CIGARETTE SMOKING PREVALENCE, INTENTION TO QUIT AND ASSOCIATED FACTORS IN KINONDONI, DAR ES SALAAM

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Master of Public Health Dissertation

Muhimbili University of Health and Allied Sciences

October, 2014

CIGARETTE SMOKING PREVALENCE, INTENTION TO QUIT AND ASSOCIATED FACTORS IN KINONDONI, DAR ES SALAAM

By

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A dissertation Submitted in (partial) Fulfilment of the Requirements for the Degree of Master of Public Health of Muhimbili University of Health and Allied Sciences

Muhimbili University of Health and Allied Sciences

October, 2014

CERTIFICATION

The undersigned certify that he has read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled ***"Cigarette smoking prevalence, intention to quit and associated factors in Kinondoni, Dar es Salaam"*** in fulfilment of the requirements for the degree of Master of Public Health of Muhimbili University of Health and Allied Sciences.

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Dr. D. C. V. Kakoko

(Supervisor)

Date: _____

DECLARATION

AND

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ACKNOWLEDGEMENT

I would like to give my heartfelt gratitude to my supervisor, Dr. Deodatus C. V Kakoko for his dedication and assistance throughout this dissertation work. I also appreciate the tireless administrative support of the School of Public Health for the guidance they provided throughout this work. I also would like to extend my sincere gratitude to Kinondoni Municipal Director for granting me permission to conduct this study in his jurisdiction, also Mr. Mwenda the ward Executive Officer of Magomeni Ward for such a noble support and introduction to other Kinondoni W.E.Os

I also thank the directorate of Postgraduate Studies of Muhimbili University of Health and Allied Sciences for coordinating this study and the Ministry of Health for funding. I thank the research assistants' team lead by Dr. Kobello of Magomeni health centre, Emmanuel Kimambo, Reuben Emmanuel and Silas Qambawayda for completing the task without any complains. Last but not least I am grateful to my wife Dr. Mercy Maya for an invaluable support, care and understanding during the whole time I was undertaking the course, and my fellow students for their support and encouragement in conducting this study.

ABSTRACT

Background: Cigarette smoking is the biggest avoidable cause of death and disability globally. It is estimated that there are about 1.3 billion tobacco smokers worldwide where by about half of them will die prematurely due to smoking. Deaths from smoking are projected to increase to more than 10 million a year by the years 2030 by which time 70% of these deaths will be in the developing countries including Tanzania. While the prevalence of smoking is decreasing in the developed world, there has been a continuous rise of smoking prevalence in the developing countries. If the present smokers are not assisted to quit, about 450 million would die by 2050. While developed countries are investing into cessation programs, quitting in the developing countries is rare.

Aim of the study: The aim of the study was to determine the smoking prevalence, intention of the current smokers to quit smoking and the factors associated with the decision to quit or not to quit smoking.

Materials and methods: A descriptive cross sectional study was conducted at Kinondoni district in Dar es Salaam where by a geographically clustered multistage sampling methodology was used to select participants from households. A semi-structured questionnaire was used to collect data from one member randomly selected from each household in the picked divisions found at Kinondoni municipal in Dar es Salaam. Analysis was done using SPSS computer software; Chi-square tests were done to explain the association between cigarette smoking, intention to quit smoking and other socio demographic factors.

Results: 379 respondents were interviewed, the prevalence of smoking was found to be 27.9% among men and 3.5% among women. About 90% of these smokers were either planning or thinking about quitting someday. Knowledge that smoking is dangerous to health was the factor mostly associated to quitting. Only 15% of the respondents had high nicotine dependence.

Conclusion and recommendations: The prevalence of smoking in this district is higher than the WHO regional prevalence; majority of these smokers would like to quit smoking although they do not know how. Understanding that smoking is dangerous to their health is the major reason why they will quit. Collective effort is required to educate people on the methods and options to take when one is considering quitting; smoking cessation program is an immediate requirement.

LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
COPD	Chronic Obstructive Pulmonary Disease
FCA	Framework Convention Alliance
FCA	WHO Framework Convention Alliance
FCTC	Framework Convention for Tobacco Control
HIV	Human Immune-deficiency Virus
MUHAS	Muhimbili University of Health and Allied Sciences
NGO	Non-Government Organization
NRT	Nicotine Replacement Therapy
ORCI	Ocean Road Cancer Institute
PI	Principle Investigator
RA	Research Assistant
SPSS	Statistical Package for Social Sciences
TOT	Trainer of Trainers
TTCF	Tanzania Tobacco Control Forum
W.E.O	Ward Executive Officer
WHO	World Health Organization

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CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND

Tobacco smoke contains over 5,000 chemicals, some of which have marked irritant properties and some 60 are known or suspected carcinogens, some other products containing tobacco are highly engineered so as to create and maintain dependence (1). This makes cigarette smoking the single biggest avoidable cause of death and disability. The adverse effects of smoking are extensive and they have been widely documented. The most associated conditions are the respiratory cancers, chronic obstructive pulmonary disease, and cardiovascular diseases (2). Globally, lung cancer is the leading cause of cancer deaths in men and second leading cause of cancer deaths in women. Worldwide there are about 1.2 billion smokers of which more than half of them will die pre-maturely due to diseases associated with smoking (3).

Smoking is now increasing rapidly throughout the developing world and is one of the biggest threats to current and future world health. Currently about 5 to 6 million deaths Worldwide are attributed to smoking whilst the number is projected to increase to more than 10 million a year by 2030, by which time 70% of the deaths will be in developing countries (4).

Smoking is also associated with other non-fatal diseases such as Osteoporosis, periodontal diseases, impotence, male infertility and cataracts. In pregnancy, it is associated with increased rates of fetal and prenatal death and low birth weight for gestational age. Passive smoking after birth is associated with cot death and respiratory diseases in childhood also these children are more likely to develop lung cancer, heart diseases and stroke during adulthood (2).

The effects of tobacco use are not limited to the health of and individual smoking or those who surround him/her; there is an economic implication on an individual, family and nation at large. Apart from the cost incurred when purchasing a cigarette pack or stick, once a person has fallen sick and eventually dies, the family has lost and the government has lost the workforce. Death from smoking is always pre-mature hence the workforce is drastically reduced over time (4).

Although it has been found consistently that reduced exposure to tobacco products may consequently reduce the risk of dying due to lung cancer and other associated conditions, quitting smoking remains a big challenge among smokers to this day. Currently, the prevalence of smoking in Tanzania has been found to be between 21-27% and 2-5% among men and women respectively, the continuous increase over the past ten years is not a good sign to the tobacco control efforts done so far (5). The deaths attributed to tobacco use are now more than those caused by tuberculosis, HIV/AIDS and malaria combined. If no intervention done the number of deaths will increase to more than 10 million in 2030, with more than 70% of these deaths happening in developing countries (6).

Quitting:

There is a benefit from quitting at all ages, but stopping before age 30 removes 90% of the lifelong risk of lung cancer. The excess risk of oral and esophageal cancer caused by smoking is halved within five years of smoking (7). Many deaths resulting from smoking can be avoided if the current smokers quit however in low and middle income countries quitting is rare; this is due to inadequate information about the health risks of tobacco, inadequate information about the risks of addiction and physical or financial costs imposed on non-smokers (4).

Cessation by today's smokers will lead to substantial gains over the next five decades because of the massive number of people who are currently active smokers, while preventing children from starting will have full benefits after 2050 (8).

Due to the importance of quitting, the World Health Organization advised countries to adopt quitting programs that are compatible with their environments. These are among the methods advised by many scholars; Price increase (through taxes), Bans on promotion, Restricting youth access, Anti-smoking media, Smoking restrictions and Nicotine replacement Therapy (NRT). The later (NRT) became famous and well researched of all the methods. This treatment aims to replace the nicotine obtained from cigarettes, thus reducing withdrawal symptoms when stopping smoking. Nicotine replacement is available as chewing gum, transdermal patch, nasal spray, inhaler, sublingual tablet, and lozenges. This has been proven to be the most acceptable and the most rewarding method worldwide.

Smoking in Tanzania

The situation in Tanzania does not differ much from what is observed in other low income countries. The prevalence of smoking of 27% in males and 5% in female is lower than that reported in the developed countries but the trend shows a reported increase rather than decrease (9). There is also an increase of tobacco use among the youths where by the prevalence has reached 3-5%(10). It has been shown that almost 32% of all cancers at the Ocean Road Cancer Institute were associated with smoking and the government spends about $ 30M annually treating tobacco related illnesses (11).

The WHO Framework Convention on Tobacco Control (WHO FCTC) which was opened up for signature back in 16th June 2003 became one of the first treaties negotiated under auspices of the World Health Organization (12). The framework provides guidelines for each state when formulating

strategies aiming at tobacco control. The WHO FCTC was signed by Tanzania back in 2004 and ratified in 2007 but there has been a slow implementation of most of the components of the treaty (13).

Like in other low income countries, Tanzania lags behind in most of the control programs. Before May 2013 there was neither single government agency nor any unit in the ministry of health that especially deals with anti-smoking campaign. Anti-smoking campaigns were mainly engineered by a single Non-government Organization known as Tanzania Tobacco Control Forum (TTCF). This NGO was registered in June, 2006, following the WHO Framework Convention Alliance (FCA) East African Workshop on Tobacco Control Initiatives, which was held in Nairobi in November 2005.

The Ministry of Health and Social Welfare with support from the WHO Country Office and Regional Office conducted a TOT training on tobacco cessation for the Zonal Mental Health Focal Points on 27-31st May, 2013. Participants were oriented on the role of tobacco dependence treatment within a comprehensive tobacco control strategy. The TOTs are expected to cascade the training to regional mental health coordinators and develop plans for initiation of tobacco cessation programs within the mental health units, an activity yet to be implemented.

