

**FACTORS CONTRIBUTING TO CIGARETTE SMOKING AND ITS HEALTH EFFECTS
AMONGST UNIVERSITY STUDENTS SOUTH AFRICA.**

BY

THENDELE MERVIS

11613094

**A MINI DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
OF THE DEGREE OF MASTER OF PUBLIC HEALTH (MPH) AT THE UNIVERSITY OF
VENDA**

IN THE

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC HEALTH

SUPERVISOR: DR. N.S MASHAU

CO- SUPERVISOR: DR. T.G TSHITANGANO

DECLARATION

I, MERVIS THENDELE (11613094), hereby declare that the dissertation titled “Factors contributing to cigarette smoking and its health effects amongst University of Venda students, South Africa “hereby submitted for the degree of Master of Public Health (MPH) at the University of Venda is my original work and has not been submitted for any degree at this university or any other institution; and that all citations, materials and sources used have been duly acknowledged by complete references.

Signature..... **Date**.....

M. Thendele

DEDICATION

The project is dedicated to my mother Mrs, Rebecca Thendele for being the pillar of strength throughout this study. To my brothers and sisters Mduduzi, Mthulisi, Mncedisi, and Memory, who have been supporting and encouraging me and to my little brothers Mkhululi and Mkhokheli, I say follow in the footsteps of your sister which have been set before you.

ACKNOWLEDGEMENTS

I would love to thank God Almighty for gracing me with the courage, understanding and strength to finish this degree. If it had not been for the Lord, I wouldn't have reached this far.

- My heartfelt gratitude goes to my supervisor Dr, Ntsieni Stella Mashau and Dr, Takalani Grace Tshitangano for their constructive, expertise and intense professional advice in this research.
- My earnest thanks go to the entire Department of Public Health members for their unwavering support and motivation
- I sincerely thank my friend, my mentor, Mr, Tinotenda S Murwira for unwavering support during the course of this study; your efforts are highly appreciated and forever cherished.
- My special thanks are given to my brothers and sisters in Christ at Univen Sdasm for their undisputed moral support and extreme prayers.
- My gratitude goes to the Selly Mshaba family for their emotional support during the course of this study.
- My earnest thanks also go to my best friends Buhle B. Sibanda, and Tina Mhlanga for their psychological support and encouragement during challenging times.
- To my statistician, Mr, Martin Mafunda, thank you for patiently spending time with me to guide me in the process of performing the statistical analysis.
- Finally, my sincere appreciation goes to the University of Venda community members for their assistance and participation, this study would not have been successful if they had refused to participate.

ABSTRACT

Background: Globally, cigarette smoking is causing preventable deaths in developing countries affecting especially the youth. Historically, cigarette smoking is known to be more common among adults but is also becoming common among students.

Purpose: The study aimed to investigate factors contributing to cigarette smoking and its health consequences amongst students of the University of Venda in South Africa.

Methodology: A quantitative approach using a descriptive cross-sectional design was adopted. Convenience sampling was used to randomly select 428 respondents. A self-reporting questionnaire with closed ended questions was administered to respondents between the ages of 17-40 years who suited the inclusion criteria. Permission to conduct the research was obtained from the Ethics Committee of the University of Venda. Data were analysed using SPSS version 23 and presented in the form of tables and charts. Pearson's chi squares were used to test significant relationships between variables and smoking status.

Results: A total of 407 students participated in the study. Of the 407, 208 (51%) of respondents were female students. The mean age of the study population was 24 years. Of these 407, 175(43%) reported being smokers 232 (57%) were nonsmokers. More smokers were observed among the male respondents and registered for first and second years. There was a significant relationship between age, gender, religion, school of affiliation, amount of pocket money and smoking status (P -value=0.05).The results showed that the majority of the respondents 285 (70%) agreed to the belief that students smoked cigarettes due to availability of cigarettes at every corner of the campus, 281 (79%) peer influenced by friends 289 (71%) family members who smoke, and 313 (76.8%)increase social interaction. The majority of the students were knowledgeable about health consequences caused by smoking. Nonsmoking students were more knowledgeable about harmful effects of smoking as compared to smokers (P =0.00).

Conclusion: The study concludes that students smokes cigarettes due to being a friend with someone who smokes, being in new a environment, stress, depression, observation of other students smoking, no signage prohibiting smoking and lack of knowledge regarding health effects of smoking. **Recommendations:** Therefore, there is a need to institute a health promotion programme to curb the smoking of cigarettes among students.

Keywords: Cigarette, smoking, students, 'smoking behaviours, health-related knowledge about cigarette smoking

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ABBREVIATION/ACRONYMS

CDC	Centers for Diseases Control
CDPC	Centres for Diseases and Prevention Control
DALYS	Disability adjusted life years
EMRO	Eastern Mediterranean Regional Office
EURO	Europe Region Office
FCTC	Framework Convention on Cigarette Control
GYTS	Global Youth Tobacco Survey
HBM	Health Belief Model
NCDs	Non communicable Diseases
SA	South Africa
SEARO	South East Asia Region Office
USA	United States of America
USDHHS	United States Department of Health and Human Sciences
UNIVEN	University of Venda
WHO	World Health Organisation
WPRO	Western Pacific Region Office

CHAPTER 1

INTRODUCTION AND BACKGROUND OF THE STUDY

1.0. Introduction

Worldwide, cigarette smoking is a major public health concern affecting young people of university going age. According to So and Yeo (2015), cigarette smoking is more harmful to the health of young people. This could be of toxic exposure to nicotine, tar and carbon monoxide and thus contributing to premature deaths. Cigarette smoking is one of the main causes of cancer. According to World Health Organisation, cigarette use is a risk factor for six out of eight leading causes of deaths globally (WHO 2017). Studies conducted in the USA reported that cigarette smoking is the leading preventable cause of premature death and diseases (Centers for Disease Control and Prevention 2015). Globally, studies have shown that approximately eighty percent of smokers worldwide live in low- and middle-income countries, where the problem of tobacco-related illness and death is more significant (WHO, 2015). Cigarette smoking related diseases are on the rise in Southeast Asia (SEARO) and Western Pacific (WPRO) and EURO (Europe) and Africa (AFRO) (Blecher and Ross 2013 and Tsvetkova and Antoniva 2013).

1.1. Background

According to Tobacco atlas (2015) cigarette smoking harms almost every part of the human body. About 100 million deaths were caused by cigarette usage and there will be up to one billion deaths in the 21st century if the trends do not change (WHO, 2017). In South Africa, smoking is the third leading cause of death (Ericksen, Mackay, Gomeshtapen and Drope, 2015). Eight percent of all deaths, or almost 50,000 South African deaths per year, are a direct result of cigarette smoking (World Health Organisation, 2015). It is the number one cause of many cancers in South Africa (Tobacco Atlas, 2015). According to Global Burden of Disease study (2017), prevalence of daily smoking deteriorated on a worldwide scale decreasing by 28% for men and 34% for women between 1990 and 2015.

Although the rate of smoking has plummeted over the past few decades, the number of daily smokers globally continues to rise, for example, about 1.1 billion daily smokers smoked cigarette in the year 2016 (Global Burden of disease survey, 2017). The prevalence of cigarette smoking appears to be increasing in the Africa region. This increase of daily smokers has been

evident among young people who mostly are of university going age around the world (Global Burden of Disease, 2017). For example, in South Africa, there are about seven million smokers, of whom 90% began to smoke before the age of 18, and 20% began to smoke before the age of 10 (Heart Foundation South Africa, 2017). Most of these young people are of university going age cohort. In support to this, the Department of Social Development in Limpopo conducted a survey among 400 youth and it indicated that 1 young person smoked about 5 cigarettes per day (Van Heerden, Grimsrud, Stein, et al., 2013). According to the latest national statistics in the South African National Health and Nutrition Examination Survey (Sanhanes -1), 16.4% of South Africans were smokers in 2012. Even though smoking has decreased by 5% in South Africa, there are still 33% of smokers especially among young people.

Cigarette smoking among college or university students is attributed to many factors. In a study conducted by So, Seo, Nelson, and Lohrmann (2013) at a university in the United States of America (USA) concluded that academic pressures uncertain career prospects may contribute to cigarette smoking. Similarly, in another study conducted by Niles and Barbour (2011) in USA, students reported that they smoked cigarettes due to stress, lack of supervision, having more free time, and due to the number of their friends who smoked cigarettes. College life is characterised by transition from high school to college and brings a lot of freedom to the young adults hence they start to engage in risky behaviors such as cigarette smoking ((El Ansari and Stock, 2010). This newly found independence pressures young college students to experiment with psychoactive substances such as alcohol, tobacco and illicit drugs (Al-Naggar, Al- Dubai, Hamoud, et al., 2011).

The situation is exacerbated by the lack of rules regarding tobacco control and massive tobacco advertisement in many university campuses around the world (Bahaa-eldin, Mahfouz, and Yagoub, 2014). For example, a comparative study conducted among four SADC universities revealed that cigarette smoking was rife in most campuses due to non-enforcement of tobacco laws, and tobacco advertisement within the universities (Tsvetkova, 2013). In another study conducted at the Western Cape University in South Africa, cigarette smoking among students is encouraged by relaxed preventative measures within the university therefore this gives the students the courage to smoke cigarettes (Kruger, 2016). Numerous factors contribute to cigarette smoking among youths. This could be as a result that most young people are in a time period of tertiary education that represents freedom of choice including making decisions to smoke cigarette (Khabour, Alzoubi et al., 2012). However there are many factors which contribute to cigarette smoking, therefore this study seeks to understand these factors.

In an effort to minimise the number of daily cigarette smokers, the Government of South Africa adopted a number of legislation including the WHO Framework Convention for Tobacco Control (WHO FCTC) in 2005. Smoking prevalence in South Africa has deteriorated since the initiation of the first South African tobacco regulations in 1993. According to the South African National Health and Nutrition Examination Survey (SANHANES-1) the prevalence of smoking rate is currently at 16.4% (Hoosain et al., 2013). However, in comparison, South Africa has the highest prevalence of smoking as compared to other African countries. Although South Africa is one of the first countries in the world to ban smoking in public places when it introduced its (Tobacco Products Control Amendment Act 83 of 1993) targeting public spaces which include public universities. Little is understood about why students smoke in an environment where tobacco controls is robust. Therefore, this research strives to understand factors that contribute to cigarette smoking and its health effects among students at the University of Venda.

1.2. Problem statement

Despite efforts by the South African government to limit cigarette smoking in public places in South Africa, students are still smoking cigarettes as observed by the researcher. The researcher is a peer educator at the University of Venda who has observed with serious concern that University of Venda students smoke cigarettes within the campus. According to the risk assessment survey by the peer educators in 2015, cigarette smoking is common at the University of Venda and is mostly practiced at the university cafeteria and residences where students spend most of their time relaxing. Furthermore the government has initiated a number of health promotions to sensitise the public about harmful effects of cigarette smoking. However, students continue to smoke. Regardless of this high level of awareness about the dangers of cigarettes to young people, a relatively high number of young people still smoke cigarettes.

1.3. Rationale for the study

There is limited information about cigarette smoking in sub-populations such as students, hence there is a need to explore factors that motivate students to smoke cigarettes at university campuses (Tucktuck, Ghandour, Abu-Rmeilerh, 2017). Generally, across the country, most previous research focuses on substance abuse with special emphasis on prevalence of alcohol abuse. Previous studies done at the University of Venda focus on prevalence of alcohol use rather than cigarette smoking and its contributing factors (Kyei and Ramagoma, 2013). Hence there is need to understand the factors that contribute to cigarette smoking amongst the

University of Venda students. Therefore, the researcher attempts to assess the factors that contribute to students smoking cigarettes at the University of Venda, Vhembe District, and Limpopo Province in South Africa.

1.4. Significance of the Study

The study findings from this study may help the University of Venda to strengthen smoke free policies that ban smoking on the university premises and set other preventative programs to reduce the rates of students smoking. Furthermore, insights from this study finding may inform the University of Venda Campus health and counseling department on how to design health promotion campaigns focusing specifically on cigarette smoking. Insights gathered from the study may stimulate other researchers to study this topic and increase the body of knowledge regarding cigarette smoking among students. In addition, the study may help university students to avoid smoking initiation hence save the lives of students. The information acquired from this study may be of use to the Department of Health by providing valuable understanding insight when developing strategies to deal with non-communicable. Furthermore, the results of the study may provide baseline information that may assist health planners to design effective approaches directed towards addressing the factors contributing to cigarette smoking among students. The outcome of this mini-dissertation may assist the students Health and Wellness Centre managers to plan and design programmes that will focus on reducing the factors contributing to cigarette smoking among university students. The mini dissertation can be a reference for training of peer educators, other students and Professional responsible for health and Wellness Programmes.

1.5. Aim of Study

The aim of the study was to assess the factors that contribute to cigarette smoking and its health effects amongst students at University of Venda in South Africa.

1.6. Objectives of the study

The objectives of this study are to:

- Assess individual/personal factors that contribute to cigarette smoking among students at the University of Venda.
- Determine socio-cultural factors that contribute to cigarette smoking among students at the University of Venda.

- Determine environmental factors that contribute to cigarette smoking at the University of Venda.
- Assess students perceptions regarding health consequences of cigarette smoking at the University of Venda.

1.7. Definition of key terms

‘Smoking’- is the breathing of the smoke through burning tobacco covered in cigarettes, pipes, and cigars” (Eriksen et al., 2015). For the purpose of this study, smoking is inhalation of tobacco products in order to alter one’s behavior.

‘Cigarettes’- is a paper rolled with any tobacco leaves (Blecher and Ross, 2015). In this study cigarette is manufactured tobacco with additives.

‘Students’- are learners who are attending an educational institution or someone who attends an educational institution in order to acquire knowledge (Dimaggio, 2013). In this study, students refer to full time registered students at the University of Venda.

‘Smoking Health effects’- it refers to health challenges caused by cigarette smoking. In the current study health effects refers to how smoking can affect the body and one’s looks.

Factors- According to the Oxford Dictionary (2012), it refers to components contributing to a particular result or situation. For the purpose of this study it refers to the elements influencing cigarette smoking amongst University of Venda students.

University of Venda- refers to a rural based university in the Limpopo Province. In this study, it is defined as a university based in Thohoyandou, Vhembe district in South Africa.

1.8 Outline of the dissertation

This study is divided into five chapters as follows:

Chapter 1 introduces the study, gives the statement of the problem, aim and objectives of the study, significance, rationale and definition of key terms.

Chapter 2 is based on literature review which highlights the individual factors, socio-cultural factors, and environmental factors contributing to cigarette smoking, health effects of cigarette smoking, and Health belief Model.

Chapter 3 Summarizes research approaches that were used in data gathering, collection, presentation and analysis.

Chapter 4 outlines the study findings.

Chapter 5: discussions based on the results of the study, conclusions and suggested recommendations.

1.9 Summary

The university has an obligation of providing smoke free zones through installation of anti-smoking posters that are aimed at prohibiting smoking at undesignated areas. Currently, there are no strict rules and signage within the university premises except at the administrative offices. This chapter has highlighted important issues that motivates cigarette smoking among students and need to be investigated particularly at the University of Venda. The following chapter presents the literature review of this study.

CHAPTER 2

LITERATURE REVIEW

2.1. Introduction

Literature review refers to an account of what has been published on a particular topic by scholars and researchers (Babbie, 2012). The literature was reviewed in two phases which are data-based and based on theoretical frameworks. The aim of the literature review was to become knowledgeable about the main published works concerning cigarette smoking among university students. Reputable websites were consulted such as Science Direct, Ebscohost, Sabinet and PubMed. The Boolean method was used to search for key words such as factors or smoking or university students. The literature review was done according to the objectives of the study.

