SCHOOL OF MEDICINE AND HEALTH SCIENCES

ASSESSMENT OF AWARENESS OF HEALTH IMPLICATIONS CAUSED BY THE USE OF SHISHA SMOKING AMONG STUDENTS AT THE UNIVERSITY OF LUSAKA

BY

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DECLARATION

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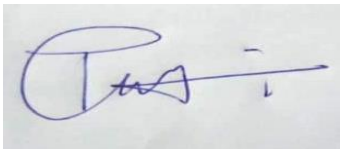
I declare that this proposal is my creative work and to the best of my acquaintance has not been presented for a degree in any other institution.

Signature:  **Date: 13/04/23.**

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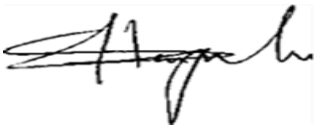
Signature:  **Date: 13/04/23.**

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ABSTRACT

Background: Shisha smoking has become increasingly popular among university students in Zambia, despite evidence of its adverse health effects. However, little is known about the awareness of these health implications among this population. This qualitative study aims to assess the awareness of health implications caused by the use of shisha smoking among students at the University of Lusaka.

Methodology: A qualitative approach using semi-structured interviews was used to collect data from 20 university students who were regular shisha smokers. Participants were recruited through purposive sampling, and interviews were conducted face-to-face. Data were analyzed using thematic analysis.

Results: Various key themes emerged from the data analysis following in line with the three research focus areas: (1) The level of awareness among students at the University of Lusaka regarding the health implications caused by the use of shisha smoking, (2) Where the students get or access the Shisha from; (3) How students at the University of Lusaka perceive and respond to the use of shisha smoking? Most participants had some knowledge about the health implications of shisha smoking, with some believing that shisha was less harmful than cigarettes. However, the study found that social and cultural factors such as peer pressure, perceived social status, and cultural traditions influenced the uptake and continuation of shisha smoking.

Conclusion: The study highlights the need for increased awareness and education about the health implications of shisha smoking among university students in Zambia. Interventions should address misconceptions about the relative safety of shisha compared to other forms of tobacco and also take into account social and cultural factors that contribute to its popularity. These findings may inform future public health campaigns and policies aimed at reducing the prevalence of shisha smoking among university students in Zambia.

Keywords: Shisha smoking, health implications, awareness, university students, Zambia.

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LIST OF ACRONYMS

BDNF:	**Brain-derived neutrophic factor**
CAD:	**Coronary artery disease**
CEA:	**Carcinoembryonic antigen**
CM:	**Carbon monoxide**
DNA:	**Deoxyribonucleic acid**
FEV:	**Forced expiratory volume**
FMD:	**Flow-mediated dilation**
FVC:	**Forced vital capacity**
GSH:	**Glutathione**
HR:	**Heart rate**
IHD:	**Ischemic heart disease**
IL:	**Interleukin**
MI:	**Myocardial infarction**
MRNA:	**Messenger RNA**
NO:	**Nitric oxide**
TNF:	**Tumor necrosis factor**
UNILUS:	**University of Lusaka**
UTH:	**University teaching hospital**

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CHAPTER ONE

1.0 Background/Introduction

Shisha is simply a modified way of tobacco smoking, such that the tobacco smoke is allowed to pass through water before being inhaled by the smoker. Shisha smoking is therefore known by a lot of different names such as waterpipe, Narghile, hookah and Hubble bubble, derived from the word 'haqqa' which simply means 'pot or jar' (Loloji, Munsanje , Haakonde , Samanyama , 2020).

Tobacco is a plant which has leaves that have significant high levels of an addictive chemical called nicotine (National cancer institute, 2017).

Tobacco use through shisha smoking has now become a huge health concern because of its adverse health effects it brings about, it has been discovered that there are about 8 million deaths each year which is as a result of direct tobacco usage and on the other hand a huge number of 1.2million deaths occurred due to non-smokers simply being exposed to second hand smoking (WHO, 2020). Shisha is one of the many types of smoking and it is therefore becoming one of the emergent public health concern or problem so to say in the world. Shisha is a device which was formed in east part of India somewhere in the 16th century, this was in the era of Akbar, this physician designed shisha to make tobacco smoking safer.

Sidani (2019), alluded that the increment in the use of shisha among the youths has spread to the entire population, regardless of one's level of education and socioeconomic status.

This device comprises of the head, body, also a bowl and hose which contains a mouthpiece, those that use shisha inhale the smoke through the mouthpiece through the process of drawing air over the heated charcoal which is always placed on the head of the device.

It was recorded that about 17% of high school senior boys and 15% of high school senior girls in the United States have been found to have used shisha before. The CDC notes that shisha smoking is a bit higher among college students, with about 24% to 40% having tried it. This is due to the fact that it is typically done as a group event and mostly in special cafes, tea houses, or lounges (CDC, 2015).

It has been noted that shisha (water pipe) smoking in Zambia is now considered as a new norm or practice, noted amongst the youths of the age group 18 to 30 years. There has been an influx of customers request for it and mostly by the youths of the aforementioned age groups, and this has been seen being done by even different students from different

universities, who flaunt in clubs to either easy of the stress which comes with school work, and others just issues of peers.

The Zambian Public Health (Tobacco) Regulations of (2006) postulates that, print warning saying 'tobacco is harmful to health', should be displayed on both sides of the surfaces of the tobacco consumption packaging in letters against a contrasting background. Concerns over the immediate and long-term health implications have been issued out. And some of the health implications have been noted like lung cancer, co pulmonary disease, hypertension, infertility and fibroids. There have been mistakes of the parents and the belief of the young people assuming smoking shisha is not dangerous as cigarette smoking. As a result, they have made shisha smoking to be taken as a light practice, therefore, contributing to the growth and making it popular in the Middle East (Raj, 2016).

Furthermore, a review of studies was done by a group of public health specialist led by WHO on 29 April, 2020. Found that those who smoke shisha are at risk to develop severe respiratory diseases such as COVID-19 and co pulmonary disease, compared to non-smokers.

1.1 Statement of the problem

Despite a lot of warnings against smoking, also outlining the health implications and adverse side effects it causes, a lot of youths have taken a new form of smoking called shisha smoking, it has now become an endemic global phenomenon. Shisha smokers have this false sense of safety because shishas are mostly used casually in social gatherings and smoking them is now a recreational activity which is practiced both indoors and outdoors. It is estimated that 70% of shisha smokers believe shisha to be a safer way of smoking than cigarette smoking which is actually not true. youths among them students who usually visit the clubs to easy off the stress and others just for pleasure, have been seen using the shisha. This act is more harmful than just the use of one single cigarette, because shisha smoking is taken in large amounts and therefore causes more harm to the one smoking and those nearby (El-Hakim, 2021).

Therefore, the need to carry out further research concerning shisha smoking and the awareness on its health implications.

1.2 Justification of the study

This study will give an insight on the adverse health implications which is caused by shisha smoking. It will bring about awareness, also it will help the university understand whether they have been taking a hand in bringing about awareness and sensitizing the students about adverse health implications caused by shisha smoking.

It will also help to understand the other contributing factors leading to the use of water pipe smoking, whether it's social factors, interpersonal relation factors, or institutional factors, or issues of person beliefs.

This study will help to come up with drastic, thorough and alleviated measures to bring about awareness about the side effects/ health implications associated with shisha smoking. By doing so students will be aware of both short- and long-term implications which can be caused by shisha smoking and as a result a lot will start shunning away from using of water pipe smoking.

This study was conducted with the view of adding more knowledge to the already existing "scope" of knowledge and it will therefore contribute in preventing a lot of possible fatality cases that can be caused by inhaling of tobacco through the use of shisha. And by doing so we will be having a healthy people who will be able to contribute to the socio-economic activities of the nation.

