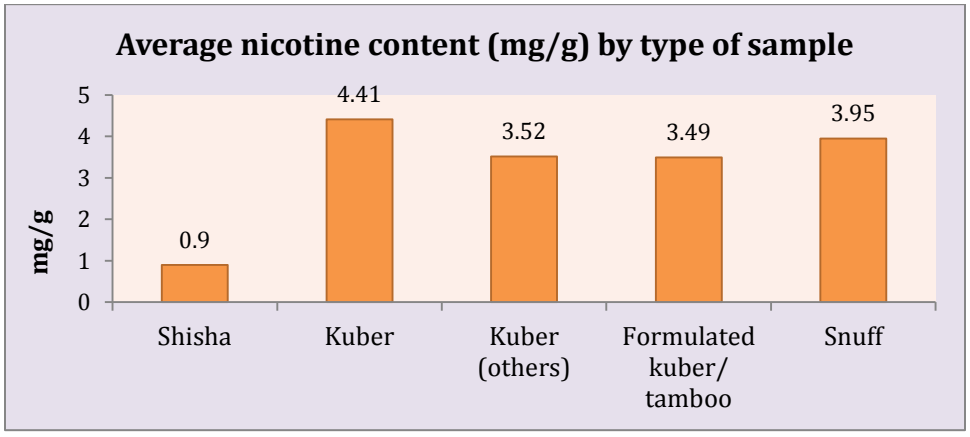
Table 2: Sample distribution

Shisha	24	24%
Kuber	14	14%
Kuber(others e.g. Gutkha and Ganpati	18	18%
Formulated kuber/ tamboo	22	22%
Snuff	22	22%
Total	100	100%

5.2Nicotine level

According to Figure 1, the average level of nicotine in mg/g of sample collected shows that kuber has the highest level at 4.41mg/g followed by snuff at 3.95mg/g, kuber (others) at 3.52mg/g, formulated kuber/ tamboo at 3.49mg/g while shisha had the least levels of nicotine at 0.9mg/g.

Figure 1: Level of nicotine by type of sample

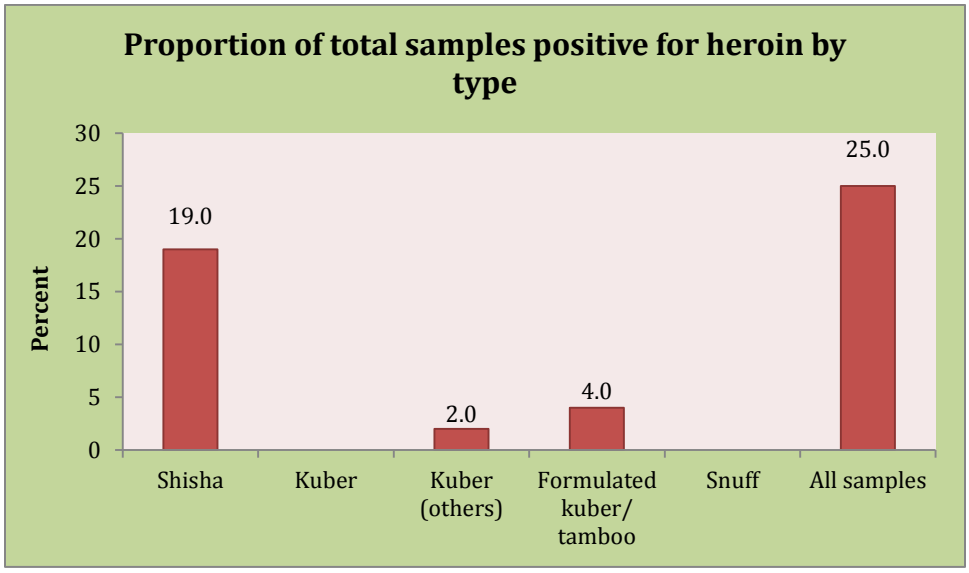


Nicotine levels after smoking shisha for 45 minutes are reported to be higher than those measured after smoking a cigarette (Tobacco Advisory Group, 2007). A typical cigarette contains approximately 0.5 to 1.0 g of tobacco and, on average, 10 mg of nicotine (Tobacco Advisory Group, 2007; NIDA, 2001). While the water filtration in a hookah does reduce some toxins, it does not reduce the level of tar in the smoke, which contains the most carcinogens (cancer-causing chemicals). Thus shisha smokers may be at greater risk for harm than cigarette smokers, since they are exposed to greater overall amounts of nicotine, carbon monoxide, and other toxins (Knishkowy, 2005).

