IDRC Research Output Title and Abstract Page

Tobacco Use Among Eritrean Health Professionals

A Final Scientific Report

By: Zemuy Ghirmay, Seare Ghebreyesus, Amanuel Abraha

Report Type:

Final scientific report

Date: October 2009

***IDRC Project Number:** 104399-003
***IDRC Project Title:** Tobacco Use Among Eritrean Health Professionals
***Country/Region:** Eritrea

***Full Name of Research Institution:**
Eritrean Pharmaceutical Association (ERIPA)

***Address of Research Institution:**
PO Box 5414, Asmara, Eritrea

***Name(s) of Researcher/Members of Research Team:**

Principal Investigator:
Zemuy Ghirmay (BSc. In Pharmacy, Ministry of Health, Department of Regulatory Services (MOH,DRS)
E-mail: **zemg03@yahoo.com**

Co-Principal Investigators:
Seare Ghebreyesus (BSc. In Pharmacy, MOH,DRS)
E-mail: **segheb2002@yahoo.com**

Amanuel Abraha (BSc. In Pharmacy, Halibet Hospital)
E-mail: **amanstark@yahoo.com**

***Contact Information of Researcher/Research Team members:**

Zemuy Ghirmay: zemg03@yahoo.com

***This report is presented as received from project recipient(s). It has not been subjected to peer review or other review processes.**

***Abstract:**

Tobacco use in developing countries is reaching epidemic proportions. Past studies suggest that despite a wealth of information about the adverse health effects of tobacco use, significant numbers of health professionals in many countries continue to smoke. The purpose of this study was to determine tobacco use prevalence, knowledge and attitudes among Eritrean health professionals towards tobacco use, cessation, prevention and control.

A cross sectional study with structured questionnaire was conducted on randomly selected 600 health professionals with a response rate of 98.2%.

The finding suggests that current prevalence of tobacco use among health professionals was 7.0%. And Current prevalence of cigarette smoking was about 5.1%, while current use of other forms of tobacco was about 1.8%. Significant differences were observed in tobacco use prevalence when the data were analyzed by sex (p=0.0, males14.3% and female 0%), age (p=0.0001) and health profession types (p=0.0002,) with more physicians (17%) smoking. There was a substantial chance of exposure to second hand smoke at public places and workplaces. A knowledge gap was observed among health professionals based on their claimed knowledge about the health hazards of smoking, such knowledge was especially low among Nurses

and Associate Nurses. Cessation programmes in the heath care setting and training on cessation techniques was non-existent but the desire to quit among current tobacco users was high. Furthermore, there was high support among the health professionals towards tobacco control, and in their opinion, the enforcement of the existing Proclamation is poor.

The current prevalence of smoking among the health professionals, especially among male physicians, is a cause for concern given their role as public health leaders. Efforts must be made to strengthen tobacco control in Eritrea. One immediate step in that direction is to secure ratification of Framework Convention on Tobacco Control to guide on going efforts, to reduce the tobacco use prevalence and exposure to second hand smoke. Cessation programmes should be incorporated as a key component of the primary heath care setting.

***Keywords:** tobacco use, health professionals, Eritrea

TOBACCO USE AMONG ERITREAN HEALTH PROFESSIONALS

A FINAL SCIENTIFIC REPORT

2009

Principal Investigator:

- **Zemuy Ghirmay (BSc. In Pharmacy, Ministry of health, Department of Regulatory Services (MOH,DRS)**
  E-mail: zemg03@yahoo.com

Co-Principal Investigators:

- **Seare Ghebreyesus (BSc. In Pharmacy,MOH,DRS)**
  E-mail: segheb2002@yahoo.com

- **Amanuel Abraha (BSc. In Pharmacy,Halibet Hospital)**
  E-mail: amanstark@yahoo.com

Tobacco use among Eritrean health professionals was carried out in Eritrea and was conducted by the Eritrean Pharmaceutical Association (ERIPA) with the aid of a grant # **104399-003** from the International Development Research Center (IDRC), Ottawa, Canada.

Printed in Eritrea,

CONTENTS

ACKNOWLEDGEMENTS

Eritrean Pharmaceutical Association(ERIPA) is grateful for the aid of a grant from Research for International Tobacco Control (RITC) of the International Development Research Center (the Center) in Ottawa, Canada and the financial support of the Canadian Tobacco Control Research Initiatives (CTCRI), the American Cancer Society, Inc. (ACS), Cancer Research UK, the " Institut National du Cancer" of France and the Department for International Development, UK (DFID) for carrying out this Research Project in Eritrea.

ERIPA would like to express its gratitude to the Ministry of Health, and particularly to late Bernardo Kifleyesus, Director General of Department of Regulatory Services (DRS), and Dr. Andom Ogbamariam , Director General of Human Resource Research and Development (HRD) and to all Staff of DRS for their consistent support and encouragement to the research.

Furthermore, ERIPA would also like to thank Prof. Asmerom Kidane for his excellent advises on the proposal development and for the consensus building workshop participant and WHO-Eritrea who have given us their valuable inputs and comments in enriching the questionnaire. In addition, especial thanks go to Mr. Hagos Fessehaye for his valuable expert contribution.

ERIPA also feels privileged to thank Ms. Rosemary Kennedy for her special support and assistance for the whole duration of the research project and the IDRC Staffs.

ERIPA would also like to give special thanks for the diligence and commitment of the data collectors who has accomplished their tasks with great success.

Finally, we would like to thank for all the survey participants who are willing to give their responses and opinions and all those who support us during the data collection process.

ABSTRACT

Tobacco use in developing countries is reaching epidemic proportions. Past studies suggest that despite a wealth of information about the adverse health effects of tobacco use, significant numbers of health professionals in many countries continue to smoke. The purpose of this study was to determine tobacco use prevalence, knowledge and attitudes among Eritrean health professionals towards tobacco use, cessation, prevention and control.

A cross sectional study with structured questionnaire was conducted on randomly selected 600 health professionals with a response rate of 98.2%.

