FACTORS THAT INFLUENCE SMOKING AMONG SECONDARY SCHOOL STUDENTS IN ILALA MUNICIPALITY

BY

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CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by the University of Dar es Salaam a dissertation titled: **"Factors that influence smoking amongst secondary school students in Ilala Municipality**" in partial fulfillment of the requirements for the degree of Master of Public Health.

.....

Prof. E. MUHONDWA
(Supervisor)

Date.....

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I , **Ssanyu Sylvia Nyinondi**, declare that, this dissertation is my own original work, unless specifically indicated in the text. It has not been presented and will not be presented to any other University for a similar or any other degree award.

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DEDICATION

I dedicate this work to my parents Eustard and Monica Nyinondi, my daughter Monica and niece Catherine

ABSTRACT

In the wake of increasing tobacco consumption amongst young people globally, this study set out to investigate factors that influence smoking among secondary school students in Ilala Municipality. This was a cross sectional descriptive study that involved a random sample of 275 students from five secondary schools in Ilala. The subjects involved in the study were in form three to form six. Semi structured questionnaires were used for gathering data.

The results showed that 22.1% of students had experimented with cigarettes and 4.1% of the total sample population was current smokers. The mean age for initial smoking was 14 years and curiosity was given as the main reason to start experimenting with smoking. The proportion of students reported to have started smoking at home was 41%. Ever smoking was highly associated with having a classmate, a close friend and a sibling who smokes, high daily allowances and low parental education.

The findings indicate that experimenting with smoking is common amongst students due to interaction of various interpersonal and environmental factors. It was also evident that students know that smoking is harmful but have mixed perception of what exactly are the dangers of smoking. It is recommended that more information be provided to the students on the dangers of smoking.

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LIST OF ACRONYMS

AIDS	**Acquired Immunity Deficiency Syndrome**
AMMP	**Adult Morbidity and Mortality Project**
CDC	**Centre for Disease and Control (US)**
ETS	**Environmental Tobacco Smoking**
FCTC	**Framework Convention pf Tobacco Control**
HIV	**Human Immuno Deficiency Syndrome**
INWAT	**International Network Of Women Against Tobacco**
MOH	**Ministry of Health (Tanzania)**
RITC	**Research on International Tobacco Control**
WB	**The World Bank**
WHO	**World Health Organization**

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CHAPTER 1: INTRODUCTION

1.1 Background

Tobacco epidemic is described as a global crisis, it is one of the two major causes of death and still growing, the other one being HIV AIDS (Asma et al, 2001).

Cigarette smoking, consumption of other tobacco products and exposure of tobacco smoke to non smokers are the world leading preventable cause of death responsible for about 5 million deaths a year, mostly in poor countries and poor populations (WHO, 2003). Environmental tobacco smoking (ETS) increases adult mortality from lung cancer by 20-30%. It is estimated that 710 million children live in households where someone else smokes (WHO 1997, WHO 1999)

The number of smokers worldwide is estimated to be 1.3 billion people, 84% of these smokers living in developing countries (WB, 2003). In these countries an increase in number of smokers is a result of low levels of awareness of the health risks associated with tobacco use, compounded by the long-time lag between the cause and effects of tobacco use as well as by aggressive tobacco industry advertising using free market policies (RITC 1999, WB 2003).

One of the major concerns in the cigarette consumption issue is the fact that the proportion of young people taking up smoking has been shown to be on the increase. It is estimated that the number of children and young people taking up smoking every day is between 68,000 and 84,000 for low and middle-income countries around the world (Chaloupka, 2003). The Global Youth Tobacco Survey launched in 1998 by WHO has released findings which show that 1 in 5 school children in developing countries smoke

and these are children aged between 13 to 15 (WHO, 2002). Of the children who smoke, 25% start before the age of 10 (Crabb, 2003)

The prevalence of smokers in Sub-Saharan Africa is 6% and it is said to be lower as compared to other region (WB, 1999). However, populations in these countries use other forms of tobacco such as snuff and chewed tobacco at higher rate than the manufactured cigarettes (Saloojee, 2001).

Studies have been done with regard to smoking amongst secondary school students in different Sub Saharan African countries. Zimbabwe reported a 25.5% rate of smoking among form four students (16/17yrs) in 1996 (Guthrie T. et al, 2001). In Nairobi the smoking prevalence is reported to be 17% (Kwamanga et al, 2003). Studies in Dar es Salaam reported a 1.6% prevalence rate amongst secondary school students (Mbatia, 1996). In some of these countries the prevalence is fairly high which portends a lifetime addiction for a large number of people, half of whom will die of tobacco related illnesses (Warren et al, 1999).

1.2 Tobacco control

The effectiveness of comprehensive tobacco control policies in reducing the level of tobacco use has been demonstrated in both developed and developing countries. However, tobacco control remains a low priority in many developing countries and most tobacco control research takes place in developed countries (RICT, 1999)

Amongst the world best control policy are Canada with a policy on the health warning covering half the pack and South Africa where a substantial tax increase has cut

smoking from 33% to 27%. In Malaysia tobacco advertising and promotion activities are totally banned (Laux 1999, Krishnan et al 2003).

In the year 2003, the World Health Assembly adopted the WHO Framework Convention on Tobacco Control (FTCT) (WHO, 2004). This is the first international treaty that mainly asserts the importance of demand reduction strategy. Some of the measures advocated in this treaty are eliminating all forms of trade in tobacco, implementing legislations against sales to minors and advertising (aiming at eliminating all advertising and sponsorship within five years and requiring a warning label of at least 30%), price and tax measures to reduce the demand for tobacco, protection from exposure to tobacco smoke, regulation on content and labelling of tobacco products and education, training and public awareness (WHO, 2004)

There have been regional movements to support the FCTC. These include the Nairobi Declaration on Tobacco Control Policy and Programming in the African Region, the Johannesburg Declaration on FCTC and the Commonwealth move to support the FCTC. The major component in all these movements is the recognition that smoking is increasing amongst the young people and women and that this trend has to halt before it gets worse. There are also in some countries antismoking groups such as Non Governmental Organisations, women groups, youth groups, economists and environmentalists who have played a key role in tobacco control (WB, 2003)

The first tobacco control policy in Tanzania was passed in February 2003 (Tobacco Product Act, 2003). This enforces some global measures in tobacco control such as, a warning label on the pack, banning of TV and newspapers advertisements, prohibiting

sale to minors and near schools. However, Tanzania is one of the major tobacco leaf producers with the product accounting for about 10% of the total earning from 1990 to 1997 (Machang'u, 2001). This brings about a big challenge to the implementation of tobacco control policies.