2.2. Factors that contribute to cigarette smoking among students

2.2.1. Socio-cultural factors contributing to cigarette smoking

Social factors are determined by a person's thoughts, feelings and behavior that can be largely influenced by their society and cultural beliefs (Reddy, Zuma, Shisana, Jonas, and Sewpaul 2015). Cigarette smoking is determined by the social environment where one lives. Young people who reside in communities where smoking is a culturally approved event are likely to smoke. A quantitative study conducted in five European universities reported that cigarette smoking among university students was influenced by the cultural differences that existed among communities (Jewell 2015, and Radi et al., 2014). Students who came from cultural groups that smoked cigarettes had a greater chance to smoke in comparison to those who came from non-smoking cultural communities (Karimy, Niknami, Heidarnia, and Shamsi, 2013).

In a similar study conducted in Nigeria by Egbe, Petersen, Meyer-Weitz and Asante (2014) revealed that students who are raised in communities that promote cigarette smoking through the use of cultural events that include ceremonies and medicinal uses of tobacco are likely to smoke cigarettes due to positive social perception of cigarette smoking within the communities. Jewell (2015) argues that having role models in the communities such as the traditional leaders who smoke can influence students to start smoking. Having subjective norms could also significantly predict intention to initiate smoking. Karimy, Niknami, Heidarnia, and Shamsi (2013) reported that subjective norms of students on smoking could significantly predict intention to

initiate smoking. The norms could be as a result of social environment where the student is exposed to.

Students who have friends that smoke cigarette at university are more likely to initiate smoking. Ngahane, Ekobo and Kuaban (2015) found that the most important independent factor associated with cigarette smoking among students was having friends who smoked. Evidence from two longitudinal studies conducted in the USA showed that non-smoking students who had friends who smoked were more likely to start smoking in the future than those without any smoking friends (Freedman, 2012). Bowing down to peer pressure is one of the major reasons why the students initiate smoking. In a study conducted in Nigeria by Egbe, et al (2014) revealed that most of the current smokers started smoking in the company of friends followed by being in the company of relatives.

Having a parent who smoked also influenced people to start smoking cigarettes. A study by Reddy et al (2015) reported that parental/guardian smoking was significantly associated with smoking among students in tertiary institution. The influence of parental smoking on youths smoking behavior was confirmed by Bricker, Schuck, Otten, Kleinjan, and Engels (2014) in a cohort study concerning five thousand families. The study finding is confirmed by the outcomes of other studies conducted in developing countries as well as in developed countries (Radi et al., 2014). In fact, children are more likely to imitate the behaviors and attitudes of their parents who are considered by them as models. This is indicated by a study conducted at a University in the Western Cape that states that youth who come from family members that smoke are 50% likely to smoke due to exposure (Kruger et al., 2016). Therefore, social and family situations have an influence on cigarette smoking among university students (Smith, Bean, Mitchell, Speizer and Fries 2016).

Teachers are role models in a society, if teachers smoke the students are likely to imitate cigarette smoking. Students who are exposed to significant adults seem to exert influence on student smoking attitude modeling their own behaviour (Cosci et al., 2013). In two studies conducted by Cosci et al., (2013) and Karimy (2013) showed that exposure to smoking people appeared to be the major reason for scholars smoking behaviour. The analysis showed that smoking initiation was common among the students who saw teachers smoking compared to students not seeing teachers smoking.

2.2.2. Individual factors contributing to cigarette smoking

Individual factors are those that affect an individual directly and impact the behaviour. Cigarette smoking amongst students can be determined by personality characteristics, motivational factors such as stress, low self-esteem, and strong desire for social approval by friends, attitudes and anxiety.

Psychological distress is one of the factors influencing smoking behavior among young people. Students at universities experience academic stress, depression, and anxiety and these are the common psychological stresses experienced by students (Saravanan and Wilks 2014). A study by Li, Mao, and Stanton (2014) conducted among students concluded that having psychological problems such as being stressed, depressed, anxious and having a low self-esteem were significantly associated with the initiation of smoking. Depression, social alienation and lower self-esteem were cited as vulnerability factors in the process of smoking initiation. Smoking was used as means of coping with personal or social problems (Saravanan and Wilks 2014).

So and Yeo (2015) revealed that having a low self-esteem was also reported to be associated with factors motivating or mediating smoking initiation. Having a low level of happiness and high level of stress were significantly associated with smoking initiation among Korean youth. Stress and depression were found to be two of the main motivational factors for smoking initiation (Lim et al., 2014). Young people who reported symptoms of stress, anxiety, or depression were found to be more susceptible to smoking than those without (Pradhan, Niraula, and Ghimire 2013).

Stress is a second major reason why students smoke cigarettes as a way to relieve stress resulting from academic pressures (Tucktuck et al., 2017). Similarly, a study conducted by (Kidane 2014) in Ethiopia reported that students smoke cigarettes due to stress resulting from academic relationship and isolation. Radi et al., (2014) also confirm that stress and associated distress or depressions are important factors in the initiation to cigarette smoking among university students. There is evidence noted by Blecher and Ross (2015) noted that cigarette smoking is consistently a coping mechanism.

Furthermore, several studies have shown the influence of body image dissatisfaction in contributing to cigarette smoking (Mudhovozi, 2012). A survey conducted in the USA reported that students who are negatively correlated with internal locus of control and autocratic interpersonal style are likely to smoke and have a lesser chance of smoking cigarette due to

increased self-esteem unlike those exposed to positively correlated with submissive styles of interpersonal behaviour (Smith et al., 2016). This exposes students to be vulnerable to peer influence putting them at risk to start smoking at colleges and universities so that they conform to a certain group of friends (Hossain et al., 2017).

Attitudes towards smoking behavior could act as an encouraging factor influencing smoking initiation (Halls, 2014). The more an individual has favorable attitudes and beliefs towards smoking the greater likelihood to smoke. In a study piloted by Lim et al., (2014) male students who reported a more positive attitude toward smoking had a greater chance initiating smoking. On the other hand, stronger attitudes against smoking are more likely to protect against initiating a smoking habit. A qualitative study conducted in Italy by Cosci et al (2013) found that positive belief that smoking can improve self-image has influenced the students to initiate smoking, where participants perceived those celebrities or those who smoke look more glamorous, elegant and increased sophistication. Gilani and Leon (2013) also found that positive belief that smoking inspire and increases creativity when composing music has influenced students to initiate smoking.

Lack of knowledge about smoking could be one of the major factors in predicting cigarette smoking initiation (Karimy, Nikman, and Heidamia, 2013). A study conducted in Iran, showed that lack of knowledge could be one of the most significant factors in predicting cigarette smoking initiation. Students' smokers have less knowledge about the negative effects of cigarette smoking than nonsmoking students hence normalise their smoking behaviour and contradict the risks of experimenting cigarette smoking. It was also reported that misconceptions on the health effects of smoking is one of the main factors influencing smoking initiation among female adolescents in Italy (Cosci et al., 2013).

Students who have low self-efficacy and lack refusal skills have a greater chance to start smoking cigarettes (Tang and Loke, 2013). Low level of self-efficacy to resist smoking was identified as one of the most significant factor contributing to smoking initiation. Similarly, in a study conducted in Hong Kong it was reported that students who are confident of their ability to resist the pressure to smoke may be better able to avoid smoking than those who are not confident. It was also found that refusal skills can be taught effectively (Voh ah et al., 2013). This therefore indicates that stronger refusal self-efficacy was more likely to protect them against initiating a smoking habit.

Bricker et al (2014) argued that students who receive pocket money are more likely to initiate smoking as compared to students who did not receive pocket money. Students receiving pocket money were more likely to initiate smoking. In South Africa, students who have NSFAS or other funding that buy groceries normally smoke cigarettes as compared with those who rely on their parents for funding (Kruger, 2016). These students normally buy groceries for customers and in return for money so that they buy clothes, cigarettes and alcohol.

2.2.3 Environmental factors contributing to cigarette smoking

Environmental factors are external factors that influence an individual's thoughts (Tulu, Shimelis, and Keskis, 2015). According to Cosci et al (2013), there are factors in the environment that potentially influence cigarette smoking initiation and maintenance by students at universities. Students usually interact with roommates, classmates, mentors and friends on a regular basis. Moreover, college students also tend to have group affiliations, like being members of dance groups, and sports team who have members that smoke cigarettes and are likely to imitate smoking. As of the dynamic and different nature of relationships within college students' lives, the social environment plays a crucial role in the cigarette smoking initiation. In particular, the relationship of smoking-related behavior and interactions between friends, roommates, and partners, smoking initiation is examined (Reddy, 2013).

Students who are exposed to tobacco advertisements such as in the movies and sporting events are more likely to initiate in cigarette smoking (Talip et al., 2015). A qualitative study conducted in South Africa and Colombia revealed that appearance of cigarette brand logos and smoking in movies and cigarettes advertised at sporting events influenced students to initiate smoking (Eriksen et al., 2015 and Radi et al., 2014). A study conducted by Raji, Abubakar, Oche and Kaoje (2013) revealed that advertising and promotion are one of the most important factors that contribute to cigarette smoking. According to WHO (2015) advertisement on media motivate youths and children to experiment and initiate cigarette smoking, discouraging current cigarette smoking users from quitting, stimulating former users to resume using, and increasing daily consumption by serving as an external cue to smoke.

Tobacco atlas (2015) concluded that cigarette advertising appears to affect young people's perceptions of the generality, image, and function of smoking. According to Raji et al (2013), misperceptions in these areas contribute to psychosocial risk factors that encourage smoking initiation. Thus cigarette advertising appears to encourage young people's risk of smoking. For

example, advertisements for cigarette, portrays smokers as stylish and sexy especially in movies. Therefore, youths smoking is influenced by the type of tobacco advertising they are exposed to (Poudel and Gurung, 2014). The media, mainly in movies and dramas, portray people who smoke as stylish and sexy, thus creating a desire in the young people to be stylish and sexy through smoking as they would observe on social media. The companies use stylish and manipulative ways targeting young people. Therefore, it is not surprising that current and never smokers have different perceptions regarding media influence on the decision-making process of smoking (Blecher and Ross, 2015). In similar study conducted with American students it was reported that exposure to tobacco counter-marketing campaign was associated with an increase in anti-tobacco attitudes and beliefs (Centers for Diseases Control and Prevention, 2015).

Availability and ease of acquiring cigarettes within the university premises is another environmental factor that contributes to cigarette smoking among young people (Eriksen et al., 2015). In South Africa, cigarettes are widely accessible in the sense that there are sold in stores, kiosks and rooms near the university campus, making it easy to purchase it at any time (Kruger 2012 and Egbe et al.,2014). This is especially worsened by the non-enforcement of age restrictions in purchasing cigarettes. Loss of control on the amount and availability of cigarettes and other substances within the university premises exposes the students at risk for cigarette smoking (Egbe et al., 2014). These have an impact on students as they portray the image that cigarette smoking is a norm and may encourage students to smoke cigarettes. This has been supported by a study conducted by Freedman (2012), in the USA who reported that university students tend to smoke due to the ceremonies like fresher's ball, bashes and watching movies that encourage cigarette smoking among the university students. Therefore, pricing and tobacco control laws should control the availability of cigarettes within university campuses.

Non-smoking policies on university campuses are proven to discourage students from smoking initiation and encourage smoking students to quit smoking (Sa, Nelson and colleagues, 2013). Smoking bans in campus facilities, such as restaurants and bars, as well as the prohibition of tobacco sales on campus are very unpopular anti-smoking policies because they overtly impact smokers (Egbe et al., 2015).

Signage at university differs around various buildings. While these signs are present at the entrance to main buildings and lecture venues, there are none near the cafeteria and eating

areas, which are places where students gather during their free time (Saravanan, 2014). The areas around the offices of the university staff also have little or no signage. We propose a more uniform distribution of no-smoking signs as well as the allocation of specific smoking areas for smokers. The smoking areas should be a considerable distance away from lecture venues, cafeterias and offices (Khan et al., 2014). They should preferably be in an open space that is not in parking areas or walkways and that is a large distance away from buildings and gardens in order to create a healthier atmosphere.

Cigarette smoking as well as quit attempts among students at university is associated with multiple features. For example, whether or not smoking is prohibited on campus or other university premises represents one of the environmental factors influencing cigarette smoking due to availability (Zale, Ditre, Dorfman, Heckman and Brandon, 2014). Hence, introducing a total ban of smoking on university campuses is a relevant policy directive that could limit cigarette smoking among students given the general relevance of smoking restrictions on smoking prevalence (El Ansari and Stock, 2012). Many universities and colleges still seem not to have a total smoking ban on campus, allowing for tobacco use in several outdoor locations (Mudhovozi, 2012).

2.5. Knowledge of health consequences for cigarette smoking

Smoking is the third leading cause of death in South Africa (WHO, 2015). Eight percent of all deaths, or almost 50,000 South African deaths per year, are a direct result of smoking (Kruger, 2012). It is the number one cause of many cancers in South Africa (Tobacco Atlas, 2015). Cigarette smoking has also been associated either as a contributory factor or causal agent in the following health conditions: blindness, weakness, loss of teeth, diabetes, reduced fertility, asthma, reduced sperm count, fungal eye infection, early menopause, stomach ulcers, cardiovascular heart diseases, reduced lung function, and reduced lung growth (Egbe et al., 2014).

Further studies postulated that injuries due to accidents such as car accidents, physical disabilities and diseases and the effects of possible overdoses are among the health-related consequences of students smoking. According to Tulu, et al., (2015) smoking can also influence students to practice unsafe sexual intercourses with different sexual partners, which can lead to contradicting HIV/AIDS and other sexually transmitted diseases. Transmission of HIV/AIDS primarily occurs during unsafe sexual contact with an infected partner due to cognitive and behavioral problems (Zale et al., 2014).

Cigarette smoking causes many forms of cancer, cardiovascular disease, reduced pulmonary functioning, offspring with low birth weight and nicotine dependence smoking (Al-nagger et al., 2013; Primack, Shensisa, and Kim, 2013) as well as the spreading of infectious diseases through the common practice of sharing the mouthpiece among friends (Kumar, 2012).

Unfortunately, these health consequences are not the limited preserve of active smokers but are also shared by passive or second-hand smokers. Evidence suggests that secondhand smoke can be particularly dangerous for women and children who may be exposed to it inside or outside the home and who often lack the ability to negotiate for smoke-free spaces (Magu, 2015). According to WHO, (2013), an estimated 53,000 Africans died from secondhand smoke in 2004. The main cause for these deaths was due to ischemic heart disease for adults and lower respiratory infections for children (Smith et al., 2016). Globally, 10.9 million disability-adjusted life years (DALYs) were exposed to secondhand smoke in 2004, this putting them at risk in contracting smoking related diseases.

According to the United States Department of Health Humanities (2015), cigarette smoking is harmful to every organ of the body and affects overall health. Among woman, cigarette smoking can make it difficult to become pregnant and can affect the unborn baby through early delivery, slow birth weight, sudden infant death syndrome, ectopic pregnancy and still birth. Relating to men, cigarette smoking can affect men's sperms which can reduce fertility. WHO (2015) says cigarette smoking can cause cancer in any part of the body. For example, cervix, stomach, bladder, esophagus, blood, trachea and lung cancer. Hence, smoking causes diminished overall health and increased health care utilization and costs (Kruger, 2012). This has been evidenced by a study reviewed in the United States stating that using other tobacco products such as cigars or pipes also increases the risk for lung cancer. Cigarette smoke is a toxic mix comprised of more than 7,000 chemicals that are poisonous. At least 70 are known to cause cancer in people or animals (WHO, 2014).

The American Cancer Prevention and Control, Centres for Diseases (2016) report that people who smoke cigarettes are 15 to 30 times more likely to get lung cancer or die from lung cancer than people who do not smoke. Even smoking a few cigarettes a day or smoking occasionally increases the risk of lung cancer. The more years a person smokes and the more cigarettes smoked each day, the more risk he or she is likely to encounter (Kelly, Narula, and Fuster, 2012). Cigarette smoking may also put smokers and second-hand smokers at greater risk of cardiovascular diseases that affect heart and blood vessels that may eventually cause stroke

(American Cancer society 2016 and Kelly et al., 2012). This maybe as a result of blood blockages caused by smoking. People who smoke are likely to stroke due to reduced blood flow (WHO, 2013). Secondhand smoke contributes to other serious health effects (Eriksen et al., 2012).