The finding suggests that current prevalence of tobacco use among health professionals was 7.0%. And Current prevalence of cigarette smoking was about 5.1%, while current use of other forms of tobacco was about 1.8%. Significant differences were observed in tobacco use prevalence when the data were analyzed by sex (p=0.0, males14.3% and female 0%), age (p=0.0001) and health profession types (p=0.0002,) with more physicians (17%) smoking. There was a substantial chance of exposure to second hand smoke at public places and workplaces. A knowledge gap was observed among health professionals based on their claimed knowledge about the health hazards of smoking, such knowledge was especially low among Nurses and Associate Nurses. Cessation programmes in the heath care setting and training on cessation techniques was non-existent but the desire to quit among current tobacco users was high. Furthermore, there was high support among the health professionals towards tobacco control, and in their opinion, the enforcement of the existing Proclamation is poor.

The current prevalence of smoking among the health professionals, especially among male physicians, is a cause for concern given their role as public health leaders. Efforts must be made to strengthen tobacco control in Eritrea. One immediate step in that direction is to secure ratification of Framework Convention on Tobacco Control to guide on going efforts, to reduce the tobacco use prevalence and exposure to second hand smoke. Cessation programmes should be incorporated as a key component of the primary heath care setting.

Keywords: Tobacco Use, Health Professionals, Eritrea

1. INTRODUCTION

The study proposed here aims at estimating the magnitude and distribution of tobacco use among Eritrean health professionals. The rational for limiting the study to health sector is due to the fact that health personnel have frequent contact with their clients-the Eritrean patients.

Eritrea is situated in the Horn of Africa, north of equator. It had an estimated population of 3.2 million as of 2001, with 50-80 percent dwelling in highlands. Administratively, the country is divided into six zobas or regions: Anseba, Debub, Gash-Barka, Maekel and Northern and Southern Red Sea.(1)

Eritrea's economy crux depends on agriculture and pastoralism, in which about 80% of the country's population engaged. The country's GDP per capita is about US $200 (UNDP, 2001).(1) Like the economy, the development and functionality of Eritrea's health system had been greatly affected by the political history. Health Service delivery in Eritrea employs the philosophy of integrated PHC in an effort to ensure universal access to basic health services.(1)

The health services in Eritrea are organized in three-tier system which starts from the lower level *i.e.* health station (provides preventive, promotive and rehabilitative services) and goes up to National Referral Hospitals. The health services are structured in such a way that there is health station, health center, zonal or regional referral hospitals and then National referral hospitals. Furthermore, the distribution of health personnel is equitable and the number and variety of professional qualifications also varies according to the service they provide. For instance, in health stations a Registered Nurse and one or two Health Assistants (Associate Nurses) are deployed to render the services.(2)

1.1 Background Information

The Tobacco epidemic poses a growing threat to health, economy and environmental stability worldwide. Although tobacco use prevalence rates have decreased somewhat among adults in some parts of the developed world, rates among children and adolescents in these countries have increased, reversing public health gains observed during the 1970s and 1980s.(3)

One of the biggest challenges in convincing the hazards of smoking to people is that most health consequence of smoking are not manifested until three to four decades after the onset of persistent smoking. As 50% of men in developing countries are smokers and cigarette consumption is steadily rising in these countries, tobacco is predicted to be one of the major causes of death and disability adjusted life years (DALYs) in the next century.(3)

Smoking rates are showing steady growth in the developing countries especially among men. Additionally, the influence of globalization has caused to distort the traditional cultural prohibitions on women's smoking. Taking these opportunities, the tobacco companies are vigorously targeting potential markets in the developing countries.(3) As the number of mothers who smoke increases in the developing countries, this in turn is creating an additional burden to the enormous efforts making by the developing countries to improve health conditions at childbirth and decrease maternal and infant mortality. Furthermore, the more cigarettes a women smoke during pregnancy the more likely the baby's lower birth weight, which is one of the major causes of infant mortality.(4)

In many parts of the world health professionals continue to use tobacco, often at a rate similar to-if not higher than- that of the general public. The latest available data from the Tobacco Atlas online show that in China, for example there is a smoking prevalence of 61.3% for male physicians, and while in general, 66.9% of the male population smokes. However, for women, the prevalence among physicians is nearly three times that of the general female populations (12.2% vs 4.2%). In Russia, the prevalence for female physicians is also higher (13%) than for the general female population (9.7%), which shows the epidemic's expansion among women.

In Spain, the prevalence of smoking among female physicians is high, and among female nurses it is higher than that of the general female populations. It is common knowledge that professionals who consumed tobacco are less likely to engage themselves in the fight against tobacco use. In countries where tobacco use prevalence is declining, smoking among health professionals is also
declining. In countries where tobacco prevalence is rising or stable, prevalence among health professionals, mainly women, is also rising.[4]

Unless urgent action is taken to prevent tobacco epidemic, there will be 10 million deaths by 2030, out of which 70-80 % will happen in developing countries. To curb this epidemic a comprehensive action which requires the involvement of a number of players are needed to engage in controlling this epidemic. [4]

In an effort to control the tobacco epidemic WHO is working with governments to negotiate an international treaty, the Framework Convention on Tobacco Control, to regulate tobacco at the international level and strengthen individual countries' laws.[5] In May 2003, the WHO World Health Assembly unanimously adopted the WHO Frame Work Convention on Tobacco Control (FCTC).[6] And according the World Bank report a tax increase that would raise the retail price of cigarettes by 10 percent worldwide would cause 40 million smokers alive in 1995 to quit, and prevent a minimum of 10 million tobacco-related deaths.[7]

Smoking has shown to cause high morbidity and mortality. In developed countries, it is estimated to cause 87% of lung cancer deaths, 82% of emphysema deaths, 40% of heart disease deaths among people less than age 65, 21% of all heart disease deaths, 33% of all cancers, and 10% of infant deaths. Before widespread use of cigarettes, lung cancer was a rare disease. In 1912, only 374 cases of lung cancer were reported in the world literature. Now more than 150,000 deaths from cancer of the lung and bronchus per year are reported in the United States alone. Globally, smoking causes 29% of all cancer deaths among men and 6% among women.[8]

Furthermore, researchers estimate that 50 per cent of smokers who began smoking when they were young will die of a smoking related illness. Data from the developed countries demonstrate that among men aged 35-69 years, 30 per cent of all deaths are estimated to be caused by smoking.[9]