1.2 STATEMENT OF THE PROBLEM

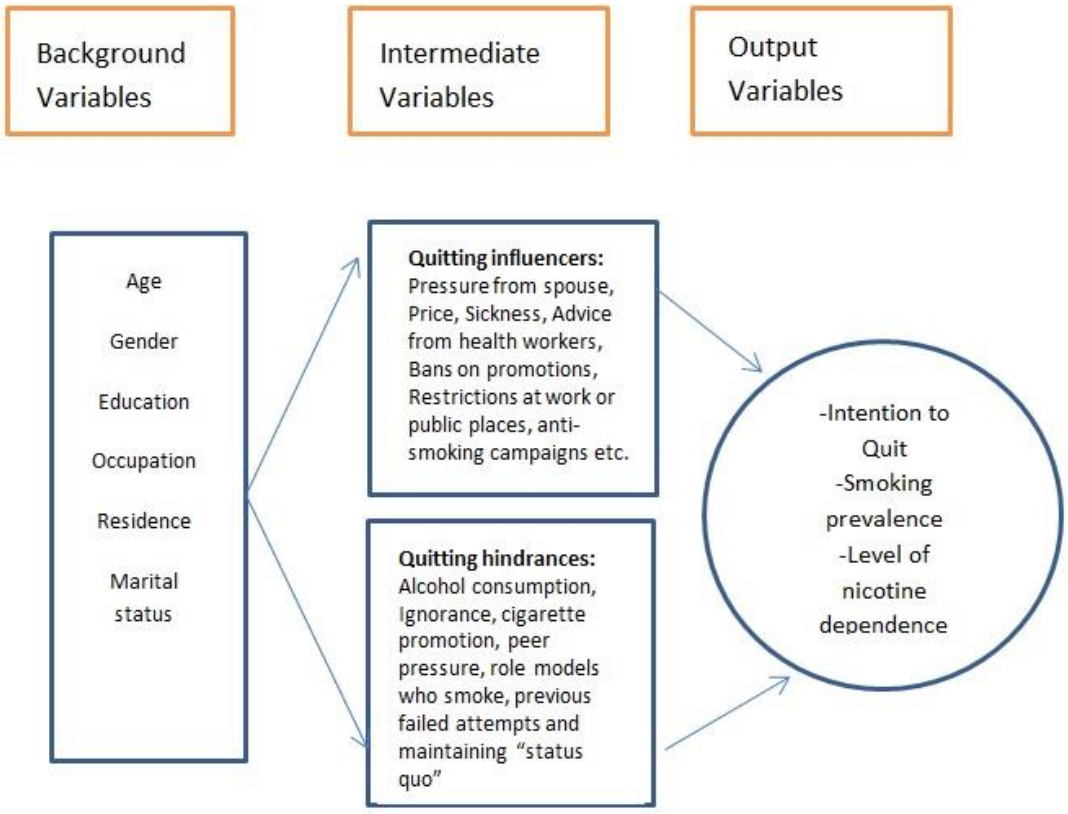
While the prevalence of smoking is decreasing in the developed World, the situation is opposite in the developing countries including Tanzania. Tobacco companies now focus on the new markets especially where the regulations are poor or absent (14). Generally, studies exploring smoking situation in Africa have not been extensively done hence most of the information regarding smoking is hard to find. For a long time it has been believed that the prevalence of smoking in Africa was low, however recent studies have shown a dramatic increase of smoking in both males and females, and the number of youths smoking is rising every day.

A lot has been studied on factors leading to smoking among youths especially those in schools. The most agreed explanation is that, youths start smoking due to influence from peers when they are young, role models or parents, others from smoking advertisements and promotion from cigarette companies. Other researchers have studied the addictive properties of nicotine and other compounds found in cigarettes (15). A portion of studies have been done which revealed the advantages of quitting smoking where by the risks of different cancers could be halved when someone stops.

Little has been studied concerning quitting in Africa and Tanzania in particular. Very little have been studied on the intention to quit which is the most important step before one has quitted smoking. A recent study conducted in Dire Dawa, Ethiopia indicated that more than half (57%) of the studied group had an intention to quit at least in the next six months however the above results could not be generalized due to the convenient sampling technique employed by the researcher (6). Tanzania with a population of about 45 million, and estimated population of 12.5 million smokers, does not have an established estimate of those who intend to quit.

Therefore this study was set out to investigate the prevalence, intention to quit, the percentage of adults who had successfully quitted and the factors associated with their decision to quit smoking in Kinondoni district. The study will also investigate if the current smokers are aware of the ways that have been proven to help one who decide to quit.

1.3 CONCEPTUAL FRAME WORK



1.4 RATIONALE

Findings from this study are expected to be of benefit to the scientific community as an evidence regarding intention to quit smoking but also the baseline where other studies can be built on because intention to quit remains a crucial step towards change of a particular behaviour.

This study may also contribute to a better understanding of/inform design of a smoking cessation program. Certain interventions can be designed which target particularly those who intend to quit while another interventions will target those who are not intending to quit in the near future. Also factors associated with both of the decisions will form a base from which the intervention can be designed.

Since smoking has become the issue of public health importance, Developing countries, Tanzania being one of them have to embark on a comprehensive tobacco control policies and strategies. This study may form a good reference during formulation of anti-smoking policies especially those concerned with smoking cessation.

1.5 RESEARCH QUESTIONS

- What is the prevalence of smoking in Kinondoni?
- What proportion of smokers intends to quit smoking?
- What proportion of former smokers is available in Kinondoni district?
- What do they know about the possible methods if they want to quit?

1.6 OBJECTIVES

Broad Objective

The broad objective was to determine the smoking prevalence, intention to quit and associated factors, in Kinondoni district.

Specific Objectives

i. To determine the proportion of smokers and former smokers in Kinondoni Dar es Salaam.

ii. To determine the proportion of current adult smokers who intend to quit smoking in Kinondoni district.

iii. To determine the factors associated with the decision to quit smoking.

iv. To describe methods used by smokers in attempt to quit smoking.

v. To obtain the level of nicotine addiction among smokers in Kinondoni district.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Smoking prevalence

Different studies estimate the number of smokers worldwide to be 1.2 billion. These studies also shows the decrease in the number of smokers in the developed countries but increasing number in the developing countries for the past 50 years (16). In the past century the world have seen the paradigm shift in smoking prevalence as cigarette companies find hash regulations to deal with in the high income countries then turn their attention to middle and low income countries where regulations are somewhat loose or they can easily be manipulated (2). Studies have shown with the Globalization and free market economy, there is massive merge of small industries to become mega tobacco industries but also low income countries are forced to comply with the free trade and economic liberalization policies to allow flow of cigarettes in their countries (17).

There are no current statistics showing a national-wide prevalence of tobacco use in Tanzania. Most of the existing studies have been undertaken in urban areas, and little information on tobacco use in the vast rural areas of the country. However current studies are showing the prevalence of tobacco use among men to be around 27% and that of women to be 5% (9). This shows an increase from previous studies, however another study in Dar es Salaam urban has estimated the self-reported prevalence to be 21% among men but similar in women (3-4%) (5). The prevalence of smoking among adolescents has been shown by several studies to be 2-4% among those who attend schools (10) and a relatively high prevalence (12.5%) among those who are currently out of school (18).

Similarly, smoking studies are scarce in East and the rest of Africa in general. A review article from Kenya, Uganda and Gambia published in 2009 reported the smoking prevalence of 50% among male primary school teachers and 3% among female primary school teachers in Kenya. The same article reported a slightly lower prevalence of 34% among adult urban males in Gambia and the prevalence of 42% among adult rural males of the same country. The prevalence of smoking among adult females in Gambia was 1.5% and 6% for urban and rural respectively. The prevalence recorded from high school students in Uganda was as low as 5.3% in the capital Kampala while the rural Arua region reported the prevalence of 21.9% among the high school students (19).

A recent study in Mozambique has shown the prevalence of smoking among men to be as high as 33.6% in men and 9.1% in women (20). Another similar study done in Cape Town South Africa among the blacks reported the prevalence of 57.8% in men and prevalence of 9.8% in women (21). Another cross-sectional study done in the eastern part of Ethiopia has reported the prevalence of smoking among adults to be 28% which is slightly lower than other parts of Africa (22).

Recent study in Pakistan has shown a prevalence of 26.6% among males and 0.4% among women which is slightly lower than that reported in other most of African countries, about 1.8% of the respondents were former smokers (23). Another study done in Malaysia among Adolescents in Kota Tinggi, Johor has found the prevalence of smoking in this part to be 23.5% (24). Another study which adopted the GATS methodology and questionnaire was done in Poland Western Europe and revealed that about 25.4% of adults residing in rural areas are daily smokers while 30.3% of those living in Town areas are daily smokers (25). In Italy, the study done among University students taking health studies have revealed the prevalence of 38.2% (26).

2.2 Quitting

Different studies have shown that there is a strong dose-response relation with heavy smoking; duration of smoking and early uptake associated with higher risks of smoking related diseases and mortality. For instance a meta-analysis of cohort studies done in the USA have shown evidence of decreased deaths among patients who had myocardial infarction and decided to quit smoking as compared to those who didn't (7). Scholars suggests that helping people to quit will lead to a substantial health gains over the next five decades while if more emphasis will made on preventing children from smoking will have full benefits after 2050 (27). A study back in 1991 using Trans-theoretical model has shown smokers quitting successfully in six months period if a comprehensive program which is culturally appropriate is designed (28).

Studies in the US have shown that, among smokers who are aware of the dangers of tobacco, three out of four want to quit (29). Another study in Switzerland have shown that almost three quarter of the smokers studied are intending to quit in the future (30). Counseling and medication can double the chance that these smokers who try to quit will succeed (31). But National comprehensive services supporting cessation are available in only 9 countries, representing 5% of the world (27). If the prevalence of smoking can be reduced by about a third by 2025, more than 200 million deaths from tobacco would be avoided during the remainder of the century (3).

Smoking cessation has been on top of agenda among developed countries where by there are several programs funded by their governments from the excise tax they collect from cigarette companies or from other government sources. A study on adult smoking in Malaysia have shown that more than 70% of current smokers are intending to quit (32). A weekly Morbidity and Mortality report by CDC reported findings from 17 different countries on smoking and intention to smoke whereby; In five of the 17 countries, the number of respondents intending to quit was >30% (43.8% in Bangladesh, 34.6% in Mexico, 33.7% in Uruguay, 31.7% in Poland, and 30.2% in Vietnam). Intention to quit

smoking was <20% in five countries (18.7% in Brazil, 16.0% in China, 14.5% in Russia, 14.2% in Malaysia, and 10.5% in Indonesia) (33).