Cigarette smoking is responsible for 75% of chronic bronchitis and emphysema and 25% of cases of Ischemic heart disease (O'Loughlin et al., 2014; Reidpath et al., 2014). About forty seven percent of male cancer deaths and 14% of female cancer deaths are linked to cigarette smoking. Young smokers suffer from shortness of breath almost three times as often as teens that do not smoke, and produce phlegm more than twice as often as teens who do not smoke (WHO, 2012). A survey conducted by Blecher (2013) postulated that cigarette smoking contains no less than 4000 chemical compounds which are harmful, 500 of these are very harmful and 43 are complete carcinogens; cancer causing agents in their own right.

Cigarette smoking is also harmful in the short term; the irritant substance in tobacco smoke can cause a buildup of composure and a smoker's cough (Blecher and Ross, 2015). Cigarette smoking also reduces the efficiency of the lungs, making people more breathless than they would normally be during rest, exercise or sudden physical exertion (Eriksen et al., 2015). Furthermore, cigarette smoking reduces the ability of the lungs to fight infections, which makes smokers more likely to get different types of chest infections (WHO, 2014 and Eriksen et al., 2015). This implication of cigarette smoking is worsened by the fact that the negative health consequences associated with smoking are not restricted to the smokers themselves (Issock, 2014). Passive smokers who must unavoidably be around those who smoke (that is, while the smoker is actively smoking) share and suffer from the health hazards of the cigarette smoking.

2.6 South African legislations and guidelines on cigarette smoking

In 2000, South Africa introduced its Tobacco Products Control Amendment Act that banned smoking in public places and was amongst the first countries to ban smoking globally. Public places in South Africa include public universities.

2.6.1. Tobacco products control amendment act 83 of 1993

The government of South Africa passed the first Tobacco Products Control Act in 1993 and started implementing the act in 1995. The act prohibited smoking in public areas and regulated

tobacco sales to children under the age of 18. Furthermore the legislation regulated aspects of advertising that included labeling. No person may smoke any tobacco product in any indoor, enclosed or partially enclosed area which is open to the public, and this includes a workplace and public transport. In summary, the most significant anti-smoking legislation in South Africa has taken important efforts towards reducing the prevalence of cigarette smoking among people. On 16 June 2003, the South African government signed the WHO Framework Convention on Cigarette Control (FCTC), an attempt at an international standardization of tobacco regulation. This legislation is aimed at monitoring tobacco use, prevention policies and protects people from tobacco smoke. In this study, these policies will enforce strict laws that will warn students about the dangers of cigarette smoking through monitoring tobacco.

2.7. Conceptual Framework

The study utilises the Health Belief Model as a conceptual framework. The Health Belief Model (HBM) is one of the first theories of health behaviour. It was developed in the 1950s by a group of Public Health Service Social psychologists who wanted to explain why so few people were participating in programs to prevent and detect diseases. HBM is a good model for addressing problem behaviours that evoke health concerns. For example high risk sexual behaviour and the possibility of contracting HIV (Croyle, 2005). The focus of the HBM is to assess health behavior of individuals through examination of perceptions and attitudes someone may have towards disease and negative outcomes of certain actions.

The Health Belief Model is used to encourage healthy behavior among individuals who put themselves at risk of developing negative health outcomes simultaneously. The model emphasizes that tobacco use is determined by an individual's perceptions regarding personal vulnerability to illness caused by tobacco use, seriousness of tobacco as a problem, treatment cost and effectiveness, barriers to quitting and signals to change tobacco use behaviour. Burke (2012) postulates that the HBM believes that behavior change occurs with the existence of perceived susceptibility and severity that an individual recognizes as enough reason to make a relevant health concern. Secondly, that person understands he or she may be vulnerable to a disease or negative health outcome (perceived threat). Finally, the individual must realize that behavior change can be beneficial and the benefits of that change will outweigh any costs of doing so (perceived benefits and barriers).

2.7.1. Application of the model to study

- **Individual Perceptions**

According to Joubert and Enrlich (2007), individual perceptions refer to knowledge and beliefs that a person has about his actions and the outcomes they could have. Individual perceptions are divided into two; Perceived Susceptibility and Perceived Severity. Within the context of the HBM, perceived susceptibility examines the individual's opinions on how likely they are of contracting a condition they are. In HBM perceived severity refers how serious the diseases that a person is vulnerable to. The HBM seeks to increase awareness of how serious the outcomes of behaviors can be in order to increase the quality of one's life. In this study, individual perception involves lack of self-esteem, lack of knowledge on cigarette, dissatisfaction with the body image, positive attitudes towards cigarette smoking and lack of refusal skills. Cigarette smoking is then determined by the knowledge and belief of cigarette in an individual's health.

- **Modifying Factors**

Health Belief Model Modifying Factors use outside influences to disturb how a threatened person feels by the outcomes of continuing the same behaviors that put him at risk. In this study, modifying factors involve environmental factors. According to Joubert and Enrlich (2007) environmental factors can contribute to the threat of disease. They further postulate that demographic background such as age, race, gender, ethnicity, and socioeconomic status can cause one to be more at risk. If someone lives in an environment wherein smoking is a norm within the family, peers and community members he/she is likely to smoke. This could lead to smoking related disease if they could not afford health care. In addition, ease access to cigarettes on campus determines continuing cigarette smoking that puts students at risk.

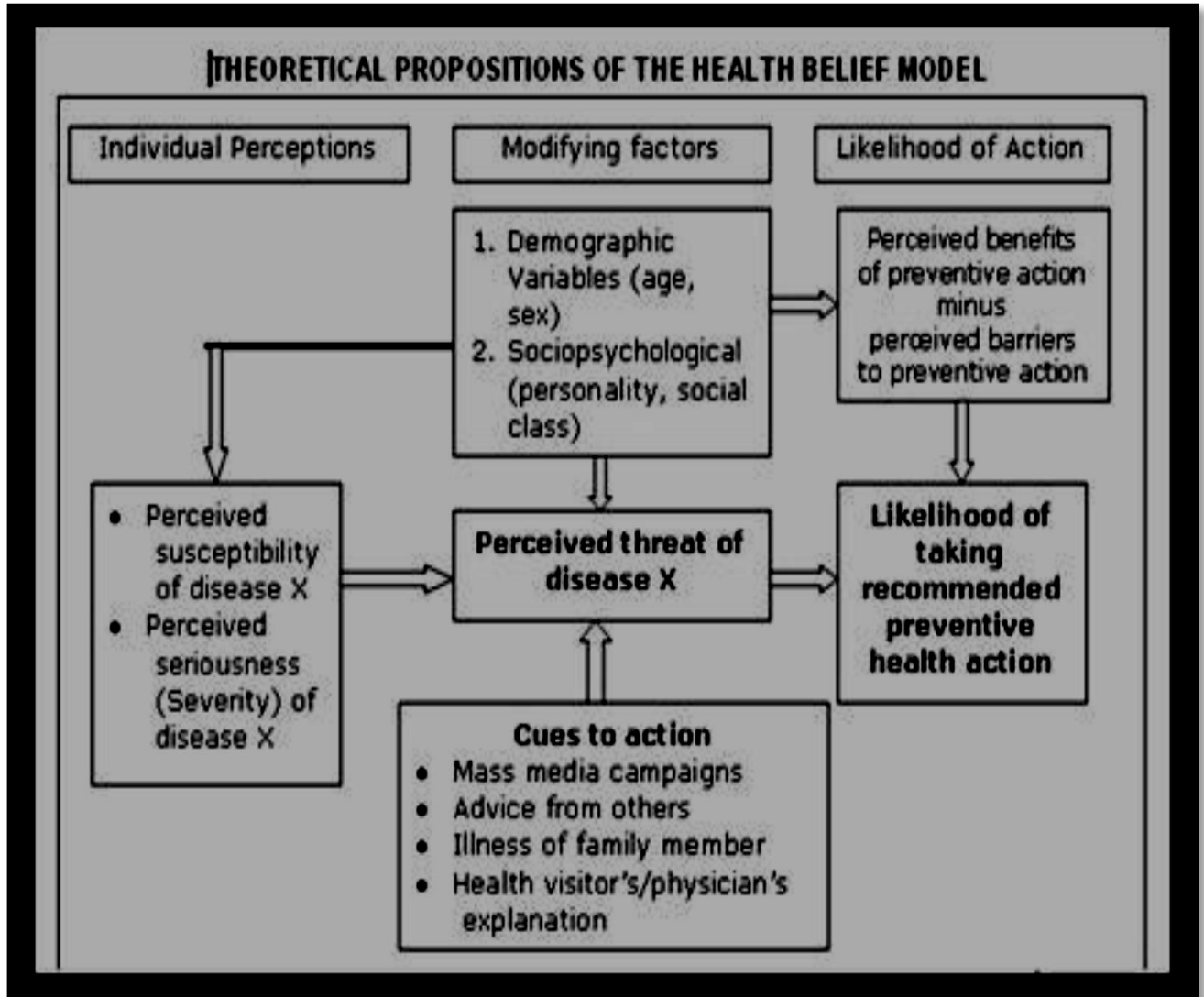
- **Likelihood of Action**

Once an individual is aware of the potential for developing a disease if behavior does not change, it is important to weigh out the benefits and the barriers to taking action and determine if it is worth it. The individual first weighs the benefits to change, followed by making the decision of changing (Joubert and Enrlich, 2007). The individual will ask him or herself why he or she cannot change. In this study, when a student is aware of the dangers of cigarette smoking he or she is likely to weigh the benefits and the risk of smoking and then make a

decision to quit smoking. This will reduce the risk of contracting smoking related diseases. The goal of HBM is to ensure greater quality of life for an individual both mentally and physically. Barriers could be anything from losing friends to not having enough money or even self-efficacy problems such as not believing in one's self. For change to take place, the benefits must be stronger than the barriers.

Due to its suitability, the Health Belief Model will be used as the framework for this study in an attempt to investigate factors contributing to cigarette smoking amongst University of Venda students. The three key categories addressed in the HBM are the individual perceptions, modifying factors and the likelihood of action that unleash unfavorable attitudes which may lead to negative outcomes. In relationship with the study, the above may be the factors that may contribute to cigarette smoking amongst University of Venda students. These factors include social factors, individual factors and environmental factors which work hand in hand with individual perception, modifying factors (social and environment) and likelihood of action which is determined by the health effects. Smoking behaviour is a function of different factors stipulated in the model. Intervention recommendations will subsequently be made based on the model.

FIGURE 1: HEALTH BELIEF MODEL



Source: Stretcher V and Rosenstock IM.1997. Health Behaviour and Health Education: Theory Research and Practice. San Fransisco: Jossey Bass.

2.8 Summary

This chapter reviewed literature of cigarette smoking. The researcher consulted various reputable websites such as Science Direct, Ebscohost, Sabinet and PubMed. It is noted that cigarette smoking is a global burden as it prevails in developing countries and is also noticeable in developed countries. South Africa has good policies and strategies to eliminate cigarette smoking but cigarette smoking is still on the rise due to various reasons. It may be concluded that researching about the factors that contribute to cigarette smoking among university

students is of paramount importance and the application of the health belief model may minimize the cigarette smoking among young people in South Africa. The next chapter is presents the research methodology which will help in clarifying the objectives of the study.

CHAPTER 3

RESEARCH METHODOLOGY

3.1. Introduction

This chapter outlines the research design, study setting, study population, sampling method and procedure, data collection instrument and procedure, data analysis, validity and reliability, ethical considerations and the dissemination of results.

3.2. Research Approach: Quantitative Approach

Research design is a procedure for collecting, interpreting analysing, and reporting data in a research study (Monette, Sullivan, Dejong, Hilton, 2014). A quantitative study is a study that is used to quantify the problem by way of generating numerical data or data that can be transformed into usable statistics (Engel and Schutt, 2013). This study utilised quantitative approach because it offers a high level of measurement by measuring how many people feel, think or behave in a certain way. Furthermore the quantitative technique minimizes the researcher's bias as compared to a qualitative approach where there is interaction between the researcher and the participants.

3.2.1. Study Design

The study adopted a cross sectional and descriptive design which describes a phenomenon at one point in time rather than several points.

3.2.2. Cross Sectional Survey

The study adopted a cross sectional survey design to assess the factors contributing to cigarette smoking and its health effects. According to Engel and Schutt (2013) cross sectional study is an observational study that determines the exposure and disease simultaneously in a given population. The researcher chose a cross sectional survey design because it allowed comparison between the different variables at the same time, such as the age, gender, and level of education in relation to smoking status. For the purpose of this study, the researcher provided the participants with a scale that allowed them to describe factors contributing to cigarette smoking and its health effects among the university students. Therefore, by describing the response of participants in terms of proportions, frequencies or percentages, it assisted in showing factors that contribute to cigarette smoking and its health effects among university of Venda students.

3.2.3. Descriptive Research

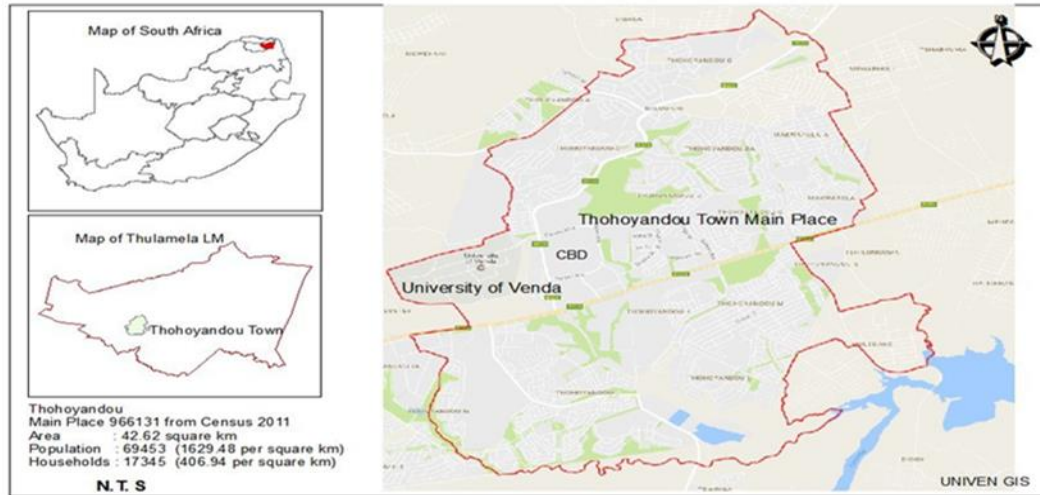
According to Burns and Grove (2012), descriptive research refers to the characteristics of a population. Descriptive research presents a picture of the specific details of a situation and answer questions like why and how. In this study, the researcher described factors contributing to cigarette smoking and its health effects amongst university of Venda students. The researcher applied both contexts of descriptive research to assess factors contributing to cigarette smoking and its health effects among university students.

3.3. Study Setting

The study was conducted at University of Venda, one of the rural based comprehensive universities in South Africa. The University of Venda has one main campus that is located in Thohoyandou town in Vhembe district in the Limpopo Province, South Africa. The University of Venda is located 175kilometres to the north-east of Polokwane. The Campus has eight faculties which are; the School of Agriculture, School of Education, School of Environmental Science, School of Health Sciences, School of Human and Social Sciences, School of Management Sciences, School of Mathematical and Natural Sciences and the School of Law.

The University had a population 15 000 registered students during 2017 and the figure is inclusive of international students from Zimbabwe, Nigeria, Malawi, Botswana, Democratic of Republic of Congo, and Kenya. The common spoken languages are English, Tshivenda, Tsonga, Sepedi, and the Swati. The University campus comprises eleven residences that include Prefabs, Bernard Ncube, Carousel, F3, F4, F5, Lost City Boys, Lost City Girls, Riverside and Mango Groove. These residences can accommodate only 2165 legal students and the rest of the students stay off campus.