1.2 Tobacco Smoking in Eritrea

In Eritrea the most frequently used types of tobacco products are manufactured cigarettes and chewing tobacco. Nonetheless, the prevalence of smokeless tobacco is much less when compared with smoked tobacco (2.9% vs7.2%).[10]

In an effort, to curb this epidemic, the government of Eritrea published a Proclamation 143/2004, which says "A Proclamation to Provide for the Tobacco Control". This Proclamation was effective as of August, 2005. The Proclamation contains different articles on the health message that need to be on the packaging and labeling of tobacco, banning of advertising, promotion and sponsorship, distribution restrictions, use restrictions, enforcement and inspection, offences and punishments and its regulations.[11]

Recent data of the Ministry of Health witness that Eritrea as one of the developing countries; it is experiencing a shift on disease burden from the Communicable diseases to Non-communicable disease.[12] This is further supported by the Health Management Information System (HMIS-2007) mortality data from hospitals and health centers in the population above 5 years of age shows that hypertension, heart failure, diabetes mellitus and liver diseases were among the 10 leading causes of deaths. And tobacco could have a grave attributes to all this complication as a risk factor.[12]

2. LITERATURE REVIEW

2.1. Situation on Global Tobacco Use

Global cigarette consumption has been rising steadily since James Bonsack invented the first cigarette rolling machine in 1818. Worldwide more people are smoking, and each smoker is consuming a greater number of cigarettes. Cigarettes account for the largest share of manufactured tobacco products but widespread consumption of chewing tobacco and bidis is also escalating especially in South Asia. More than half of the world's cigarette is consumed in China, USA, Russian Federation, Japan and Indonesia.[13]

Tobacco companies are producing 5.6 trillion cigarettes per year increasing consumption of these tobacco products has created unprecedented global public health emergency, a pandemic of epic proportions.[13]

WHO estimates that about one third of the global adult population, or 1.1 billion people, of whom 200 million are female, are smokers. Data suggest that globally nearly 47% of men and 12% of women smoke. In developing countries, 48% of men and 7% of women smoke while in developed countries, 42% of men smokes as do 24% of women. Typically there are gender differences in prevalence rates. For example, in Vietnam, the number of male smokers above the age of 15 is strikingly high, at 50%, while just 3% of females smoke. In the 1980s, about 20% of all the deaths of men in Shanghai were due to smoking, while women's rates were much lower. This number will only increase as we start to witness the effects of increased cigarette consumption, especially in the younger generation.[14]

Furthermore, tobacco use is increasing its hold and impact on women and girls across the globe. In the 21st century, it threatens to undermine not only women's physical and mental health but also their economic and social progress. Preventing the full expansion of the tobacco epidemic among the world's women will be a critical factor in improving the status of women. While global tobacco-use trends among men are now in a slow decline, the epidemic among women will not reach its peak until well into this century. WHO predicts that the prevalence of smoking among women worldwide will be 20% by 2025, a sharp contrast to the 12% of the world's women who smoke today. Yet, even if smoking rates remain unchanged, the number of female smokers will increase simply because the number of women in developing countries will increase by an estimated 1 billion from the current 2.5 to 3.5 billion by 2025.[15]

Many of tobacco's future victims are today's children. Tobacco use generally begins during adolescence and continues through adulthood, sustained by addiction to the nicotine in tobacco.[9] And more than 5 million children alive today will die prematurely from smoking-related illnesses. Nearly every adult who smokes (almost 90 percent) took his or her first puff at or before the age of 18.[16]

2.2. Health Consequences of Tobacco Use

Tobacco smoke contains more than 4000 chemical compounds. Many of these agents are toxic, and at least 43 can cause cancer. Tobacco is a known or probable cause of at least 25 diseases, including lung and other cancers, heart disease, stroke, emphysema and other chronic lung diseases. On average, lifelong smokers have a 50% chance of dying from a tobacco-related disease, and half of these deaths occur in middle age (45-54 years). In 1990, smoking was responsible for 35% of all deaths among middle-aged men in developed countries. [8]

According 2004 Surgeon General's report: smoking diminishes health and harms nearly every organ of our body. The adverse health effects begin before birth and continue across the life span. Smoking also causes cataracts and contributes to the development of osteoporosis, thus increasing the risk for fracture in the elderly.[17]

Smoking is also an important risk factor for the three diseases that cause most deaths in Australia: heart

disease, stroke and lung cancer. It is responsible for around 80% of all lung cancer deaths and 20% of all cancer deaths. Smoking has also been linked to cancers of the mouth, bladder, kidney, stomach and cervix, among others. Smokers are also at increased risk of having reduced lung function from chronic obstructive pulmonary disease. Using tobacco has been linked to a variety of other conditions, such as diabetes, peptic ulcers, some vision problems, and back pain. Smoking in pregnancy can lead to miscarriage, stillbirth or premature birth.[18]

Despite the familiar litany of smoking-related health problems such as emphysema, cancer, and heart disease, smoking cigarettes for as few as five years can have a permanent effect on the lungs, the heart, the eyes, the throat, the urinary tract, the digestive organs, the bones and joints, and the skin, even if the smoker quits.[19]

In a study conducted to assess the health related and overall quality of life among the Finnish adult population showed that the health-related quality of life profiles of the daily smokers did worse than never-smokers in a considerable number of the health dimensions. The effects of smoking were observed not only through health: the daily smokers registered significantly lower ratings of overall quality of life compared with never-smokers, too. However, both the health-related and overall quality of life of ex-smokers approached those of never-smokers.[20]

2.3. Second–Hand Smoke

Exposure to second-hand smoke is a wide spread problem that affects everyone. This exposure occurs throughout ordinary situations in daily life: in homes, at work and school on playgrounds and public transport, in restaurants, bars and many other places where people go.[21] Exposure to environmental tobacco smoke (ETS) in children is strongly associated with a number of adverse effects, particularly those involving the respiratory tract. In a 1999 report on ETS and Children's health, the WHO stated, "the vast majority of children exposed to tobacco smoke do not choose to be exposed."[22]