Programs to assist smokers to quit have been established in developed countries and have shown to have a big impact to the concerned communities (34). The bad news is that, in low and middle income countries quitting is rare (4). There is no any documented smoking cessation program in Tanzania. Taking into consideration that quitting rate is very low in the developing countries, as studies shows the proportion of former smokers to be less than 10% (35), the proportion of former smokers in Tanzania is not yet known.

2.3 Factors associated with quitting

WHO Framework Convention on Tobacco Control suggested interventions that could be customized by particular member country so as to decrease the number of smokers and even the amount of cigarettes smoked. Different scholars have studied most of them, but some of the interventions have proven to have more impact; among these are:

2.3.1 Price increase

Studies in both developed and developing countries have shown a great impact of increase the price of cigarettes on smoking prevalence (3). A study done in Bangkok, Thailand has shown that a ten percent increase in cigarette prices would reduce the number of young smokers by approximately 6.2 percent, while lowering overall youth smoking by almost 12 percent (36). A review of different papers has revealed that, a price increase of 10% would reduce smoking by about 4% in high income countries and by about 8% in low income and middle income countries. The evidence indicates that young people, people on low incomes, and those with less education are more responsive to price changes (4).

Using a model of the cohort of smokers alive in 1995, it was found that tax increases that would raise the real price of cigarettes by 10% worldwide would cause about 42 million of these smokers to quit. This price increase would prevent a minimum of 10 million tobacco-related deaths (37). Another study in Korea has revealed that the increase in tobacco price has led 11.7% of smokers to stop smoking and 20.5% of smokers to reduce smoking. In general, price increase has resulted in a 27.7% reduction in tobacco consumption in this study (38).

2.3.2 Bans on promotion

The recent WHO report on how the article 13 of the FCTC is being implemented worldwide shows that only about 24 countries have complete ban on either direct or indirect tobacco advertising, promotion or sponsorship. The report has emphasized the fact that complete ban of these advertising and promotional materials would have an impact on youths who want to try and adults who smoke (39). In 2011 Australia, which had already banned advertising introduced plain packaging for tobacco products, removing all brand imagery. The brand is printed only in small standard lettering below a pictorial warning (40). The most current study has shown most smokers consider quitting after finding out their cigarettes are no longer appealing (3). A study in China has revealed that people who are exposed to cigarettes' promotion and advertisements have a more positive attitude towards the industry hence more prone to smoking. The same study revealed the highest number of youth have been exposed to these promotional materials hence pose a future danger in that same population (41). Turkey is one of the countries which has achieved much in the tobacco control campaigns whereby one of the strategies that produced results was banning of all cigarette promotion activities by making amendments in their laws (42).

2.3.3 Restriction on Youth access

Studies found that youth are less likely to smoke and smoke fewer cigarettes where prices are higher; this is one way of restricting youths to smoking (43). Other restriction measures as how they have been explained in a review article includes restricting free sample distribution of cigarette sticks, restricting selling of cigarettes to youths and other licensing requirements (36). Some studies have shown restricting selling of cigarettes to youths is not enough; there should be strict measures such that, there should be no any tobacco sell point near any school or where there is a youth gathering, complete ban of all tobacco advertisements, promotions, and scholarships where youth can access them (44). It has been also reported that stronger public places restrictions had a significantly protective effect on smoking prevalence, and that a total ban and some restrictions on smoking at home had a stronger protective effect (45).

2.3.4 Public and Workplace restrictions

Different authors have shown restricting smoking in public and in workplaces had a lot of impacts to the smoking control campaign. Turkish government lowered smoking prevalence by 15% in six years by enacting the following laws; Law No. 5727 of 3 January 2008 banned smoking in all enclosed spaces, workplaces, public transport (including taxis), educational institutions and their premises, etc. The first phase was enacted on 19 May 2008, and the provisions banning smoking in hospitality workplaces were enacted on 19 July 2009 (42). A study done in South Africa among school personnel have found that; apart from the fact that almost 24.9% of all male teachers agreed that they are current smokers, majority of the respondents agreed that there should be a policy that govern teachers on smoking around the school premises (46). Another study done in Ghana has shown that schools that allowed smoking on their compounds registered a higher percentage of students (43.8%) having future intentions to smoke compared to schools that did not (21.8%) (47). A study in the US has shown that majority of the respondents prefers that smoking should be restricted from working

places, homes and in public (48). In Australia, across all states, smoking is prohibited in enclosed dining areas, enclosed public places and almost all enclosed workplaces. Pubs, clubs and casinos became smoke-free on the 31st of October 2007, making all of Australia's enclosed workplaces and public places smoke-free. Some jurisdictions have even legislated for smoke-free outdoor dining and outdoor areas (49).

2.3.5 Advice from Health workers

For many years now, reports have suggested the importance of health practitioners in helping smokers quit. A study back in the 80s showed that 70% of smokers will quit if they are told by their physicians to do so (50). A report by the Association of American Medical Colleges (AAMC) suggests that about 70% of smokers visits the physician each year in the US which explains that they can play a significant role in passing the information about the dangers of smoking and the advantages of quitting (51).

A group of reviewers from the Cochrane library found that there was a significant change in the cessation rates among smokers who receive advice from the health workers compared to those who didn't. Quitting rates also increased with the increased number of follow-up visits in all 41 reviewed studies and the total mortality rates were reduced by 7% among the intervention groups as compared with the control groups (52). Another study in Singapore revealed that 15% of the smokers were advised by their physicians about the advantages of quitting; similar study reported that, among smokers, 5.2% of them agreed that physicians accounted much in their motivation to quit (53).

Studies about Health workers and role they play in the smoking cessation activities in Tanzania are scarce, hence very little is known about the contribution of health workers on quitting.

2.4 Knowledge available on quitting methods

A study in china has shown poor knowledge of smokers regarding quitting methods. It has shown majority of smokers who intend to quit use traditional methods which are not effective as there are a lot of relapses. The knowledge of nicotine replacement was almost negligible according to this study (54).

A study in Ghana has reported that just over a third (37%) of all smokers had heard about nicotine replacement therapy (NRT), but only (1.41%) had ever used it. Awareness of NRT was higher in the urban areas and in more educated smokers (55). A study in Egypt conducted among family doctors have shown that physicians have poor knowledge of smoking prevention interventions. Most of those who have relatively better knowledge were the most experienced and have gained that knowledge through experience as more than half reported to never have received training within nor outside the curriculum (56).

Regardless of fact that NRT is very common in the developed world, very few people in developing world like Tanzania are aware of it. A study among community health workers in China has shown that about 55.3% of them have never heard about NRT and about 24.5% have used Chinese herbs or acupuncture (57). Little has been done and studied on the use of NRT in Africa, Tanzania in Particular (58).

2.5 Nicotine addiction

Different studies have shown that smokers with nicotine dependence were less likely to quit than smokers who were not dependent. A study of smokers in Ethiopia revealed that 27.1% of the respondents had very high level of nicotine dependence and that among those 37.5% wanted to quit smoking (6). Another study in Guangzhou has reported that 37% of all smokers studied were severely addicted to nicotine (59). A study in the US has shown that smokers with nicotine

dependence were 40% less likely to quit than those who were not (60). Another study done in Italy has shown that 42.8% of smokers were classified as very low dependent, 28.6% as low dependent, 11.0% as intermediate, 13.8% as high and only 3.8% as very high dependent (61). Studies like these are scarce in Africa and especially in Tanzania where by very little is known regarding nicotine dependence among smokers and its effects to the smoking status of an individual.

CHAPTER THREE

3.0 MATERIALS AND METHODS

3.1 STUDY DESIGN

This was a descriptive cross sectional study.

3.2 STUDY POPULATION

This study involved the populations of adults 18 years old and above who have been the residents of Kinondoni municipality for at least twelve months.

3.3 STUDY AREA

The study was conducted at Kinondoni district in Dar es Salaam region. Kinondoni is the north most of the three districts in Dar es Salaam, surrounded by the Pwani region in the north-west and the Indian Ocean in the east. Administratively, Kinondoni district is divided into four divisions namely Kinondoni, Magomeni, Kibamba and Kawe. Below the four divisions there are currently 34 registered Wards. The Kinondoni municipality is geographically located in such a way that it radiates from the Sea shore to the outmost outskirts of the city. Kinondoni has also a mixture of people with differing social economic statuses, from low, middle to high. This may present variation in environmental factors affecting smoking and quitting habits of residents.

3.4. SAMPLE SIZE CALCULATION

Sample size was calculated by open-epi program (37).

Population size(for finite population correction factor or fpc)(*N*): 1000000

Hypothesized % frequency of outcome factor in the population (*p*):27%+/-5

Confidence limits as % of 100(absolute +/- %)(*d*): 5%

Design effect (for cluster surveys-*DEFF*): 1.2

Sample Size(*n*) for Various Confidence Levels

Confidence	Level (%)	Sample Size
95%		**364**

Equation; Sample size n = [DEFF*Np(1-p)]/ [($d^2/Z^2_{1-\alpha/2}$*(N-1)+p*(1-p)]

Therefore, using the proportion (p) of 27% at 95% confidence level, the sample size was set at 364 respondents; however 10% of the respondents were added to the number to cover for non-response and other inconveniences to make a sample size target of **400** respondents.

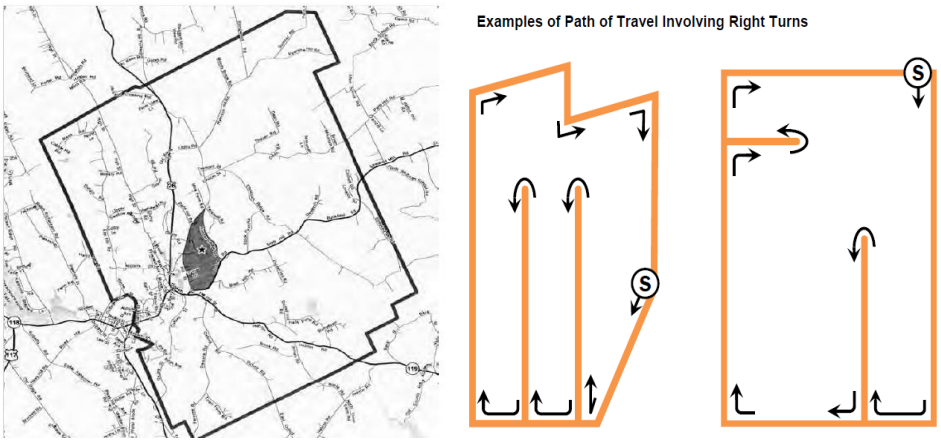
The reference smoking prevalence in Tanzania was 27% (9).