To a country like Tanzania, and other developing countries, an increase in the number of smoking related illnesses can also be interpreted in terms of an increase in a burden of disease to the highly strained health system. The use of tobacco results in a loss of $200bn to the health systems with half the losses occurring in developing countries (WB, 2001). The families of smokers are also burdened as a result of ill health, costs of healthcare and premature death. Studies done by Adult Morbidity and Mortality Project in (AMMP) in Tanzania have shown smoking to be a significant risk factor of death among persons ageing 15yrs and above in Kilimanjaro region (MOH, 1997)

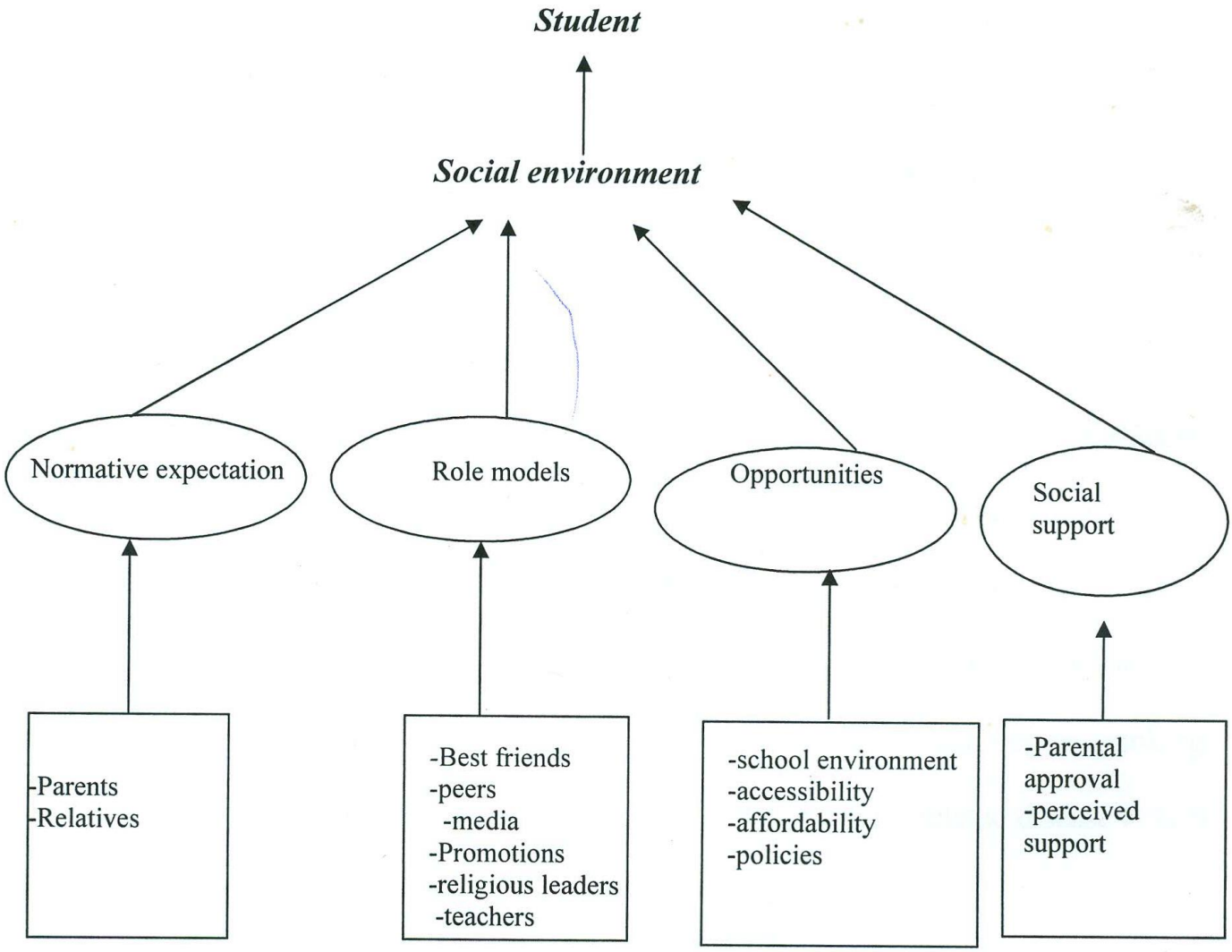
1.3 Conceptual Framework

Researchers investigating the aetiology of young people's substance use propose as interaction approach to use in which an individual is thought to develop a reciprocal interaction with the environment (Richardson et al, 2002). The theory of Social Learning (Bandura, 1977) places an individual in a social context and explains that young people acquisition of behaviour is based on a web of interpersonal and social relationship in which an individual is placed. The immediate environment for the young comprises of their best friends, parents and siblings, then followed by the peers, relatives, teachers and

further away the societal leaders, media and community policies (Perry, 1999). These levels can be explained by the following factors,

- Role models- young people imitate people they consider as role models. They also engage in a smoking behaviour to feel accepted by people they value such as their peers or best friends.
- Normative expectations- if the smoking is perceived as a norm in a community then the young will adopt it easily.
- Opportunities/ Barriers- if there are no barriers to smoking say from parents or at the school environment, or if cigarettes are cheap and accessible then the young people can easily engage in smoking.
- Social support- If these young people get encouraged by others to smoke or if they perceive that they have approval from parents they can start smoking.

For a student these factors can be explained in the framework below



1.4 STATEMENT OF THE PROBLEM

There is a need to determine the specific environmental factors that influences smoking amongst Secondary school students in Tanzania. The students in cities like Dar es Salaam are prone to smoking due to the fact that there is a lot of material in the media that glorify smoking. This comes as advertisements, films and cigarette promotion activities. In addition to that the students have peers or role models who smoke which further expose them to smoking behaviour. Cities are also characterised with numerous

places where students can purchase cigarettes and higher cash flow as compared to rural areas thus making cigarettes more accessible to students.

The research questions, which the proposed research seeks to address, are; what are the smoking patterns of student? Do the students have role models who smoke? What do they perceive as a healthy lifestyle in relation to smoking? What are the students' beliefs towards smokings?

1.5 RATIONALE

Knowledge of specific environmental factors will reveal factors that predispose students to smoking, information the students have on cigarette smoking and the knowledge on why students start smoking in the first place. All these will enable health promoters to formulate effective interventions aimed at curbing smoking behaviour. This in the long run will help reduce smoking related diseases. The younger a person begins smoking, the more likely he or she will be addicted and develop a smoking -related disease in later life (Giovino et al, 1994).

1.6 Broad Objective

To determine the socio-environmental factors that may influence smoking amongst secondary school students in Ilala Municipality.

1.7 Specific Objectives

1. To describe the student's smoking pattern
2. To determine the student's role models smoking status.
3. To assess student's beliefs towards cigarette smoking.
4. To determine students perception of a healthy lifestyle as related to smoking

CHAPTER 2: LITERATURE REVIEW

The World health organisation defines adolescence as 10 to 19 years old, youth as 15 to 24 years old and young people as 10 to 24 years old (UN, 1999). The secondary age group in the study site is between 13-22 years (Ministry of Education, 2003). These are referred to in the study as young people.

Smoking usually start early in life, by the age of 10 years 30-50% of the children have experimented with cigarette smoking at least once or twice (Thomas et al, 1998). Before the young people realise it they find themselves hooked and unable to quit. Several studies have indicated that young smokers would like to stop the habit but do not know how to (Chaloupka, 2002)

Smoking initiation at an early age has also been shown to be the case in Tanzania where a large percentage of young people have an experience with drugs or substances like tobacco and alcohol at around 10 years (WHO 2002, Mbatia 1998, Mokiti 2001). The use of "legal drugs" especially cigarette is often leading to the other substance abuse such as use of cocaine. Hence the name gateway drug for nicotine (REPRO, 2001).