5.3Heroin/opiates testing

Among all the 100 samples tested for heroin/opiates, 25% were positive. In terms of individual samples according to Figure 2, shisha was leading contributing 19% of the total positive samples followed by formulated kuber/ tamboo contributing 4% and finally kuber (others) at 2%. For snuff and kuber (original sachet) samples, they were all negative for heroin.

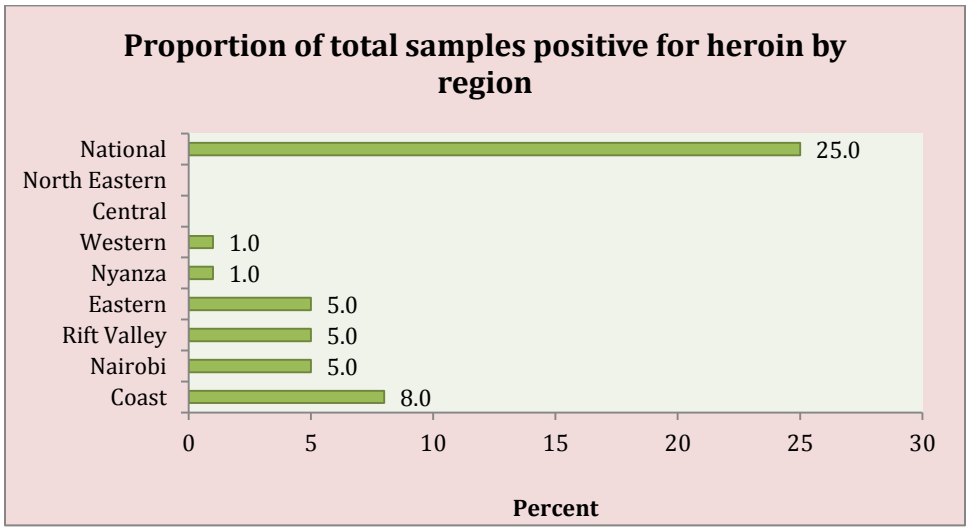
Figure 2: Samples positive for heroin (n=100)



5.3.1Positive heroin samples by region

As shown in the findings, majority of samples positive for heroin were shisha. However, availability and accessibility of shisha was skewed towards urban major urban centers, cities and other Muslim dominated communities. According to Figure 3, Coast region had the highest proportion of positive samples for heroin at 8% followed by Nairobi 5%, Rift Valley 5%, Eastern 5%, Nyanza 1% and Western 1%.

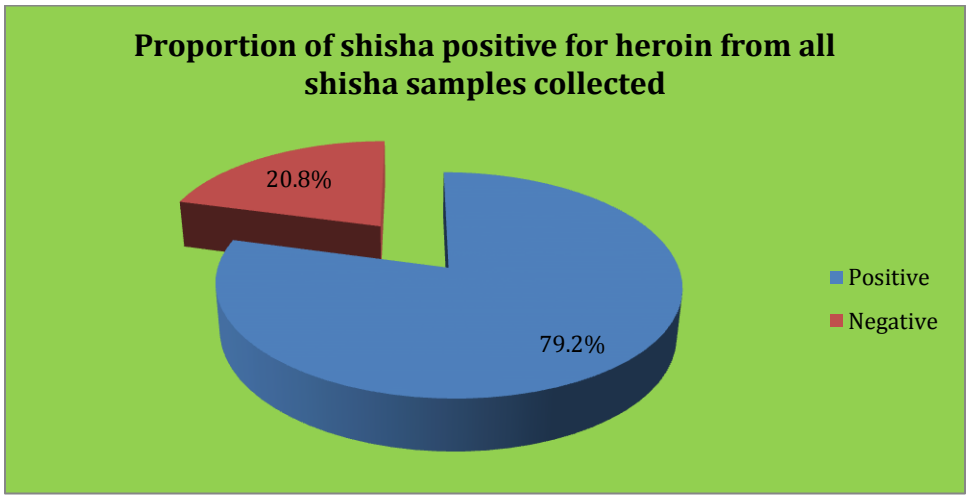
Figure 3: Positive heroin samples by region (n=25)