It is also expected that the present study will be useful in coming up with policies which can help out to mitigate the use of shisha.

1.3 General research objective

To assess awareness of health implications caused by the use of Shisha smoking among the Students at the University of Lusaka

1.4 Specific research objectives

1. To determine the level of awareness among students at the University of Lusaka regarding the health implications caused by the use of shisha smoking.
2. To evaluate and verify the accessibility and availability of Shisha to students at the University of Lusaka

3. To explore the perceptions and attitudes of students towards the use of shisha smoking at the University of Lusaka.

1.5 Research questions

1. What is the level of awareness among students at the University of Lusaka regarding the health implications caused by the use of shisha smoking?
2. Where do the students get or access the Shisha from?
3. How do students at the University of Lusaka perceive and respond to the use of shisha smoking?

CHAPTER TWO

2.0 Literature review

2.0.1 Introduction

Justin (2020) postulates that, Literature review gives a thorough and comprehensive overview of information on a particular topic published by other researchers. Helps to come up with theories, know the gaps that needs to be worked on, coming up with knowledgeable concepts of improving the vastness of knowledge out there.

Akhtar, et al. (2021), also says that literature review gives researchers a broader view on some of the knowledge which is there in line with their topic of study. It also gives them ways of identifying any gaps in the research and to make their research questions accordingly.

This literature review provides an overview of the findings from different studies that have been conducted on shisha smoking. The review includes the study conducted by Rezk-Hanna et al. (2018) in America, Syed et al. (2015) in Pakistan, Loloji et al. (2020) in Zambia, Mamtani (2017) in the Middle East, and Selim (2016) in Egypt. The studies focused on various aspects of shisha smoking, including its association with cardiovascular conditions, knowledge and awareness among university students.

2.0.2 Association between Shisha Smoking and Cardiovascular Conditions

Shisha smoking, also known as waterpipe smoking, is a popular social activity in many countries, particularly in the Middle East, North Africa, and South Asia. Shisha smoking involves burning flavoured tobacco, which is then passed through water, and the resulting smoke is inhaled through a hose and mouthpiece. Despite the popular belief that shisha smoking is less harmful than cigarette smoking, research has shown that it can have adverse effects on the cardiovascular system, including an increased risk of developing cardiovascular diseases. This essay will examine the association between shisha smoking and cardiovascular conditions, with a focus on the evidence from studies published in recent years.

The cardiovascular system is composed of the heart, blood vessels, and blood. Cardiovascular diseases (CVDs) are a group of disorders that affect the heart and blood vessels and are responsible for a significant proportion of global morbidity and mortality. According to the

World Health Organization (WHO), CVDs are the leading cause of death worldwide, accounting for approximately 31% of all deaths globally in 2019 (WHO, 2021). The most common types of CVDs include coronary artery disease, stroke, and heart failure.

Shisha smoking has been associated with an increased risk of developing CVDs. The smoke from shisha contains a mixture of toxic substances, including carbon monoxide, polycyclic aromatic hydrocarbons, volatile aldehydes, and heavy metals, which can cause damage to the cardiovascular system (Maziak et al., 2015). A study conducted by Akl et al. (2010) found that shisha smoking was associated with a higher risk of developing coronary artery disease, stroke, and peripheral arterial disease. The study also found that shisha smoking was associated with increased levels of oxidative stress, which can cause damage to the blood vessels and increase the risk of developing CVDs.

Another study by Ben Saad et al. (2014) examined the effects of shisha smoking on arterial stiffness, which is a measure of the elasticity of the arteries. The study found that shisha smoking was associated with increased arterial stiffness, which can lead to an increased risk of developing CVDs. The study also found that shisha smoking was associated with increased levels of inflammation and oxidative stress, which can contribute to the development of CVDs.

Several other studies have also reported similar findings. A study by El-Zaatari et al. (2014) found that shisha smoking was associated with an increased risk of developing hypertension, a major risk factor for CVDs. The study also found that shisha smokers had higher levels of circulating endothelial microparticles, which are markers of endothelial dysfunction, a precursor to CVDs. Similarly, a study by Shaikh et al. (2018) found that shisha smoking was associated with increased levels of inflammation, oxidative stress, and endothelial dysfunction, all of which are risk factors for CVDs.

Shisha smoking has also been associated with an increased risk of developing acute cardiovascular events, such as heart attack and stroke. A study by Jabbour et al. (2015) found that shisha smoking was associated with an increased risk of developing acute coronary syndrome, a condition characterized by a sudden decrease in blood flow to the heart. The study also found that shisha smoking was associated with a higher risk of developing thrombosis, a blood clot that can block blood vessels and cause heart attacks and strokes.

In addition to the direct effects of shisha smoking on the cardiovascular system, there are also indirect effects that can contribute to the development of CVDs. Shisha smoking is often

accompanied by unhealthy lifestyle behaviors, such as poor diet, lack of physical activity, and alcohol consumption, all of which are risk factors for CVDs (Mamtani et al., 2017). Furthermore, shisha smoking is often a social activity, which can lead to secondhand smoke exposure for non-smokers, further increasing their risk of developing CVDs (Jawad et al., 2018). Therefore, it is crucial to address the harms of shisha smoking and promote healthy lifestyle behaviors to reduce the burden of CVDs globally.

Rezk-Hanna et al. (2018) conducted a study in America that aimed to monitor the changes in arterial stiffness and blood pressure among shisha-only users. The study found that after a 45-minute smoking session, shisha smoking raised the augmentation index, mean arterial pressure, heart rate, and pressure, which are similar to the changes reported previously with cigarette smoking. The study concluded that there is an association between shisha smoking and cardiovascular conditions.

Mamtani (2017) conducted a study in predominantly the Middle East countries that compared daily shisha smokers with control subjects who were not smokers. The study found that shisha smoking was associated with the formation of different malignancies, including cancers of the neck and head, esophageal cancer, and stomach cancer. However, the study did not indicate whether the participants were aware of the health implications caused by shisha smoking.

Selim (2016) conducted a study in Egypt that reported the Duke jeopardy scores in a total number of 287 patients who were subjected to coronary angiography. The study found that shisha smokers had the highest mean values for heart rate and blood pressure, followed by mixed smokers, cigarette smokers only, and nonsmokers. However, due to the geographic wellbeing of the population studied, confounders such as previous or current cigarette use, and exposures related to occupation, the study's generalizability was limited.

2.0.3 Knowledge and Awareness Among University Students

In a cross-sectional study conducted in Saudi Arabia, Al Moamary et al. (2016) assessed the knowledge, attitudes, and practices of university students towards shisha smoking. The study found that although the majority of students were aware of the harms associated with shisha smoking, a considerable proportion still engaged in the behavior. The study also found that the students had poor knowledge regarding the health effects of shisha smoking, with many of them believing that shisha smoking was less harmful than cigarette smoking.

Another cross-sectional study conducted in Lebanon by Zaatari et al. (2011) explored the prevalence and knowledge of waterpipe smoking among university students. The study found that the prevalence of waterpipe smoking among the students was high, with a significant proportion of them reporting that they had smoked waterpipe at least once in their lifetime. The study also found that the students had poor knowledge regarding the health effects of waterpipe smoking, with many of them underestimating the risks associated with the behavior.

Similarly, a study conducted in Egypt by Gadalla et al. (2017) assessed the knowledge and attitudes of university students towards shisha smoking. The study found that the majority of students were aware of the harms associated with shisha smoking, but a considerable proportion still engaged in the behavior. The study also found that the students had poor knowledge regarding the health effects of shisha smoking, with many of them believing that shisha smoking was less harmful than cigarette smoking.