Most of the studies done in Tanzania are for selected groups of population such as an urban district, university students and are not highly representative of the whole population. However results from these studies show that tobacco prevalence in Tanzania can still be described as low, it is estimated that 27% of men and 5% of women smoke (Mugusi et al, 2002).

A cross sectional descriptive study done in Arusha amongst primary school students revealed a prevalence of 11.2% boys and 5.3% girls smokers. A similar study in found

that 4.7% boys and 2.3% girls in class six smoke (Mokiti 2001, Emblem 1998). Amongst secondary school students in Dar es salaam 1.6% were established smokers (Mbatia,1996). In these studies the age of onset was between 5 to 15 years. The major influencing factors were identified to be peer pressure and parental smoking. Other studies have shown there is a link between the connectedness of the family structure and smoking in young people (Richardson et al, 2002)

In Tanzania, the law prohibits advertising on television, however, highway billboards displaying young people enjoying cigarettes with slogans like "sportsman, ladha ya urafiki" (Sportsman, the taste of friendship) are on the increase and getting larger. They are all aimed at showing that smoking is part of the activities that friends share, a sign of sophistication and independence and prefer to use a language that young people can relate with such as a billboard with writings saying "Embassy *Hakika Imetulia* "(it's really cool). It is suggested that a 1 percent growth in advertising expenditures leads to a 0.18 to 0.24 percent growth in consumption (Annett, 2003).

Of recent years the so called diseases of the west are seen to be killing more and more people in the developing countries cardiovascular diseases being amongst them. One of the major risk factors mentioned in several studies in smoking (Kitange et al 2002, Mzileni et al, 2000, WHO 2003). The effects of smoking are also related to number of cigarette smoked, a young person who starts smoking very early in life runs a higher chance of dying of these smoking related illnesses e.g cancer of the mouth, lungs and cardiovascular diseases as compared to the one who quit or a non smoker (WB, 2003). Although in general boys smoke more than girls the risk of acquiring smoking related

diseases is higher in females than males. Female smokers have a four times chance of developing lung cancer than their male counterparts (Mbilima, 2003).

CHAPTER 3: METHODOLOGY

3.1 Study Design

This was a cross sectional descriptive study that was done over a period of two months. Research Instrument was an anonymous semi structured questionnaire that contained both open and close ended questions.

3.2 Study area

This study was conducted in secondary schools in Ilala Municipality in Dar es Salaam region. The district is bordered by the Indian Ocean to the east, the Coastal region to the west, Kinondoni municipality to the North and the Temeke Municipality to the South.

For administration purposes the municipality is divided into three divisions, which include Ilala, Ukonga and Kariakoo. It has 22 wards and 9 villages. The district covers an area of 210 sq. km with estimated population of 637,573 as per 2002 census data. Males are 321,903 and females 315,670. The average number of people in the household is 4.3.

There are 18 secondary schools in Ilala district out of which 7 are private and 6 are public schools and 5 seminaries (Tanzania Education Directory, 2003). Of all the secondary schools four are girls only and one a boys' only school. The total number of students is estimated to be 14423 (Basic Statistics, 2003)

3.3 Study Population

The study involved students in form three to form six in selected schools at the time. Smokers were identified as any student who was smoking at the time of the study and ever smoker as a student who had smoked or just tried to smoke but had stopped.

3.4 Sampling Procedure

The technique used was random selection of both schools and respondents. The schools were randomly selected; the school names were written on a piece of paper, folded, shuffled and put in a box. An individual was asked to pick the five pieces of paper corresponding to five secondary schools. The schools selected for data were Shaaban Robert Secondary School, Kisutu Girls Secondary School, Al Haramain Islamic College, Cambridge Academy and Benjamin Mkapa Secondary school.

In each secondary school 55 students were interviewed. The students were randomly picked from the student registers using table of random numbers. A starting point was blindly selected from the table of random numbers. Fifty five names were then picked from students registers for each school using numbers read from the table of random numbers. The students were then called for interview and those who were not available at the time were followed up another day. Cambridge Academy had a small number of form four students so more forms threes were selected.

3.5 Sample size

Sample size is calculated using the formula

$$n = \frac{z^2pq}{d^2}$$

Where n = sample size

z = Standard normal deviate = 1.96

q = 100 – p

d = margin of error = 0.05

p = prevalence of students smokers 20% -Sub Saharan Africa (GYTS, 2000)

$$n = \frac{1.96^2 \times 20 \times (100 - 20)}{5^2} = 256 \text{ students}$$

A 10% increase on the minimum sample was done to cater for sampling problems and misinformation. The working sample was 275 students

3.6 Data Collection and Management

3.6.1 Case definition

The cases were secondary school students in form three to form six. Both male and female students were involved in the study.

Smokers were defined as any student who smokes at least one cigarette a day (WHO, 1995)

Non Smokers are those who at the time of study were not smoking at all, including those who ever smoked and the ex smokers

Ever smokers were students who have ever smoked a cigarette or have even just tasted.

3.6.2 Quantitative Data Collection

The research assistant was instructed and tested in advance to see if he has understood the questions to avoid mishandling of the respondents. Statisticians and epidemiologists and lecturers were consulted during proposal preparation, data collection and analysis as the need arose.

The questionnaire contained 5 sections corresponding to objectives. These sections included:

Background section

Age, sex, grade level, place of residence, religion, parental education

Information on smoking habit

smoking or not, where do they smoke, why do they smoke, why don't they smoke, who do they smoke with, what brand do they smoke, accessibility, affordability, where did they first hear of the brand they smoke. What interests them in particular?

Role models

Smoking status of parents, teachers' religious leaders, best friends other influential figures.

Belief's on cigarette smoking

Questions covering what students, parents and communities think about smoking, their belief's regarding ailments caused by smoking and who should smoke and who shouldn't, and why.

Perception of a healthy lifestyle

What are their extracurricular activities, who can be affected by smoking, who gets addicted.

3.6.3 Research assistants

The principal researcher conducted this study with the help of one research assistant. Research assistant selected was a young person familiar with the situation in the secondary schools in Dar es Salaam. After selection, a research assistant was trained for two days. The training involved; -

a. Brief explanation about the study, its objectives and smoking in general.
b. In depth discussion about questionnaire, discussion about each question, how to ask the questions and how to record responses.
c. How to introduce one to study subject, how to assure confidentiality and how create rapport and maintain it.

The questionnaire was pre-tested with ten young people before being applied in the field.

3.7 Data management

After each working day the investigator met with the research assistant to go through the data collected that day. Mistakes were corrected and problems worked on before the next working day.

3.8 Data analysis

The data was entered daily in the computer program. Open ended questions were first coded before results being entered. Other questions' results were entered as they were in the questionnaires. EpiInfo 2002 was used to process and analyse the data.

3.9 Ethical consideration

Ethical clearance was obtained from Muhimbili University College of Health Sciences ethical committee.

The Ministry of Education and Culture, local government in Ilala Municipal Council and concerned schools, gave their consent before the study was affected.

The students selected to join the study were requested to give their own consent.

Students were interviewed in privacy and teachers were asked not to be around while the interview was going on. This was done to ensure confidentiality and to put students at ease and free to answer the questions.