5.3.2Shisha samples (n=24)

According to Figure 4, 79.2% of all shisha samples collected were positive for heroin while the remaining 20.8% tested negative. The findings give an indication that adulteration of shisha with heroin may be an endemic problem in the country and there is a likelihood that shisha may be emerging as a concealment route for heroin trafficking. The shisha samples positive for heroin/ opiates were Al Fakher Strawberry Flavor, Al Fakher Orange Flavor, Al Fakher Two Apples with Mint Flavor, Al Fakher Vanilla Flavor, Al Fakher Two Apples Flavor, Al Fakher Orange with Mint Flavor, Al Fakher Orange Flavor, Nakhala Molasses Tobacco Apple Flavor, Strong Formulated Shisha Cocktail, Medium Formulated Shisha Cocktail and Mild formulated Shisha.

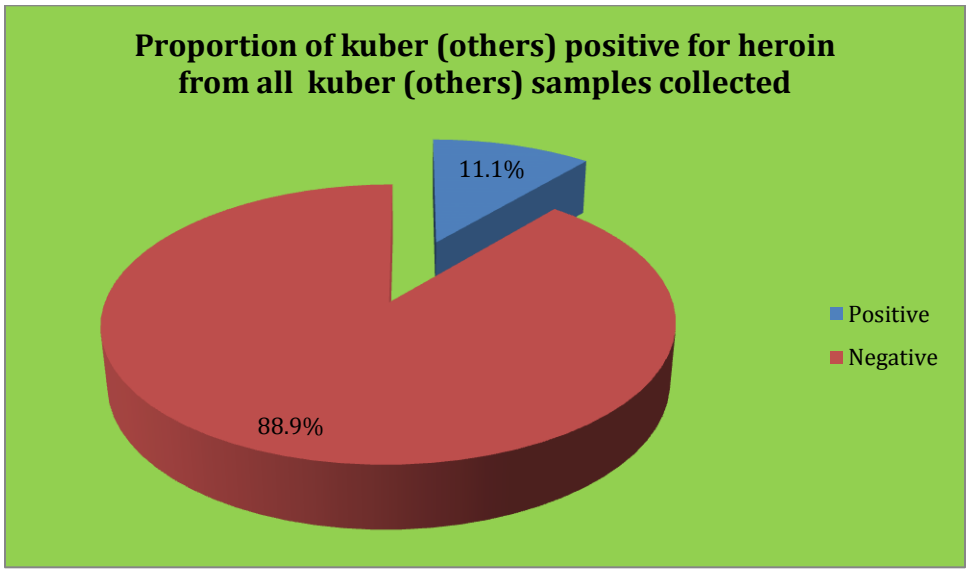
Figure 4: Shisha samples positive for heroin



5.3.3Kuber (Others)(n=18)

According to Figure 5, 11.1% off all kuber (others) samples collected were positive for heroin while the remaining 88.9% tested negative. One specific brand that was singled out was called Gutkha.