In a study conducted in Jordan by Saeed et al. (2019), the researchers assessed the knowledge, attitudes, and practices of university students towards shisha smoking. The study found that the prevalence of shisha smoking among the students was high, with a significant proportion of them reporting that they had smoked shisha at least once in their lifetime. The study also found that the students had poor knowledge regarding the health effects of shisha smoking, with many of them underestimating the risks associated with the behavior.

In a qualitative study conducted in the United Kingdom by Jawad et al. (2018), the researchers explored the perceptions and experiences of university students towards shisha smoking. The study found that the students perceived shisha smoking as a social activity that was associated with relaxation and stress relief. The study also found that the students had poor knowledge regarding the health effects of shisha smoking, with many of them underestimating the risks associated with the behavior.

Overall, the literature suggests that although university students are aware of the harms associated with shisha smoking, many of them still engage in the behavior. Furthermore, the literature suggests that university students have poor knowledge regarding the health effects of shisha smoking, with many of them underestimating the risks associated with the behavior. Therefore, efforts to reduce the prevalence of shisha smoking among university students

should focus on raising awareness about the risks associated with the behavior and promoting healthy lifestyle behaviors.

Syed et al. (2015) conducted a study in Pakistan to evaluate the popularity and familiarity of shisha smoking among university students. The study found that 92% of the students were knowledgeable about shisha smoking, while 8% had no knowledge. Furthermore, 36% of the students have ever smoked shisha, while 64% of the students never used it. However, the majority of the students (92%) knew the hazards linked with shisha smoking, and 54% of the participants were attracted by the smoke and beauty of shisha. The study concluded that smoking shisha is considered a status symbol by university students in Pakistan.

Loloji et al. (2020) conducted a study at Evelyn Hone College in Zambia to assess the factors associated with shisha smoking. The study found that smoking shisha was associated with factors such as the age of the smoker and the level of knowledge on adverse effects. Additionally, 31% of the respondents thought that smoking shisha is not a risk to their health, compared to the 8% who thought that smoking shisha is bad for their health. The study concluded that a qualitative study is needed to ask some questions that cannot be easily put up into numbers to understand certain human experiences and phenomena in regards to shisha smoking.

2.1 Theoretical Framework

Shisha smoking, also known as waterpipe smoking, is a form of tobacco smoking that has gained popularity in recent years among young adults worldwide, including university students. Shisha smoking involves the use of a water pipe or hookah that burns charcoal to heat a flavored tobacco mixture, producing smoke that is then inhaled through a hose and a mouthpiece. Despite the perception that shisha smoking is less harmful than cigarette smoking, research has shown that it is associated with several adverse health effects, including respiratory and cardiovascular diseases, cancer, and infectious diseases such as tuberculosis and hepatitis.

The theoretical framework for this study is based on the Health Belief Model (HBM) and the Theory of Planned Behavior (TPB). The HBM is a widely used theory that explains the factors influencing health-related behaviors, including individual beliefs, attitudes, and perceptions of susceptibility, severity, benefits, and barriers to behavior change (Rosenstock, 1974). The TPB, on the other hand, proposes that behavior is determined by three factors:

attitudes towards the behavior, subjective norms, and perceived behavioral control (Ajzen, 1991).

The HBM and TPB will guide this study by examining the awareness of shisha smoking health implications among university students at the University of Lusaka. The HBM will help to identify the beliefs, attitudes, and perceptions of the students towards shisha smoking, as well as their perceived susceptibility to the health implications caused by shisha smoking. The TPB will help to identify the attitudes of the students towards shisha smoking, their subjective norms (i.e., social pressures to smoke or not smoke), and their perceived behavioral control (i.e., their ability to resist peer pressure and avoid smoking).

Previous studies have shown that the HBM and TPB are effective in predicting health-related behaviors, including tobacco use (Glanz, Rimer, & Viswanath, 2008; Ajzen, 1991). Moreover, several studies have examined shisha smoking among university students in Africa and other regions of the world, but few have explored the awareness of health implications caused by shisha smoking (Jawad et al., 2013; Abughosh et al., 2016). Therefore, this study aims to fill this research gap by investigating the level of awareness of shisha smoking health implications among university students at the University of Lusaka, using the HBM and TPB as a theoretical framework.

2.2 Conceptual framework

Figure 1 shows the conceptual framework relevant for this study, showing how the various variables relate to shisha smoking.

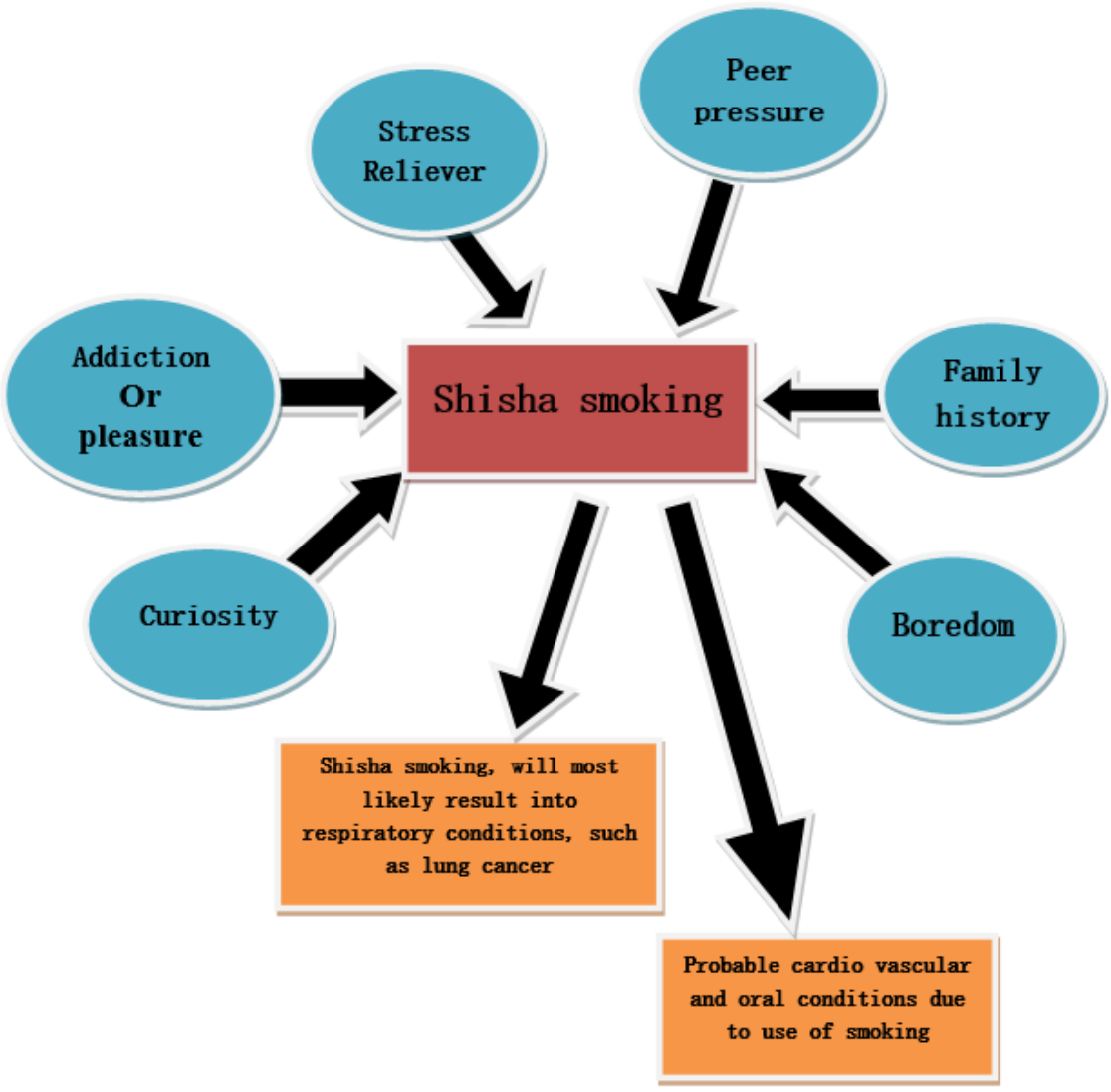

Figure 1: Conceptual Framework (Source Author: Twaambo Musonda 2022)

CHAPTER THREE

3.0 Methodology

The methods adopted in conducting the study.