3.10 Limitation of the study.

1. Students were asked to recall their past experiences and this could have led to underreporting on some of the issues.

CHAPTER 4: RESULTS

4.1. Introduction

This chapter presents results of data collected from the field survey on factors that can influence smoking amongst secondary school students in Ilala municipality. The results are presented in tables, histograms and pie charts. Analysis was done using the Epi Info program. The study covered 275 respondents in five secondary schools in the municipality.

In order to present research findings data were grouped into five categories with four of them corresponding to the research questions. The categories were

1. The background information of the respondents covering age, place of resident, grade, sex, religious affiliation and family structure.
2. The smoking status of role models which included significant others and movie stars, musicians and cigarette advertisements.
3. The smoking pattern of the students which included questions on who is an ever smoker and a current smoker, where they smoke, why they smoke, with whom they smoke and how much.
4. The beliefs student bear regarding smoking which covered how their communities view smoking, how students feel about smoking and what ailments they attribute to smoking if any.
5. The perception of a healthy lifestyle in relation to smoking covering issues on addiction and what they think of the warning of the cigarette pack.

4.2 Socio-demographic characteristics of the respondents.

Table 1: Socio-demographic characteristics of the respondents by gender

Characteristic	Male N=125	Female N=150
Grade		
Form three	58 (46.4%)	53(35.3%)
Form four	27 (21.6)	58(38.7%)
Form five	19 (15.2%)	26(17.3%)
Form six	21 (16.8%)	12(8.7%)
Age group		
13-16	15 (12%)	40 (26.7%)
17-19	80 (76%)	95(63.3%)
20-22	30 (24%)	15(10%)
Religion		
Christians	56 (54%)	81(54%)
Moslems	61 (48.8%)	62(41.3%)
Other	8 (6.4%)	7(46.8%)
Family structure		
Both parents	73 (56.4%)	84 (56%)
Single parent	22(17.6%)	35 (23.3%)
Relatives	27(21.6%)	29 (19.3%)
Other	3 (2.4%)	2 (1.3%)
Parental education		
Tertiary education	62 (51.2%)	89 (59.3%)
Secondary education	41(32.8%)	49 (32.7%)
Primary education	17 (13.6%)	9 (6.1%)
None	3 (2.4%)	1 (0.7%)

4.2.1 Gender

Of the 275 students interviewed 54.5% were female and 45.5% male.

4.2.2 Age

The students were grouped into three main age groups as indicated in Table 1. The mean age of students was 17.9 and standard deviation of 1.6. Over half of the interviewed students (63.3% female and 76% males) were of the age group 17-19 years, the smallest group were the older ones aged between 20 to 22 years.

4.2.3 Grade

A higher proportion of the male students was in form three (46.4%) and for the female students was those in form four students (38.7%). In both groups form six students were the minority.

4.2.4 Respondents religion and family structure

A question was asked on the respondents' religion. The results presented in Table 1 show that the proportion of Moslems amongst the boys was higher than that of other religions (48.8%) and amongst girls Christians formed the majority (54%).

As seen in Table 1, over half of the students lived with both parents (58% for girls and 58.4% for boys) and an overall of 3.7% lived in the hostel.

4.2.6 Parent/Guardian Education level

The students were asked a question on the education level of the head of the family.

Over half of the respondents reported their head of the family to be a university graduate (42.5%). Only 0.7% of the female students and 2.4% of the male students reported to have a guardian or parent with no formal education at all.

4.2.7 Allowances

The students were asked a question about their daily allowances. These were grouped into different categories.

The findings show that over half of the male respondents (52.4%) and 46.7% of the female students were given between 100 and 500 Tanzanian shillings daily. There were some who reported to have no allowance at all (9%).

4.3 Smoking status of students' role models

Questions on the smoking status of the selected student's role models were asked to meet specific objective number two of this study. The questions were divided into two parts, the first part was about the role models in the students' community and the other part was about those in the outer environment. The findings are as indicated in the following subsections.

4.3.1 Smoking status of role models in the respondent's immediate environment

This study sought to find out if any of the following categories of people who are believed to constitute role models for the students smoked: The findings on family members showed that 14.9% of the students had a smoking parent and 18.5% had a brother or sister who smokes.

Of the religious leaders, 15.6% know of a religious leader who smoked in their community.

Students were also asked whether they had any friend who smokes amongst their four closest friends. It appears that almost half of the male students (46.4%) had a friend who smoked and for female students 18.6% had a close friend who smoked.

Table 2: Smoking status of students' close friends

Whether any of the four closest friends smoke	Male N=125	Female N=150
At least one smokes	58 (46.4%)	28 (18.6%)
None of them smoke	67 (53.6%)	122 (84.7%)

In the school environment, 30.2% had a classmate who smoked and 34% had a teacher who smoked.

4.3.2 Role models of outer environment

These included models featured in cigarette advertisements, musicians and movie stars. About three quarters of the students interviewed had a favourite cigarette advertisement. Sweet Menthol was the most popular cigarette advertisement amongst both boys and girls (33.6% and 54.6% respectively). See Table 3

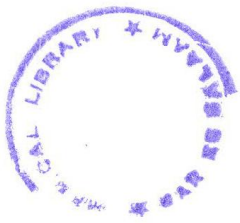

LIBRARY

Table 3: Cigarette advertisement which students find most appealing

Advertisement	Male N=125	Female N=150
Embassy	11(8.8%)	10 (6.6%)
Sportsman	30 (24.0%)	19(12.7%)
Sweet Menthol	42(33.6%)	82(54.6%)
Other*	7(5.6%)	4(2.7%)
None	35 (28%)	35(23.3%)

*Other advertisement mentioned included Aspen and King Filter

The students gave several reasons as to why they find the advertisements appealing. These are presented in Figure 2 below. The findings appear to indicate that most of the students who liked cigarette adverts think those models are having fun (26%) and they also find the slogan interesting (23%).