Among children, second-hand smoke irritates the nasal passages and bronchial airways and has been strongly linked to an increased risk of chest infections (including pneumonia and bronchitis, sometimes leading to emergency hospital admission), asthma attacks, glue-ear and middle-ear infection, decreased lung function, and sudden infant death syndrome ('cot death).[23] The report of the U.S. Environmental Protection Agency states that second–hand smoke is responsible for approximately 3,000 lung cancer deaths each year in nonsmoking adults and impairs the respiratory health of hundreds of thousands of children.[24] Furthermore, exposure of a pregnant woman to other peoples smoke can harm the fetus. The effects are compounded when the child is exposed to second-hand after birth.[25]

2.4 Global Tobacco Use Studies among Health Professionals

The Tobacco use study among health professional in Nepal shows that the overall prevalence of current tobacco use was 20.4%.[26] On similar studies from India medical students on tobacco use show that of a total of 208 respondents (47% male, 53% female), 13.5% reported current use of tobacco products (25.5% of males vs only 2.7% of females, p≤; 0.001), while 22% (42.1% of males vs 4.5% of females, p ≤; 0.001) reported ever experimenting with tobacco products. Exposure to tobacco use at home was reported by 37.1% for smoked tobacco and 11% for smokeless forms. 85% and 47.6% of the respondents reported knowing doctors/medical students who smoke or use smokeless tobacco, respectively.[27]

Global health profession student survey(GHPSS) studies on Vietnamese health professionals also indicates that Data from 2151 health workers from the 3 largest hospitals- collected using quantitative methods shows that the smoking prevalence among Vietnamese health professionals is 13.4%, dominant among male health professionals compared with female counterparts (35.6% vs 1.8%).[28]

The tobacco-smoking rate of the physicians in countries with low prevention activity dropped to 18%, which

is still much higher than the smoking rate in the US and other European countries. The Prevention activity on a national level might contribute to reducing the rate of current smokers among physicians to a large extent, less so in nurses.[29]

3. PROBLEM STATEMENT

We have already noted that smoking tobacco is dangerous to our health as an individual or as a nation. WHO says that annually, there are now more people dying of smoking related illnesses than AIDS, tuberculosis, fires, and even wars–combined. It has been scientifically established, above all, that tobacco smoke carries more than 4750 chemicals, 43 of which have been proven to be carcinogenic.

Health professionals, including doctors, dentists, pharmacists, nurses, midwives and others, are trusted sources of information and advice, and are themselves role models in matters related to health. They are in contact with high percentage of the population and can be instrumental in helping people change their behavior.

Studies show that even brief advice from health professionals can increase tobacco abstinence rates up to 30%. Interventions for smoking cessation led by nurses have shown to increase the chance of successfully quitting smoking by up to 50%.[4]

Since Eritrea is a developing country, it could not be an exception. Consequently, Eritrea is now facing a double burden of diseases with Non-Communicable disease (NCD) gaining prominence as major causes of morbidity and mortality while communicable diseases are still prevalent, further overburdening the existing health system.

A survey on the NCDs risk factors in 2004 reported a national prevalence of daily smokers 7.2%, and another 0.9% are non-daily smokers. And the national prevalence of smokeless tobacco is 2.9%.[10]

In another study, the Global Youth Tobacco Study and the Global School Personnel Study showed that there is an approximately 8% of students use any form of tobacco, 2% of students smoke cigarettes, 7% use some other forms of tobacco.[30]

Therefore, even though there is no specific data that links the type of the diseases and mortality to tobacco use, the importance of tobacco use come into picture, as it is one of the risk factor in developing the non-communicable disease. And according to the KAP study 2005, tobacco smoking is common among diabetics and hypertensive patients.

Globally, health professionals are the trusted source of information when it comes to health related issues. And in this regard, the health professionals in Eritrea are expected to play a great role in various health related issues and for this purpose in particular in the tobacco control. They have to play a lead role in the population, the media, since their voices are heard across a vast range of social, economical and political arenas. At individual level, they can advise on the harms of tobacco use and exposure to second hand smoke. They can also be a good source of advice and help to those who need to quit smoking. Moreover, they can engage in spreading the health message and promoting in creating smoke free workplaces.

4. OBJECTIVE

4.1 General Objective

The purpose of this study is to determine tobacco use prevalence and knowledge and attitudes among Eritrean health professionals towards tobacco use, cessation, prevention and control.

4.2 Specific Objectives

1. To determine the magnitude of tobacco use among health professionals in Eritrea ,
2. To assess knowledge, attitude and practice about tobacco use and tobacco control among health professionals ,
3. To ascertain the level of involvement of health professionals in providing smoking prevention and cessation advice to their patients,
4. To measure their knowledge of health effects of second-hand smoke and their exposure to second-hand smoke both at work and other places,
5. To ascertain their knowledge and attitude on the current tobacco control policies in Eritrea.

4.3 Hypothesis

1. Tobacco consumption among health professionals is unknown,
2. There is lack of knowledge and skills about tobacco and tobacco control,
3. Health professional are not involved in the tobacco cessation activities,
4. Second- hand smoking exposure is not seen as danger,
5. Health professional have full support to the regulation.

5. METHODOLOGY

5.1 Sampling Methodology

The target population was health professionals(HPs) who work for the Ministry of Health available in the country namely, Physicians, Pharmacy personnel (both the Pharmacy Technicians and Pharmacists), Nurses (Registered Nurse, Nurse Degree, Nurse and Midwifery Nurse), Associate Nurses, Medical Laboratory personnel (both the Diploma and Degree holders).

A cross sectional study with structured questionnaire was conducted on 600 health professionals. The sample size was determined with an assumed 40%[1] as proportion of smokers, and 4% desired accuracy at 95% confidence interval. An adjustment rate for possible non-responses of 4% was also added to the final sample size.

The sampling frame that was used for the study was obtained from Department of HRD of the Ministry of Health and respective Zonal Ministry offices. It contained information on workplace, Names, addresses as well as professional qualifications of the health professionals.

In selecting the sample of 600, a two-stage stratified random sampling was used. In the first stage, the population was stratified by "type of health profession". Five distinctions were identified for health profession types; namely, Physician, Pharmacy personnel, Nurse, Associate nurse, and Medical laboratory personnel. In the second stage, each health professional category was stratified by zoba. Ministry of health head quarter and National referral hospitals were treated each as a zoba due to their comparably big size and nature of their work. Thus, the study had 8 zoba.