3.1 Study Approach

The adopted study approach is a qualitative research approach. Qualitative research helps to ask questions that cannot be easily put up into numbers to simply understand human experience and how they perceive certain actions. Also understand certain phenomena and other context.

3.2 Study Design

A Phenomenological study design was adopted. This method is simply aimed at eliciting the participant's point of view while the researcher accordingly records the information which the participants provide. It also helps to understand how certain variable phenomena are able to correlate within and across different units of analysis, from individuals to families and broader social groupings. And it helps in getting a much greater understanding of the phenomenon.

3.3 Study Population/Target Population

The study was conducted at the University of Lusaka, Leopards Hill campus. Located in Bauleni. The target population was the law students and third- and fourth-year Public Health students.

3.4 Sample Size/Sampling Procedure

A sample is a component of the individuals from a larger population available. Sampling is getting/identifying the group that you will actually get data from in your research (McCombe, 2019).

A purposeful sampling method was adopted for this particular study. Purposive sampling is a type of sampling method that aim at capturing a wide range of perspectives from the participants concerning a certain topic (McCombe, 2019).

Therefore, in this study, to have a vast of information the participants were carefully picked using different criteria for them to qualify for the interview. The mode of choosing of participants relied on judgement to identify for certain characteristics in students.

Participants who exhibited desired characteristics were approached for the study. Among the many criteria, the other criteria that was used to qualify students for this study included; age differences, different social backgrounds, different lifestyle, different Hobbies, the campus social life etc.

> **INCLUSION:** Those that smoke shisha and are 18 years to 30 years old and willing to participate.
>
> **EXCLUSION:** Those below 18 years and do not smoke, and those that smoke but not willing to take part in the study.

A total of 20 students were selected. The need to complete the work in a short amount of time is necessary in order to come up with accurate data of the study on the students and also weighing the benefits of the sample and reaching saturation. Avoiding large number will prevent me from having repetitive data.

All the participants had to give consent before the data was collected and used. It was explained to the participants the following (I) reasons for conducting the study, (ii) assurance of confidentiality, (III) Participants had the power to leave certain questions blank on the questionnaire.

3.5 Data Collection Methods

Primary data was collected using a self-structured interview guide. So as to enable the researcher to ask open-ended questions, and follow up questions in order to come up with a comprehensive knowledge on the awareness of health implications as a result of shisha smoking. Furthermore, the open-ended questions encouraged participants to react to their own words, thereby giving them room for reflecting on their own feelings and thoughts, as Lofland (1997) puts it in is writings.

(Engel & Schutt, 2013) alludes that, semi-structured questionnaire prompt questions, which allows order and content in the nature of questions. Which is based on the answers the participants usually give during the study the questionnaire is made in line with the study questions formulated, and is done either through one-on-one interviews, or groups where need arises.

There was some audio recording so as not to miss any important data during the session with the correspondents. Secondary data was collected from reference materials including internet websites, published books and journals relevant to the context of the research.

3.6 Data Analysis

This study is more on assessing the knowledge or awareness of the health implications that are caused by the use of shisha smoking, and a therefore thematic analysis as well as narrative method was ideal.

Thematic analysis Braun et al. (2006), guidelines for thematic analysis was used to help out with identifying the themes in line with encouraging and deterring shisha use, capturing of individuals understandings and allowing a good in-depth analysis of the acquired data.

In order to come up with an excellent analysis the framework recommended by Nowell et al. (2017) was used, it emphasizes that interpretivist research is expected to meet the criteria for trustworthiness, which involves calls for credibility and transferability (generalizability); confirmability and dependability (Lincoln and Guba, 1985; Shenton, 2004). Data was also used to describe, summarize, and later on interpret in relation to broader implications.

During the analysis stage there was a part of getting to understand the data. This involved the process of transcribing the audio, going through the texts, taking some initial notes, and thoroughly going through the data to get familiarized with it.

Later the data was coded. Coding simply entails to the process of outlining sections of the texts such as phrases or sentences as well as formulating shorthand labels or "codes" to describe specific content. Themes where then generated from the codes which were labelled, by identifying the patterns among them. Ensuring that the themes which were created are useful and accurate representations of the actual data. Defining, naming themes and writing up after successfully coming up with a well-established final list of themes, all the themes were named and defined respectively. Then, the write up the analysis of the data was done.

3.7 Ethical Considerations

This study involved human subjects therefore clearance was obtained from the ethical committee in the school of medicine and Health Sciences at the University of Lusaka and National Health Research Authority. Above all written consent was obtained from each participant after explaining to them thoroughly about the purpose of the study. Participation to this study was voluntary, confidential and private. During the interview codes to identify the students were used in sequence (Student 1, Student 2 and so on) no names were used to maintain confidentiality.

CHAPTER FOUR

4.0 Results

This chapter presents the results from the findings of this study.

4.1 Demographic details of the students

Table 4.1.1 below, shows the age and sex of the University of Lusaka students that participated in the study. As shown; there were 10 male students and 10 female students, with age ranging from 20 years to 27 years (26 years absent). The mean and median age was 23 years. Also Table 4.1.1, shows the year and school of the University of Lusaka students that participated in the study. As shown; there were 6 third year (3rd) Law students, 4 second year (2nd) Public Health students and 10 fourth year (4th) Public Health students, respectively.

	SEX AND AGE OF RESPONDENTS			RESPONDENT BY SCHOOL	
	Male students	Female Students		PUBLIC HEALTH STUDENTS	LAW STUDENTS
AGE	Frequency	Frequency	Year	Frequency	Frequency
20	1	0	1st	0	0
21	0	3	2nd	4	0
22	2	2	3rd	0	6
23	3	1	4th	10	0
24	1	3	Total	14	6
25	2	1			
27	1	0			
TOTALS	10	10			
GRAND TOTAL		20			20

Table 4.1.1 shows the age and sex also the year and school of the University of Lusaka students.

4.2 The level of awareness among students at the University of Lusaka regarding the health implications caused by the use of shisha smoking.

Table 4.2.1 shows the summary of the thematic analysis with reference to the research question: What is the level of awareness among students at the University of Lusaka regarding the health implications caused by the use of shisha smoking?

Research Question	Sub-Question	Codes	Theme(s)
What is the level of awareness among students at the University of Lusaka regarding the health implications caused by the use of shisha smoking?	Are you aware of some of the health implications caused by shisha smoking and if you are, which ones are they?	Very aware (n=11): related cancers; brain damage Not aware (n=9)	▪ Adequate level of knowledge on negative health implications of shisha smoking. ▪ Negative effects of shisha smoking ignored even when experienced ▪ Limited Information, Education, Communication (IEC) Materials and messages
	Do you experience any side effects after smoking shisha, if yes what exactly do you experience?	Yes (n=12): Headache; Drowsiness; Nausea; Vomiting; Loss of balance; Shortness of breath; No (n=8)	
	What are some respiratory conditions that you know that can be caused by shisha smoking?	Don't know (n=5) Lung cancer; Bronchitis; Asthma; Chronic Obstructive Pulmonary disease	
	What are some heart related conditions caused by shisha smoking that you know of?	Don't know (n=11) Coronary heart disease; Cancer, Blood Pressure; Heart failure	
	Have you ever come across any post talking about the dangers of shisha smoking? If yes, what is your view on that?	No (n=15) Yes (n=5): Fail to stop still; Not the right time to stop; more information needed	
	When smoking shisha do you share the shisha with friends or not, are you aware that sharing shisha smoking pipe can cause transmission of other infectious diseases such as tuberculosis, herpes	I don't share (n=5) I share (n=15):Not aware (n=8); Aware (n=7)	

	etc.?		