FIGURE 2: UNIVERSITY OF VENDA MAP



3.4. Research Population

According to Babbie (2012), population is the entire group of persons or objects that are of interest in the study. The group that is targeted might not all be available and, therefore, some of the individuals may be excluded from the study. The population for this study was all the students enrolled for academic programmes at the University of Venda. Target population is the entire set of units for which the survey data are to be used to make generations. The target population of this study was all registered students at the University of Venda in 2017. A sample was drawn to determine participants for this study. The students are organized as illustrated in Table 3.1.

TABLE 1: SAMPLING FRAME FOR UNIVERSITY OF VENDA STUDENTS

Schools	Male	Female	Total
Agriculture	660	1000	1160
Environmental Sciences	800	866	1666
Education	700	1480	2180
Health Sciences	806	1200	2006

Human and Social	700	1400	2100
Mathematics	580	1032	1612
Management	1000	1000	2000
Law	676	1100	1776
Total	5922	9078	15 000

3.5. Sampling Method and Procedure

Sampling is the process of selecting eligible individuals from a population that the researcher is interested in studying (De Vos, 2014). According to Polit and Beck (2013), a sample is an element of the population considered for inclusion in the study. A sample was drawn using probability sampling technique. Non-probability sampling occurs when participants do not have the same opportunity for being part of the study (Engel and Schutt, 2013).

For the purpose of this study, the researcher used convenience sampling as a method for selecting participants. Convenient sampling is a type of non-probability sampling that involves the sample being drawn from that of the population that is readily available (Bless, Smith, and Kagee, 2012). This study adopted convenience sampling because it is fast and inexpensive to carry out as compared to probability sampling. In order to select participants, the researcher stood at places where students smoke cigarettes such as behind SRA, behind classes and cafeteria lapa where many students were found smoking cigarettes and selected participants who were near and easily available at that given time and where willing to participate in the study.

Inclusion criteria

Polit and Beck (2013) indicate that inclusion criteria are the criteria which specify population characteristics.

- Students who were registered at University of Venda in the year 2017
- Students who are between 17 and 40 years
- Students willing to participate in the study and have signed the consent form
- Students who are readily available for data collection.

Exclusion criteria

- Unregistered students during 2017 academic year

- Students above 40 years of age

3.4.1. Sample size

Slovin's (1960) as cited by Guilford and Frucher is (1973) formula was used to calculate the sample size, where N is the total number of registered students, n is the sample size, and e is the level of error and in this study e is 0.05. The total population for students who are registered at the University of Venda is 15 000.

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{15\,000}{1 + 15\,000(0.05)^2}$$

$$n = \frac{15\,000}{38.5}$$

$$= 389$$

The sample size was increased by 10% to allow room for non-response. Hence the figure for the sample size is 427. The researcher randomly selected participants that are convenient to participate in the study. The participants were found at the university cafeteria and residences until a desired number were achieved.

TABLE 2: SAMPLE OF SELECTED STUDENTS

Schools	Male	Female	Total
Agriculture	660/5922*169=19	1000/9078*258=28	47
Environment	800/5922*169=23	866/9078*258=25	48
Education	700/5922*169=20	1480/9078*258=42	62
Health	806/5922*169=22	1200/9078*258=34	56
Human and Social science	700/5922*169=20	1400/9178*258=40	60
Mathematics	580/5922*169=17	1032/9178*258=29	46
Management	1000/5922*169=29	1000/9078*258=28	57
Law	676/5922*169=19	1100/9078*258=32	51
Total	169	258	427

3.6. Data Collection Tool

According to Polit and Beck (2013) data collection is gathering information that is relevant for the study that is used to address the research purpose and objectives. For the purpose of the study the researcher used self-administered questionnaires. A self-administered questionnaire refers to a list of written down set of questions that allow respondents' answers to be systematically compared and contrasted (Monette et al., 2014). The rationale for using self-administered questionnaires in this study is that it is not too expensive; requires less time and effort to administer. The researcher developed the questionnaire based on the objectives, literature review and the health belief model. For this study the researcher adapted the World Health Organisation Tobacco Global Adult Survey second edition (2011), and from a study by Oyundi (2015) which consisted of closed ended multiple-choice questions using likert scales.

The questionnaire was composed of five parts which were divided into a demographic data section to collect information about the respondents, individual factors, socio-cultural factors, environmental factors and knowledge of health effects caused by cigarette smoking. The knowledge of health consequences were divided into three parts based on the scores in the questionnaire. A score less than 50% was regarded as poor knowledge, and above 50% was regarded as knowledgeable. The questionnaires had general instructions on how to complete the questionnaire and each of the questionnaires was accompanied by a covering letter stating the aim of the study to the potential respondent. The questionnaire was written in English since students attending at the University of Venda speak different languages so English was the easiest form of communication to everyone.

3.7. Validity and Reliability of the Measurement Instrument

3.7.1 Validity

Validity refers to the extent to which the instrument actually reflects the abstract constructs being examined (Brink, Van der Walt and Van Rensburg, 2013). Validity is the extent to which an instrument measures what it is intended to measure. In this study, the researcher utilised content validity.

3.7.2. Content Validity

This type of validity is employed in the development of questionnaires, interview schedules or interview guides (Engel and Schutt, 2013). Content validity refers to a degree to which an

instrument has suitable sample of items for the construct being measured and effectively covers the construct domain (Brink et al., 2013). For the purpose of this study, content validity of instruments was evaluated by environmental health specialists, supervisors and lecturers from the department of Public Health and from other departments together with students accessed the questionnaire during Departmental seminar presentations. The researcher modified the instrument after getting some corrections from the department seminar presentation and from the school higher degrees committee.

3.7.1. Reliability of the measurement instrument

According to Polit and Beck (2013), reliability refers to the consistency with which an instrument measures what it is intended to measure. Consistency in answering of the questions was assessed using test-retest technique. The questionnaire was pretested on 42 students from one FVET College and repeated after two weeks to determine the check-recheck reliability. The reason for administering structured questionnaire to same respondents in different occasions apart is to check the accuracy and consistency of the questionnaire and check if it will produce the same results. The Cronbach's Alpha coefficient showed =0.864 was acceptable because the results showed a correlation-coefficient of close to 1. If the test-retest technique show a correlation-coefficient close to 1 the reliability of the statement would be high, if not then the reliability will be low.

3.8 Pretesting of Instrument

According to De Vos (2013) pretesting entails including a few individuals who meet the inclusion criteria but who will not form part of the sample. In order to pretest the questionnaire, the researcher distributed a questionnaire to 42 students from FVET College students during gender based violence campaign conducted at the University of Venda and repeated the process after two weeks to determine the check-recheck reliability. This was done in order to identify problems with the questionnaire that include unclear questions or the questionnaire taking too long to administer. The aim for conducting pretesting was to investigate the feasibility of the study and to detect possible flaws in the methodology before the actual study is conducted (Brink et al., 2013).

3.9. Data collection and procedure

The researcher employed one male research assistant who assisted in collecting data in male residences. The researcher assistant was trained by the researcher on how to collect data

without inflicting harm on participants. The researcher and the research assistant stood in places where many students were smoking such as the cafeteria Lapa, behind classes and in residences. Self-administered questionnaires with closed ended questions were handed to the eligible participants. The questionnaires were distributed to participants who meet the criteria of inclusion. Questionnaires were distributed to students who were accessible and willing to participate. The data were collected during August and September 2017. The respondents were given a period of 45 minutes to 2 hours to fill in the questionnaire while the researcher was waiting in case problems were experienced, and the completed questionnaires were sent back the same day. This arrangement of completing the questionnaire within 45 minutes to 2 hours and the questionnaires being sent back to the researcher was found to be less expensive, less time consuming and produced quick feedback. This was done during the lunch hour and on weekends in order to collect data.

The participants were advised not to put their names or anything that identified them with a particular response in order remain anonymous and complete the forms in their own privacy ensuring the participants write their experiences. Furthermore, the participants were informed on the objective of the study and benefits of conducting the study to the university community.

3.10. Data analysis

Data analysis is a process that is done to minimise, organise and give meaning to the collected data (Burns and Grove, 2013). The researcher captured the data on an excel spread sheet and exported to the Statistics Package for Social Scientist (SPSS) version 23 where the findings were analysed. The data was presented in tables and graphs. The chi square was used to test significant relationship between variables. Statistically significance values for Chi square was set at ($P=0.05$). This was all done with the help of a statistician who assisted in identifying missing or incorrect values.

3.11. Ethical considerations

Research ethics involves moral principles of behavior that is expected in conducting a study and maintains integrity (De Vos, 2015). It is the researcher's responsibility to conduct research in an ethical manner. To conduct research in an ethical manner means that a researcher must carry out research by avoiding harming respondents and honestly in managing resources (Brink et al., 2013). In this study the researcher observed the following major ethical principles:

3.11.1. Permission to conduct a study

The proposal was submitted to the University Higher Degrees Committee (UHDC) for quality assurance and approval. The researcher applied for ethical clearance from the University of Venda Research Ethics committee. After obtaining permission from the UHDC and the ethical clearance, the researcher was able to collect data. The following aspects were applied to ensure adherence to ethical considerations:

3.11.2. Informed consent

Informed consent means informing respondents on the study so that they are able to freely volunteer to participate in the study (Babbie, 2012). Informed consent was issued to research respondents before the commencement of the study in order to ensure free will to participation after being informed. The letter included information concerning the aim of the study, benefits of the study, all relevant information on the study and how the data will be collected.

3.11.3. Confidentiality and Anonymity

Confidentiality is the ability to keep information private. Information given by respondents must not be divulged or made available to any unauthorized person (Brink et al., 2013). In this study, the participants remained anonymous, meaning that their names were not revealed in a questionnaire they were responding to. Data collected during the study was only made available to persons directly involved in the study such as the supervisors.

3.11.4. Protection of harm to participants

The researcher ensured that no physical, psychological or emotional harm was inflicted on the respondents. The researcher constructed questions in a professional manner as well non-judgmental manner to avoid inflicting anxiety and psychological discomfort during the process of responding to the questionnaire. Other possible dangers were looked at and the research guarded against them.

3.12. Dissemination of results

The study results and recommendations will be made available at the University of Venda library for reference by other fellow students. The findings from the study will also be published in peer-reviewed and accredited journals and will be presented at national and international conferences.

3.13. Summary

The chapter presented and discussed the on research methodology which the researcher used in conducting the research. The chapter also outlined the sampling method, data collection

techniques and methods used the methods were used in order to address the objectives of the study. Plans for data collection, instrumentation, and ethical considerations and data analysis were also explained in detail. The following chapter will present the research results.

CHAPTER 4

PRESENTATIONS OF RESULTS

4.1. Introduction

Chapter four outlines the results of this survey. Firstly, the description of the (i) socio-demographics; (ii) the relationships of socio-demographic factors and smoking status of the students (iii) Individual factors, social cultural and environmental factors contributing to students to smoke on campus. This was followed by a cross tabulation of contributing factors with socio demographics. Lastly the cigarette smoking and its health effects were presented. The responses were analysed using descriptive statistics and inferential statistics. The data is been presented in tables and graphs.

4.2. The study response rate

The overall response rate was considered as very high. Out of 427 questionnaires administered, 407 were completed and returned to the researcher. This translates to 95% response rate.

4.3. Socio demographic characteristics of the study respondents

Results on demographic variables are shown on Table 4.1 below and the analysis is given thereafter. Out of 407 students 197 (48.4%) were 21-25 years old, while 96 (23.6%) were 17-20 years, 73 (17.9%) were aged 26-35 years and 41 (10%) were aged 36-40 years. The mean age of respondents was 24.6 years, modal age of 21-25 years ranging from 17 to 40 years. See Table 4.1 below. Out of 407 respondents, 205 (51%) were females and 202 (49%) were males. The findings of this study may be an indication that most students at the University of Venda are females than male. Refer to Table 3 below.

From a total of 407 respondents, 393 (96%) were black students. This was followed by whites 7(1.7%), and colored in that order with minimum of 7(1.7 %) respectively. It is evident that black people have the highest proportion at this university. The frequency and percentages of study sample according to race is given below. Of the 407 respondents, the majority of the respondents, 322 (79.1%) were not married. 75 (18.4%) are married, 5 (1.2%) are divorced 2 (0%) are widows and 3(0.7%) are widowers respectively. It is of paramount importance to note that marital status plays a significant role in cigarette smoking. (For more details refer to Table 3 below).

The total population $n=407$ showed that they belonged to specific religious groups. The majority of the respondents reported that they are Christians with 366 (89.9%), while 23 (5.7%) believed in traditional practices, 12(2.95%) believed in other religious beliefs, those of Islamic faith were 3 (1%) and Hinduism 3 (1%). Religion plays an essential role in cigarette smoking. Some religious groups have strict rules which make it difficult for their members to smoke cigarettes. Frequency and percentages of respondents by religion are given below in Table 3. From a total of 407 respondents who participated in the study sample 117(28.8%) are doing second year, 118(29.0%) are third years, 29 (7.1%) are fourth years and 55(13.5%) are postgraduate students. The frequency and distribution of respondents according to their level of study is given below in Table 3.

Out of 407, it is evident that the highest proportion of study the sample size 73 (18%) are currently registered under the School of Health Sciences, 61 (15%) are registered in the School of Education, 55 (14%) in the School of Human and Social Sciences. Furthermore, the results indicate that Management has approximately 42(10.3%), Agriculture 42 (10.3%), Environmental Sciences 38 (9.3%) and Mathematics has 38(9.3%). For frequency and percentages of respondent by their schools. As many as 205 (50.3%) students live on campus while 95 (23.3%) live at home and 107(26.4%) live in rental homes. The frequency and percentages of respondents by the place lived is given below. (Refer to Table 3).

Some of the students 152(37.3%) stay alone though a reasonable number 123(30.2%) stay with roommates, and 82 (20.1%) live with friends. The rest of the students 50 (28%) live with family members at home. The frequency and percentages of respondents according to who they live with is given below. From 407 respondents who participated in the study, 96(23.5%) obtain their pocket money from Sbus. Sbus is card used to pay eligible students their allowances in the form of vouchers. Students sell their vouchers in exchange for money. 147 (36.1%) of 407 respondents obtain their pocket money from parents, 49(12%) from working part time and 114(28.4% of students obtain their pocket money through bursaries like NRF. The frequency percentages of respondents by source of pocket money of pocket money received is given in below. See details on table 3.

About 120(29.8%) students receive pocket money ranging from 501-1000rands per month, 114(28.1%) receive 500 rands or less, 69(17%) receive 1000-1500rands, 59(14.5%) receive above 1500rands and 43(10.6%) do not receive money at all. Frequency and percentages of pocket money received by respondents are given below. Out of the total population of 407

respondents, more than half of the study sample does not smoke, 232 (56.7%) while 175(43.3%) smoke cigarettes. The frequency and percentages of respondents by their smoking status is shown below. (See details on Table 3).