The sample of 600 was allocated to the health professional types using a square root allocation, this allocation method allowed the study to sample enough personnel from some health professional types, which under proportional sampling would have been severely under sampled due to their small sizes in the study population. The sample numbers of health professionals for each health professional type (stratum) were then allocated to the 'zoba' in proportion to their respective sizes of health professionals of the type in each zoba.

Required samples of health professionals for each combination of health profession type and 'zoba' were independently selected from each other within each zoba through simple random sampling procedure.

5.2 Questionnaire and Data Collection

The questionnaire used was adopted from the Global Health Professional Student (GHPS) survey questionnaire. It was a structured-closed questionnaire. As part of the process for validating the questionnaire such that it concurs to the Eritrean context, the questions were reviewed and harmonized by the research team in collaboration with stakeholders.

The questionnaire was organized to have 7 parts. The first 6 were on the subject matter - assessing prevalence levels of cigarette smoking and other tobacco use, exposure to second hand smoke, attitudes of health professionals concerning tobacco, knowledge of health professionals on health effects of tobacco use and tobacco control policy, behavior and cessation attempts of smokers, and in-service training given to health professionals concerning tobacco. The last part was on demographics of participants.

The questionnaires were administered through personal interviews. The enumerators were all health professionals working for the ministry of health and were given a one day training regarding the overall objectives of the survey and the particulars of the questionnaire. And a translated version of the questionnaire

[1] Based on an article by Winkler and Becher, it is assumed that the current prevalence of smoking in African countries range between 20 and 65%. Putting Eritrea within this given range the survey assumed that the proportion of smokers as being 40%.

was given to all the enumerators so as to have a uniform understanding during the interviewing. The questionnaire was pre-tested in Zoba Maekel. The survey was conducted between April 27 and May 15 of 2009.

Questionnaires completed by enumerators were checked for consistency and completeness by supervisors at the field.

5.3 Ethical Issues

The research and the instrument that was used to collect data were reviewed by the ethical committee of the Department of Research and HRD of the Ministry of Health, and it was approved. Zonal Ministry offices were informed about the survey prior to the survey time and were asked for their cooperation. During data collection, permission for interviewing was sought from health facilities and individual who were selected to take part in the survey. All the respondents were informed that the information they gave us will be strictly confidential and anonymous.

5.4 Data Analysis

After data collection was completed; data entry, cleaning and analysis were done using Epi Info version 3.4 package. Data analysis contained generating frequency distribution of different variables, and cross-tabulating relevant variables by some selected background characteristics to see if the distribution of a dependent variable varies significantly across the values of the independent variables.

5.5 Weighting and Estimation

A weight has been associated with each questionnaire to reflect the likelihood of sampling each health professional and to reduce bias by compensating for differing patterns of non-response. Except where indicated, all results in this paper are weighed.

The weight used for estimation is given by:

$$W=w*f$$

Where: w=inverse of the probability of selecting a health professional calculated at health profession type level

f= non-response adjustment factor calculated at health profession type – zoba combination level

6. LIMITATIONS OF THE STUDY

1. The study was conducted only on health professionals in the public sector; the private sector is not accounted because the research was unable to get a comprehensive and complete data on that population.
2. Repeated appointment from respondents, especially physicians, created a delay in the duration of data collection process.
3. The study did not consider the influence of the social, cultural and economical dynamics on tobacco use and control.

7. RESULTS

7.1 Response Rate

Overall response rate was 98.2%. Almost all health professionals selected for the survey had participated. The survey was not very successful with physicians in National Referral Hospital, among them response rate was only 60%. Main reason for not participating among them was refusal - because of lack of time.

Table 1: Response rate by health profession and zoba

Zoba	Physicians	Medical lab. Personnels	Nurses	Pharmacy Personnels	Associate Nurses	Total
Maekel	17(of17)	15 (of 15)	46(of 46)	17 (of 17)	43 (of 43)	**138**
Anseba	3 (of 4)	6 of (6)	12(of 12)	4 (of 4)	20 (of 20)	**45**
Debub	7 (of 7)	12 (of 12)	28(of 28)	7 (of 7)	42 (of 42)	**96**
Gash-Barka	6 (of 8)	12 (of 12)	16(of 16)	7 (of 7)	32 (of 32)	**73**
Northern Red Sea	5 (of 5)	11 (of 11)	14(of 14)	5 (of 5)	26 (of 26)	**61**
Southern Red Sea	2 (of 2)	2 (of 2)	6 (of 6)	3 (of 3)	8 (of 8)	**21**
Head Quarter	7 (of 7)	19 (of 19)	10(of 10)	13 (of 13)	2 (of 2)	**51**
NationalReferral Hospital	12(of20)	11 (of 11)	38(of 38)	8 (of 8)	35 (of 35)	**104**
Total	**59**	**88**	**170**	**63**	**209**	**589**

7.2 Socio-Demographic Variables

The distribution of respondents by selected demographic characteristics is given in (Table 2).

Table 2: Percent Distribution of Respondents by Selected Background Characteristics[2]

Background Characteristics		Percent	Number of HPs
Sex	Female	45.3	267
	Male	54.7	322
Age	<24 years	9.2	54
	25-29	17.0	100
	30-34	11.4	67
	35-39	12.9	76
	40-44	11.2	66
	45-49	20.2	119
	50-54	9.7	57
	55+	8.5	50
Health Profession	Physician	10.0	59
	Pharmacy Personnel	10.7	63
	Nurses	28.9	170
	Associate Nurses	35.5	209
	Medical Lab Personnel	14.9	88
Marital Status	Single	29.7	175
	Married	61.3	361
	Widowed	2.9	17
	Divorced/Separated	6.1	36
Zoba	Southern Red Sea	3.6	21
	Northern Red Sea	10.4	61
	Debub	16.3	96
	Anseba	7.6	45
	Gash Barka	12.4	73
	Maekel	23.4	138
	National Ref. Hospital	17.7	104
	Head Quarters	8.7	51
Total		100.0	589

[2] Data are not weighted

7.3 Tobacco Use Prevalence

7.3.1 Ever-smoking Prevalence

Ever prevalence of cigarette smoking (ever smoked a cigarette, even one or two puffs) and ever use of other forms of tobacco products among Eritrean health professionals were found to be 30.1 % and 5.3 %, respectively (Table 3).