Table 4.2.1: Thematic Analysis Summary: The level of awareness among students at the University of Lusaka regarding the health implications caused by the use of shisha smoking.

The emerging themes as shown in Table 4.2.1 were:

4.2.1 Adequate level of knowledge on negative health implications of shisha smoking:
Most of the respondents (n=11) are aware of some health implications of smoking shisha and were able to state some of them, as shown in the quoted text below:

- **Student 3:** "Smoking related cancers and in some cases heart diseases or lung disease"

- **Student 7:** "Yes, lung cancer, bladder cancer and oral cancer"

- **Student 10:** "Causes cancer, it destroys the lungs, it reduces the number of blood cells in the body"

- **Student 13:** "It can cause TB by the exchange of pipes and it can also lead to COPD"

- **Student 17:** "Yes; Cancer, emphysema, chronic bronchitis, stroke, diabetes mellitus"

However, when it came to responses on heart related conditions due to shisha smoking, only a few students offered responses (n=11), only 9 people gave responses, s shown in the quoted text below:

- **Student 3: "**Systemic inflammation and risk of coronary heart disease."

- **Student 7: "**Heart failure."

- **Student 13: "**Congestive heart failure"
- **Student 14: "**Heart failure, Stroke."

- **Student 17: "**Stroke, Coronary heart disease."

4.2.2 Negative effects of shisha smoking ignored even when experienced:

Most of the respondents (n=12) said they experience side effects from shisha smoking, however, overall, the negative side effects are ignored as shisha smoking still continues.

- **Student 1:** "Light headaches if I take too much of it."
- **Student 3:** "Not really, maybe feeling a bit too high and if am mixing it with alcohol maybe a slight headache in the morning, or a bit of numbness as I smoke it…but nothing to serious"
- **Student 7:** "Headaches, shortness of breath…"
- **Student 8:** "Sometimes it makes me feel high and a little woozy."
- **Student 9:** "Drowsiness"
- **Student 12:** "Mild headaches, drowsiness, I think it's because of continuous inhalation of smoke"
- **Student 20:** "A mild headache when consumed in small amounts"

In addition to the above; the negative effects of smoking shisha are ignored to the point that most students (n=15) share the pipe when smoking, and of these that share, some (n=8) are not aware that sharing the shisha pipe can lead to the spread of other infectious diseases such as Tuberculosis, Herpes, etc. The others (n=7) are aware but do not seem to care about the consequences. This is shown in the quoted text below.

- **Student 1:** "I do share at times , about the diseases I think it's possible since it involves droplets etc."
- **Student 2:** "Yes we share. And no I wasn't aware"
- **Student 3:** "Yes I do and am very much aware of that"
- **Student 5: "**I share with others. Yes I am aware."
- **Student 6:** "I actually share with a group of friends and I wasn't aware of the cause transmission"
- **Student 13:** "Mostly we share and I'm aware of that"
- **Student 14:** "Yes we share, No I didn't know"
- **Student 15:** "I Share with friends, Yes I am aware."

- **Student 17:** “Yes I do share and I know that there's transmission of infectious diseases”
- **Student 19:** “I do share, I didn't know about that.”

4.2.3 Limited Information, Education, Communication (IEC) Materials and messages:

Most of the students (n=15) said they have never come across any post talking about the dangers of shisha smoking, indicating limited Information, Education Communication materials and messages on the dangers of smoking shisha. Sadly those, that have come across such information chose not to pay attention to it, did not feel ready to stop smoking shisha or felt that they needed more education. The responses of those that have come across such messages are quoted below:

- **Student 6:**“Yes, but I never took the time to read it. “
- **Student 8:**“Yes and everything has an implication so when one decides to do something knowing the dangers they must be ready to face the dangers that come along with it.”
- **Student 13:**“Yes I have, my view is educate the community about it so that when they have the insight of something they are able to make proper decisions.”

- **Student 17:**“Yes, I have but I feel it's not yet the right time for me to stop because am still enjoying my youth.”

- **Student 19:**“Yes, it's really true but I fail to stop.”

4.3 Where students get or access the Shisha from.

Table 4.3.1 shows the summary of the thematic analysis with reference to the research question: Where do the students get or access the Shisha from?

Research Question	Sub-Question	Codes	Theme(s)
Where do the students get or access the Shisha from?	How do you manage to access shisha?	Accessed from clubs (n=20)	Night clubs are Shisha smoking hotspots

Table 4.3.1: Thematic Analysis Summary: Where students get or access the Shisha from.

When asked where the students access shisha from, the emerging theme was that night clubs are shisha smoking hotspots, meaning clubs go out of their way to ensure that shisha smoking pipes are very much available for use. All the students (n=20) said they get shisha when they go clubbing, which also includes alcohol drinking and other club activities. Some quoted text is shown below.

- **Student 1:** "I use money to buy in clubs"
- **Student 3:** "To avoid getting addicted I do not own a shisha bong, so once In a while when am out I buy some if the place am at offers it like Decapo, Chicago's, etc"
- **Student 4:** "Buying it from the club owner on their shisha counters."
- **Student 9:** "Every time I go to the club"
- **Student 12:** "I get it from the clubs, that's where they sale."
- **Student 13:** "Shisha is accessible at most clubs, very accessible."
- **Student 17:** "I always have it from drinking clubs (pubs)."

4.4 How students at the University of Lusaka perceive and respond to the use of shisha smoking.

Table 4.4.1 shows the summary of the thematic analysis with reference to the research question: How do students at the University of Lusaka perceive and respond to the use of shisha smoking?

Research Question	Sub-Question	Codes	Theme(s)
How do students at the University of Lusaka perceive and respond to the use of shisha smoking?	Why do you smoke shisha?	Stress reliever (n=9) Curiosity (n=1) To feel good (n=10)	▪ Shisha a stress reliever and mood booster ▪ Peer Pressure and curiosity as major motivators for starting shisha smoking ▪ Shisha smoking an addictive activity. ▪ Mixed feelings towards banning Shisha ▪ Shisha perceived to be less harmful than cigarettes. ▪ Poor knowledge of Shisha content ▪ Level of awareness not sufficient to influence positive change
	What made you to start smoking shisha?	Peer Pressure (n=9) Curiosity (n=8) Stress (n=2) Craving (n=1)	
	How often do you smoke shisha?	Weekends (n=7) Some days in the week (n=10) Some days in the month (n=3)	
	How long does your smoking session last?	Minutes (n=3) 1 hour (n=4) 2 hour Plus (n=13)	
	Which one between shisha smoking and cigarette smoking is more harmful? Justify	Shisha (n=1) Cigarette (n=15), Contains Nicotine Both (n=4)	
	Are you aware of the content in shisha, if you are what is contained in it?	Not aware (n=11) Nicotine (n=4) Flavours (n=5)	
	What is your view/opinion on the call for the ban of shisha smoking?	Should be banned (n=12) Should not be banned (n=8)	
	Have you ever considered quitting smoking shisha before? Give a reason for your answer	No (n=9): harmless; enjoyable Yes (n=11): harmful; got tired; unhealthy; feels bad after	

Table 4.4.1: Thematic Analysis Summary: How students at the University of Lusaka perceive and respond to the use of shisha smoking.