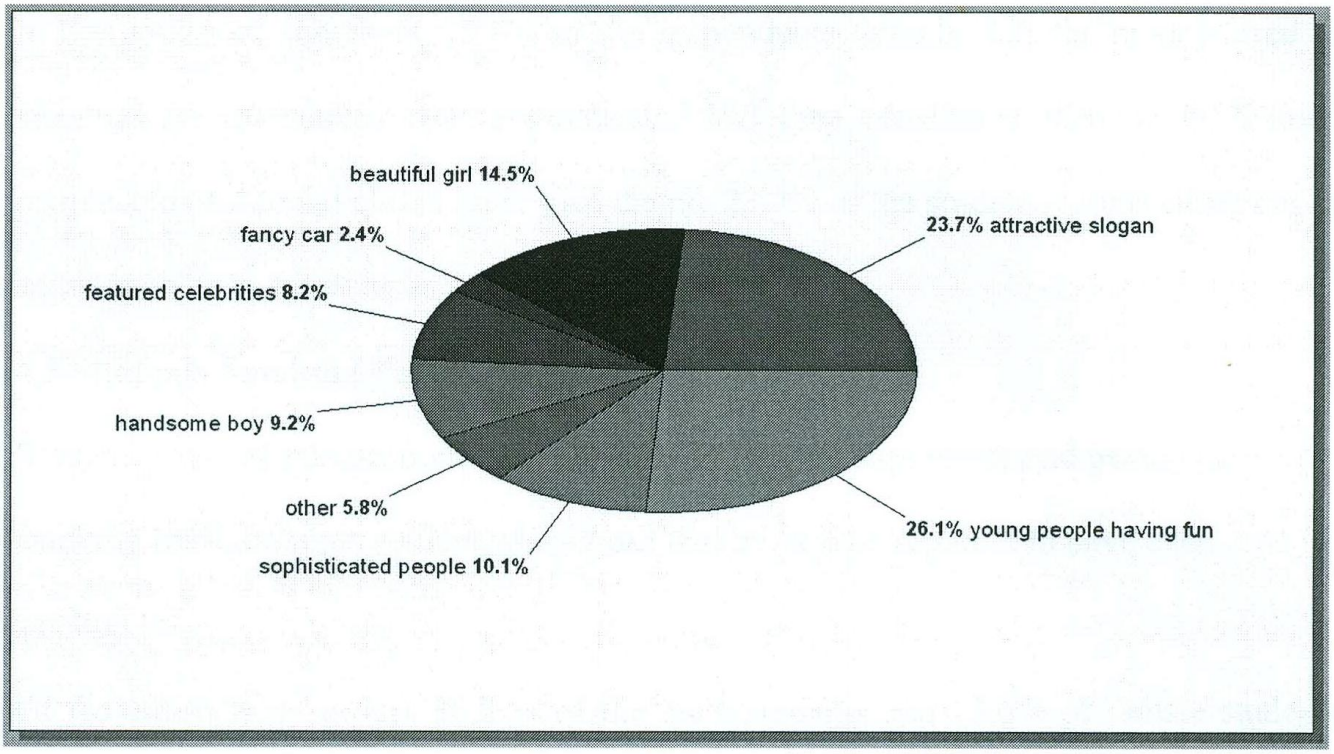


Figure 1: Reasons why students find cigarette advertisements appealing

Students were also asked whether their favourite movie and music video have a smoker. The findings indicated that 41.5% of students' favourite musician smoked and of those 74.5% were western music videos. It was also reported that 37.8% of the students' favourite film had a starring who smoked with 81.9% of the films being of western origin. A larger proportion of boys 44.6% seem to favour smoking musicians as compared to 39.3% of the girls. The findings are presented in Table 4 below.

Table 4: Proportion of students whose favourite music video has a smoking actor

Whether Musician smokes	**Male N=125**	**Female N=150**
Yes	55(44.6%)	59 (39.3%)
No	70 (56.0%_	91 (60.2%)

In this group of questions, 29.8% of the respondents thought that the models used in cigarette advertisements were sophisticated and they considered them to be learned people and of a social class higher than theirs. 23.7% of the students found musicians or actors who were smoking as attractive and classy.

4.3 Students Smoking Pattern

Students were asked questions that aimed at finding the experience and pattern of smoking habit amongst student who smoke and those who reported to have ever smoked.

Of the entire study group, 35.2 % of the male students and 12.6% of female students reported to have ever smoked (Table 5). Among the ever smokers, 19.0% still smoke (Table 6) which constitutes 4.4% of the entire sample population. This is made up of 18.2% of all boys who had ever smoked and 21.2% of female students who had ever smoked.

Table 5: Proportion of students who had ever smoked

Whether the student ever smoked	Male N=125	Female N=150
Yes	44 (35.2%)	19(12.6%)
No	81 (64.8%)	131 (87.3%)

Table 6: Proportion of current smokers amongst students who had ever smoked

Whether the student still smoke	Male N=125	Female N=150
Yes	8(18.2%)	4 (21.2%)
No	36 (81.6%)	15 (78.9%)

4.3.1 Age at which students smoked for the first time

The age at which students first smoked ranged between 7-20 years with a mean of 14 and standard deviation of 3. To present the findings the initiation age was grouped in five categories as shown in Table 7.

Table 7: Smoking initiation age

Start age	Male N=44	Female N=19
7 -10	7(15.9%)	5(25.4%)
11 - 13	9(20.5%)	2(10.5%)
14- 16	17(38.6%)	6(31.6%)
17-19	11(25%)	5(26.3%)
20	0	1(5.3%)

A higher proportion of girls started experimenting with smoking at a younger age as compared to boys. Most of the students seem to have tried to smoke after the age of thirteen years.

4.3.2 How students acquired their first cigarette

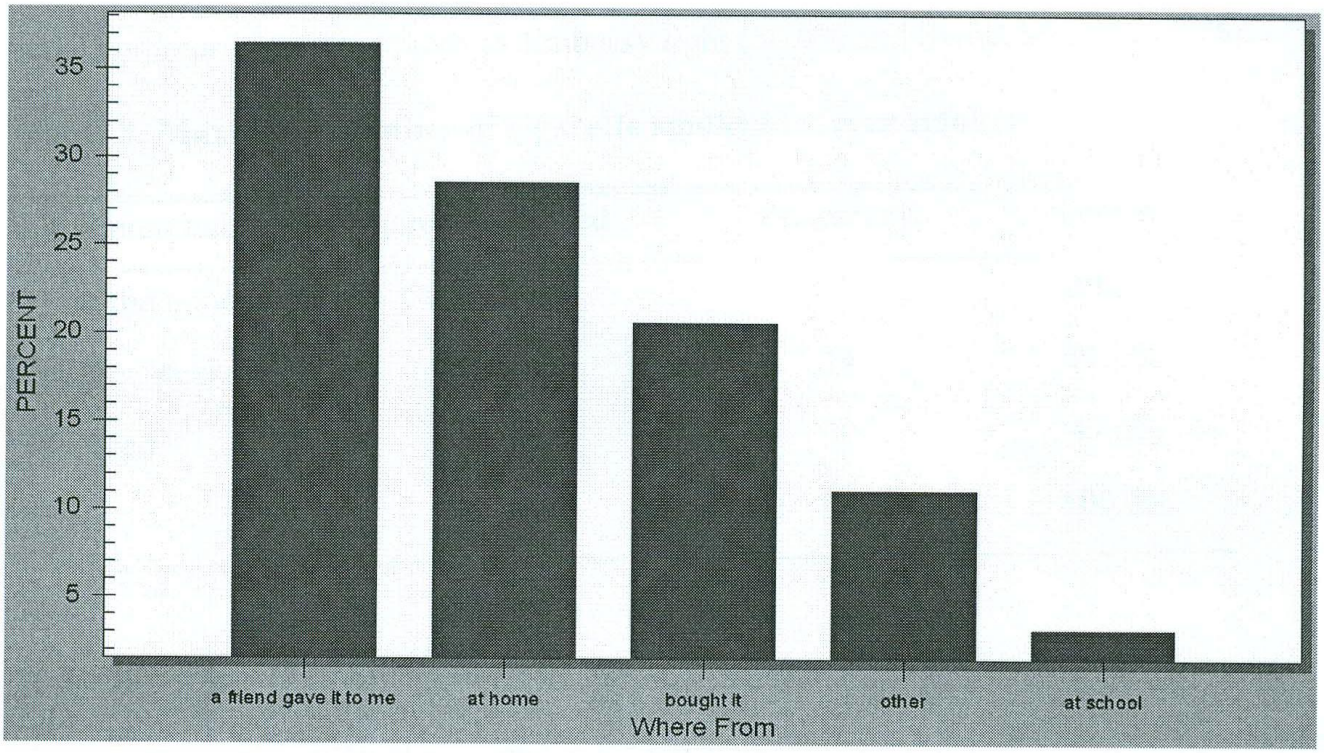


Figure 2: Places where students got their first cigarettes.