3.5 SAMPLING PROCEDURE

Geographically clustered, multistage sampling methodology partly adopted from the Global Adults Tobacco Survey (GATS) was used. All members of the target population were sampled from the household (HH) where one must have stayed in that house for at least twelve months. First, the district was divided into primary sampling units, segments within these primary sampling units, and households within the segments.

Three divisions (Magomeni, Kinondoni and Kawe) were selected at early stages of the design, from each division; one ward was chosen randomly (Primary Sampling Units), out of each ward one administrative street (geopolitical segment). The list of households was obtained by enumerating all the households present in a particular geopolitical segment by following a described pattern to make sure that no household is skipped. From the households selected, all eligible members of the household were listed and asked to pick a piece of folded paper, only one who picked the "Yes" piece was interviewed.

Illustration on how the segments were designed and how survey was conducted



Inclusion criteria

One adult member found in the household 18 years and above who has been residing in that particular residence for at least twelve months was enrolled in the study.

Exclusion criteria

All adults who fulfilled the above criteria but severely sick or mentally unstable were excluded from this study.

3.6 DATA COLLECTION TOOLS

Tools for data collection

Data was collected by trained field interviewers using a semi-structured questionnaire with closed and few open-ended questions adopted from Global Tobacco Surveillance System (GTSS), which were translated to Kiswahili. Fagerstrom test for nicotine dependence was adopted for testing the level of nicotine dependence among the respondents.(62).

Recruitment of the research assistants

Three research assistants were recruited for data collection after being interviewed for the task. I trained the research assistants concerning the task ahead of them, focusing on understanding the study objectives, questions, recording responses and interviewing skills. I (the principle investigator) also accompanied the research assistants in the process of data collection and offered technical assistance when it was needed.

Data collection procedure

Data collection started soon after obtaining the ethical clearance from the MUHAS research and publication directorate and later permission from the Kinondoni Municipal Executive Director. Eligible individuals were interviewed after they have read and consented accordingly. The interview was conducted privately between the interviewer and the interviewee to make sure that correct information is obtained. In case of absence of the respondent in the selected households, the research assistants recorded in the notebook and returned later or the day after for completion of the questionnaire.

3.7 VARIABLES

The following variables were included in the study:

Dependent Variables

Smoking status, Proportion of smokers who intend to quit.

Independent Variables

Sex, Age, Education level, Religion, Occupation, and Residence, Methods used by smokers in attempt to quit, Factors influencing quitting e.g. advice from health care worker, pressure from

significant others, sickness, price increase, job/public restrictions, bans on promotion, anti-smoking campaigns. Factors that may hinder quitting decision e.g. Excessive nicotine dependency (addiction), alcohol consumption, Ignorance of the dangers of smoking, cigarette promotion activities, peer pressure, role models who smoke, previous failed attempts and maintaining "status quo".

3.8 DATA MANAGEMENT, CODING OF VARIABLES AND ANALYSIS

Data collected by research assistants was cross-checked on the same day soon after data collection so as to make sure that they have all been filled and coded properly. All questionnaires were given numbers before data entry was done. Data cleaning was done through running the frequencies of all variables to identify miscoded variables, duplicates, omissions, etc. All reported values from the sample population were analyzed by using computer software SPSS Version 15.0. Descriptive analysis was done to see the distribution of the population according to different socio-demographic characteristics and other dependent variables.

Smoking prevalence:

Current smoker was defined as a person who gave a "Yes" answer to the question; "*do you currently smoke cigarette?*" and later current smokers were classified as "daily smokers" and "less than daily". Former smoker was a person who had been smoking "regularly" in the past and had successfully quitted for six months or more. Smoking prevalence was determined by calculating counts (frequencies) and corresponding percentages. Cross tabulation was done among current smokers to determine their distribution with sex and age groups, the same was done to former smokers and to smokers who intends to quit. Pearson's chi-square tests were done to explain the association between cigarette smoking and other socio demographic factors.

Intention to quit:

Smokers who intends to quit were categorized into, "*those who were planning to quit within the same month after the interview*", "*those who intends to quit in the period of one year*" and also "*who intends to quit some-day but were not certain when*". Those who said "*were not thinking of quitting any time soon*" were termed as not intending to quit.

Factors associated to quitting decision:

Seven factors that contribute to smoker's decision to quit were identified from literature and these were, *"Advise by health workers, knowledge that smoking is dangerous, Pressure from spouses, Sickness, Economic factor, Public restrictions, Anti-smoking adverts".* Also six that explain why most smokers do not intend to quit were, "*Previous unsuccessful attempts, Alcohol consumption, friends who smoke, Poor knowledge on dangers of smoking, Cigarette adverts, Maintenance of status quo".* These were explained to smokers and were told to choose one factor that explains best their decision of either to quit or not. Frequency tables were generated from SPSS and any association present was reported.

Methods used by smokers in attempt to quit smoking:

Methods used by smokers when one want to quit was assessed by questions, "*Which of the following method did you use when attempting to quit cigarette smoking?*" the correct answers were four, *Counseling, including at a smoking cessation clinic, Nicotine replacement therapy such as the patch or gum, Other prescription medications from health facilities, and A quit line or a smoking telephone support line.*

Magnitude of nicotine addiction:

Six items questionnaire of Fagerstrom test for nicotine dependence was used to assess the level of nicotine dependence. This has been measured by summing six factors: time to first cigarette, ability to refrain from smoking in forbidden areas, cigarette sticks smoked per day, smoking when ill, early morning smoking and which cigarette would be the most difficult to give up. Scores ranges from 0 to 10. The test for nicotine dependence has been classified as: very low dependence (score 0-2), low dependence (score 3-4), medium dependence (score 5), high dependence (score 6-7), and very high dependence (score 8-10) (62).

3.9 ETHICAL CONSIDERATIONS

Ethical clearance was sought from the Muhimbili University of Health and Allied Sciences (MUHAS) institutional review board. Consultation was done with Kinondoni Municipal Executive Director's office and permission to undertake the study within the areas of their jurisdiction was obtained. Respondents were informed about the purpose of the study, data to be collected and their voluntarily participation. Those who agreed to participate signed a letter of informed consent prior to the inclusion in the study. Confidentiality of the information and freedom to withdraw from the study anytime was stipulated clearly in the letter of informed consent.

CHAPTER FOUR

4.0 STUDY RESULTS

4.1 Study group distribution

A total of 379 adults were interviewed from four different wards of Kinondoni district. 265 (69.9) were males and 114 (30.1) were female, all were 18 years and above. About 36% of the respondents aged between 18 and 29 years while only 18% aged 50 years and above, the mean age was 37.2 years (SD 13.6) years. About 4% of the respondents had no formal education.

Table 4.1: Socio-demographic characteristics of respondents

Demographic variable	**Sex of respondents**		**Total N=379**
	Males (N=265)	**Females (N=114)**	
	n (%)	**n (%)**	
Age groups			
18 to 29	90 (34)	48 (42.1)	138 (36.4)
30 to 39	71 (26.8)	27 (23.7)	98 (25.9)
40 to 49	53 (20)	21 (18.4)	74 (19.5)
50 and above	51 (19.2)	18 (15.8)	69 (18.2)
Education level			
No formal education	12 (4.5)	3 (2.6)	15 (4)
Primary	151 (57)	65 (57)	216 (57)
Secondary	78 (29.4)	37 (32.5)	115 (30.3)
Tertiary	24 (9.1)	9 (7.9)	33 (8.7)
Occupation			
Civil servant	25 (9.4)	5 (4.4)	30 (7.9)
Businessman/Trader	128 (48.3)	68 (59.6)	196 (51.7)
Peasant	6 (2.3)	1 (0.9)	7 (1.8)
Other occupations *	82 (30.9)	13 (11.4)	95 (25.1)
Unemployed	24 (9.1)	27 (23.7)	51 (13.5)
Marital status			
Married	153 (57.7)	69 (60.5)	222 (58.6)
Single	92 (34.7)	35 (30.7)	127 (33.5)

Divorced/Separated	13 (4.9)	8 (7)	21 (5.5)
Cohabiting	7 (2.6)	2 (1.8)	9 (2.4)

***Such as: technicians, drivers, tailoring, security guards, carpenter, and masons**

4:2 Prevalence of smoking

Prevalence of smoking was found to be 27.9% among men and 3.5% among women, while the overall prevalence of smoking was 20.6%. All female smokers (100%) were daily smokers. Prevalence of former smokers was 14.5%. The prevalence of former smokers among women was only 1.8%. In general, about 48% of males and 5.3% of female had ever smoked "regularly" in the past or they are currently smoking (Table 4.2).

Table 4.2: Smoking status among men and women in percentages

Smoking status	Sex of respondents		Overall %
	Men N= 265 (%)	**Women N= 114 (%)**	
Ever smoked cigarette	127 (47.9) ***	6 (5.3)	133 (35.1) $\chi^2=63.69$
Current cigarette smokers	74 (27.9)***	4 (3.5)	78 (20.6) $\chi^2=63.72$
Daily cigarette smokers	63 (85.1) ***	4 (100)	67 (85.9) $\chi^2=29.23$
Former cigarette smokers	53 (20) ***	2 (1.8)	55 (14.5) $\chi^2=21.39$

Chi square test where *=p<0.05, ** =p<0.01, ***= p<0.001

Most of the current smokers (about 30%) are in the 40-49 age groups and 50 years and above group consists of only 11% of the current smokers (Table 4.3).

Table 4.3 Current cigarette smokers' percentages by age groups

	Smoking status		Total (%)
	Yes (%)	**No/NA (%)**	

Age Groups	18 to 29	25 (18.1)	113 (81.9)	138 (100)
	30 to 39	23 (23.5)	75 (76.5)	98 (100)
	40 to 49	22 (29.7)	52 (70.3)	74 (100)
	50 and above	8 (11.6)	61 (88.4)	69 (100)
Total		**78 (20.6)**	**301 (79.4)**	**379 (100)**

4.3 Proportion of adult smokers intending to quit

About 90% of all smokers interviewed were either planning to quit in the near future or thinking about quitting someday, and about 58% have made at least one quit attempt in the past. Only about 11% of smokers were not thinking of quitting at all. About 10% of smokers were advised to quit smoking by the health care provider.