The emerging themes as shown in Table 4.4.1 were:

4.4.1 Shisha a stress reliever and mood booster:

Most of the students (n=19) claimed that the major reason for smoking shisha is to either relieve stress or to boost one's mood (slang, to feel high). Quoted text is shown below.

- Student 1: "Pleasure and stress reliever."
- Student 2: "For stress relief."
- Student 3: "For Fun and pleasure."
- Student 7: "Stress relief."
- Student 12: "It's helps to relieve stress, most of the times when I am occupied with school pressure it helps to relieve it. That's why I smoke it."

4.4.2 Peer Pressure and curiosity as major motivators for starting smoking Shisha:

Most of the students claimed that the reason for starting to smoke shisha was due to peer pressure or curiosity (n=9, n=8, respectively), other reasons were craving and stress.

- Student 1: "Just wanted to try it out, heard about the flavors it comes with"
- Student 2: "My friends introduced me to it."
- Student 10: "Curiosity."
- Student 12: "I wanted to try it out, youth thing."
- Student 13: "Peer pressure."

4.4.3 Shisha smoking an addictive activity:

When asked how often the students smoke shisha, the frequency indicated shows that a regular smoking pattern has been established (for most, smoking is done on weekends) which is suggestive of being addicted to shisha.

- Student 1: "2 times a week mostly weekends"
- Student 2: "Every weekend."
- Student 6: "Once in a week."
- Student 8: "Once or twice a week."
- Student 13: "Mostly when out clubbing."
- Student 15: "On weekends."
- Student 17: "5 times in a week."

4.4.4 Mixed feelings towards banning Shisha:

When asked whether the students are for the idea of banning shisha, there were mixed feelings on that, though more students opted for banning of shisha (n=12). Strong feelings were expressed by those who did not want shisha to be banned. Some quoted text is highlighted below.

- Student 1: “If it has health implications then it's fine but if not, then there is no need to ban it.”
- Student 3: “There's always a good and bad side of things, in as much as shisha is harmful, it provides an income for the seller and honestly, it's only abused by the consumer. I think there are bigger issues right now in the world than shisha and yet they are not banned, so am against shisha banning”
- Student 5: “It should be controlled, especially among adolescents because most of them are unaware of its implications on health.”
- Student 12: “If there are researchers that have researched and found it to be bad for the wellbeing of people then they should ban it.”
- Student 19: “It should be banned because it's really affecting us badly as youths.”

4.4.5 Shisha perceived to be less harmful than cigarettes:

When asked which one is more harmful between shisha and cigarettes, most students (n=15) said that cigarettes are more harmful, while only 4 said both are harmful, and only 1 student said shisha is more harmful. Clearly, there is a serious knowledge gap here on the dangers of shisha smoking.

- Student 1: “Cigarette smoking.”
- Student 2: “Cigarettes smoking is more harmful because it has more nicotine in it than shisha.”
- Student 3: “They are equally both harmful.”
- Student 5: “Cigarette smoking because it has a high content of tobacco which is a harmful substance.”
- Student 8: “Not sure but I think Cigarette because of the tobacco. With shisha you're literally vaping flavour unless you buy the electrical ones with nicotine in them.”
- Student 17: “Cigarette smoking is more harmful because it contains tar which makes it more addictive.”

4.4.6 Poor knowledge of Shisha content:

When asked about the content of shisha, most students (n=11) expressed ignorance of the content, while only a few said nicotine (n=4) and the rest (n=5) said there are just flavours. This is highly indicative of very poor knowledge of the full content of shisha , even for those who said that shisha only contains flavours.

- Student 1: “Only know it contains flavors such vanilla, strawberry.”
- Student 2: “No I'm not, I'm only aware of the flavors in it.”
- Student 5: “Not really.”
- Student 7: “Tobacco juice.”
- Student 12: “Only know it has some different flavors that makes it more addictive.”
- Student 14: “No I don't know.”

4.4.7 Level of awareness not sufficient to influence positive change:

When asked whether the students considered quitting shisha smoking, mixed feelings where expressed, though the majority said they considered it (n=11). Those that do not desire to quit claimed that is harmless and enjoyable. This is indicative of the fact that the level of awareness of the negative effects is not sufficient to influence positive change. Some quoted text is highlighted below.

- Student 1:” No, because I think it's harmless.”
- Student 2: “No I haven't considered that yet, maybe later I will stop.”
- Student 3: “I am not a heavy shisha smoker so I haven't really thought about it.”
- Student 5: “Yes I have. Despite it been cool I sometimes do think with time it may cause serious harm to my health.”
- Student 7: “Yes I have; But the stress keeps taking me back.”
- Student 8: “No because I enjoy it.”
- Student 11: “Yes I have. It's unhealthy.”
- Student 12: “Not really because it hasn't given me reasons on doing so, maybe if it made me get really sick I might consider but since I started smoking I have never encountered any.”
- Student 17: “Yes...Because of the hangover and headache it gives me hours after smoking.”
- Student 19: “Yes, because they are more disadvantages than advantages.”

CHAPTER FIVE

5.0 Discussion

This study yielded interest findings which are discussed in this chapter.

With regards to the level of awareness among students at the University of Lusaka regarding the health implications caused by the use of shisha smoking; the emerging themes were: *Adequate level of knowledge on negative health implications of shisha smoking; Negative effects of shisha smoking ignored even when experienced; Limited Information, Education, Communication (IEC) Materials and messages.* These findings tally with many other studies (Maziak et al., 2004: Mostafa and Shokeir, 2002; Hasim, 2000). For instance, Maziak et al. (2004) reported that the majority of respondents believed smoking shisha was bad for their health, 97% knew lung cancer was related to smoking, and knowledge of smoking-related diseases (pulmonary emphysema, coronary heart disease, peptic ulcer, and neonatal death) was typically less than 50%. Furthermore, the most frequently stated negative health impact of shisha smoking, respiratory illness, was noted in a research by Maziak et al. (2004) among university students in Syria. (Mostafa and Shokeir, 2002).

Additionally, according to Almutairi (2004), shisha consumers noted that dehydrated mouth, headaches, and nausea were the most detrimental adverse effects of smoking shisha. Additionally, a qualitative research conducted among young people who frequent shisha cafés and smoke waterpipes in the United Kingdom found that sharing the shisha smoking pipe raises the risk of spreading diseases like hepatitis, herpes, and tuberculosis as well as other viruses. (Knishkowy and Amitai, 2005, City of Ottawa 2010, Nakkash and Khalil, 2010). However, in the present study, harmful side effect and other health related consequences seem to be ignored by the students.

Sadly, the lack of adequate Information, Education and Communication (IEC) materials and other posts cautioning against the dangers of shisha smoking in the present study was inconsistent with Taha's (2008) findings, which showed that television was the primary source of information about health and disease as reported by both male and female students. Additionally, students at the College of Applied Medical Science in KSA believed that media impact was the main source of knowledge regarding the harmful effects of smoking. (Richmond and Kehoe, 1997). This lack of knowledge in the current research may indicate that the issue of shisha smoking requires more attention and resources.

With respect to where the students access shisha from, the single emerging theme was that *clubs are shisha smoking hotspots*, where shisha is very much available for access to anyone who is patronizing the clubs. These findings were somewhat consistent with the qualitative study in the United Kingdom where young adults access shisha at shisha cafés and or night clubs (Merdad, et al., 2007).