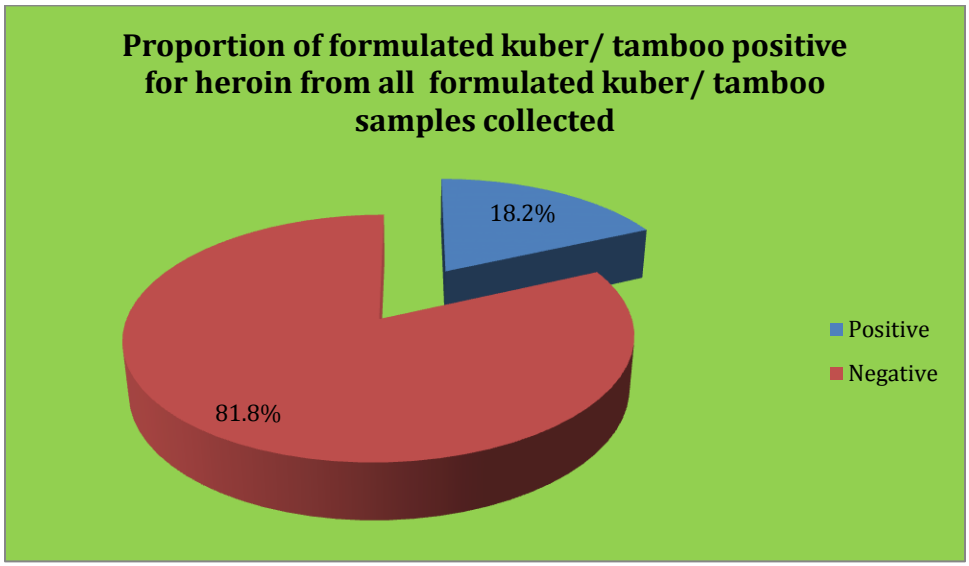
Figure 5: Kuber (others) samples positive for heroin



5.3.4 Formulated kuber/ tamboo (n=22)

According to Figure 6, 18.2% of all kuber/ tamboo samples collected were positive for heroin while the remaining 81.8% tested negative. The vendors were mixing the different ingredients that make kuber and they were able to dispense quantities of as low as Ksh 10. A significant observation with this type of sample is that adulteration more common in the Coast region.

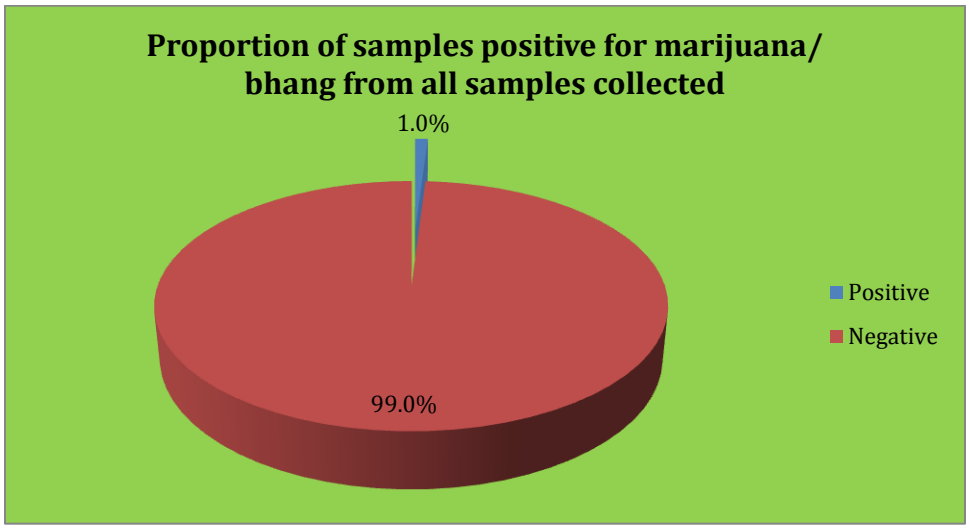
Figure 6: Kuber/tamboo samples positive for heroin



5.4 Marijuana/ bhang testing

Among all the 100 samples tested for marijuana/bhang, 1% were positive. In terms of individual samples according to Figure 7, shisha was the only sample adulterated with marijuana. This gives evidence that shisha may be the most adulterated type of tobacco in the country. The results would even be more interesting if sampling is possible at the point of use.

Figure 7: Samples positive for marijuana/ bhang (n=100)



5.5 Cocaine and amphetamines

According to the findings, none of the samples collected tested positive for cocaine or amphetamines. However, this does not rule out possibility of future adulteration and hence the need for regular surveillance.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The use of kuber and other forms of smokeless tobacco like snuff is widespread in Kenya, both in the rural and urban areas. Majority of those using kuber and other forms of smokeless tobacco are aged 14-25 years. Findings also show that chewing of kuber and other forms of smokeless tobacco is more common among the less educated, unemployed and mostly the poor. Further, the use of kuber and other forms of smokeless tobacco is also an emerging culture commonly associated with vulnerable groups like the boda boda operators and commercial sex workers (CSW). They use these products as a coping mechanism to give them courage, contentment and a sense of self-worth. The use of smokeless tobacco, especially kuber which is either packaged or formulated ("tamboo") is very common among school going children and users go unnoticed because the smell is not easily detectable. Its popularity among the young and the underage could be attributed to the fact that it is very affordable and with only ksh 10, you can purchase your dose of the drug. Further, kuber is sold to anyone without regard for one's age provided you can afford to purchase it. Its sale has also penetrated the community and is now readily available in the village kiosks and rural market centres.