As indicated in Figure 3 above, the majority of the students reported to have been given the cigarette by a friend (39.7%) followed by those who found the cigarette at home (28.6%) and those who bought it (20.6%).

4.3.2 Reasons why students' smoke

The students cited curiosity as the main reason why they smoked the first time (50.8%) and the other group (22.2%) were those who were asked to light the cigarettes by their friends or family members.

58.3% of current smokers reported that they smoke because it is refreshing and relaxing. Of the ever smokers, the majority (47%) reported to have just tried smoking once. However 30.3% of them continued to smoke more than one cigarette per week and

22.2% smoked at least one cigarette per week (Table 8). The current smokers report the most common cigarette brands as Embassy light (50.0% and Sweet Menthol (33%).

Table 8: Maximum number of cigarette smoked by ever smokers

Maximum number of cigarettes smoked	Frequency	Percent
More than one per week	19	30.2%
One per week	14	22.2%
Just tried	30	47.6%
Total	63	100.0%

4.3.3 Place where students smoke

To get an insight on smoking venues for students they were asked to state places where they usually smoke or smoked for the first time. Table 9 presents these findings. It shows that 49% of the ever smokers reported to have had their first experience with smoking at home followed by 22.8% who smoked for the first time with friends. Of the current smokers the majority smoked anywhere (33.3%) and about 25% smoke at home.

Table 9: Places where students smoked for the first time

Place where first smoked	Frequency	Percentage
At home	31	49.2%
At school	6	9.5%
with friends	18	28.6%
other	8	12.7%
Total	63	100.0%

4.3.4 Reasons why students quit smoking

The majority of students just tried to smoke once and stopped (47.1%). This was followed by those who mentioned that cigarettes are harmful to them and has no benefit (33.3%). About 11.8% mentioned parental disapproval as the reason to quit.

Table 10: Reasons for quitting

Reason student stopped smoking	Frequency	Percentage
Bad smell	1	2.0%
Expensive	3	5.9%
Health reasons	17	33.3%
Just tried	24	47.1%
Parental disapproval	6	11.8%
Total	51	100.0%

4.3.4 Alcohol consumption

The students were asked to say if they take alcohol or not. This was necessary in order to see if there is any pattern in consumption of these two substances. Only 20% of the students reported to be current drinkers.

4.4 Students' beliefs towards smoking

The respondents were asked questions that would give an indication whether they or their community members believed smoking could be of any danger to them. 82.2% of the students said that they don't think anybody should smoke. The major reason given was that cigarettes are harmful (77.1%) and they cause a variety of health problems. The main health problems identified by the students were respiratory problems (52.4%).

Table 11: Ailments attributed to cigarette smoking by the students

Ailments	Frequency	Percent
Cancers	105	38.2%
Respiratory problems	144	52.4%
Teeth discoloration	6	2.2%
*Other	20	7.3%
Total	275	100.0%

*This included tuberculosis or all the three problems mentioned.

Students were asked why they think other students smoke. This question aimed at getting an insight into what the students feel is a major influence to smoking regardless of whether they were smoking or not at the time. Friend's influence was mentioned as the major contributing factor (62.4% boys and 64% girls) on why other student's start smoking, this was followed by advertising and promotion. The findings are summarised in Table 12.

Table 12: Students' opinion on why their peers smoke

Why students smoke	Male n=125	Female n=150
Advertisement and promotion	22 (17.6%)	23(15.3%)
Can afford it	3(2.4%)	5(3.3%)
Curiosity	12(9.6%)	19(12.7%)
Friend's influence	78(62.4%)	96 (64%)
Other (prestige, stupidity)	10(8%)	7(4.7%)

One third of the students (33.7%) felt that their communities did not perceive cigarettes as harmful and 23.2% thought that it is perceived as normal for a student to smoke in their communities. Most of the students reported that they wouldn't have liked to see their younger sister/ brother smoking (75%) and 21.2% reported that they would offer advise on the dangers of smoking to their siblings. Only 4% said they would do nothing to stop their siblings from smoking.

4.5 Perception of a healthy lifestyle in relation to smoking

This section relates to specific objective number four and it covered students' opinions on what they consider to be accepted smoking levels if any.

The findings show that the majority of the current smokers did not want to quit smoking (58.3%). Overall the students' population interviewed did not feel that it was easy to quit smoking (68.4%) and 73% believed that cigarette smoking is addictive.

Table 13: Students' opinion on whether cigarette smoking is addictive

Whether cigarette smoking is addictive	Frequency	Percentage
Yes	200	73.0%
No	74	27.0%
Total *	274	100.0%

* One record missing

Over three quarters of the students (85.5%) reported to have read the warning on a cigarette pack. Most of them were of the opinion that the warning applies to all smokers (76%), while some thought it applies to heavy smokers only (12.4%) and the remaining 7.3% noted that the warning applies to both smokers and non smokers.

4.6 Associations and variations among groups.

4.6.1 Gender and smoking

Amongst male students, the proportion of ever smokers was much higher (35.2%) as compared to the proportion of female students (12.7%). The difference was found to be highly statistically significant. ($p < 0.001$ CI 95%)

4.6.2 Smoking and parental education

There was a tendency of decreasing proportion of ever smokers as the parental /guardian education level increases. Those whose parents had no education or had primary education had a higher proportion of ever smokers (30%) while the lowest proportion was amongst those whose parents had tertiary education (Table 14). These findings were not statistically significant.

Table 14: Variation of smoking with parental/guardian education

Ever Smoked	Primary or None	Secondary Education	Post Secondary	Total
*Yes	9	21	32	62
	30%	23.3%	20.9%	
No	21	69	121	211
	70%	76.7%	79.1%	
Total	30	90	153	273
	100%	100%	100%	

Chi square 1.072 p>0.05 * one record missing

4.6.3 Smoking and student's grade

The students in lower forms smoked less than the older ones. The study found out that amongst the A level students 29.1% had ever smoked while in Ordinary level it was found to be 20.4%. However, the difference was not statistically significant.

Table 15: Association between smoking and student' grade

Ever Smoked	Ordinary Level	Advanced Level	Total
Yes	40	23	63
	20.4%	29.1%	
No	156	56	212
	79.6%	70.9%	
Total	196	79	275
	100%	100%	

Chi Square 2.41 p> 0.1101

4.6.5 Association between smoking and allowances

As indicated in Table 16 below, the tendency to smoke increased as the daily student allowances increased. Students who had a daily allowance of Tanzanian shillings 1001 were found to have a higher percentage of ever smokers (41.2%) than those who reported to have no allowance at all (12%). These findings though socially significant, were not statistically significant in this sample.