With respect to how students at the University of Lusaka perceive and respond to the use of shisha smoking, the emerging themes were as follows: *Shisha a stress reliever and mood booster; Peer Pressure and curiosity as major motivators for starting Shisha smoking; Shisha smoking an addictive activity; Mixed feelings towards banning Shisha; Shisha perceived to be less harmful than cigarettes; Poor knowledge of Shisha content; Level of awareness not sufficient to influence positive change.* The results were in line with those of a study done in Pakistan where students claimed that shisha smoking would relieve their tension and provide them with amusement. This misconception is largely a result of people not being conscious of the negative impacts of shisha smoking. Another reason they smoke is that some families and the community are beginning to embrace it as a socially normal behavior, or they feel that their peers are pressuring them to start smoking. (Mostafa and Shokeir, 2002).

In addition, a Jordanian research by Dar-Odeh et al. (2010) showed that 25% of medical students used shisha on a daily or weekly basis and that up to 44.1% of them were shisha smokers, just like the students in the present study. According to an Egyptian survey, 74% of female pupils thought smoking shisha was less hazardous than smoking cigarettes. (Labib et al., 2007). Because shisha smoking includes the passing of smoke through water, which is believed to filter the smoke and eliminate toxic agents, there is a misconception that it is better than smoking cigarettes. (Kandela, 2000; WHO 2005; Dawn 2006). But according to a research by Ash (2007), using water pipes poses three more fatal risks than smoking cigarettes, and using flavouring tobacco over coals only makes the situation worse by adding new pollutants to the already hazardous smoke. (Ash, 2007).

With regards to either banning shisha or quitting shisha smoking the present study's findings are similar to many other studies in which smokers were asked about their desire to stop smoking.(Abolfotouh, et al., 1998; Maziak et al., 2004; Taha et al., 2010), for instance, a Syrian research on café patrons' quit attitudes revealed that while the majority (86.5%) believed they could stop using waterpipe at any moment, only a small minority (28.4%) were

actually interested in doing so. According to Taha et al.'s 2010 research among university students, more than half of present smokers (56%) thought they could stop, and 75.2% were motivated to do so. In a survey of the smoking habits of Saudi male medical students, 57.1% of those who were already smoking said they were motivated to quit, while 42.9% said they weren't. (Abolfotouh, et al., 1998). Students' lack of knowledge and understanding of the health risks associated with shisha smoking and the overwhelming social and friend pressure to continue smoking are two possible reasons for users' failure to stop.

5.2 Limitations of the study

Qualitative studies have some limitations that can affect the validity and reliability of the findings. Here are some limitations that may apply to the present study:

- Limited generalizability: The findings of this qualitative study may not be generalizable to other populations or settings because the sample size is small (n=20) and non-randomly selected. Therefore, the findings may not be representative of the larger population beyond the University of Lusaka.
- Researcher bias: The researcher's personal bias or beliefs may affect the study's design, data collection, and analysis, which could lead to inaccurate results.
- Social desirability bias: Respondents may have provided socially desirable responses, especially since the topic being studied is sensitive. This may lead to an overestimation or underestimation of the actual awareness levels.
- Limited scope: The study's focus is only on awareness levels of shisha smoking health implications among students at the University of Lusaka, and it may not provide a comprehensive understanding of other factors that may contribute to shisha smoking, such as cultural and social norms.
- Self-reporting bias: Respondents may have not accurately reported their shisha smoking behavior or knowledge level. This could have led to inaccurate results, especially if respondents felt stigmatized or ashamed about their behavior.
- Time and resource limitations: Qualitative research can be time-consuming and resource-intensive, especially when conducting in-depth interviews or focus groups. Therefore, the present study may be limited in terms of the number of participants or the depth of data collected.

CHAPTER SIX

6.0 Conclusion and recommendations

After conducting this study of the awareness of health implications caused by the use of shisha smoking among students at the University of Lusaka, it is somewhat worrying that even though a significant proportion of the students are aware of the dangers associated with shisha smoking, the level of awareness doesn't seem to be adequate enough to promote positive change. This can be attributed to some information and knowledge gaps that still exist as noted in the findings.

The findings of this study have revealed that a majority of the students are aware of the adverse health effects of shisha smoking, such as increased risk of lung cancer, cardiovascular diseases, and other respiratory illnesses. This awareness is further reflected in the students' attitudes towards shisha smoking, with many expressing a desire to quit but putting that desire into action seems to be difficult as some even stated that they are addicted to shisha smoking or are drawn back to it due to peer pressure.

Furthermore, the study has highlighted the need to increase the level of education and awareness-raising campaigns on the dangers of shisha smoking among young people. This is particularly important in light of the increasing popularity of shisha smoking among young people in Zambia and other parts of the world.

In conclusion, the assessment of the awareness of health implications caused by the use of shisha smoking among students at the University of Lusaka has shown that there is a high level of awareness among the students, even though some knowledge gaps were noted and some negative attitudes towards the shisha smoking habit were also exhibited by the students. However, there is still a need for further education and awareness-raising campaigns to ensure that more young people are aware of the dangers of shisha smoking and are empowered to make informed decisions about their health.

6.1 Recommendations

The following are the recommendations; directed at the students and also at the University Management.

6.1.1 Recommendations for students smoking shisha.

- Quit smoking shisha: The most effective way to avoid the health risks associated with shisha smoking is to quit altogether.

- Limit the frequency of smoking: If quitting is not an option, students should limit the frequency of shisha smoking to reduce the amount of exposure to harmful chemicals and toxins.
- Avoid sharing mouthpieces and hoses: The sharing of mouthpieces and hoses during shisha smoking sessions can increase the risk of infectious diseases, students should avoid sharing these items.
- Use clean and well-maintained equipment: Students should ensure that the shisha equipment they use is clean and well-maintained to reduce the risk of bacterial and fungal infections.
- Stay hydrated: Shisha smoking can cause dehydration, students should drink plenty of water to stay hydrated during and after smoking.
- Seek professional help: Students who are struggling to quit shisha smoking or experiencing health problems related to smoking should seek professional help from a doctor or a smoking cessation program.
- Spread awareness: Students should educate themselves and their peers about the health risks associated with shisha smoking and spread awareness about the dangers of smoking.

6.1.2 Recommendations for University management.

- Ban shisha smoking on campus: University management should consider implementing a ban on shisha smoking on campus to protect the health of students and staff.
- Provide education and awareness: University management should provide education and awareness campaigns about the health risks of shisha smoking to students and staff.
- Promote smoking cessation programs: The University should promote smoking cessation programs for students who want to quit shisha smoking.
- Encourage healthy alternatives: The University should encourage healthy alternatives to shisha smoking, such as exercise or other stress-relieving activities.
- Provide resources for smoking cessation: The University should provide resources for smoking cessation, such as nicotine patches, gum, or other quit-smoking aids.

- Enforce the ban: University management should enforce the ban on shisha smoking on campus and provide consequences for those who violate the policy.
- Collaborate with local health authorities: The University should collaborate with local health authorities to develop strategies and programs to reduce the prevalence of shisha smoking among students.

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APPENDICES

Appendix A: Consent Form

University of Lusaka

Department of medicine and health sciences

Public health student research consent form

I_____(participant) allow_____ (student researcher) to use the voluntarily recorded material as described by the researcher for the completion of the proposed research.