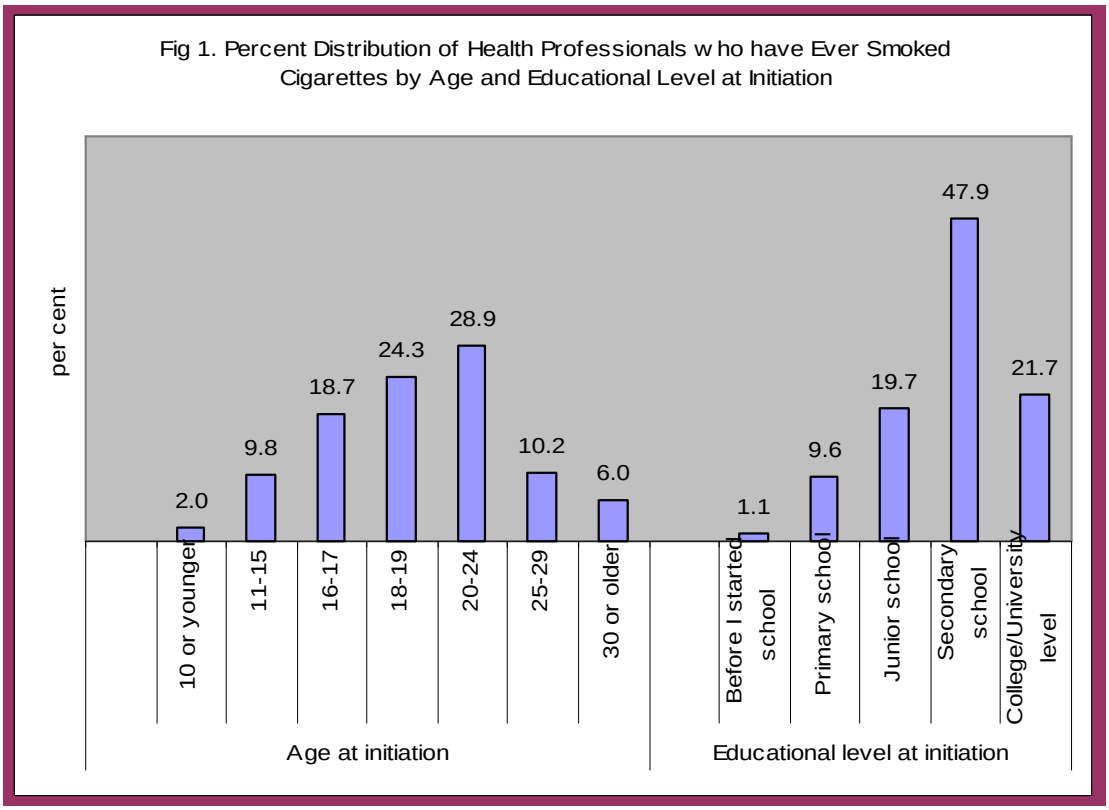
Analysis by sex revealed that male health professionals were significantly more likely than their female counterparts to have ever smoked cigarettes (48.3% Vs 12.9%, p=0.0), or ever used other forms of tobacco (10.7% Vs 0.2%, p=0.0). Significant differences were observed in the proportions of health professionals who had ever smoked cigarettes (p=0.0012) or ever used other forms of tobacco (p=0.0) when analyzed with respect to age. In general, older health professionals were more likely to have used them than the younger ones. Significant differences were also observed in the proportions of health professionals who had ever smoked cigarettes when seen by health profession type (p=0.0). Physicians (67.4%) and pharmacy personnel (46.0%) were more likely to have ever smoked cigarettes compared to the other health professionals (Table 3).

Table 3: Percent Distribution of Ever -Smoking Prevalence of Tobacco Use among Eritrean Health Professionals by Sex, Age, and Health Profession

	Ever smoked cigarettes			Ever used other tobacco forms		
Background characteristics	Yes	No	Number of HPs	Yes	No	Number of HPs
Sex						
Female	12.9	87.1	302	0.2	99.8	302
Male	48.3	51.7	287	10.7	89.3	287
Age						
<24	15.8	84.2	52	3.7	96.3	52
25-29	24.0	76.0	96	1.1	98.9	96
30-34	21.2	78.8	71	0.0	100.0	71
35-39	30.8	69.2	88	6.3	93.7	88
40-44	32.9	67.1	69	3.4	96.6	69
45-49	30.1	69.9	114	4.3	95.7	114
50-54	47.6	52.4	54	19.7	80.3	54
55+	47.1	52.9	45	11.0	89.0	45
Health Profession						
Physician	67.4	32.6	34	12.1	87.9	34
Pharmacy Personnel	46.0	54.0	28	14.3	85.7	28
Nurse	27.6	72.4	186	3.5	96.5	186
Associate Nurse	25.4	74.6	291	4.8	95.2	291
Medical Lab Personnel	33.0	67.0	50	5.7	94.3	50
Total	30.1	69.9	589	5.3	94.7	589

7.3.2 Age and Educational Level of Initiation

Among health professionals who had ever smoked cigarettes, majority of them initiated smoking at the age ranges 20-24(28.9%), 18-19(24.3%), and 16-17(18.7%) years. And with respect to their educational level at the time of initiation, 47.9% were in secondary school, 21.7 % were in college/university, followed by 19.7% who were in junior school (Fig.1).



7.3.3 Current Prevalence

The survey found that about 1 in 20 health professionals (5.1%) currently smoke cigarettes, and 1.8% were current users of other forms of tobacco. Overall, about 7% of the health professionals currently either smoke cigarettes or use other forms of tobacco (Table 4). Significant difference was observed in the proportions of current smoking statuses of health professionals when analyzed by sex (p=0.0), with more males (10.5%) currently smoking than females (0.0%). Similarly, there was a significant difference in the current smoking statuses of health professionals when analyzed with respect to age (p=0.0049) and health profession type (p=0.0). In general, older health professionals were more likely to be current smokers than younger health professionals; and physicians (17.0%) were more likely to be current smokers than any professionals in the other health profession types.