TABLE 3: DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS.(N=407)

Variables	Description	N	Percentage
Age	17-20 Years	96	23.6
	21-25 Years	197	48.4
	26-35 Years	73	17.9
	26 years and above	41	10.1
Gender	Female	205	50.4
	Male	202	49.6
Race	Black	393	96.6
	white	7	1.7
	Coloured	7	1.7
Marital status	Married	75	18.4
	Never married	322	79.1
	divorced	5	1.2
	widow	2	0.5
	widower	3	0.8
Religion	Christianity	366	89.9
	Traditional	23	5.7
	Islamic	3	0.7
	Hinduism	3	0.7
	other	12	2.9
Level of study	First year	88	21.6
	Second year	117	28.7
	Third Year	118	29.0
	Fourth year	29	7.1
	Postgraduate	55	13.5

School	Education	61	15.0
	Human and Social sciences	55	13.5
	Mathematics	38	9.3
	Agriculture	42	10.3
	Management	42	10.3
	Environmental science	38	9.3
	Law	58	14.3
	Health Sciences	73	17.9
Residence of respondents	At Home	95	23.3
	On Campus	205	50.3
	Rental Rooms	107	26.4
With whom do you live with	Alone	123	30.2
	Roommate	152	37.3
	Friends	82	20.1
	Family	50	12.3
Source of pocket money	Parents	147	36.1
	SBUX	96	23.6
	Bursary	49	12.0
	Working	114	28.0
Amount of pocket monthly money	Don't receive money at all	43	10.6
	500 or less	114	28.0
	501-1000	121	29.7
	1001-1500	69	17.0
	1501 and above	59	14.5
Frequency of pocket money	No money	40	9.8
	weekly	36	8.8
	Bi-weekly	16	3.9

	monthly	305	74.9
	Bi-monthly	10	2.5
Smoking	Yes	176	43.2
	No	231	56.8

4.3.1. Relationship of demographic characteristics and smoking status

The results indicated that students' ages and smoking status statistically are significantly correlated (P-value =0.004). There was a positive relationship between age and smoking status, as most students who smoked were 21-25years old. Significantly, more male students smoked cigarettes (P- value =0.000) than female students. There was no significant association between smoking status and race (P-value = 0.756), marital status (P-Value = 0.577) and level of study (P-value = 0.287). However, there was significant associations between smoking status and religion (P-value= 0.048), school of respondents (P value= 0.042), residence of respondents (P value= 0.010) but not with whom students lived with (P- value =0.569), the amount of pocket money they received (P-value =0.179), and frequency of pocket money received (P value =0.239). Table 4 illustrates a significant association between smoking status and the source of pocket money (P value= 0.0298). The distribution of demographic characteristics and smoking status of participants is shown in Table 4 below.

TABLE 4: RELATIONSHIP OF DEMOGRAPHIC CHARACTERISTICS AND SMOKING STATUS

Variables		Do you smoke		P Value
		Yes	No	
Age of Respondents	17-20 Years	44	52	0.047*
	21-25 Years	86	111	
	26-35 Years	29	44	
	36-40 Years			

		17	24	
Gender of Respondents	female	68	137	0.000*
	male	108	94	
Race of Respondents	black	169	224	0.756
	white	3	4	
	Indian	0	0	
	coloured	4	3	
Marital status of respondents	married	31	44	0.577
	never married	140	182	
	divorced	2	3	
	widow	2	0	
	widower	1	2	
Religion of respondents	Christianity	151	215	0.058*
	traditional	16	7	
	Islamic	1	2	
	Hinduism	2	1	
	Other	6	6	
Level of study	First year	41	47	0.287
	Second year	47	70	
	Third year	45	73	
	Fourth year	13	16	
	Post graduate	30	25	
School of respondents	Education	24	37	0.042*
	Human and social	22	33	
	Mathematics	18	20	
	Agriculture	17	25	
	Management	25	17	
	Environmental sciences	18	20	
	Law	30	28	
	Health sciences	22	51	

Place lived	At home	47	76	0.010*
	On campus	76	76	
	Rental rooms	53	79	
Who do you live with?	Alone	64	83	0.569
	Roommate	42	54	
	Friends	25	24	
	Family	45	70	
Source of pocket money	Parents	63	72	0.029*
	Sbux	60	96	
	bursary	30	29	
	Working	23	34	
Pocket money received	Don't receive money at all	18	25	0.179
	500 or less	39	75	
	501-1000	57	64	
	1001-1500	35	34	
	1501 and above	27	32	
How often respondent gets money	No money	14	26	0.239
	Weekly	21	15	
	Bi-weekly	8	8	
	Monthly	130	175	
	Bi-monthly	3	7	

*Statistically significant

4.4: Individual/personal factors contributing to cigarette smoking

Likert based questions were asked to respondents in order to show their level of agreement to certain questions on individual factors that contribute to students smoking at the university. For the purpose of analysis, strongly agree and agree are merged together and strongly disagree and disagree are merged together. Out of 407 respondents who participated in the study, more than half 276 (67.7%), agreed to the belief that smoking enhances school performance, 263 (64.6%), expression of freedom, 271 (66.5%) depression, 322 (79.3%) stress, 212 (52.2%) role models, 94 (23.1%) believe in themselves, 123 (29.7%) lose weight, and 323(79.3%)lack of knowledge regarding the effects of smoking are individual factors that influence students to

smoke cigarettes at the University of Venda. The frequency and percentage of individual factors that contribute to cigarette smoking is given below in Table 5.

TABLE 5: THE FREQUENCY AND PERCENTAGE OF INDIVIDUAL FACTORS CONTRIBUTING TO CIGARETTE SMOKING

Variables	Strongly agree		Agree		Disagree		Strongly disagree	
	N	%	N	%	N	%	N	%
Smoking enhances performance	145	35.6	131	32.1	119	19.2	53	13
Expression of freedom	141	34.6	124	30.5	98	25.1	44	10.8
Experiencing depression	108	26.5	163	40.0	104	25.6	62	15.2
Experiencing stress	212	52.9	111	27.3	62	15.3	18	4.5
Role models who are smokers	127	31.3	85	20.9	111	27.2	84	20.5
Believe in myself	45	11.1	46	12.0	120	30.4	193	47.4
Smoking make me lose weight	43	10.6	80	19.7	107	26.3	176	43.3
Lack of knowledge regarding the effects of smoking	138	54.0	103	25.3	92	12.6	73	7.9

4.5 .Socio-Cultural Factors Contributing To Cigarette Smoking

For the purpose of analysis, strongly agree and agree are merged together and strongly disagree and disagree are merged together. Out of 407 students who participated in the study, the majority of respondents 274 (67.5%) agreed to a great extent that attending a number of social events contribute to students smoking cigarettes, 278 (78.4%) having friends that smoke make one to smoke cigarette, 73 (17.5%) smoke due to culture, 223 (74. 8%) having family members, 297 (72.7%) having a roommate, 21(12.3%) medical problems make one to smoke, 313 (76.8%) smoking extends social interactions, and 255(62.6%) community endorses smoking. These are socio-cultural factors that contribute to students smoking. The extent to which the following socio-cultural factors contribute to cigarette smoking amongst university students is given below in Table 6. (See details below).

TABLE 6: THE FREQUENCY AND PERCENTAGE OF SOCIOCULTURAL FACTORS(N-407)

Variables	Not at all		Little extent		Moderate extent		Great extent		Very great extent	
	N	%	N	%	N	%	N	%	N	%
Attendance of social events	7.7	31	10.3	42	14.5	59	25.1	102	42.4	172
Having friends who smoke	3.2	12	8.1	33	10.3	42	17.2	70	61.1	248
Culture permits students to smoke	56.0	223	15.0	61	11.1	45	7.4	30	10.3	42
Family members who smoke make one to smoke	4.3	16	4.5	16	16.5	67	14.0	57	60.8	247
Roommate who smoke	5.4	22	8.2	33	16.7	68	16.2	66	56.5	228
Community endorsing smoking	9.1	37	13.2	54	15.0	61	14.0	57	48.4	197
Medical problems make one to smoke	68.8	280	10.1	40	8.6	35	7.1	29	5.2	21
Extended social interactions	4.4	18	10.8	41	7.6	31	7.6	31	69.2	282

4.5: Environmental Factors Contributing To Cigarette Smoking

This section covers environmental factors that contribute to cigarette smoking amongst students. For the purpose of analysis, strongly agree and agree are merged together and strongly disagree and disagree are merged together. Out of 407 study sample size, 281 (69.1%) strongly agree that there are no rules prohibiting smoking on campus, 252 (62%) cigarettes are available in each and every corner of the campus, 224 (55%) of respondents new environment with no parents' makes students to smoke, 267 (65.5%) regular adverts of cigarette smoking make students to smoke, 307 (75.5%) observing other students smoking. The extent to which the following environmental factors contribute to cigarette smoking amongst students is shown below. (Refer to table 7 below).

TABLE 7: THE FREQUENCY AND PERCENTAGE OF ENVIRONMENTAL FACTORS(N-407)

Variables	Strongly agree		Agree		Disagree		Strongly disagree	
	N	%	N	%	N	%	N	%
No rules prohibiting smoking	154	37.8	127	31.2	79	19.4	47	11.5
cigarettes available every corner on campus	112	27.5	140	34.4	104	25.6	51	12.5
New environment makes student to smoke	101	25.0	122	30.0	97	20.4	87	22.4
Regular adverts make student to smoke	74	38.2	112	27.5	111	27.3	110	7.0
No anti-smoking posters make students to smoke	107	26.3	111	27.3	91	27.2	97	23.8
Observation of other students smoking encourages cigarette smoking	208	51.2	99	24.3	42	10.3	58	14.2

4.6 Knowledge of health consequences of cigarette smoking

In order to assess the awareness of respondents on health consequences of cigarette smoking, students were requested to fill in a questionnaire by showing their awareness to certain questions. The questions were put on a 5 item Likert scale where 5 represented very much aware, 4 much aware, 3 quiet aware, 2 slight aware and 1 completely unaware. For the purpose of analysis, very much aware and much aware will be merged together and slightly aware and completely unaware will be merged together.

The total population n =407 showed their awareness of respondent on health consequences of cigarette smoking. Most students 332(81.5%) are aware that smoking causes lung diseases, 354 (87.8%) lung cancer, 308 (75%.6) heart diseases, 260 (64.6%) hypertension, 234 (57.5%) infertility problems, 327 (80.4%) affect unborn babies, 235 (57.8%) malnutrition, 136 (58.1%) delays wound healing, 299 (74%) affects the person smoking and the next person in contact and 317 (78.1%) chance that it triggers asthma.

Overall 34 (8,4%) of 407 students are quite aware that smoking causes lung diseases, 20(4.9%) lung cancer, 65(16.0%) heart diseases, 81 (19.9%) hypertension, 70 (17.4%) infertility problems, 31 (7.6%) affect unborn babies, 66 (16.5%) malnutrition, 72 (18%) delays wound healing and 55 (13.5%) triggers asthma.

Of the 407 respondents 41 (10.1%) are unaware that smoking causes lung diseases, 25 (6.4%) lung cancer, 33 (8.1%) heart diseases, 60 (15.4%) hypertension, 100(24.4%) infertility problems, 46 (11.3%) unborn babies, 105 (25.8%) malnutrition, 93 (22.8%) delays wound healing, 46 (11.3%) affecting the next person in contact and 33(8.1%) triggers asthma. The frequency and percentage of health effects of cigarette smoking is shown in Table 8. **(See details below).**

TABLE 8: THE FREQUENCY AND PERCENTAGE OF HEALTH EFFECTS OF CIGARETTE SMOKING(N-407)

Variables	Completely unaware		Slightly aware		Quite aware		Much aware		Very much aware	
	N	%	N	%	N	%	N	%	N	%
Smoking causes lung diseases	20	4.9	21	5.2	34	8.4	84	20.6	248	60.9
Smoking causes lung cancer	11	2.7	15	3.7	20	4.9	87	21.4	270	66.4
Smoking causes heart diseases	14	3.4	19	4.7	65	16.0	84	20.6	224	55.0
Smokers likely to develop hypertension	27	6.6	33	8.8	81	19.9	84	20.6	179	44.0
Smoking cause infertility problems	46	11.3	54	13.3	71	17.4	69	16.5	167	41.0
Smoking can affect unborn baby	21	5.2	25	6.1	31	7.6	69	17.0	258	63.4
Smoking may contribute to malnutrition	55	13.5	50	12.3	67	16.5	74	18.2	161	39.6
Smoking delays	47	11.5	46	11.3	77	18.9	81	19.9	155	38.1

wound healing										
Secondhand effects	20	4.9	26	6.4	59	14.5	83	20.4	218	53.6
Smoking triggers asthma	20	4.9	13	3.2	55	13.5	70	17.4	247	60.7

4.6.1: Relationship between smoking status and knowledge of health consequences

This section shows a comparison of smokers and non-smokers with regard to knowledge of health consequences cigarette of smoking. A statistically significant association was found between smokers and nonsmokers and the knowledge development of lung diseases (P-value =0.01) and the knowledge regarding development of hypertension (P- value = 0.03). There was a statistically significant relationship between smokers and nonsmokers regarding the development of lung cancer (P -value=0.03). A significant association was recognised between smokers and nonsmokers and knowledge on effects of passive smoking (P-value=0.03). There was a significant association (P-value = 0.00) between smokers and nonsmokers regarding knowledge of cigarette smoking affecting unborn babies. Furthermore, there were significant associations between smokers and nonsmokers regarding knowledge of malnutrition with (P- Value =0.01) and smoking triggers such as asthma (P-value = 0.05) as shown in Table 9.

However, there was no significant association between the responses of the smokers and nonsmokers respondents on smoking causing infertility problems (P-value=0.09), heart diseases (P-value=0.2) and delay in wound healing (P-value=0.3).The relationship between smoking status and health consequences distribution is shown on table 9. (See details below).

TABLE 9: RELATIONSHIP BETWEEN SMOKING STATUS AND HEALTH CONSEQUENCES

Variables		DO YOU SMOKE				P value
		smokers		Non smokers		
		N	%	N	%	
Smoking causes lung diseases	Completely unaware	11	2.7	9	2.2	0.01*
	Slightly aware	13	3.2	8	2.0	

	Quite aware	15	3.7	19	4.7	
	Much aware	41	10.1	43	10.6	
	V. much aware	96	23.6	152	33.7	
Smokers develop hypertension	Completely unaware	18	4.4	9	2.2	0.03*
	Slightly aware	19	4.7	17	4.2	
	Quite aware	37	9.1	44	10.8	
	Much aware	35	8.6	49	12.0	
	V much aware	67	16.5	112	27.5	
smoking cause lung cancer	Completely unaware	7	1.7	4	1.0	0.03*
	Slightly aware	9	2.2	6	1.5	
	Quite aware	12	3.0	8	2.0	
	Much aware	43	10.6	44	10.9	
	Very much aware	103	25.5	168	41.6	
Smoking causes infertility problems	Completely unaware	24	5.9	22	5.4	0.09
	Slightly aware	27	6.7	27	6.7	
	Quite aware	27	6.7	44	10.9	
	Much aware	35	8.6	32	7.9	
	Very much aware	62	15.3	105	25.9	
Smoking causes heart diseases	Completely unaware	8	2.0	6	1.5	0.2
	Slightly aware	11	2.7	8	2.0	
	Quite aware	28	6.9	37	9.1	
	Much aware	41	10.1	43	10.6	
	Very much aware	87	21.4	137	33.7	
Smoking affect the health of unborn babies	Completely unaware	15	3.7	6	1.5	0.00*
	Slightly aware	16	4.0	9	2.2	
	Quite aware	11	2.7	20	5.0	
	Much aware	37	9.2	32	7.9	

	Very much aware	95	23.5	163	40.3	
Smoking contributes to malnutrition	Completely unaware	26	6.4	27	6.7	0.01*
	Slightly aware	29	7.2	21	5.2	
	Quite aware	26	6.4	41	10.1	
	Much aware	28	6.9	46	11.4	
	Very much aware	65	16.0	96	23.7	
Cigarette smoking can delay wound healing	Completely unaware	23	5.7	24	5.9	0.3
	Slightly aware	20	4.9	26	6.4	
	Quite aware	29	7.1	48	11.8	
	Much aware	42	10.3	39	9.6	
	Very much aware	62	15.3	93	22.9	
Second hand effects	Completely unaware	11	2.7	9	2.2	0.03*
	Slight aware	15	3.7	11	2.7	
	Quite aware	23	5.7	36	8.9	
	Much aware	37	9.1	46	11.3	
	Very much aware	89	21.9	129	31.8	
Smoking triggers asthma	Completely unaware	13	3.2	7	1.7	0.05*
	Slightly aware	8	2.0	5	1.2	
	Quite aware	28	6.9	27	6.7	
	Much aware	35	22.4	48	11.8	
	Very much aware	71	17.4	164	40.2	

*statistically significant

4.7 Summary

The chapter was a presentation of results. The results showed that most respondents smoked cigarettes because of friendship with smokers, Lack of signage or poster prohibiting smoking, observing other students smokers, attending social events where smoking is common, stress, depression and lack of knowledge regarding negative health effects of cigarette smoking. The

nonsmokers were very much aware of the negative health consequences caused by cigarette smoking.