Table 4.4: Quit attempt and intention to quit among smokers by sex (N=78)

Quit decision	Sex of respondents		Overall (%)
	Men (%)	Women (%)	
	74 (100)	4 (100)	78 (100)
Smokers who made quit attempt in the past 12 months	43 (58.1)	1 (25)	44 (56.4)
Smokers who Planned to and were thinking about quitting	66 (89.2)	4 (100)	70 (89.7)
Smokers who were advised to quit by health care provider	8 (10.8)	0 (0)	8 (7.7)

4.4 Reasons to quit smoking

Majority of the respondents (57.1%) associated their decision to quit smoking with the knowledge that smoking is dangerous to their health. Very few (1.4%) associated their decision to quit with the presence of public restrictions on smoking as how it is summarized in the table 4.6. Most who did not want to quit associated their decisions with two factors, “Previous unsuccessful quit attempts and alcohol consumption.

Table 4.5: Description of reasons associated with decision to quit smoking

Factor	Number	Percentage
Advice by health worker	6	8.6
Knowledge that smoking is dangerous	40	57.1
Pressure from spouse	5	7. 1
Sickness	5	7.1
Economic reasons	11	15.7
Public restrictions	1	1.4
Anti-smoking advertisements	2	2.9
Total	70	100

4.5 Methods used by smokers in an attempt to quit smoking

From 44 smokers who attempted to quit in the past, only about 16% of them sought help councilors and clinics while about 77% had used other methods particularly traditional medicines. An almost similar result is observed among former smokers. Only 4.5% of smokers knew and have tried to use Nicotine replacement therapy to help them quit smoking.

Table 4.6 Description of methods used by smokers in an attempt to quit smoking

	Smokers who attempted to quit *N=44* **(%)**	**Former smokers** *N=55* **(%)**	**Total** **N= 99 (%)**
Counseling, including at a smoking cessation clinic	7 (15.9)	10 (18.2)	17 (17.2)
Nicotine replacement therapy such as the patch or gum	2 (4.5)	3 (5.5)	5 (5.1)
Other prescription medications from health facilities	1 (2.3)	2 (3.6)	3 (3)
A quit line or a smoking telephone support line	0 (0)	1 (1.8)	1 (1)
Other methods (including traditional medicines)	34 (77.3)	39 (70.9)	73 (73.7)
Total	**44 (100)**	**55 (100)**	**99 (100)**

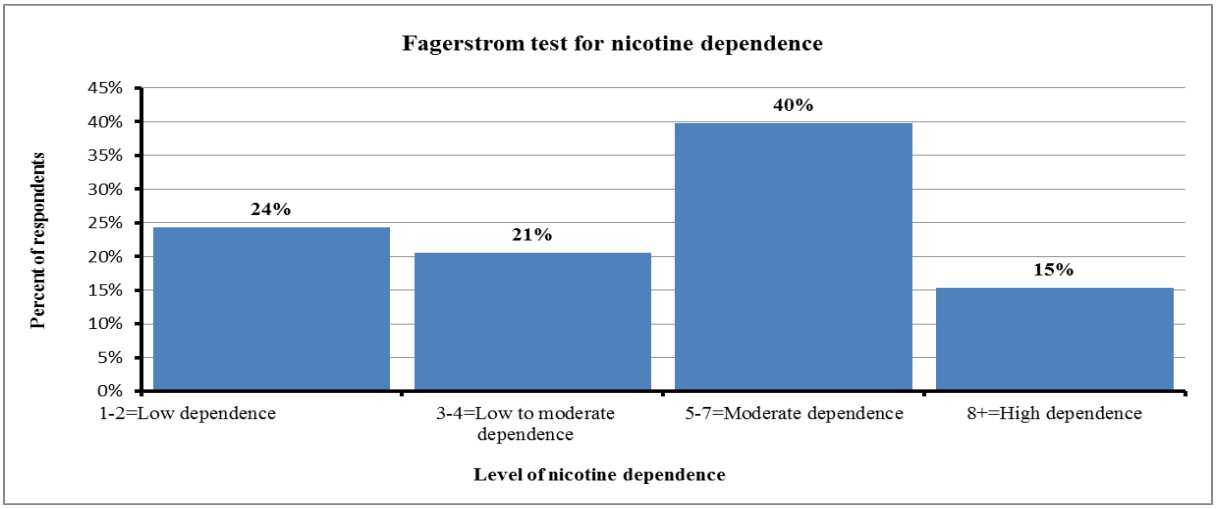
4.6 Magnitude of nicotine addiction among smokers

Majority of the smokers (38.5%) would smoke within the first five minutes after waking up while about half of them (51.3%) will find it difficult to refrain smoking in places where it is forbidden. About 42.3% smoke less than 10 sticks of cigarette and around 20% smoke more than 20 cigarettes a day. Results shows also that 36% of smokers keep on smoking even when they are sick in bed for most of the day. See table 4.9 below:

Table 4.7 Fagerstrom test for nicotine dependence

Variable	**Response**	**n**	**%**
How soon after waking do you smoke your first cigarette?	Within 5 minutes	30	38.5
	5-30 minutes	19	24.3
	31-60 minutes	29	37.2
Do you find it difficult to refrain from smoking in places where it is forbidden? E.g. Church, Mosque, Library etc.	Yes	40	51.3
	No	38	48.7
Which cigarette will you hate to give up?	The first in the morning	37	47.2
	Any other	41	52.6
How many cigarettes a day do you smoke?	10 or less	33	42.3
	11-20	30	38.5
	21-30	11	14.1
	31 or more	4	5.1
Do you smoke more frequently in the morning?	Yes	40	51.3
	No	38	48.7
Do you smoke even if you are sick in bed most of the day?	Yes	28	35.9
	No	50	64.1

About 15% of all smokers had high nicotine dependence according to the Fagerstrom test while 40% had moderate dependency.



Graph 4.1 Fagerstrom test of nicotine dependency

CHAPTER FIVE:

5: 1 DISCUSSION

The extent of the effects of cigarette smoking have been under estimated in the developing world due to the existence of other life threatening diseases such as HIV/AIDS, malaria and Tuberculosis. Furthermore, it has been difficult to link many deaths resulted or associated with smoking due to the fact that so many factors contribute to the etiology of cancer. The slow increase of smoking habit in the developing countries such as Tanzania pose a threat to the livelihood of the present and the coming generation as these countries are already overwhelmed by other precarious conditions.

5.2 Prevalence of cigarette smoking

The study revealed the huge difference of smoking prevalence between men and women of Kinondoni where by men smoke more than women. The prevalence of 27.9% and 3.5% among men and women respectively does not deviate much from other studies in developing countries but it is higher than the WHO prevalence reported for African region (63). Results are similar to those reported by another study done in Ilala in the year 2002 which reported the prevalence of 27% among men and 5% among women (9). However, in the former study, the investigator used expired alveolar carbon monoxide as a validation tool so as to capture cases which might be lost due to under-reporting. Another study done in Moshi rural had shown the prevalence of smoking to be 23.1% in men and 1% in women back in 1997 hence there has been a gradual increase of smoking prevalence since 1990s (18). This increase may be caused by lack of a proper anti-smoking policy in Tanzania but also absence of strong rules and regulations against advertising and promotion of tobacco products.

Prevalence of former smokers was slightly lower compared to other developing countries (54) but slightly higher than that reported by WHO for African region (63). The prevalence of former smokers means the percentage of smokers who successfully quitted smoking hence these results give us the picture that there have not been a considerable number of successful quitters in Tanzania. Lack of a well-established smoking cessation program might be among the reasons why there are very few who have quitted successfully in the past.

5.3 Intention to quit

This study has shown that about 56% of the smokers had attempted to quit in the past 12 months similar to another study conducted in Ethiopia of which 59.9% of all smokers have made a previous attempt to quit smoking (6). This is higher than that reported in Albania where by only 30% of smokers have attempted to quit smoking (64). A good number of smokers who have attempted to quit in the past implies a considerable proportion of quitting intenders in the future. Majority of the smokers (89.9%) were either planning to quit in the future or thinking about quitting. This figure is higher than that observed in developed countries where by different studies in the US have shown that about 57% of smokers intend to quit (65). This figure has demonstrated that if effective intervention to help smokers quit is in place, the number of smokers can drop considerably. This study has shown that, most of the smokers are aware of the dangers of smoking and are in the position to seek help out of their situation; the only problem is if the stake holders are prepared enough to address issues they face on their attempt to quit. The presence or absence of a solution oriented program will determine the fate of these smokers who intend to quit.

5.4 Factors associated with quitting decision

Majority of smokers would quit because they know that smoking is dangerous to their health, this has been observed in this study. Similar results have been reported in Japan among the elderly (66). This explains that most people are aware that smoking is dangerous and that failure to quit does not result from ignorance rather other factors need to be researched. Only 8% of the smokers would quit because they were told by the health care worker the dangers of smoking or why they should quit. Apart from the fact that most people visit health facilities when they are sick, most are not told of the dangers at the health facility, the role of health workers in the fight against smoking need to be evaluated. This percentage is very low as compared to other countries, other findings shows that 70% of heavy smokers would quit when they are told to do so by the physician (50). Only 1% would quit because of public restrictions, this has demonstrated the effects of not implementing the tobacco regulation act or enforcing other laws which limit the use of tobacco in public. About 16% of the smokers would quit due to economic reasons as cigarette cause them a financial loss. Increasing the price of cigarettes to this population may have a pronounced decrease in the smoking rate as these are price sensitive. Similar findings have been demonstrated in the US (4)

5.5 Methods used by smokers and former smokers in an attempt to quit

The study has shown limited use of scientifically agreed methods to quit smoking. In this study, smokers and former smokers mostly use other methods like traditional medicines rather than known in attempts to quit smoking. However, this can only be explained that may not be aware of these methods. These results may imply that, smokers are in a danger of failing to quit regardless of their intent as they may succumb to relapses or total failure due to methods they use. It might also imply that knowledge on quitting methods is much more deficient hence people rely on information from

lay people and traditional healers. These findings differ hugely from the results of a study done in the US whereby the prevalence of NRT alone was about 61% in the whites and 33% in the black smokers(67). These results do not differ much from that observed from a study done in Brazil among physicians who smoke whereby, only 7% of them used cessation methods (68). More studies need to be done to explore the knowledge on quitting methods.