For the case of shisha, its use is biased towards the urban centres of major towns like Nairobi, Nakuru, Eldoret, Kisumu, Mombasa, Kilifi and Malindi. However, it is also common in Muslim dominated towns like Garissa and Isiolo. Unlike kuber and other forms of smokeless tobacco, shisha is not easily accessible to the underage children because it is mostly smoked in the bars or clubs. However, some are able to access it through the home parties organized by teenagers. The use of shisha is common among those aged 18-35 years and the culture of shisha smoking is gaining popularity among students of higher institutions of learning. This culture is also common among the young ladies because its use is associated with a sense of "status and style". In terms of education, majority of those smoking shisha are educated, employed and mostly from the affluent in society.

In terms of the nicotine levels in mg/g of sample, packaged kuber has the highest level at 4.41mg/g followed by snuff at 3.95mg/g, kuber (other forms of packaged kuber) at 3.52mg/g, formulated kuber/ tamboo at 3.49mg/g while shisha had the least levels of nicotine at 0.9mg/g. In terms of adulteration, shisha samples were more likely to be positive for heroin/ opiates, which then raise caution that if unchecked, its use could be a gateway to narcotic drugs or another alternative concealment method for trafficking of opiates.

6.2 Recommendations

5. The Tobacco Control Act, 2007 provides for protection of the health of persons under the age of eighteen years by preventing their access to tobacco products. The Act also provides for strict adherence to the packaging requirements for all types of tobacco products. This therefore calls for the relevant agencies to enforce these

provisions of the Act to deter access, availability and affordability of tobacco products among the underage.

6. Students are citizens and potential future consumers, and with respect to these roles it is appropriate for the Ministry of Education to consider utilizing official information provided by the Ministry of Health to integrate instruction on the health consequences, addictive nature and mortal threat posed by consumption of tobacco in subjects taught in public and private schools at all levels of education, including informal and non-formal as well as indigenous learning systems.

7. Under schedule 1 of the Narcotic Drugs and Psychotropic Substance (Control) Act of 1994, heroin (diacetylmorphine) and cannabis/ bhang have been listed under the first schedule of narcotic drugs in Kenya. These are prohibited substances and therefore call for seizure of all tobacco products adulterated with these narcotic drugs. There is need for the relevant agencies to undertake regular market surveillance to protect the health of the public from potential harm associated with the consumption of these narcotic drugs without their knowledge.

8. The enforcement agencies should regulate the smokeless tobacco products such that they are only permitted if the importers and manufacturers satisfy the legal and regulatory requirements for these products.

7.0 REFERENCES

Agar, M. (1980).*The Professional Stranger: an Informal Introduction to Ethnography*, New York: Academic Press.

Agar, M. (1995) 'Recasting the "ethno" in "epidemiology"', *Medical Anthropology*, 16, 1–13.

Agar, M. (1999, forthcoming) 'Qualitative research and public policy', in T. Rhodes (Ed.) *Qualitative Methods in Drugs Research,* London: Sage.

Alpert, H.R, Koh, H. and Connolly, G.N. (2008). "Free nicotine content and strategic marketing of moist snuff tobacco products in the United States: 2000-2006." *Tobacco Control*, 17:332-338.

Eriksen, M., Mackay, J. and Ross, H.The tobacco atlas. Atlanta, GA, USA: American Cancer Society, 2012.

Framework Convention Alliance for Tobacco Control (2005). Factsheet number 2. http://www.fctc.org/docs/factsheets/fca_factsheet_002_en.pdf

Henley, S.J., Connell, C.J., Richter, P., Husten, C., Pechacek, T., Calle, E.E. and Thun, M.J. (2007)."Tobacco-related disease mortality among men who switched from cigarettes to spit tobacco."*Tobacco Control*, 16:22-28.