CHAPTER 5

DISCUSSION

5.1. Introduction

Chapter five discusses the descriptive, and chi-square results presented in chapter four, comparing them with findings from other relevant studies. All of the study's objectives are considered, involving students (i) socio-demographics, (ii) personal factors, (iii) socio-cultural factors, (iv) environmental factors and health consequences of cigarette smoking are also examined.

5.2. Socio-demographic factors

According to the findings of this analysis, age as demographic characteristics plays a major role in making decisions to smoke. In this study, the majority of respondents were between the age group of 21- 25 years with the mean age being 21 years. Oktay, Celik and Akbaba, (2013) and Kumar et al., (2012) also found a higher percentage of students aged between 21-25 years in their study among Turkish University and Malaysia University students. In contrast, a study conducted in Cameroon by Ngahane and others (2013) and Karimi et al., (2017) reported that the majority of students were younger, aged between 15 and 19 years. The implication of the study is that this age group is a time of transition from high school to college life where young people are vulnerable to risk taking behaviours (Karimi et al., 2017).

According to the study findings, the largest group (51%) of participants was female students. This frequency reflects the general statistics of students at the University of Venda where the females are predominant due to recent university admission policies on female's affirmative action. Similar results were observed at the University of KwaZulu Natal (72%) and the University of Cape Town (58%) by Issock (2014) and Egbe et al., (2014) where most students are females. These study findings are different from a study conducted in Kenya by Magu (2015) where the majority of respondents were (71.3%) males. The implication of having more females is that it allows gender equality were female students have equal opportunity to learn unlike long back were females were discouraged from going to school (Kruger, 2013).

The majority of respondents in this study were Africans at (96%). The study results are in accordance with a study conducted by Khan et al., 2016 and Rantao et al., (2012) conducted at South African universities. On the other hand, some studies in USA have found that the majority of students are white and colored (King, Dube, and Tynan, 2012). In this study the majority of

students (79%) were found to have never married. Several authors in Ethiopia and Ghana support the findings that most students at university have never married (Tesfaye, Derese, Hambisa, 2014; Egbe, 2014). In contrast, the findings of the study conducted by Rantao et al., (2012) in a nursing college showed that the majority of students were married. This is because marriage comes with challenges that limit young people from studying due to many responsibilities (Issock, 2014).

The findings also showed that Christianity (89%) was the dominant religion at the University of Venda. Some respondents indicated that they are Muslim, Hindus, hold traditional beliefs while others belong to other faith. The study findings are similar to the study findings by Khan et al., (2016) and Kruger, (2013) who stated that most students at South African universities believe in Christianity. However, the study findings are in contrast with a study conducted in Ghana by Cofie (2013) that reported the majority of students (82%) were Muslims.

In this study the majority of study samples (29%) are registered for level two. This is different from the study results by Kumar et al., (2012) who reported that the majority of students (30, 2%) in one of India's universities are registered at level 3. However, contrary findings were observed in a study conducted in Ethiopia by Tesfaye et al., (2014). The reason for many students at first year was that students usually drop out of college as the year's progress.

The largest proportions of respondents enrolled at the University of Venda were from the School of Health Sciences (17%) as compared to other schools. The study findings are similar to a study conducted in Ethiopia by Tesfaye et al., 2014). However, this is in contrast to a study conducted in Turkey by Oktay, Celik, Akbaba (2013) who reported that the majority of students at that university were registered under the School of Human and Social Sciences.

The study finding revealed that the majority (50%) of students reside on campus. A similar study was conducted in Kenya by Magu (2015) reported that the majority of students were staying on college campuses where they have too much freedom. This contrasts with study findings conducted in South Africa and Ethiopia revealed that the majority of students reside in private rented rooms due to limited accommodation on campus residence by (Kidane, 2014; Reddy, 2013). Findings from the Africa's campus life study showed a high prevalence of experimentation if young people reside without parents or guardians (Karimy et al., 2017). This puts their lives in danger.

Findings of this study also revealed that the majority students (30%) receive pocket money of between 500-1000 rands per month. Similar findings were shown in one of the Cape Town

universities by Kruger et al (2016) and Gilani and Leon, (2013) who found out that the highest proportion of the students received below R1 000 a month. While Mudhovozi et al., (2012) reported that students received pocket money which was above R1000.00. Almost half of the 175(43%) students in this study reported that they smoked cigarettes. This demonstrates that cigarette smoking is prevalent among the students. The findings are in accordance with other studies carried out in Ghana and Zimbabwe by Egbe (2015) and Mudhovozi et al., (2012). However, in contrast in Jordan (Sharif, Qandil and Alkafajei, (2013) found a low prevalence of (29.3%). The reason for high prevalence at the university of Venda maybe lack of law enforcement that prohibits smoking within the university.

The study findings indicated that more males smoked cigarettes as compared to women. This revelation supports the results of other studies that smoking is a preserve of males. For example, studies conducted by Amakali et al., (2015); Issock, (2013) in Namibia University and University of KwaZulu Natal confirm this observation. In South Africa, however, the prevalence gap is closing despite the fact that women are smoking less. Although in other countries the “prevalence gap” between men and women is closing due to the fact that women are smoking more, while smoking prevalence among men has stabilised.

Furthermore, the findings reported that there was a higher prevalence of smoking among the African students that participated in the study as compared to other races. This was due to the fact that the majority of students enrolled at this institution are black. Although a study conducted at the University of Cape town by Khan, (2012) differs with current study findings because it reveals that majority of students (50%) are coloured people and have the highest smoking prevalence percentages, followed by whites, Indians and Africans, in that order. Globally, preventive measures that prohibit cigarette smoking should be undertaken in order to minimize deaths resulting from cigarette smoking related diseases (Karimy, 2017).

5.3. Smoking status and demographic characteristics

In this study, it was found out that there was a significant relationship between smoking and age ($P=0.047$) meaning that age had an influence on smoking. In a similar study conducted in Ghana and Malaysia by Cofie (2013) and Kumar et al., (2012) students below the age of 25 years were significantly more likely ($P\text{-value}=0.003$) ($P=0.04$) to smoke. This age group is normally at college, a time of increased risk for smoking initiation (Tobacco atlas, 2015). The implication is that smoking at a young age puts students at risk of harmful effects of cigarette

smoking leading to short life span if the person does not quit smoking (Blecher, 2015). In contrast with the present study findings, a study conducted in a university in South Africa and Iran by (Kruger 2013 and Karimy et al., 2017) reported that there was no significant relationship between age and smoking status. Students below the age of 17 years were found smoking because of the transition period from high school to university. The theoretical framework of the present study indicated that demographic background such as age, race, gender, ethnicity, and socioeconomic status can cause one to be more at risk of smoking initiation.

With regards to gender the study showed that there is a significant relationship between smoking and gender ($P=0.000$). This means that gender had an influence on smoking prevalence among students. In this study more male students smoked cigarette as compared to female students. This interpretation is consistent with findings of previous studies conducted at the university of Western Cape and Ghana by (Morejele et al., 2013 and Ebusu, 2012) where male students were significantly ($P\text{-value}=0.01$) ($P\text{-value}=0.01$) more likely to smoke as compared to female students. This could be explained by the fact that cigarettes are considered to be socially acceptable among males in African communities. Therefore, culture plays a significant role in female behaviour and attitude hence female students are less likely to smoke (Ryan, Trosclair and Gfroerer, 2012). On another hand, Zawahir et al (2013) and Torre et al., (2012) reported that among students in Poland and in Asian countries, females students were found to smoke more than their male counterparts but they were reluctant to admit to the researcher that they were smokers. The implication is that there should be national tobacco control policies that address cigarettes to all genders unlike focusing on children because smoking is harmful to both sexes and precautions must be taken to avoid smoking negative effects.

In this study, there was no significant association between racial groups and smoking. More African students were found smoking cigarettes as compared to other racial groups. Similar findings were reported by a study conducted in Zimbabwe and South Africa by Mudhovozi, et al (2012) and Reddy et al (2013) have showed that smoking status is not significant to race. In their studies the majority of students were observed among the black students. Different results from a studies by Emmeree (2013) and Ryan et al (2012) conducted in USA concluded that race was significantly associated to smoking status with white students found to be smokers than any other racial groups.

With regards to marital status, the study never showed a significant association between marital status and smoking (P -value=0.577). In this study the majority of smokers were observed among participants who were never married as compared with those who were married. Similar findings by Pampel (2013) indicated that there was no association between smoking and marital status hence single students who had never married had a greater likelihood of smoking. The implication of this is that marriage often comes with responsibilities that restrict individuals from purchasing cigarettes. Therefore, married participants are less likely to smoke and this minimizes the risk of tobacco related illnesses (Blecher and Ross, 2015). In contrast to the study results, a study conducted in Ethiopia and Saudi Arabia by Tesfaye et al.,(2014) and Mahfouz et al., (2014) found an association between marital status and smoking status (P -value=0.010. The difference in the result may be due to the fact that married university students may suffer the effect of marital condition and day to day campus life that may lead them to smoke more than never married students who were relatively at a low stress level (Tefaye et al., 2014).

Regarding to the level of study of students there was no association between the smoking status and level of study (P -value=0.287). In this research the riskiest period for cigarette smoking among university students seems to be the first years registered under the faculty of education. Actually, one would expect that with each year of education, more students would realize the adverse effects of smoking not only on their own health, but also on the health of other people (Magu, 2015). Similar findings have been reported in Ghana and Ethiopia by Cofie (2013) and Gebreslassie et al (2013) who showed that the level of study has no association with smoking status and level of study (P -value=0.403).

This result was not supported by previous studies in Ethiopia and Ghana by Bago (2017) and Ashiamah (2016) who found a significant association between level of study and smoking status (P -value=0.004) (P -value=0.05). More third year and fourth year students were found to be smokers. This may be due to the fact students at this level of study are in the middle of their campus life in which they usually become desperate and get into depression so they may tend to use cigarettes to relieve depression. The disadvantage of smoking at a university is that it affects their students' academic performance and health which can lead to poverty due to poor health conditions and school dropout. The implication is that tobacco prevention programs must target students at all levels of study because every student is at risk of smoking due to the challenges that they encounter while at university (Magu, 2015).

Students religion was significant in relation to smoking status with more than 80% indicating that they are Christians ($P=0.05$). The majority of smokers were observed among Christians. Similar to this study, students from a university in Ghana ($P\text{-value}=0.02$) and Ethiopia ($P\text{-value}=0.04$) reported that having no religion or catholic backgrounds have a significance relationship with smoking due to their personal choices and permissive religion (Ashiamah, 2016 and Bago,2017). The reason is not known though about the strength of association between religion and smoking status across various religious denominations. Contrary to the study findings, a study conducted in Western Cape and Ethiopia amongst university students by Kruger, Van Walbeek and Vellios (2014) reported that there is no association between ($P\text{-value}=0.5$) religion and smoking status. More students who believe in traditional beliefs were smokers. This observation illustrates the importance of religion and cigarette smoking since it is assumed that students are influenced by their religion. The implication is that students who have a strong association with their religion are less likely to smoke cigarettes (Amakali et al., 2015).

Area of residence is significantly associated with cigarette smoking use ($P\text{-value}= 0.01$), with a high proportion of smokers staying on campus. Similar to the study findings conducted at a South African university ($P\text{-value}=0.03$) and ($P\text{-value}=0.001$) in Ethiopia by (Morejele et al., 2013 and Gurmesa et al., (2012) have shown a significant association between smokers and nonsmokers of students who stay on campus. Students who lived on campus were more likely to smoke cigarettes despite all the rules imposed by the university. The study is contrary to the study conducted in Botswana and Tanzania by Mbongwe, et al., (2017) and Abu et al., (2012) who reported that there was no association between smoking status and area of residence. The findings further revealed that students who live off campus; either in rental rooms or family home are more likely to smoke more than students who live on campus residences and there was no association ($P\text{-value}=0.060$) ($P\text{-value}=0.5$). This is because joining university often leads to new opportunities, independence from family control, self-decision making, and peer-pressures. All this may encourage students to smoke cigarettes (Morejele et al., 2013).

Smoking was also significantly associated with school of affiliation ($P\text{-value}=0.04$). Most smokers were enrolled in the School of Health sciences as compared to other schools. This is confirmed by a study conducted at the University of Western Cape, South Africa by Kruger, Van Walbeek and Vellios (2014) who found out that there was an association between smoking status and school of affiliation ($P\text{-value}=0.04$). There is no explanation for these differences from this study, but this may be related to the actual distribution of students in higher education institutions in South Africa. Contrary to this study, Amakali, et al., (2015) concluded that

smoking was not associated (P -value=0.4) with school of affiliation at Namibia University. In addition, Mahfouz et al., (2014) concluded that there was no association between smoking and school of affiliation among health sciences students at a gulf university in Saudi Arabia.

Regarding the amount of pocket, the study revealed that there was no significant relationship between pocket money received and smoking status (P -value=0.179). This study demonstrated those who currently receive more pocket money of R1500 and above had a higher chance of smoking cigarettes as compared to those who get less money. This could be that students who receive extra-money end up spending it on non-essentials such as cigarettes (Kalucka, 2012). Similar results were obtained from the University of Western Cape by Kruger, Van Walbeek and Vellios (2014) and Kalucka (2012) who found out there was no association between amount of pocket money and smoking status (P -value=0.20). In contrast, studies conducted in Saudi Arabia and Botswana by Mahfouz et al., (2014) and Mboweni et al., (2014) demonstrated an association between smoking and amount of pocket money received by a student (P -value=0.001). The higher the income, the less likely the risk of smoking. This was confirmed by the lower prevalence reported among students who are dependent and also have multiple sources of pocket money. Students smoke regardless of the availability of money depending on the confidence and resistant skills (Mboweni et al., 2014).

There was a significantly higher association between smoking and source of pocket money (P -value=0.02) with more smokers (17%) having their source of pocket money from parents. Hence they are more likely to smoke cigarettes unlike those who work part time jobs. Similar results reported a significant association between smokers and nonsmokers and source of pocket money at the University of Cape Town by (Reddy et al., 2013). In contrast, a study conducted by Talip et al., (2015) and Cofie (2013) in Asia and Ghana reported that students who had salaries or their own sources of pocket like, working are at higher risk of being smokers and there was no significance (P -value =0.745). It can be concluded from the study that conditions attached to pocket money from family sources, loan bursary encourage students to smoke (Egbe et al., 2015).

5.4. Individual Factors Contributing To Cigarette Smoking

In regard to individual factors which contribute to smoking on campus most students (58%) agreed to the notion that students smoke cigarettes because they believe it will help them to improve their academic performance. This concurs to a study conducted by Submaramaiam et

al (2015) which concluded that (75%) students from Singapore smoke cigarette because it helps them to refocus their thoughts and concentrate better during study related sessions. The results of the study are further supported by Bashiru and Udo (2014) who illustrated that smoking makes one to study longer hours than usual. The students who smoked performed better than others. In contrast, one of the studies in Malaysia reported that there is association between smoking status and improved academic performance. Students with unsatisfactory academic performances were more likely to initiate smoking than students with better performance (Lim et al., 2014). In other words, the aim of the students is to succeed and obtain higher marks. In other words, the main focus of the student's focus is to succeed and obtain high grades so they are likely to take the risk of smoking for the sake of concentrating while studying. This negative attitude might be the most important factor to be considered in any smoking control program for university students (Sharif et al., 2013 and Almousawi, 2014).

Pertaining to smoking as an expression of freedom, a larger proportion (67%) of students started that students smoke because they will be expressing their newfound freedom in a new environment. Similar findings were reported by Hossain et al., (2017) in Bangladesh where they reported that students smoke to express freedom of being away from home. The study has been supported by a study conducted in Kenya among university students by Magu (2015) and Peltzer (2013) who reported that there is significant association between smoking status and expression of freedom. Different findings were revealed by Ngahane et al., (2015) who showed that students smoke due to family influence. The implication of the study showed that students at universities smoke cigarettes because they will be testing limits set by parents in an attempt to be accepted by peers (Ngahane et al., 2015).