There was significant difference in current use of other tobacco forms between the sexes (p=0.0) and between the age groups (p=0.0), but no significant difference was observed between the health profession type

With respect to the overall use of tobacco, significant differences were observed when the data were analyzed by sex (p=0.0), age (p=0.0001) as well as health profession types (p=0.0002); and the pattern is similar to the pattern obtained for current smoking status of health professionals by these background characteristics. (Table 4).

Table 4: Percent Distribution of Current Tobacco Use Status of Eritrean Health Professionals by Sex, Age, and Health Profession type

Background Characteristics		Current smoking status				Current use of other forms of tobacco status				Current use of any tobacco products status			
		Current smokers	Ever smokers but not current	Never smoked	Number of HPs	Current other tobacco users	Ever other tobacco users but not current	Never used other tobacco	Number of HPs	Current any tobacco users	Ever any tobacco users	Never used any tobacco	Number of HPs
Sex	Female	0.0	12.9	87.1	302	0.0	0.2	99.8	302	0.0	12.9	87.1	302
	Male	10.5	37.7	51.7	287	3.7	7.0	89.3	287	14.3	34.6	51.1	287
Age	<24	0.0	15.8	84.2	52	2.7	1.1	96.3	52	2.7	13.1	84.2	52
	25-29	5.8	18.3	76.0	96	0.0	1.1	98.9	96	5.8	18.3	76.0	96
	30-34	6.6	14.6	78.8	71	0.0	0.0	100.0	71	6.6	14.6	78.8	71
	35-39	4.1	26.7	69.2	88	1.6	4.7	93.7	88	5.7	25.1	69.2	88
	40-44	0.9	31.9	67.1	69	0.0	3.4	96.6	69	0.9	31.9	67.1	69
	45-49	5.5	24.7	69.9	114	0.4	3.9	95.7	114	5.9	24.3	69.9	114
	50-54	10.5	37.1	52.4	54	11.3	8.4	80.3	54	21.8	29.2	49.0	54
	55+	8.6	38.6	52.9	45	3.1	7.9	89.0	45	11.7	35.5	52.9	45
Health Profession													
	Physician	17.0	50.4	32.6	34	0.0	12.1	87.9	34	17.0	50.4	32.6	34
	Pharmacy Personnel	6.3	39.7	54.0	28	1.6	12.7	85.7	28	7.9	39.7	52.4	28
	Nurse	7.1	20.6	72.4	186	0.0	3.5	96.5	186	7.1	20.6	72.4	186
	Associate Nurse	1.9	23.4	74.6	291	3.3	1.4	95.2	291	5.3	20.6	74.2	291
	Medical Lab Personnel	8.0	25.0	67.0	50	1.1	4.5	94.3	50	9.1	23.9	67.0	50
Total		5.1	25.0	69.9	589	1.8	3.5	94.7	589	7.0	23.5	69.6	589

7.4 Exposure to Second-hand Smoke

A little less than half of the health professionals (48.9%) reported having been exposed to second hand smoke at public places, 23.3% reported having been exposed to second hand smoke at work places, and 12.9% reported having been exposed to second hand smoke at home at least once during the last 7 days prior to the survey (Table 5).

Comparison of exposure to second hand smoke between the sexes revealed that there was no statistically significant difference (p=0.07) in their exposure to second hand smoke at home between males and females. Similarly, no significant difference was observed between health profession types (p=0.1467) in their exposure to second hand smoke at home. However, significant difference was observed between the age groups (p=0.0096) as well as between current smoking statuses (p=0.0359) in their exposure to second hand smoke at home. In general, younger health professionals were more likely to report that they were exposed to second hand smoke at their homes than older health professionals. Ever smokers but not current (18.3%) and current smokers (17.2%) were more likely to report that they were exposed to second hand smoke at their homes compared to never smokers (10.4%).

Comparison of exposure to second hand smoke at work place by age group as well as by health profession type showed that there were no statistically significant differences in their exposure to second hand smoke between the age groups (p=0.9325) and between the health profession types (p=0.068), respectively. Exposure to second hand smoke at workplace was significantly different between the sexes (p=0.0) and between current smoking statuses (p=0.0003). Males (31.2%) were more likely to report that they were exposed to second hand smoke at workplace during the last 7 days prior to the survey than females (15.8%). With regard to current smoking status, current smokers (48.4%) were more likely to report that they were exposed to second hand smoke at workplace during the last 7 days prior to the survey than either ever smokers but not current (28.7%) or never smokers (19.6%).

Significant difference was observed between the sexes (p=0.0), between the age groups (p=0.0096), between the health profession types (p=0.0055), as well as between current smoking statuses (p=0.0) in their exposure to second hand smoke at public places. (Table 5)

Table 5: Percentages of Exposure to Second Hand Smoke at least once during the Last 7 Days Prior to the Survey at Home, Workplace and Public Places among Eritrean Health Professionals by Background Characteristics

Background Characteristics		At home	At work place	At public places	Number of HPs
Sex	Female	10.3	15.8	36.3	302
	Male	15.3	31.2	62.1	287
Age	<24	21.6	23.4	51.2	52
	25-29	22.0	26.2	60.7	96
	30-34	11.3	20.5	58.6	71
	35-39	8.3	23.7	33.1	88
	40-44	8.4	18.7	45.1	69
	45-49	10.1	23.4	44.8	114
	50-54	15.4	22.2	47.1	54
	55+	3.4	29.0	54.1	45
Health Profession	Physician	16.6	29.7	70.7	34
	Pharmacy Personnel	11.1	25.4	60.3	28
	Nurses	7.6	28.2	47.1	186
	Associate Nurses	15.3	18.2	44.0	291
	Medical Lab Personnel	14.8	29.5	62.5	50
Smoking status	Current smokers	17.2	48.4	74.7	30
	Ever Smokers but not current	18.3	28.7	60.9	147
	Never smokers	10.4	19.6	42.7	412
Total		12.7	23.3	48.9	589