5.6 Magnitude of nicotine addiction

Results from this study have shown that 15% of the smokers are highly addicted to nicotine where by about 39% cannot refrain from smoking in places where it is forbidden to smoke. Similar study in Ethiopia has shown those who are addicted to be twice as much as those in this study (6). Majority of the smokers takes between 11 to 30 cigarette sticks a day, an average of 1-2 packs a day, besides the healthy consequences financial consequences is also a concern as how it has been mentioned earlier. Studies have shown that smokers who are highly addicted to nicotine are less likely to quit smoking as compared to smokers who are less addicted. Therefore, the small percent demonstrated in this study gives a hope that majority of smokers are not highly addicted hence they can be helped out of it if an intervention is in place.

5.7 Limitations of the study

Since the study depended on the information reported by respondents hence under reporting of issues such as smoking status was anticipated. However questions were designed in a manner that respondents were willing to display their smoking status. Researchers were instructed on how to create conducive environment to allow respondents to express themselves freely. Being a household survey, interviewers faced some difficulties in accessing some houses due to cultural and religious beliefs especially the survey was done during the holy month of Ramadan. To overcome that, interviewers were trained on best approaches in situations like those including the culturally accepted

dressing code and/ or avoiding interviewing opposite gender in a closed environment whenever necessary.

CHAPTER SIX

6. CONCLUSION

This study has shown that the smoking prevalence of both men and women is higher than the WHO prevalence for African region but men's prevalence exceeds that of women by far. The overall prevalence of former smokers was found to be similar to most developing countries but lower than the developed countries to large extent. Majority of the smokers were either planning to quit or were thinking of quitting in the near future. Most couldn't tell exactly when are they going to quit but a considerable number knew exactly that they will quit in one month. Among the smokers, more than half have made at least one previous attempt to quit and the most mentioned reason was due to their own perception that smoking is dangerous to their health. Very few smokers were advised by the health care workers about the dangers of smoking and that the reason why they should quit. Less than half of the respondents were able to respond on the question about Nicotine replacement therapy. Overall results have shown that non-smokers were more knowledgeable about methods to use to stop smoking than smokers and former smokers combined. Few smokers were highly addicted to nicotine and that some would keep on smoking even when they are sick in bed for most of the day.

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CHAPTER SEVEN

7. RECOMMENDATIONS

Based on the results, the following recommendations are made:

For policy

- The Ministry of Health in collaboration with other stake holders should prepare policies and guidelines on smoking cessation, and smoking education programs which requires for health care providers to provide anti-smoking counseling to their clients because very few respondents mentioned them as their source of information.

- The Ministry of Health in collaboration with other stake holders should increase the availability of Nicotine replacement therapy options and other hospital prescription drugs that can help someone who intends to quit smoking by adding subsidies to the NTRs because few smokers were able to mention anything regarding NRTs.

For Practice

- Establishment of smoking cessation clinics which will be equipped with professionals who knows better how to guide someone towards quitting smoking because findings in this study have shown that smokers had very poor practice on quitting methods although majority wanted to quit.

- The key stake holders should organize massive campaigns targeting smokers to inform them why and how to quit smoking as findings in this study have shown that majority of them have tried to quit without success.

For future research

- Furthermore, studies are needed to investigate the knowledge of physicians and health care workers in general on smoking and smoking cessation as they are the key stake holders in the anti-smoking campaigns, besides their contribution to quitting among smokers was not well researched here.

CHAPTER EIGHT

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APPENDICES

APPENDIX 1 ENGLISH QUESTIONNAIRE

CIGARETTE SMOKERS INTENTION TO QUIT AND ASSOCIATED FACTORS:

SECTION A: IDENTIFICATION

DIVISION | | | | ----------

WARD | | | | ----------

VILLAGE/STREET | | | | ----------

HOUSEHOLD | | | | ----------

NAME OF ENUMERATOR: ----------

TIME INTERVIEW START: ----------

DATE OF INTERVIEW: ----------

DATE OF DATA ENTRY: ----------

SECTION B: Socio demographic Characteristics (Pleases circle)

QCODE	QUESTION	RESPONSES AND CODING
B1	How old are you?	[.....] years
B2	Sex of respondent (observe)	Male .....1 Female 2
B3	What is your education level?	No formal education.....1 Primary.....2 Secondary …….....3 Tertiary…….....4
B4	What is your occupation?	Civil servants.....1 Businessman/Trader .....2 Peasant .....3 Other specify.....4 Unemployed…….5
B5	Which description fits you well regarding your marital status?	Married .....1 Single .....2 Divorced .....3 Cohabiting 4

SECTION C: SMOKING

C00. I would now like to ask you some questions about *smoking* tobacco, including all types of cigarette

QCODE	QUESTION	RESPONSES AND CODING
C01	Have you ever smoked cigarette regularly?	Yes……1 No/Never……2→skip to **C22-23**
C02	Do you *currently* smoke tobacco on a daily basis, less than daily, or not at all?	Daily .....1 → skip to **C05** Less than daily.....2 → skip to **C08** Not at all.....3 →skip to **C22-23** Don't know……..7777 Refused…….....9999
C03	Have you smoked tobacco daily in the past?	Yes .....1 → skip to **C10** No .....2 → skip to **C13** Don't know…....7777 Refused…….9999
C04	In the *past*, have you smoked tobacco on a daily basis, less than daily, or not at all? [IF RESPONDENT HAS DONE BOTH "DAILY" AND "LESS THAN DAILY" IN THE PAST, CHECK "DAILY"]	Daily .....1→ Skip to **C11** Less than daily .....2→ Skip to **C14** Not at all .....3→Skip **C22,23** Don't know……..7777 Refused…..……..9999
[CURRENT DAILY SMOKERS]		
C05	How old were you when you first started smoking tobacco *daily*?	……Years Don't know…….7777 Refused……9999
C06	How many years ago did you first start smoking tobacco *daily*?	……Years Don't know…….7777 Refused……9999
CO7	How many of the following do you currently smoke *daily*? -Cigarette -Shisha -Pipe -Cocktail (tobacco plus other drugs)	Cigarette……..1 Shisha……..2 Pipe……..3 Cocktail……4 After here skip to **C18**
[CURRENT LESS THAN DAILY SMOKERS]		
C08	How old were you when you first started smoking tobacco *regularly*?	…….Years Don't know…….7777 Refused……9999
C09	How many years ago did you first start smoking tobacco *regularly*?	……..Years Don't know…….7777 Refused……9999
C10	How many of the following do you currently smoke during a usual week?	Cigarette……..1 Shisha……..2 Pipe……..3 Cocktail……4 After here skip to **C18**
[FORMER SMOKERS DAILY]		
C11	How old were you when you first started smoking tobacco *daily*?	…….Years Don't know…….7777

		Refused……9999
C12	How many years ago did you first start smoking tobacco *daily*?	…….Years Don't know…….7777 Refused……9999
C13	How long has it been since you stopped smoking?	Years ..... 1 Months ..... 2 Weeks..... 3 Days..... 4→back to **C05** Less than 1 day..... 5→back to **C08** Don't know…….7777 Refused……9999 After here skip to **C17**
[FORMER SMOKERS, LESS THAN DAILY]		
C14	How old were you when you first started smoking tobacco *regularly*?	…….Years Don't know…….7777 Refused……9999
C15	How many years ago did you first start smoking tobacco *regularly*?	…….Years Don't know…….7777 Refused……9999
C16	How long has it been since you stopped smoking?	Years ..... 1 Months ..... 2 Weeks..... 3 Days..... 4→back to **C05** Less than 1 day..... 5→back to **C08** Don't know…….7777 Refused……9999
C17	Did you use any of the following to try to stop smoking tobacco? a. Counseling, including at a smoking cessation clinic?	Yes.....1 No……..2 Refused…..…9999
	b. Nicotine replacement therapy, such as the patch or gum?	Yes.....1 No……..2 Refused…..…9999
	c. Other prescription medications, for example……..	Yes.....1 No……..2 Refused…..…9999
	d. Traditional medicines, for example ……	Yes.....1 No……..2 Refused…..…9999
	e. A quit line or a smoking telephone support line?	Yes.....1 No……..2 Refused…..…9999
	f. Switching to smokeless tobacco?	Yes.....1 No……..2 Refused…..…9999
	g. Anything else? . g1. Please specify what you used to try to stop	Yes.....1 No……..2

	smoking……	Refused…..…9999
QUITTING The next questions ask about any attempts to stop smoking that you might have made during the past 12 months. Please think about tobacco smoking:		
C18	During the past 12 months, have you tried to stop smoking?	Yes .....1 No.....2 → skip to **C21** Refused…..9999
C19	Thinking about the last time you tried to quit, how long did you stop smoking?	Months .....1 Weeks .....2 Days……..3 Less than 1 day (24 hours)....4 Don't know……...7777 Refused…….9999
C20	During the past 12 months, did you use any of the following to try to stop smoking tobacco? a. Counseling, including at a smoking cessation clinic?	Yes.....1 No……..2 Refused…..…9999
	b. Nicotine replacement therapy, such as the patch or gum?	Yes.....1 No……..2 Refused…..…9999
	c. Other prescription medications, for example?	Yes.....1 No……..2 Refused…..…9999
	d. Traditional medicines, for example?	Yes.....1 No……..2 Refused…..…9999
	e. A quit line or a smoking telephone support line?	Yes.....1 No……..2 Refused…..…9999
	f. Switching to smokeless tobacco?	Yes.....1 No……..2 Refused…..…9999
	g. Anything else? g1. Please specify what you used to try to stop smoking ……	Yes.....1 No……..2 Refused…..…9999
C21	Which of the following best describes your thinking about quitting smoking? I am planning to quit within the next month, I am thinking about quitting within the next 12 months, I will quit someday but not within the next 12 months, or I am not interested in quitting?	Next month…….1 Next 12 months…..2 Quit someday…….3(Not in 12 months) Not interested…….4 Don't know….7777 Refused……9999
C22	Which of the following describes well why one will consider quitting? Being advised by someone working in the hospital, I know smoking is dangerous to health, My spouse hate to see me smoking, Because of I am sick, I will waste a lot of money on cigarettes, and There are a lot of restrictions at job/public areas, I saw an advert that smoking is bad?	Advised by health worker..1 Smoking is dangerous…….2 My Spouse hate smoking…3 I am sick……..4 It waste lots of money…....5 Public restrictions……6 Anti-smoking advert……...7