About the argument that smoking makes students lose weight a quarter of the respondents agreed with the notion. This was supported by a study conducted in Arabian countries by (Sharif, Qandil, and Alkafajei (2013) and Talip et al (2015) who revealed a significant difference between smoking status and losing weight. The study indicated that students smoke as a way of losing weight. However, the relationship between smoking and body weight is complicated. Some studies revealed that smoking might cause irregularities in eating (Blecher, 2015 and Jima, 2015).

The belief that smoking is a stress reliever, entertained by students, has been reported in many studies (Issock, 2013 and Brynne, et al., 2015). In the present study, students perceived smoking as caused by (66%) depression and (60%) stress. A similar study conducted in

Namibia by Amakali et al., (2015) reported that youths may smoke cigarettes as a way to reduce depression and to cope with stress. This was further supported by (Submaramaiam et al., 2015) who found out that students from Singapore highlighted that smoking was an aid for alleviating stress, and depression. Pradhan et al., (2013) and Lim et al., (2014) also supported the study findings. However, So and Yeo (2015) argued that students do not smoke because of stress but use that as a cover up for their smoking behaviour attitude. On the other hand, researchers in Botswana (Mbongwe, 2017) found that stress was not the significant factor of smoking behavior among students. Although the study further revealed that cigarette smoking increases the risk of depressive and anxiety symptoms hence reducing the likelihood of smoking (Saravanan and Heidhy 2014).

Study findings indicated that most of the respondents indicated that (59%) students smoke due to lack of knowledge regarding smoking effects. The study was supported by Issock (2013) at University of KwaZulu Natal who reported similar results. A study by and Al Mousawi (2014) assessing the knowledge, attitude and avoidance behaviour towards smoking in Ghana with higher education showed similar results. On the contrary, some researchers found that students who are knowledgeable about the cigarette smoking addiction and its side effects on health are more likely to restrain from cigarette smoking (Issock, 2013; Hossain et al.2017, Mudhovozi et al., 2012). Nevertheless, the majority of studies related to the knowledge of smoking effects on smoker's health shows that people are generally aware of those effects but are still smoking due to positive attitudes they have towards smoking. Although other researchers reported that having a good level of knowledge about smoking health consequences does not always reflect the people's attitude and behaviour towards smoking. The health belief model influence individuals' behaviour so that institutional, community or policy changes can be achieved by influencing individual attitude towards smoking (CANCA, 2015). Interventions at the individual level might use several strategies such as mass media, peers counseling, educational programs and support groups.

5.5.Socio-cultural factors contributing to cigarette smoking

Socio-cultural factors play a great role in influencing cigarette smoking ranging from the family to the peer group influence and the need to fit in a certain group (Talip et al., 2015 and Oyundi, 2015).The study findings demonstrated that most students (68%) smoke cigarettes due to attendance of social events. A similar study conducted in Singapore and Zambia by Submaramaiam et al., (2015) and Kalucka (2012) found out that students who frequently attend social gatherings with cigarette smoking are at higher risk of smoking. The reason being

students feel that their friendship with other smokers is more meaningful than nonsmokers. Similar results were observed among University of Cape Town students by Reddy et al., (2013) who found out that students smoked cigarettes because it makes them feel more comfortable at celebrations, parties and social gatherings.

Friends or peers represent a major influential factor of smoking. In this study, the highest proportion of students (69%) reported that they smoke due to friends influence. The study has been supported by Ngahane (2015) and Kalucka (2012) who found similar results. Evidence from cross sectional studies conducted in Ethiopia showed that students who smoke and have friends who smoke are more likely to start smoking in the future than those without smoking friends (Rudatsikira, Abdo and Muula, 2015 and Ngahane, 2015). Similar results were observed from empirical studies conducted in South Africa by Van Zyl et al., (2013) who found out that peers encourage their uninitiated friends to smoke cigarette among youths. On the contrary, although a study conducted in 27 European countries reported parental smoking and smoking of peers as factors associated with smoking initiation, the effects of these two factors were similar (Filippidis, Agaku and, Vardavas 2015 and Kasundu, 2015).

The study findings further revealed that about (55%) students perceived having family members who smoke makes them to smoke. A Similar study conducted in Zimbabwe and Zambia by Mudhovozi, (2012) and Bago, (2017) reported that students with family members who smoke are more likely to imitate the smoking behaviors and attitudes of their family members whom they considered as their role models. The implication of this study is that students should have open communications lines with their parents. Furthermore, the finding was similar to a study conducted by Ngahane et al., (2015) that indicated that parents who smoke are more likely to allow smoking in the house. However, contrary to the study findings, evidence suggests that those with adequate family members who smoke are less likely to indulge in smoking (Morojele et al., 2016); Ghuman et al., 2012). On the other hand, a study conducted in South Africa among college students by Meghdadpour et al., (2012) has shown that students coming from a family that smokes and have a nurturing home environment, encompassing family supervision and monitoring, are less likely to smoke cigarettes. Not far from the context of this study, (Issock, 2013 and Van Heerded, 2013) found out that students who believe that their families would be more disappointed if they knew they smoked are less likely to continue or to start to smoke than students who assume their families would not be as upset.

The majority of students (53%) agreed to the statement that staying with a roommate who smokes may influence students to smoke cigarettes. Similar results were recently found by Amakali, et al., (2013) who reported that students living with roommates who smoke are at higher risk of being smokers than those living with non-smokers. In fact, the decrease of parental influence occurring while youngsters grow older may lead to an increase of the magnitude of peer pressure. Students staying away from parental figures are more likely to smoke due to the non-availability of parental guidance (Issock, 2013). Culture has an influence on people's behaviour towards smoking. In this present study a minority of students (17%) reported that they smoke due to their culture that permits them to smoke. Contrary to the study that revealed that in Chinese and Taiwanese culture smoking among men is accepted and even encouraged, in America it is considered impolite and unwelcome to smoke or propose a cigarette to someone (Ng et al.,2014: King et al.,2012). In contrast to the image of Chinese and Taiwanese female smokers considered as cheap and untraditional yet, in the US, female smokers are not judged or stereotyped (Issock, 2013).

The majority of students (77%) reported that smoking extends social interactions. Similar findings were reported in a study conducted in Singapore amongst students indicating that students smoked as a way of developing broader social networks and perceived smokers as being more approachable and friendlier (Submaramaiam et al.,2015). Students who perceived smoking as a social activity for making friends were more likely to smoke. On the contrary, Glanz et al., (2014) students enrolled in a university in Zambia indicated that they enjoyed smoking by themselves without the company of friends.

Study results demonstrated that most students (63%) indicated that a community that endorses smoking encourages students to smoke cigarettes. A similar study conducted amongst youths by Kasundu,Mutiso, Chebet, and Mwirigi (2012) in Kenya indicated that students from communities that recommend taking of stimulants, depressants and hallucinogens such as beer, liquor, wine, cigarettes and cannabis during cultural functions were more likely to smoke. During these cultural ceremonies or festivities, cigarette smoking is culturally accepted and people are grouped according to age sets and exchange cigarettes. Students are not given caution but rather the smoking behavior is endorsed. In consistent with these results, students from colleges in South Africa reported that a community that is tolerant and exposes youth to smoking increases the likelihood of youth smoking. The reason being societal norms favor smoking thereby putting young people at risk of smoking. In contrast to these study findings, Saravanan and Heidhy (2014) found that in Malaysia revealed there was a lesser prevalence of

smoking cigarette among students population due to social custom, family restriction and cultural issues. The implication is that students find it difficult to smoke in front of guardians due to social custom (Saravanan and Herdly, 2014).

5.6. Environment factors contributing to cigarette smoking

Smoke free laws play a crucial role in smoking behavior amongst students. In this present study, most of the respondents (69%) reported that there are no rules or signage prohibiting smoking within campus. However, findings from a study conducted in developing country Singapore by Subramaniam (2015), found out students from university smoke cigarettes regardless of smoke free laws and are likely to smoke due to the roles of peers and family on students smoking behaviour. Issock (2013) agrees on the fact that students may smoke due to the unavailability of rules prohibiting smoking. Although few students at the University of Kwazulu Natal such as non-smokers are more supportive and believe that smoking restrictions in public places may reduce cigarette smoking.

Awotedu et al (2016) reported remarkable results in a study on the attitude towards non-availability of strict rules prohibiting smoking observed among students attending a tertiary institution in the Eastern Cape in South Africa. By contrasting from a Canadian university reported that students continue or initiate cigarette smoking on campuses regardless of the existence of non-smoking rules on university campus. The study further revealed that non-smoking policies can only be effective if they are practical measures accompanied the implementation (Baillie et al., 2011). On the other hand, a study conducted in universities in Malaysia by Saravanan and Heidhy (2014) reported that students are strictly not allowed to smoke inside university premises and this reduced the stimulation to smoke cigarette.

Signage and no posters prohibiting smoking have an influence towards cigarette smoking among university students. About (53%) of the respondents showed that students smoke cigarette because they are no signage or posters that prohibits smoking in most buildings. While these signs are present at the entrance to main buildings, there are none in lecture venues and near the cafeteria which are the places where students gather during their free time (Khan, 2014). The areas around the offices of the university staff also have little or no signage. We propose distribution of anti-smoking signs as well as the allocation of specific smoking areas for smokers. The smoking areas should be a considerable distance away from lecture venues, cafeterias and offices. They should preferably be in an open space that is far away from buildings in order to create a healthier atmosphere.

In this present study, the majority of students (70%) reported that students smoke due to availability of cigarettes at every corner of the campus. Availability of cigarettes everywhere on campus is evidence that smoking is acceptable at this campus. This was supported by a study conducted by Amakali et al (2015) who reported that students smoke due to easier access of obtaining cigarettes at universities. Therefore, more young people are likely to smoke. In the same way, students who perceived a weak anti-smoking character in their school or campus are more likely to smoke. In a similar fashion a study conducted by Issock (2013) reported similar findings. Therefore, tertiary institutions must have comprehensive non-smoking policies such as banning smoking in public places and prohibiting cigarette sales on campuses. The study was supported Submaramaiam et al (2015) and Seo et al (2012) found out that students in the USA with smoke free campus policy showed great decreases in cigarette smoking after the policy went into effect among smokers due to a change of students' behaviour and attitude.

Tobacco advertising plays a major role in the initiation and continuation of smoking habits among young people by creating a 'positive' image of smoking (WHO, 2015). In this study the majority of respondent (66%) reported that students smoke due to regular advertisement done during bashes. Similar findings were reported in Kenya by (Oyundi, 2015). The study was further supported by Talip et al (2015) and Khan et al (2016) who found out that students smoked cigarettes due to cigarettes advertised at sporting events.

A new environment with and parents have an influence on young people's decision to smoke (Sa et al., 2015). The present study found out that the majority of students (55%) smoke cigarettes due to a new environment without parents. The reason can be transitioning to university a place where young people are free to make their own choices. This triggers the smoking initiation in this environment (Eriksen et al., 2015). This is because, once students get into universities, they are free to do whatever pleases them since they are no longer minors. Similar findings were reported by different authors in Ghana, South Africa and Kenya who found out that students smoke because the transition from high school to college is stressful and cigarettes represents a stress reliever (Egbe. et al., 2014; Ramsoomar, 2015; Oyundi, 2015).

Study results revealed that majority of students (75%) smoke cigarette due to observing other students smoking. Cofie (2013) also found similar results. Similar results were observed by Van Zyl(2013) in a study conducted in South Africa that showed that students smoke due to observing of other students smoking. This is because students spend a lot of their time with peers and tend to imitate what their friends do (Gilani and Leon, 2013). Knowing that smoking is

a transmittable phenomenon, they end up smoking as well (Oyundi, 2015). Studies have concluded that seeing other smokers smoking triggers a desire to smoke as well (Talip et al., 2015; Eriksen et al., 2015). The theoretical framework postulates that someone who lives in an environment where smoking is a norm within the family, peers and community members, is likely to smoke.

5.7. Health consequences of cigarette smoking

The present study findings have revealed that the majority of students were knowledgeable about the negative health effects of smoking (81%) lung diseases, (87%) lung cancer, (75.6%) heart diseases, (65%) hypertension, (58%) infertility problems, (80%) affecting unborn baby, (57%) malnutrition, and (58%) wound healing delays, (74%) secondhand effects, and (78%) asthma. This study findings were similar with the one conducted among South African university students by Khan, Hira, and Haffejee (2016). A substantially lower proportion of (30%) young people were not knowledgeable in previous years (Eriksen et al., 2015). However, Khan et al (2015) further reported that approximately a quarter of the respondents reported not knowing that smoking causes heart diseases and that it aggravates tuberculosis. Health-education programmes need to be improved so that this knowledge reaches all young people. Furthermore, health consequences should be added to school curricula so that it directly targets young people at an age when they are vulnerable to commence smoking. Education programmes must also include information on the harmful effects of secondary smoke as many are unaware of this.

5.8. Smoking Status versus Knowledge of Health Consequences of Cigarette Smoking

In this study, data analysis showed that, in general, there was a significant difference between smokers and nonsmokers and knowledge of perceived health consequences of cigarette smoking. This showed that the majority of students have good overall knowledge about harmful effects of cigarette smoking.

When chi square was computed it was found that there was significant correlation about health knowledge between smokers and non-smokers in the following variable (P value=0.01) lung diseases. The current study revealed that more nonsmokers were knowledgeable about smoking related lung diseases. The study findings were in line with the findings reviewed in Ethiopia by Bago (2017) and Fakhreddine et al., (2014) who found a correlation between

smokers and nonsmokers regarding knowledge about lung diseases. The study results were different from a study conducted in Cameroon by Ngahane et al (2015) which reported that smokers who were knowledgeable that smoking causes lung diseases are less likely to smoke.

The findings of the study indicated that there was a significant difference between smokers and nonsmokers with regard to (P-value=0.03) knowledge about lung cancer. Nonsmokers showed more knowledge about smoking related lung cancer as compared to smokers. In a similar a study conducted in India by Sansone et al., (2012) reported that nonsmokers were aware of harms caused by cigarette smoking such as lung cancer. However, the study findings are different to study findings conducted in Iraq by Dawood, Rashan, Hassali, and Saleem (2016) which revealed that the majority of smokers believed that cigarette smoking causes lung cancer. The results have shown that there was low awareness of lung cancer amongst student smokers.

The results indicated a significant correlation between smokers and nonsmokers and knowledge about hypertension (P-value=0.03). Nonsmokers showed more awareness towards hypertension as compared to smokers. A similar report in Ethiopia by Bago (2017) and Jima et al., (2015) revealed significance in smokers and nonsmokers who were aware on the health consequences like hypertension. The more the students were knowledgeable about the health consequences the less likelihood of smoking. These data confirmed the findings of a study conducted in Iran by Reisi et al., (2014) who reported that there is association between smoking status and knowledge of harmful effects of smoking because students who are vulnerable to smoking related health problems as compared to their counterparts at university are less likely to smoke.

This study indicated a significant correlation between smokers and nonsmokers and knowledge about asthma (P-value=0.05). The study revealed significant difference in that the majority of nonsmokers had good knowledge of the various health problems associated with cigarette smoking like asthma (Jima et al., 2015). This is probably due to the fact that many of them have been educated about these harmful effects. It is also in line with the report of other findings elsewhere in Nigeria as reported by Ebirim et al., (2014) who indicated a significant association between smokers and nonsmokers regarding asthma (P-value=0.001).

The study findings revealed a significant association between smokers and nonsmokers regarding knowledge on passive smoking. Most of nonsmokers were aware that smoking can cause secondhand effects (P-value=0.03). The study findings were different by a study

conducted in China which revealed that more smokers were knowledgeable about secondhand effects of cigarette smoking. Then findings indicate that in spite of the evidence for the secondhand effects of smoking, the majority of smokers worldwide have low awareness on the secondhand effects of smoking. Findings regarding the perceptions of secondhand effects of smoking as they relate to smoking behaviour are consistent with those from previous studies conducted in Cape Town by Kruger (2013) and Primack et al., (2013). Knowledge of the harmful effects of smoking was also found to be generally high among students of institutions of higher learning in the Eastern Cape Province of South Africa.