As the participant, I understand that the uses of this research as described by the researcher and therefore I give the student permission to use the materials obtained for academic purposes. Yes:_____ No:_____

Yes: Yes, with the following exceptions:

_____

As the participant, I give permission for the student researcher to use my name in the communication of this research. Yes:_____ No:_____

I wish to be identified as _____

As the participant, I understand that the student researcher will (choose one):

- Keep the materials in their possession.
- Deposit the materials in a public archives collection such as the university of Lusaka
- Destroy the materials after the completion of the research.
- *if depositing the materials in the public archives collection, I have read and signed the informant contract and I understand that the archives will, at the discretion of the archives, allow researchers to use the materials as described by the researcher.
  Yes:____ No:_____

Consent:

Your signature means that:

- You have read the information or have been informed about the research
- You have been able to ask questions about the study
- You are satisfied about the answers to all your questions
- You understand what the study is about and what you will be doing
- You understand that you are free to withdraw from the study at any time, without having to give a reason and that doing so will not affect you now or in the future
- If you sign this form, you do not give up your legal rights and do not release the researcher from their professional responsibilities.

Participant's signature:

_____

_____

Date:_____

Appendix B: Data collection tool_ Structured Interview Guide

Main Research Question	Sub-Question
1.0 What is the level of awareness among students at the University of Lusaka regarding the health implications caused by the use of shisha smoking?	1.1 Are you aware of some of the health implications caused by shisha smoking and if you are, which ones are they?
	1.2 Do you experience any side effects after smoking shisha, if yes what exactly do you experience?
	1.3 What are some respiratory conditions that you know that can be caused by shisha smoking?
	1.4 What are some heart related conditions caused by shisha smoking that you know of?
	1.5 Have you ever come across any post talking about the dangers of shisha smoking? If yes, what is your view on that?
	1.6 When smoking shisha do you share the shisha with friends or not, are you aware that sharing shisha smoking pipe can cause transmission of other

	infectious diseases such as tuberculosis, herpes etc.?
2.0 Where do the students get or access the Shisha from and the cost?	2.1 How do you manage to access shisha?
3.0 How do students at the University of Lusaka perceive and respond to the use of shisha smoking?	3.1 Why do you smoke shisha?
	3.2 What made you to start smoking shisha?
	3.3 How often do you smoke shisha?
	3.4 How long does your smoking session last?
	3.5 Which one between shisha smoking and cigarette smoking is more harmful? Justify
	3.6 Are you aware of the content in shisha, if you are what is contained in it?
	3.7 What is your view/opinion on the call for the ban of shisha smoking?
	3.8 Have you ever considered quitting smoking shisha before? Give a reason for your answer

Appendix C: Workplan

TASKS	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May 23	Jun-23
Proposal development and completion										
Ethical approval										
Data collection										
Data analysis										
Report writing										
Final report										

submission										

Appendix D: Budget

S/N	Item	Quantity	Unit Cost K	Total Cost K
1	Plain papers (Ream of paper)	1	K 140	K140
2	Transportation	20 litres	K500	K500
3	Pens	15	K30	K30

4	Printing of interview Guide	**5**0	K50	K100
5	Accommodation		K 850	K850
6	Food		k400	K400
Total				K 2070

Appendix E: UNILUS Authorisation Letter

SCHOOL OF MEDICINE AND HEALTH SCIENCES LEOPARDS HILL CAMPUS
Plot No. 37413, Off Alick Nkhata Mass Media. P. O Box 36711, Lusaka.
Phone: +260211258505, 258409 Fax +260211233409; Cell +260976075850,961917862,
E-mail:unilus@zamnet.zm,ictar@zamnet.zm

SCHOOL OF MEDICINE AND HEALTH SCIENCES RESEARCH ETHICS COMMITTEE

Ref no: IORG0010092-2023/075

Date: 15th DECEMBER, 2022

TWAAMBO MUSONDA - BSPH19114534

Re: RESEARCH TITLE: ASSESSMENT OF AWARENESS OF HEALTH IMPLICATIONS CAUSED BY THE USE OF SHISHA SMOKING AMONG STUDENTS AT THE UNIVERSITY OF LUSAKA

The above research was submitted to the research ethics committee for review. The study has no major ethical problems and is approved subject to the following:

1. The study cannot be changed without express permission of the UNILUS Research ethics committee
2. Approval from the Lusaka District health Management or equivalent health authorities should be sought.
3. The study tools should be added.
4. An informed consent form should be attached and filled by all study participants (If dealing with primary data)
5. The risks and benefits should be included in the consent form.
6. Ensure before commencement that approval is sought from ZNHRA

Congratulations and the committee wishes you success in your work.

Prof Kasonde Bowa
MSc(Glasgow),M.Med(UNZA),FRCS(Glasgow),FACS,FCS,DPH(LSTMH),MPH(UCL)
Chairman- UNILUS REC
Professor of Urology and Consultant Urologist
Executive Dean
University of Lusaka and University Teaching Hospital School of Medicine and Health Sciences.

SCHOOL OF MEDICINE AND HEALTH SCIENCES LEOPARDS HILL CAMPUS

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E-mail:unilus@zamnet.zm,ictar@zamnet.zm

Date: 15th DECEMBER, 2022

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PERMISSION FOR **TWAAMBO MUSONDA - BSPH19114534 TO** CONDUCT A RESEARCH STUDY AT YOUR FACILITY/ INSTITUTION/ORGANIZATION

Reference is made to the above subject matter

The University of Lusaka, School of Medicine and Health Sciences here by requests for permission for **TWAAMBO MUSONDA** Public Health Student to conduct research at your facility/ institution/ organization, entitled; **ASSESSMENT OF AWARENESS OF HEALTH IMPLICATIONS CAUSED BY THE USE OF SHISHA SMOKING AMONG STUDENTS AT THE UNIVERSITY OF LUSAKA.** The research is in partial fulfillment of the requirements for the degree of Bachelor of Science Public Health. This is purely for academic purposes and information gained in such a way will not be used in the public domain without prior authorization from the institutions/ organizations involved.

The research topic has been cleared by the University of Lusaka, School of Medicine and Health Sciences Research Ethics Committee as per the attached copy. Data collection is expected to be done from 1st **January, 2023 to 31st March, 2023**.

The University of Lusaka avails itself of this opportunity to review to your office the assurances of its highest considerations and looks forward to your timely and favorable response.

Prof Kasonde Bowa

MSc(Glasgow),M.Med(UNZA),FRCS(Glasgow),FACS,FCS,DPH(LSTMH),MPH(UCL)

Chairman- UNILUS REC

Professor of Urology and Consultant Urologist

Executive Dean University of Lusaka and University Teaching Hospital School of Medicine and Health Sciences.

Appendix F: NHRA Authorisation Letter

NATIONAL HEALTH RESEARCH AUTHORITY
Lot No. 18961/M, off Kasama Road, Chalala, P.O. Box 30075, LUSAKA
Tell: +260211 250309 | Email: znhrasec@nhra.org.zm | www.nhra.org.zm

Ref No: NHRA000025/24/01/2023 **Date:24th January 2023**

The Principal Investigator,
Twaambo Musonda,
UNILUS,
Lusaka, Zambia.

Dear Ms Musonda

Re: Request for Authority to Conduct Research

The National Health Research Authority is in receipt of your request for ethical clearance and authority to conduct research titled "**Assessment Of Awareness Of Health Implications Caused By The Use Of Shisha Smoking Among Students Of The University Of Lusaka.**"

I wish to inform you that following submission of your request to the Authority, our review of the same and in view of the ethical clearance, this study has been **approved** on condition that:

1. The relevant Provincial and District Medical Officers where the study is being conducted are fully appraised;
2. Progress updates are provided to NHRA bi-annually from the date of commencement of the study;
3. The final study report is cleared by the NHRA before any publication or dissemination within or outside the country;
4. After clearance for publication or dissemination by the NHRA, the final study report is shared with all relevant Provincial and District Directors of Health where the study was being conducted, University leadership, and all key respondents.

Yours sincerely,
Acting Director/Chief Executive Officer

Ms Sandra Chilengi-Sakala,
National Health Research Authority