C23	Which of the following describes well why people are not interested in quitting? I made several unsuccessful attempts, Can't resist when Drunk, all of my friends smoke, smoking is not dangerous as they say, cigarette adverts are cool and my status allows me to smoke?	Unsuccessful attempts……1 When drunk can't resist…..2 If friends smoke too…..….3 Smoking not dangerous…..4 Cigarette adverts are cool…5 Because of status…….6

Fagerstrom test for nicotine dependence

Please tick(√) one box for each question		
How soon after waking do you smoke your first cigarette?	Within 5 minutes 5-30 minutes 31-60 minutes	) 3) 2) 1
Do you find it difficult to refrain from smoking in places where it is forbidden? E.g. Church, Mosque, Library etc.	Yes No	) 1) 0
Which cigarette will you hate to give up?	The first in the morning Any other	) 1) 0
How many cigarettes a day do you smoke?	10 or less 11-20 21-30 31 or more	) 0) 1) 2) 3
Do you smoke more frequently in the morning?	Yes No	) 1) 0
Do you smoke even if you are sick in bed most of the day?	Yes No	) 1) 0
SCORE	1-2=Low dependence 5-7=Moderate dependence 3-4=Low to moderate dependence 8+=High dependence	

Add up the scores from the questionnaire.

APPENDIX 2 DODOSO LA KISWAHILI
KUHUSU UVUTAJI WA SIGARA, NIA YA KUACHA NA SABABU ZINAZOHUSIANA

SEHEMU A: UTAMBULISHO

TARAFA | | | | ----------

KATA | | | | ----------

KIJIJI/MTAA | | | | ----------

NYUMBA | | | | ----------

JINA LA MDODOSAJI: ----------

MUDA WA KUANZA MASWALI: ----------

TAREHE YA KUKUSANYA TAARIFA ----------

TAREHE YA KUINGIZA TAARIFA ----------

SEHEMU B: Socio demographic Characteristics (Tafadhali zungushia duara)

ALAMA	SWALI	JIBU NA ALAMA
B1	Je una miaka mingapi?	Miaka [.....]
B2	Jinsi ya mhojiwa (tazama)	Kiume .....1 Kike…… 2
B3	Kiwango chako cha elimu?	Sikusoma kabisa.....1 Elimu ya msingi.....2 Elimu ya Secondari….....3 Elimu ya juu…….....4
B4	Unafanya kazi gani?	Mwajiriwa wa serikali.....1 Mfanyabiashara…….....2 Mkulima.....3 Nyingine (taja).....4 Sina ajira…..…….5
B5	Hali ya ndoa?	Umeoa/olewa kwa ndoa.....1 Sijaoa/olewa.....2 Tumeachana.....3 Tunaishi pamoja bila ndoa.....4

SEHEMU C: Uvutaji wa Sigara

C00. Ningependa sasa kukuuliza maswali juu ya uvutaji wa sigara, nikimaanisha aina zote za sigara.

ALAMA	SWALI	JIBU NA ALAMA
C1	Je, umeshawahi kuvuta sigara mara kwa mara?	Ndiyo……...1 Hapana/Sijawahi…..2→Elekea **C22,23**
C2	Kwa kipindi hiki unaweza kuelezea vipi kiasi chako cha uvutaji wa sigara?	Kila siku.....1 → Elekea **C05** Siyo kila siku.....2 → Elekea **C08** Sivuti kabisa.....3 → Elekea **C22-23** Sijui……...7777 Amekataa…….....9999
C3	Umewahi kuwa mvutaji wa sigara wa kila siku kwa kipindi fulani kilichopita?	Ndiyo.....1 → Elekea **C10** Hapana.....2 → Elekea **B13** Sijui…….....7777 Amekataa……..9999
C4	Kama ndiyo, ulikuwa ukivuta kila siku, mara moja moja au ulijaribu ukaacha?	Kila siku.....1 → Elekea **C11** Siyo kila siku.....2 → Elekea **C14** Sijavuta kabisa.....3 → Elekea **C22-23** Sijui…….....7777 Amekataa…….....9999
[KWA MVUTAJI WA SASA WA KILA SIKU]		
C5	-Ulikuwa na umri gani ulipoanza kuvuta sigara *kila siku*?	Miaka…… Sijui…….……7777 Amekataa……9999
C6	Ni miaka mingapi iliyopita tangu uanze kuvuta sigara *kila siku*?	Miaka…… Sijui/sikumbuki……..…7777 Amekataa……9999
C7	Kwa wakati huu unaweza kusema unavuta kipi kati ya vifuatavyo kila siku? Sigara Shisha Kiko/sigara kali Mchanganyiko wa tumbaku na madawa mengine	Sigara……1 Shisha ……..2 Kiko/sigara kali…3 Mchanganyiko wa tumbaku na madawa mengine……4 Baada ya hapa elekea **C18**
[MVUTAJI WA SASA ASIYEVUTA KILA SIKU]		
C8	Ulikuwa na umri gani ulipoanza kuvuta sigara *mara moja moja*?	Miaka……. Sijui…….7777 Amekataa……9999
C9	Ni miaka mingapi iliyopita tangu uanze kuvuta sigara *mara moja moja*?	Miaka……. Sijui…….7777 Amekataa……9999
C10	Kwa wakati huu unaweza kusema huwa unavuta kipi kati ya vifuatavyo? Sigara Shisha Kiko/sigara kali Mchanganyiko wa tumbaku na madawa	Sigara ……1 Shisha ……..2 Kiko/sigara kali ……..3 Mchanganyiko wa tumbaku na madawa mengine……..4

	mengine	Baada ya hapa elekea **C18**
[MVUTAJI WA ZAMANI KILA SIKU]		
C11	Ulikuwa na umri gani ulipoanza kuvuta sigara *kila siku*?	Miaka…… Sijui…….7777 Amekataa……9999
C12	Ni miaka mingapi iliyopita tangu uanze kuvuta sigara *kila siku*?	Miaka…… Sijui…….7777 Amekataa……9999
C13	Muda gani umepita tangu uache kuvuta sigara *kila siku*?	Miaka…….....1 Miezi….....2 Wiki .....3 Siku……...4 Rudi **C05** Pungufu ya siku.....5 Rudi **C08** Sijui……..…..7777 Amekataa.……..…9999 Baada ya hapa elekea **C17**
[MVUTAJI WA ZAMANI PUNGUFU YA KILA SIKU]		
C14	Ulikuwa na umri gani ulipoanza kuvuta sigara *mara kwa mara*	Miaka…… Sijui…….7777 Amekataa……9999
C15	Ni miaka mingapi iliyopita tangu uanze kuvuta sigara *mara kwa mara*?	Miaka…… Sijui…….7777 Amekataa……9999
C16	Muda gani umepita tangu uache kuvuta sigara *kila siku*?	Miaka…….1 Miezi….....2 Wiki .....3 Siku……..…..4Rudi **C05** Pungufu ya siku.....5 Rudi **C08** Sijui……..7777 Amekataa.……9999
C17	-Je katika kipindi cha miezi 12 iliyopita uliwahi kutumia mojawapo ya njia hizi katika jitihada zako za kuacha kuvuta sigara? a. Ushauri, ukihusisha pamoja na kliniki ya kusaidia kuacha kuvuta sigara?	Ndiyo….....1 Hapana……..2 Sijui……...7777 Amekataa…..……9999
	b. Matibabu mbadala ya nikotini kama vile jojo na vibandiko vyenye dawa hiyo?	Ndiyo….....1 Hapana……..2 Sijui……...7777 Amekataa…..……9999
	c. Dawa nyingine zitolewazo hospitali…	Ndiyo….....1 Hapana……..2 Sijui……...7777 Amekataa…..……9999
	d. Dawa za mitishamba mfano…	Ndiyo….....1 Hapana……..2 Sijui……...7777 Amekataa…..……9999

	e. Huduma ya simu ya bure yenye kusaidia wanaopiga wakitaka kuacha	Ndiyo….....1 Hapana……..2 Sijui……...7777 Amekataa…..……9999
	f. Kuhamia kwenye matumizi ya tumbaku isiyo ya kuvuta…	Ndiyo….....1 Hapana……..2 Sijui……...7777 Amekataa…..……9999
	g. Njia nyingine?.....	Ndiyo….....1 Hapana……..2 Sijui……...7777 Amekataa…..……9999
	g1. Tafadhali taja njia uliyotumia kujaribu kuacha	
KUACHA Maswali yanayofuata yanahusu jitihada zozote za kuacha kuvuta sigara ambazo huenda uliwahi kujaribu kuzitumia katka kipindi cha miezi 12 iliyopita. Tafakari fikiri juu ya uvutaji wa sigara pekee:		
C18	Katika kipindi cha miezi sita iliyopita umewahi kujaribu kuacha kuvuta sigara?	Ndiyo ….....1 Hapana.....2 → Elekea **C21** Amekataa…….9999
C19	Ukijaribu kukumbuka kipindi ulichoacha kuvuta, uliweza kukaa muda gani bila kuvuta?	Miezi….....1 Wiki .....2 Siku……..3 Pungufu ya siku.....4 Sijui……..7777 Amekataa.……9999
C20	Je ulitumia mojawapo ya njia hizi katika jitihada zako za kuacha kuvuta sigara? a. Ushauri, ukihusisha pamoja na kliniki ya kusaidia kuacha kuvuta sigara?	Ndiyo….....1 Hapana……..2 Sijui……...7777 Amekataa…..……9999
	b. Matibabu mbadala ya nikotini kama vile jojo na vibandiko vyenye dawa hiyo?	Ndiyo….....1 Hapana……..2 Sijui……...7777 Amekataa…..……9999
	c. Dawa nyingine zitolewazo hospital…	Ndiyo….....1 Hapana……..2 Sijui……...7777 Amekataa…..……9999
	d. Dawa za mitishamba…	Ndiyo….....1 Hapana……..2 Sijui……...7777 Amekataa…..……9999
	e. Huduma ya simu ya bure yenye kusaidia wanaopiga wakitaka kuacha	Ndiyo….....1 Hapana……..2 Sijui……...7777 Amekataa…..……9999
	f. Kuhamia kwenye matumizi ya tumbaku isiyo ya kuvuta…	Ndiyo….....1 Hapana……..2 Sijui……...7777 Amekataa…..……9999