Regarding smoking affecting the health of unborn babies, a significant correlation was observed between smokers and nonsmokers and knowledge about smoking affecting the health of unborn babies (P -value=0.0000). A highest proportion of nonsmokers were observed compared with smokers. The study is supported by Raji, et al (2013) and Blecher and Ross (2012) that revealed the harmful effects of cigarette effects in the unborn babies. Nonsmokers were significantly aware of the health effects that smoking causes malnutrition (P -value=0.01. The study was in line with that study conducted in Nigeria by Bushiru and Udo (2014) who reported a significant difference between smokers and nonsmokers regarding malnutrition. Most nonsmokers were conversant on smoking causing malnutrition as compared to smokers with a significant correlation of (P -value=0.000).

In this current study, there was no significant correlation between smokers and nonsmokers and knowledge about smoking causing heart disease (P -value=0.2). The majority of smokers have shown some knowledge regarding heart diseases. This was similarly reported by Ebirim et al (2014) and Bago (2017) where a majority of nonsmokers agreed that cigarette smoking is implicated in heart disease. This showed that students were familiar with these health problems that result from smoking cigarettes. On the other hand, smokers and nonsmokers had higher levels of knowledge regarding health consequences suggesting that their knowledge levels may influence their choice of not smoking. Amongst smokers who do not succumb early to heart diseases, smoking has been linked to an increased likelihood of developing Alzheimer's disease and dementia later in life (Reisi, 2014).

In contradiction to several studies conducted in Africa among students, a recent study found low level of awareness about most of the students in regard to cigarette smoking among American young people at higher institutions (Hall et al., 2014). This implication of cigarette smoking is worsened by the fact that the negative health consequences associated with smoking are not

restricted to the smokers themselves. In a similar study conducted in Ghana and Nigeria by (Egbe, et al., 2016); Bashiru and Udo, 2014) it was found that the knowledge of health effects of cigarette smoking did not prevent cigarette smoking among students to a lower prevalence in smoking among Nigerian students. The implication of this section reveals that smokers' low perception of the negative effects of their smoking behaviour on their health also results in many of them being unwilling to quit smoking (Ngahane et al., 2014).

5.9. Limitations

The current study findings should be interpreted within the limitations of its research methodology. Firstly the present study utilised cross-sectional study as there was no evidence of the sequential order of events making it difficult to make interpretations based on causality. Secondly, self-reporting questionnaires may have resulted in misreporting of cigarette smoking use as students might feel misjudged. Although other studies have found out that self-reporting questionnaires is valid for assessing smoking status among students (Primack, 2013).

5.10. Conclusion

In this current study, the objectives of the study were reviewed after the study findings and discussion to determine whether they were met or not. The factors significantly associated with students smoking were age, gender, religion, school of respondents and source of pocket money it was noted that male students had the higher percentage of students smoking. Most students smoked due to individual factors, socio-cultural factors and environmental factors that they encounter on a day to day basis. The study concluded that the majority of the students were knowledgeable on the health effects of cigarette smoking to themselves and to other people in contact with the smoking. However, a few students demonstrated a lack of knowledge of health risks from cigarette smoking. There was positive association between knowledge of health consequences and smoking status. However, there is positive need to conduct further research to enrich this knowledge base for the benefit of policy change and programme design for university student anti-smoking interventions.

CHAPTER 6

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1. Introduction

This chapter outlines the summary, conclusions and recommendations based on the study objectives. This is based on the research findings that is presented and discussed in the previous chapters. The study established several findings which make a direct contribution to knowledge and policy formulation. Recommendations both for further research as well as policy and practice have been made.

6.2. Executive Summary

The aim of the study was to investigate factors contributing to cigarette smoking and its health effects among students at university in South Africa. A self-administered questionnaire was formulated in line with study objectives in order to collect data. The data was captured in a Micro soft excel spread sheet and transferred to Statistics Package for Social Sciences. Research conclusions have been outlined and it has been indicated that individual factors, socio-cultural factors and environmental factors have a negative impact on the smoking status of students. The results from the study could form a database for further comparative studies. Recommendations have been drafted in line with the study objectives. The study reviewed previous studies with a view to establish academic gaps which the present study sought to bridge. This was done through library research.

6.2.1. Individual factors

One of the study objectives was to assess individual factors contributing to cigarette smoking among students at university in South Africa. The study findings revealed that the majority of respondents agreed that students smoked cigarette because they believe smoking enhances their academic performance, expression of freedom, depression, experiencing stress due to various reasons, and having lack of knowledge regarding the health effects of smoking. The study further revealed that a minority of students reported that students disagreed that students smoke due to role models who are smokers, believe in themselves, and as a way of losing weight.

6.2.2. Socio-cultural factors

The second study objective was to assess socio-cultural factors contributing to cigarette smoking. The majority of the respondents agreed to a very great extent that students smoked cigarettes due to attendance of social events, having friends who smoked cigarettes, having family members who smoke, roommates who smoke, a community that endorses cigarette smoking, and the belief that smoking extends social interactions. The study findings further revealed that students smoked cigarettes due to medical problems and a culture that permits them to smoke to a lesser extent.

6.2.3. Environmental factors

The third objective was to establish the influence of environmental factors contributing to cigarette smoking among students at university in South Africa. The measurement of this objective was based on one indicator namely; environmental factors. The major finding was that most students strongly agreed that availability of cigarettes in every corner of the campus made them smoke, lack of rules prohibiting smoking, new environment without parents and guardian, regular adverts of cigarettes on mass media and social media, lack of anti-smoking posters make students to smoke and observation of other students smoking encourages cigarette smoking. All these are environmental factors influencing students to smoke cigarettes at the University of Venda in South Africa.

6.2.4. Knowledge of health effects regarding cigarette smoking

The fourth objective of the study was to establish knowledge about the health effects of cigarette smoking among students at the University of Venda. The measurement of this objective was based on one indicator namely; awareness of health effects of cigarette smoking. The major finding was that most students were very much aware that smoking causes lung diseases, lung cancer, heart diseases, hypertension, infertility problems, affect unborn babies, causes malnutrition, cause wound healing delays, secondhand effect and triggers asthma. All these are health effects of cigarette smoking likely to be experienced by students if they continued smoking.

6.3. Conclusion of the Study

The study found that there exists a positive association between smoking status and health consequences and smoking status and demographic factors. Individual factors, socio-cultural

factors, and environmental factors influence cigarette smoking among students at the University of Venda.

6.4. Recommendations of the study

On the basis of the above conclusions, the following recommendations were made about factors contributing to cigarette smoking.

6.4.1 Recommendations for policy makers

- Banning of cigarette smoking in public places and the implementation of stiffer measures to control the availability and accessibility of cigarettes to the community could reduce smoking among young people.
- Strict policies should be enacted to handle smoking issues in the country; the Department of Health must intensify its anti-drug campaigns in order to have smoke-free society with a special focus on the young people.
- The government should prevent selling of cigarettes to students in shops and other places near the schools which would be in line with the laws of South Africa.
- The government and concerned parties should make concerted efforts in restricting the spread of the ban of cigarette smoking among our youths through awareness programmes.
- The government should impose taxes on cigarettes to increase cost of production and consequently increases prices of tobacco and discourage its use.
- The ministry of health working with other ministries and youth organizations should establish committee to be concerned with tobacco as a public health problem.

6.4.2. Recommendations to the tertiary institution

- There is therefore a need for the institution to integrate health education program in the basic study programs, to address the knowledge gap and risk behaviors of cigarette smoking.
- There, should be an implementation of a health education programmes at tertiary institutions that are aimed at creating awareness and imparting life skills that are necessary for critical thinking, conducive to constructive peer relations and healthy lifestyles.
- The study recommends universities to install anti-smoking signage on all university premises to ensure a smoke free environment aimed at protecting students from being exposed to cigarette smoking.

- The study suggests that universities provide educational programmes that teach health risks of cigarette smoking and the skills that are necessary to protect students from being tempted to smoke cigarettes.

6.4.3. Recommendation for students/ community members

- Parents should be aware of their youngsters and their friends.
- Adults in our schools and universities where young people are commonly found should set good examples by role modeling the youths.
- Religious organizations such as churches and mosques should fight against cigarette smoking in the form of preaching.
- Parents should teach their youngsters on the effects of cigarette smoking on their health, society and human dignity, since charity begins at home.
- Students should choose their friends wisely and be able to distinguish between what is right and what is wrong.
- Declaring the University of Venda's campus as a "tobacco free zone" will help to protect students from exposure to both active and passive smoking

6.4.4. Recommendations to Campus Health Authorities

- Health promotion practitioners on campus need to conduct youth-friendly adverts that discourage young people from cigarette smoking and encourage those already smoking to quit smoking.
- Another recommendation is that there should be a department at the university that is in charge for counseling of stressed students and policies should be formulated that are aimed at preventing depression among university students.

6.4.5. Recommendations for further research

The study tried to establish factors contributing to cigarette smoking and its health effects among students at university in South Africa attempting to bridge the gap in knowledge that exists. The study achieved its aims and objectives although only focused on one South African a University. There is need to conduct the study using many universities in South Africa in attempt to compare the findings. Hence, there is need to conduct a comparable study which will attempt to unravel the role of the government in the fight against cigarette smoking in the area.

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APPENDICES

APPENDIX 1: INFORMATION SHEET

INFORMATION SHEET

My name is **Mervis Thendele** student number 11613094 currently registered for Masters in Public Health under the Department of Public Health, in School of Health Sciences at University of Venda. I am conducting a study entitled **Factors contributing to cigarette smoking and its health effects among students at university in South Africa**. The main purpose of the study is to investigate factors contributing to cigarette smoking among students at the University of Venda.

I hereby request you to be my participant in my research project. There will be no direct benefits to you for your participation in this study. The research project may inform the university authorities to create a smoking free environment, and may reduce risk of diseases caused by second smoking. It may also provide information that will assist health planners to design effective substance abuse programmes that eliminates risk diseases caused by smoking.

Hence there will be no direct benefits to you for your participation in this study. I assure you that any information obtained from you will be treated as confidential. Your participation in this study is voluntary and your decision to take part in this study will have no negative impact on your life or health and you are free to withdraw from the study should you feel uncomfortable with the way the study is being conducted.

APPENDIX 2: CONSENT LETTER

I Mervis Thendele hereby, invite you to participate in this study. Please note that any information you will provide will be handled with utmost confidentiality and will not be revealed by to anyone without your consent. Participation in this study is voluntary and this implies that you are free to withdraw any time should you feel uncomfortable or threatened during the study.

Signature of researcher..... Date.....

I Have read and understood the contents and terms of this invitation to participate in this study. I hereby declare that I am voluntarily participating in this research.

Respondent signature..... Date.....

For more information contact: mevisthendele@gmail.com. Cell number 0764632757

APPENDIX 3: PERMISSION LETTER

The Director (Student Affairs)

University of Venda

Private Bag X5050

0950 Thohoyandou

27 June 2017

Dear Sir/ Madam

RE: REQUEST FOR PERMISSION TO CONDUCT A STUDY

My name is Mervis Thendele, a student in the Department of Public Health in the School of Health Sciences at the University of Venda. I wish to request for permission to conduct a study entitled "Factors contributing to cigarette smoking among students at the University of Venda".

The study is purely academic and all information collected will be used for the purpose of this study and will not, in anyway, affect students relationship with other students or university management.

Hope you will find this in order and thank you for your favorable response.

Mervis Thendele

mervisthendele@gmail.com/0764632757

APPENDIX 4: THE QUESTIONNAIRE

Instructions:

Please complete the following questionnaire

Do not write your name or number.

Participation in this study is voluntary and all the information provided will be treated with utmost confidentiality.

Respondent`s code (*For official use only*)

Section A: Biographical information

1. Age (Please tick)

Age group	Code
17-20 years	1
21-25 years	2
26-35 years	3
36 -40years	4

2. What is your gender?

Gender	Code
Female	1
Male	2

Race

Race	Code
Black	1
White	2
Indian	3
Coloured	4

4. What is your marital status?

Marital status	Code
Married	1
Never married	2
Divorced	3
Widow	4

Widower	5
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5. Religion

Denomination	Code
Christianity	1
Traditional	2
Islamic	3
Hinduism	4
Other	5

6. What is your level of study?

Level of study	Code
First Year	1
Second Year	2
Third Year	3
Fourth Year	4
Post graduate	5

7. Which school are you registered in?

School/faculty	Code
Education	1
Human and Social Sciences	2
Mathematics	3
Agriculture	4
Management	5
Environmental sciences	6
Law	7
Health Sciences	8

Indicate the degree

.....

.....

8. Where do you currently live?

Residence	Code
At home	1
On Campus	2
Rental rooms	3

If you reside at home, whom do you live with?

.....

.....

9. What is your source of pocket money?

Source	Code
From parents	1
Sbux	2
Bursary	3
Working	4

8. How much pocket money do you get as a student?

Amount	Code
Don't receive money at all	1
R500-or less	2
R501-R1000	3
R1001-R1500	4
R1501 and above	5

9. How often do you receive pocket money?

Frequency	Code
No money	1
Weekly	2
Bi-weekly	3
Monthly	4
Bi-monthly	5
As and when there is money	6

10. Do you smoke cigarettes? Please tick any applicable one

Smoking status	Code
Yes	1

No	2
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SECTION B: Individual/Personal factors contributing to cigarette smoking among students

12. To what extent do the following individual/personal factors influence you to smoke cigarettes?

Read each statement and tick the appropriate box	Strongly Agree 1	Agree 2	Disagree 3	Strongly disagree 4
The belief that smoking enhances my performance in studies.				
The belief that smoking enhances expression of freedom.				
Experiencing depression due to personal problems.				
Experiencing stress due to heavy academic workload.				
Having role models who are smokers.				
The perception that smoking makes me believe in myself				
The belief that smoking cigarettes makes me lose weight				
Lack of knowledge on the effects of smoking on one's health.				

Section C: Socio-cultural factors contributing to cigarette smoking among students.

13. To what extent do the following socio-cultural factors influence students to smoke cigarettes?

Read each statement and tick the appropriate box	Not at all (1)	Little extent(2)	Moderate extent(3)	Great extent(4)	Very Great extent(5)
Attending number of social events like bashes every weekend influences students to smoke.					
Having friends who smoke influences students to smoke cigarettes.					
My culture permits me to smoke					
Living with family members who smoke cigarettes makes me smoke cigarettes.					
Living with a roommate who smokes influences students to smoke cigarettes.					
Living in a community which endorses public smoking encourages me to smoke cigarettes.					
My medical problems make me to smoke.					
Smoking cigarettes helps me to have friends and extended social interactions such as dating.					
My religion makes me to smoke					

Section D: Environmental Factors contributing to cigarette smoking among students.

14. To what extent do the following environmental factors influence students to smoke cigarettes?

Read each statement and tick the appropriate box	Strong Agree	Agree	Disagree	Strongly Disagree
No rules prohibiting cigarette smoking on campus makes students to smoke				
Loose draws and packets of cigarettes are sold in each and every corner on campus makes students to smoke.				
New environment with no parents makes me smoke cigarettes.				
Regular adverts on cigarettes during bashes make me smoke				
There are no anti-smoking posters prohibiting cigarette smoking within campus.				
Observation of other students smoking everywhere encourages me to smoke				

Section E: Health consequences of cigarette smoking.

15. To what extent does students smoking cigarettes affects your health?

Read each statement and tick the appropriate box	Completely unaware 1	Slightly aware 2	Quite aware 3	Much aware 4	Very Much aware 5
Cigarette smoking causes lung diseases for example chronic bronchitis.					
Cigarette smoking causes lung cancer					
Cigarette smoking worsens heart diseases					
Smokers are more likely to develop hypertension.					
Cigarette smoking can cause infertility to both males and females.					
Cigarette smoking can affect the health of the unborn baby					
Cigarette smoking can contribute to malnutrition					
Cigarette smoking can delay wound healing.					
Smoking cigarette can affect the health of the smoker and the people who might come into contact with the smoke.					
Cigarette smoke triggers asthmas					