Table 16: Association between smoking and students' allowances

Ever Smoked	No allowance	Tshs. 100-1000	Tshs. 1001 and above	Total
Yes	3	46	14	63
	12%	21.3%	41.2%	
No	22	170	20	212
	88%	78.7%	58.8%	
Total	25	216	34	275
	100%	100%	100%	

Chi Square 0.317 $p>0.05$

Smoking and Family Structure

Table 17: Variation of smoking with the family structure

Ever Smoked	Living with Both parents	Living with Single Parents	Total
Yes	35	14	49
	22.2%	24.6%	
No	122	43	165
	77.8%	75.4%	
Total	157	57	214
	100%	100%	

Chi square 0.12 $p>0.05$

As indicated in the Table 17 above, the proportion of ever smokers was slightly higher amongst students who were living with single parents as compared to those living with both parents.

4.6.7 Ever smoking and role models smoking status

Student ever smokers who had friends and classmates who smoked did smoke more than those who didn't. The same goes for those who found models in the cigarette advertisements and videos sophisticated and attractive. However, family member smoking does not appear to have a direct relationship with ever smoking.

There was a highly significant relationship in the study between having a classmate who smokes and ever smoking. (39.8%) of students who had a classmate that smokes had ever tried smoking (Table 18). This is twice the proportion of ever smoked who had no smoking classmate.

Table 18: Association between having a smoking classmate and smoking behaviour

Ever smoked	Classmate smokes	Classmate not smoking	Total
Yes	33	30	63
	39.8%	15.6%	
No	50	162	212
	60.2%	84.4%	
Total	83	192	275
	100%	100%	

Chi square 19.04 $p< 0.01$

The results also revealed that having a close friend who smokes is highly associated with ever smoking among students. In Table 19, it is shown that 46.5% of the students with at least one close friend who had ever smoked were also found to have experimented with smoking compared to 12.2% of the other group. This difference was statistically significant.

Table 19: Association between students' smoking and having a smoking best friend

Ever smoked	At least one close friend Ever smoked	No close friend Ever smoked	Total
Yes	40	23	63
	46.5%	12.2%	
No	46	166	212
	53.5%	87.8%	
Total	86	189	275
	100%	100%	

Chi square 39.43 $p<0.01$

Of the whole student population interviewed 173 had a favourite music video or movie in which the starring was smoking. Ever smoking was more common (52.7%) amongst students who found smoking movie actors attractive than those who did not (12.7%) ($p< 0.001$). This relationship was highly statistically significant.

Table 20: Proportion of ever smokers who find film actors who smoke attractive

Ever Smoked	**Smoking actor attractive**	**Smoking actor not attractive**	**Total**
Yes	29	15	44
	52.7%	12.7%	
No	26	103	129
	47.3%	87.3%	
Total	55	118	173
	100%	100%	

Chi square 31.4 $p<0.001$

A substantial proportion of ever smokers had a brother or sister who smoked. There study results show that there is a significant relationship between those who had a smoking brother or sister and ever smoking. 41.7% of those who had a sibling smoking had ever smoked (Table 20).

Table 21: Association between students' smoking status and sibling smoking

Ever Smoked	Sibling smoking	Sibling not smoking	Total
Yes	24	39	63
	47.1%	17.4%	
No	27	185	212
	52.9%	82.6%	
Total	51	224	275
	100%	100%	

Chi square 20.6, $p < 0.001$

Having a teacher who smoked had a positive non-significant relationship with the ever smoking. 25.3% of those who had a teacher who smoked were ever smokers. (Table 21)

Table 22: Association between students' smoking and smoking teachers

Ever smoked	Teacher smoking	Teacher not smoking	Total
Yes	24	39	63
	25.3%	21.7%	
No	71	141	212
	74.7%	78.3%	
Total	95	180	275
	100%	100%	

Chi square 0.45 $p > 0.05$

Having found a model used in cigarette advertisements sophisticated did not have a significant effect on smoking amongst students in this sample (Table 22). There were a higher proportion of ever smokers amongst students who found models not sophisticated (29.4%) as compared to those who found models sophisticated (18.3%).

Table 23: Association between smoking and students opinion on models in cigarette advertisement

Ever Smoked	Models sophisticated	Models not sophisticated	Total
Yes	23	30	53
	18.3%	29.4%	
No	103	72	175
	81.7%	70.6%	
Total	126	102	228
	100%	100%	

Chi square 3.92, p =0.048

4.6.8 Student smokers' beliefs related to smoking

The students who thought that it was normal for a student to smoke in their communities were more likely to have ever smoked than those who did not think it was prohibited for a student to smoke in their respective communities. There was a statistically significant difference between the proportion of the students who thought it was normal to smoke in their communities and had ever smoked (38.1%) than those who thought the opposite but had ever smoked (18.4%) (Table 24)

Table 24: Association between students' smoking and communities' perception on smoking

Ever smoked	Normal for a student to smoke	Not normal for a student to smoke	Total
Yes	24	39	63
	38.1%	18.4%	
No	39	173	212
	61.9%	81.6%	
Total	63	212	275
	100%	100%	

Chi square 10.63 $p < 0.001$

4.6.8 Perception of a healthy lifestyle in relation to smoking

The proportion of ever smokers was higher amongst students who had the opinion that one can easily quit smoking (40.2%) as compared to those who thought otherwise (Table 25). This difference was statistically significant (Chi square 10.63 $p < 0.001$)

Table 25: Association between smoking and opinion that quitting smoking is easy

Ever smoked	Easy to quit	Not easy to quit	Total
Yes	35	28	63
	40.2%	14.9%	
No	52	160	212
	59.7%	85.1%	
Total	87	188	275
	100%	100%	

Chi square 10.63 $p < 0.001$

The knowledge that cigarettes are addictive did not have any effect on smoking amongst students. 24% of those who thought cigarette are addictive had ever smoked and 18.9%

who did not believe on addictiveness of cigarette smoking ever smoked (Table 26). It appears that the majority of the students are no aware that smoking is addictive.

Table 26: Association between students' smoking and awareness that smoking is addictive

Ever Smoked	Smoking is addictive	Smoking is not addictive	Total
Yes	49	14	63
	24%	18.9%	
No	151	60	211
	76%	81.1%	
Total	200	74	274
	100%	100%	

Chi square 0.95 p >0.05

CHAPTER FIVE: DISCUSSION OF MAJOR FINDINGS

5.1 Introduction

In this chapter a discussion and interpretation of the results is presented. The discussion is based on the objectives of the study, research questions, and significance of the study and review of literature. The study set out to identify factors that influence smoking amongst students in secondary schools.

5.2 Characteristics of the student smokers and ever smokers

The prevalence rate of ever smoking of 22.9% in the study group is comparable to other Sub Saharan Africa prevalence data among students (20%) (Warren CW et al, 2000) and it is also similar to data on ever smoker from youth survey in Old Stone town of 19.7 %, (WHO, 1999). The prevalence of current smokers (4.4%) compares with data from several studies on adolescent smoking (5%) (Mbatia 1998, Kiangi. 1995).

Most of the students start experimenting with smoking at around 14 years and the behavior increased with age (Table 7). This age is within the range reported by previous studies in various countries of where smoking was reported to start at ages between 5 and 15 years. (Busby, 1998, Sondo et al 1996) The youngest age to have first experimented with smoking was amongst female students was 7 years and in male students it was 8 years in this study.