	g. Njia nyingine?.....	Ndiyo….....1 Hapana……..2 Sijui……...7777 Amekataa…..……9999
	g1. Tafadhali taja njia uliyotumia kujaribu kuacha…	
C21	-Kipi kati ya vifuatavyo kinaelezea kwa ufasaha nia yaka katika kuacha kuvuta sigara? Nafikiria kuacha ndani ya mwezi mmoja ujao, Ninafikiria kuacha ndani ya kipindi cha miezi 12 ijayo, Sifikirii kabisa kuacha kuvuta sigara?	Mwezi ujao……1 Ndani ya miezi 12 ijayo…..2 Nitaacha tu……..3 (si miezi 12 ijayo) Sifikirii kabisa kuacha…….4 Sijui…….…7777 Amekataa…….……9999
C22	-Kipi kati ya vifuatavyo kinaelezea vyema sababu kwanini unafikiria kuacha kuvuta sigara siku moja? Nafahamu uvutaji wa sigara ni hatari kwa afya, Mwenzi wangu hapendi kuniona nikivuta, kwa sababu ya ugonjwa, Nimepoteza pesa nyingi kwenye sigara, kuna makatazo mengi kazini na pia sehemu za halaiki na nimeona kwenye matangazo athari za kuvuta sigara?	Nilishauriwa ……..1 Uvutaji sigara ni hatari..…..2 Mwenzi wangu hapendi.…3 Sababu ya Ugonjwa.……..4 Napoteza fedha nyingi……5 Makatazo ni mengi.……6 Matangazo yanazuia……...7
C23	-Kipi kati ya vifuatavyo kinaelezea vizuri kwanini hauko tayari kuacha kuvuta sigara? Nimejaribu kuacha mara kadhaa bila ya mafanikio, Nikinywa pombe siwezi kujizuia kuvuta, rafiki zangu wote wanavuta, uvutaji wa sigara si hatari kama watu wanavyosema, matangazo ya sigara yanavutia sana, na hadhi yangu inaniruhusu kuvuta?	Nilijaribu nikashindwa …….1 Nikilewa siwezi jizuia ……..2 Rafiki wote wanavuta ……..…3 Sigara si hatari kiivyo ……..4 Matangazo yanavutia sana …5 Hadhi yangu yaniruhusu ..….6

Kipimo cha Fagerstrom cha utegemezi wa nikotini

Weka alama ya vema(√) penye mduara wa jibu sahihi		
Ni muda gani tu baada ya kuamka unavuta sigara yako ya kwanza?	Ndani ya dakika 5 Dakika 5-30 Dakika 31-60	○ 3 ○ 2 ○ 1
Je unapata wakati mgumu kuacha kuvuta sigara penye maeneo yaliyokatazwa? Mfano. Kanisani, Msikitini, Maktaba, n.k?	Ndiyo Hapana	○ 1 ○ 0
Ni sigara ipi ambayo kwako ni ngumu sana kuacha?	Ya kwanza asubuhi Yeyote ile	○ 1 ○ 0
Unavuta sigara ngapi kwa siku?	Pungufu ya 10 11-20 21-30 31 au zaidi	○ 0 ○ 1 ○ 2 ○ 3

Je unavuta sigara zaidi wakati wa asubuhi?	Ndiyo Hapana	) 1) 0
Je huwa unavuta sigara hata kama unaumwa kiasi cha kulala siku nzima?	Yes No	) 1) 0
Tafsiri ya Alama	1-2=Utegemezi mdogo 3-4=Utegemezi mdogo mpaka wa wastani	5-7=Utegemezi wa Wastani 8+=Utegemezi Mkubwa

Jumlisha alama kutoka kwenye dodoso.

APPENDIX 3 CONSENT FORM-ENGLISH

Title: Cigarette smoking Prevalence, intention to quit and associated factors in Kinondoni, Dar es Salaam

Greetings! My name is Dr. David Isaya, a finalist student at the School of Public Health and Social Sciences at Muhimbili University of Health and Allied Sciences (MUHAS).

I am conducting a study with the above title as part of my study program.

Aims of the study:

The aim of the study is to determine the smoking prevalence, intention of the current smokers to quit smoking and the knowledge of available methods to use when one intends to quit cigarette smoking.

Participation in this study:

All adults of 18 years and above residing at Kinondoni Municipality are eligible to participate in this study. You happen to take part in this research study because you were randomly selected from among all the Kinondoni inhabitants. The study involves questions about cigarette smoking in this district and also the intention of smokers to quit. If you decide not to participate in this study, you will not be affected in any way and you are free to answer or not answer any question that may seem uncomfortable to you. You are also free to withdraw from the study any time you wish to do so.

Risks:

There are no any physical risks associated with this study, however the questionnaire may include some questions that might seem sensitive or personal. You might feel uncomfortable answering some questions on the questionnaire. You can skip any questions you do not want to answer.

Benefits:

We hope to use information we get from this study to benefit others in the future. This would include an understanding of how smoking affects our lives, how people struggle to stop smoking and obstacles they face in the process, this will help the government or any other institution to plan for future interventions.

Confidentiality:

All data collected will be treated with strict confidentiality and stored in locked cabinets, encrypted computers and will not be revealed to anybody outside the research team.

Cost:

Respondents will not be required to make any payments to participate in this study and there will be no financial compensation for participation.

Who to contact:

For further information, questions or queries, you can contact:

1. The Principal Investigator,

Dr. David Isaya,

School of Public Health and Social Sciences,

MUHAS P. O. Box 65007,

Dar es Salaam

Tel: +255 712 103 686

Email: davidisaya@yahoo.com

2. Dr. DCV Kakoko,

School of Public Health and Social Sciences,

MUHAS. P. O. Box 65007

Dar es Salaam

Tel: +255 786 015 304

3. Prof. Mainen. J Moshi,

Chairman of the Senate Research and Publications Committee,

MUHAS

P.O. Box 65001, Dar es Salaam.

Tel no; 2150302-6, 2152489.

Signature:

I, _____ have read/been told the contents of this form. My questions have been answered. I agree to participate in this study.

Signature of parent/caretaker_____

Signature of researcher_____

Date of signed consent_____

APPENDIX 4 FOMU YA RIDHAA-KISWAHILI

FOMU YA RIDHAA YA KUSHIRIKI KATIKA UTAFITI

Uvutaji wa sigara, nia ya kuacha na sababu zinazohusiana nazo.

Jina langu ni Dkt. David Isaya, mwanafunzi wa Shahada ya Uzamivu katika Sayansi ya Jamii. **C**huo **K**ikuu **C**ha **A**fya na **S**ayansi **S**hirikishi Muhimbili (MUHAS).

Madhumuni ya utafiti:

Utafiti huu unalenga kujua kiwango cha uvutaji wa Sigara na pia tungependa kujua nia ya wavutaji wa sigara katika kipindi cha meizi kumi na miwili ijayo kama wanatarajia kuacha kuvuta au la, na pia kwa wale ambao wamejaribu kuacha wakafanikiwa au wakashindwa, je walipata vikwazo gani na wangependelea nini kifanyike.

Ushiriki katika utafiti:

Mtu mzima yeyote mwenye umri wa miaka 18 au zaidi na amekuwa mkazi wa manispaa ya Kinondoni kwa miezi kumi na mbili au zaidi anaruhusiwa kushiriki utafiti huu. Umepata kushiriki kwenye utafiti huu kwa bahati nasibu kutoka kwenye list ya wakazi wote wa Kinondoni. Utafiti huu utahusisha maswali yanayohusu uvutaji wa sigara na nia ya kuacha kwa wavutaji. Kama utashiriki katika utafiti huu utakuwa na hiyari ya kujibu maswali utakayoweza na utakuwa na uhuru wa kuacha kujibu kama utajisikia vibaya. Utakuwa na uhuru wa kujitoa katika utafiti wakati wowote utakapojisikia bila ya kuwa na kikwazo chochote

Hatari:

Hatutarajii kuwepo na athari/hatari yeyote itokanayo na ushiriki katika utafiti huu.

Faida za utafiti:

Tunatumai kutumia taarifa tutakazozipata kwenye utafiti huu kunufaisha wewe na wengine baadae. Hii inajumuisha uelewa juu ya kiwango cha uvutaji na kiwango cha watanzania wenye nia ya kuacha kuvuta na vikwazo wanavyokutana navyo ili kama kutakuwa na mkakati wa kiserikali au asasi nyingine wa kujaribu kushughulikia ili tatizo wawe na pa kuanzia.

Usiri:

Taarifa zote zitakazokusanywa katika utafiti huu zitakuwa siri, hivyo ushiriki wako hautajulikana na mtu. Taarifa hizi zitajulikana kwenye timu ya watafiti tu.

Malipo:

Kwa kushiriki kwenye utafiti huu, hautalipwa wala hautalipa chochote.

Ukiwa na swali au tatizo lolote, unaweza kuwasiliana na wafuatao:

1. Mtafiti Mkuu,

Dr. David Isaya,

Skuli ya Sayansi ya Afya Jamii,

MUHAS S.L.P 65007,

Dar es Salaam.

Simu: +255 712 103 686

Barua pepe: davidisaya@yahoo.com

2. Dr DCV Kakoko,

Skuli ya Sayansi ya Afya Jamii

MUHAS. S.L.P 65007

Dar es Salaam

Simu: +255 754 285660

3. Prof. Mainen J. Moshi

Mwenyekiti wa kamati ya utafiti na machapisho

MUHAS,

S. L. P. 65001

Dar es Salaam

Simu: 2150302-6, 2152489.

Kuweka sahihi ya makubaliano:

Mimi, _____, nimesoma/nimesomewa maelezo yote yaliyomo kwenye fomu hii na nimeelewa. Maswali yangu yamejibiwa na niko tayari kushiriki.

Sahihi ya mshiriki _____

Sahihi ya Mtafiti _____ Tarehe _____