HHS (1986). The Health Consequences of Using Smokeless Tobacco: A Report of the Advisory Committee to the Surgeon General, Bethesda, MD 20892, NIH Publication No. 86-2874.

Knishkowy, B.and Amitai, Y. (2005).Water-pipe (narghile) smoking: an emerging health risk behaviour. *Pediatrics*, 116:e113–119.

NIDA, 2006).*Nicotine addiction*.Bethesda, MD, National Institute on Drug Abuse, 2001, rev. 2006 (http://www.drugabuse.gov/PDF/RRTobacco.pdf, accessed 30 May 2014).

Stepanov, I., Jensen, J., Hatsukami, D. and Hecht, S.S. (2006). "Tobacco-specific nitrosamines in new tobacco products." *Nicotine and Tobacco Research*, 8 (2): 309-313.

Tobacco Advisory Group of the Royal College of Physicians (2007). *Harm reduction in nicotine addiction: helping people who can't quit. A report by the Tobacco Advisory Group of the Royal College of Physicians.*London, Royal College of Physicians.

Tomar, S, "Is use of smokeless tobacco a risk factor for cigarette smoking? The U.S. experience," Nicotine & Tobacco Research5 (4):561, 2003

WHO(2007). Why is tobacco a public health priority? World Health Organization, Geneva

WHO (2011). Global Status Report on Non-Communicable Diseases 2010. World Health Organization, Geneva

World Health Organization (WHO) Scientific Advisory Committee on Tobacco Product Regulation (2003).Recommendation on Smokeless Tobacco Products.World Health Organization, Geneva

WHO (2011). WHO Report on the Global Tobacco Epidemic.World Health Organization, Geneva

World Bank Group (2003). Tobacco Control at a Glance. http://www1.worldbank.org/tobacco/pdf/AAG%20Tobacco%206-03.pdf

WHO (2003). WHO Framework Convention on Tobacco Control. World Health Organization, Geneva.

8.0 APPENDICES

8.1 Focus Group Discussion Guide

Drug use

1. Which are the major drugs used in this area?
2. What is shisha? (Probe for local names)
3. What is kuber? (Probe for local names)

Shisha

4. How would you describe the usage of *shisha* in this area?
5. How would you describe usage of *shisha* among: young people (in-school and out of school; adult men and women)? (Probe age, gender, occupation, education level)
6. Why do people smoke shisha?
7. Do people who smoke *shisha* add or mix with other drugs?
8. Which other drugs are commonly smoked together with *shisha*?
9. Which effects of using *kuber* are you aware of? (Probe socio-economic and health effects including dependence)

Kuber

10. How would you describe the usage of *kuber* in this region?
11. How would you describe usage of *kuber* among: young people (in-school and out of school; adult men and women)? (Probe age, gender, occupation, education level)
12. Why do people chew *kuber*?
13. Do people who chew *kuber* add or mix with other drugs?
14. Which other drugs are commonly chewed together with *kuber*?
15. Which effects of using *kuber* are you aware of? (Probe socio-economic and health effects including dependence)

Drug sources

Shisha

16. Where is *shisha* sold in this area?
17. Do children below the age of 18 years access *shisha*?
18. Where would you find people smoking *shisha* in this area?

Kuber

19. Where is *kuber* sold in this area?
20. Do children below the age of 18 years access *kuber*?
21. Where would you find people chewing *kuber* in this area?

Recommendations

22. What should be done to control the use of *shisha*?
23. What should be done to control the use of *kuber*?

8.2 Key Informant Interview Guide

Shisha

1. How old were you when you first smoked *shisha*?
2. How long have you been using *shisha*?
3. Why do you like taking *shisha*?
4. What is the cost of purchasing *shisha*?
5. Where is *shisha* sold in this area?
6. Where do people smoke *shisha* in this area?
7. Do people who smoke *shisha* add or mix with other drugs?
8. Which of these drugs are you aware of?
9. Have you ever added or mixed other drugs with *shisha*?
10. What drugs have you ever added or mixed with *shisha*?
11. Which effects of smoking *shisha* are you aware of? (Probe socio-economic and health effects including dependence)
12. What should be done to control the use of *shisha*?