The background of students in terms of age, gender, social status, and religion are important factors in smoking behavior. Despite the fact that the number of female students was higher than that of males, males were found to have a higher proportion of ever smokers than female students (Table 5). Similar results have been reported before (Kilonzo et al 1992, Kiangi 1999, Zhu et al, 1988).

The proportion of female students experiment with smoking drops as they grow older which is the opposite with male students. The reason could be social cultural whereby negative attitude is generally observed in the society regarding female smoking. One study in particular mentioned that girls who are seen smoking are labeled as prostitutes (Mbilima, 2002).

Students living with single parents and relatives had a slightly higher proportion of ever smokers compared to those living with both parents (table 17). This implies that the family structure is important in shaping students behavior. It might be difficult for one parent to note everything that goes on in his/her children than when the burden is shared by both parents. Similar observations were reported in a study amongst primary school students in Arusha (Mokiti, 2001).

The proportion of ever smokers decreased with increasing level of parental or guardian education (Table 14). This could mean that educated parents have a higher knowledge of negative effects of smoking and are stricter on this issue than non-educated parents.

5.3 Peer Influence

The results in this study imply that peer smoking is the major influential factor associated with smoking amongst students. A higher proportion of the students (36%) reported to have been given their first cigarette by friends (Figure 2). Having a best friend who had ever smoked was also highly associated with ever smoking (table 19). These results are in accordance with previous reports (Molyneux 2004, Chaloupka 1999, Sondo 2001, CDC 2001), in which it was reported that friends' smoking status has an impact on ever smoking amongst students.

The findings also revealed that having a classmate who smokes had a statistically significant relationship with ever smoking ($p < 0.01$) (table 18). The fact that both these almost a third of the students reported to have a classmate who smoke implies that this behaviour is common amongst the students' population.

However, the majority of students started smoking out of curiosity as previously reported in other studies. (Madu SN, 2003. Asma S, 2000) but the main issue remains that there are factors that stimulate the curiosity.

5.4 Family Influence

As reported in previous studies, (Gritz et al, 2002) smoking among household members was an important predictor of ever smoking among students. Despite the low reporting of family member smoking in the study population, ever smoking was highly associated with having a sibling who smokes (Table 21). Family members were also reported to

have sent the students to light cigarettes for them. This implies poor awareness of hazardous effects of smoking and particularly environmental tobacco smoking in the households.

5.5 The school environment

Slightly more than a third of the students had a teacher who smokes. Similar results were obtained in India (40.5%) in a study of tobacco use among school personnel (Sinha et al 2002). With such statistics the school environment cannot be said to be protective against smoking. School personnel form important role models especially in early teens, their engagement in smoking behavior potentially influence tobacco use amongst students. This coupled with having classmates who smoke create an atmosphere where students can regard smoking as norm in within the schools. It also implies that the teaching staffs are not aware of the impact their actions can make on their students.

5.5 Opportunities and Barriers to smoking

Interestingly, 49.2% of the students reported to be at home when they smoked for the first time (Table 9). This can have two meanings, one is that at home students are at ease and they may find places to smoke even if parents do not approve. The other is that many students may have smoked when the household members asked them to light. Similar findings are reported by other researcher in which 47% of smokers reported home as one of the smoking venues (Mokiti F, 2001).

Although the majority of the students reported parental disapproval regarding smoking, a small proportion of those who quit cited this as a reason (table 10). Most of them were worried of adverse health effects of smoking or were just experimenting. The implication some form of permissive environment at students' homes that allows smoking activities to take place.

Daily student allowances seem to contribute to experimenting with smoking in this study. Amongst the students with daily allowances, the proportion of ever smokers was higher in a group that received above Tshs. 1000/= (Table 16) which is a considerable amount to students in Dar es Salaam and thus making cigarettes accessible and affordable to them. It is also important to note that 20.6% of the ever smokers reported to have bought their first cigarette (figure 2). From these results it can be presumed that students use their daily allowances to buy cigarettes and that the shopkeepers sell cigarettes to students despite the fact that most of them are underage.

5.4 Cigarette advertising and the media

The majority of the students do not feel that cigarette advertisements can induce smoking amongst them. Only 16% mentioned advertisement and promotion activities as a source of smoking behavior. The association between cigarette advertisements and choice of cigarette brands could not be established in this study due to a small number of current smokers. It is worthy noting that the most of the students did find cigarette advertisement appealing (table 3).

The smoking actors and actresses in films and music videos on the other hand proved to have a significant relationship with ever smoking in the study population (Table 20). The students that reported to have found the smokers in such materials attractive had a higher proportion of ever smokers compared to those who did not. The students look upon these actors as their role models and idols there is a tendency to imitate their actions. Large proportions mentioned watching movies and listening to music as their favorite leisure activity which means that the youth are sedentary and what they engage in could easily expose them to a variety of behaviors that are not of any benefit to them. This also implies that students' exposure to these materials can also induce the students to experiment with smoking in order to identify with their role models.

5.5 Community norms and beliefs associated with smoking behavior.

It was evident in the study that most of the students were aware of the harmful effects of smoking (82%) though their knowledge on the actual effects seems to be minimal. Most of them associated harmful effects of smoking with some of the communities' explanations for example, some mentioned Tuberculosis as a side effect of smoking. Other researchers obtained similar results around Africa (Sondo 1996, Kiangi 1995, Warren 2000). The idea that cigarette smoking is bad for health cut across the grades.

The results also indicate that students' communities are not in favor of smoking in young people. However, a large proportion of students who perceived it was normal to smoke in their communities were ever smokers (table 24). This means that some of the

communities provide a supportive environment for students to acquire smoking habit. It also implies that a substantial number of community members do not have enough knowledge on the catastrophic effects associated with this behavior.

Lack of proper knowledge on hazardous effects of smoking is also evident in the information given by students regarding cigarette-smoking addiction. There are a substantial proportion of students (31.6%) that seems to think one can smoke casually which is significantly associated with ever smoking. This also, makes them a potential smoking group as they may think they can just smoke for a short time and quit without knowing that they may get addicted.

CHAPTER SIX: CONCLUSION

6.1 Introduction

This study presented a brief overview of cigarette smoking behavior amongst secondary school students, the reasons why they acquire the behavior, the places where the behavior takes place and the characteristics of students who engage in the behavior.

The study has made a modest contribution to the existing literature on the factors that may influence smoking in students. This body of literature is important for academia and all those interested in promoting healthy lifestyle through curbing tobacco use.

6.2 Conclusion

From the research findings the following conclusions can be made

- Substantial proportions of students have tried or have experimented with smoking.
- Exposures to films and videos with smokers have a bigger impact to students on taking up or experimenting with smoking than do cigarette advertisement. Students need to be encouraged to use their extra time in sports.
- Students, their teachers and the community as a whole need to be properly informed on harmful effects associated with smoking.
- Peer influence seems to be a major influencing factor for taking up or experimenting with smoking.

- Schools can be a good environment for taking up or experimenting with smoking.

6.3 Recommendations for further studies

- More analytical work on a large scale is needed to determine the extent to which environmental factors influence smoking among students.
- A study is needed to investigate whether cigarette advertising has any impact in the brand choices among young smokers in a Tanzanian society.

- Schools can be a good environment for taking up or experimenting with smoking.

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