7.5 Knowledge of Health Professionals on Health Effects of Tobacco Use

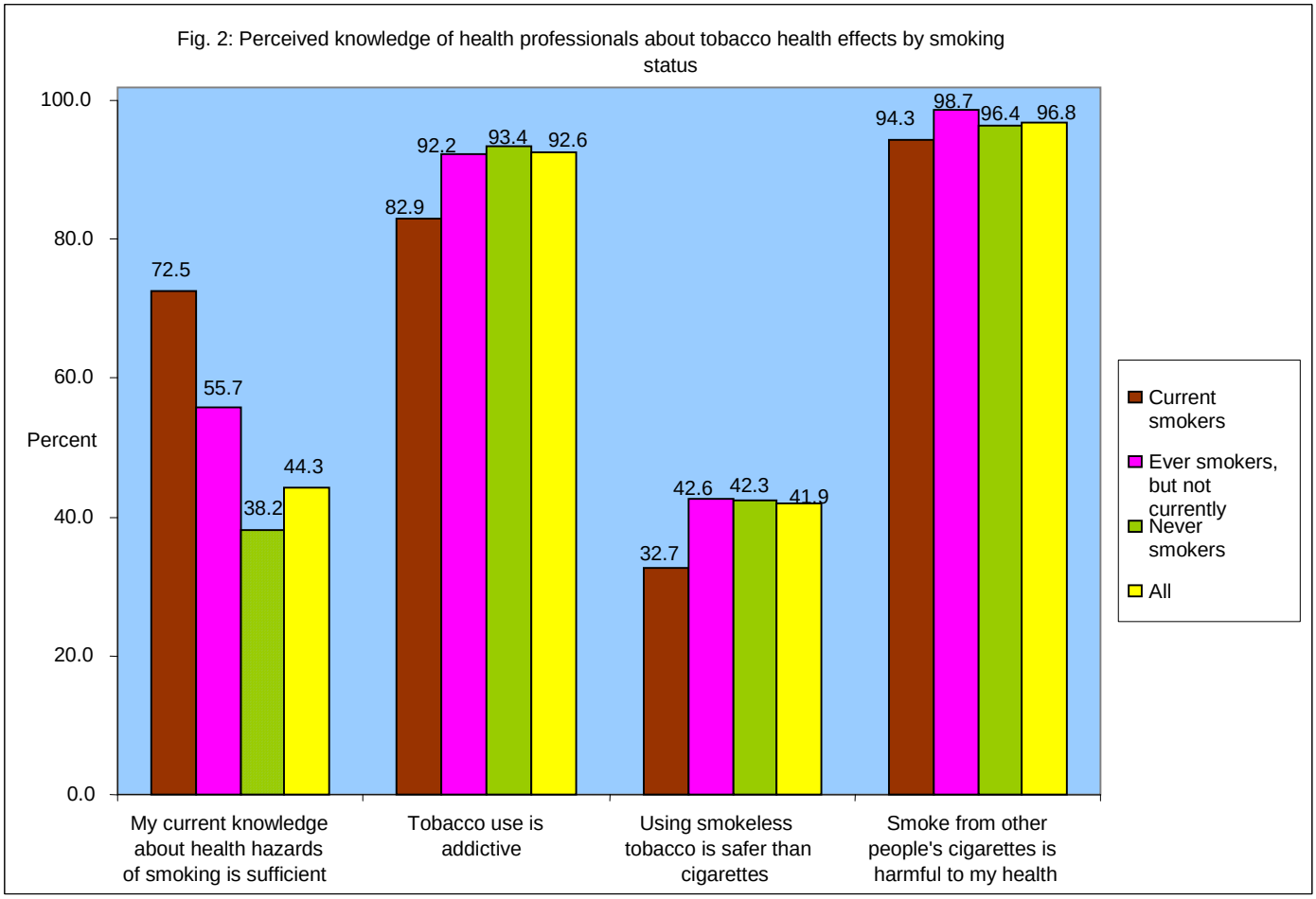
Less than half (44.3%) of health professionals thought that their current knowledge about the health hazards of smoking was sufficient.

In an effort to find out about their current knowledge on health effects of tobacco use, questions such as 'Is tobacco use addictive?', 'Does tobacco use cause lung cancer?', 'Does tobacco use cause heart disease?' and 'Do you think that using smokeless tobacco is safer than cigarettes?' were included in the questionnaire. Among those who reported that their current knowledge about the health hazards of smoking is sufficient, 99.1% reported that tobacco use causes lung cancer, and 96.6% reported that tobacco use causes heart disease.

The survey findings showed that 92.6% of health professionals believed that tobacco use is addictive, with no significant difference in belief between health professionals with different current smoking statuses.

A little more than 4 in 10 (41.9%) thought that using smokeless tobacco is safer than smoking cigarettes.

Moreover, 96.8% of health professionals thought that smoke from other people's cigarettes is harmful to their health. (Fig. 2)



Comparison among health profession types in their claim that their current knowledge about the health hazards of smoking is sufficient revealed that there was significant difference (p=0.0009) in knowledge between the groups. Associated nurses (62.7%) were more likely to claim that their current knowledge about health hazards of smoking is insufficient. And even among the physician group, more than one-quarter of them reported having insufficient knowledge of health hazards. That is a very high number. (Table 6)

Current smokers (72.5%) were more likely to claim to have sufficient knowledge about the health hazards of smoking than either ever smokers (55.7%) or never smokers (38.2%) (p=0.0). (Fig. 2 and Table 6)

Table 6: Percent Distribution of Health Professionals who Claimed that their Current Knowledge about the Health Hazards of Smoking is Sufficient by Health Profession type and Current Smoking Status			
	Current knowledge sufficient		
Background Characteristics	Yes	No	Number of HPs
Health Profession			
Physician	72.8	27.2	34
Pharmacy Personnel	50.8	49.2	28
Nurses	48.2	51.8	186
Associate Nurses	37.3	62.7	291
Medical Lab Personnel	47.7	52.3	50
Smoking Status			
Current Smokers	72.5	27.5	30
Former Smokers	55.7	44.3	147
Never Smokers	38.2	61.8	412
Total	44.3	55.7	589

7.6 Smoking Behavior and Cessation Attempts

7.6.1 Number Cigarettes Smoked by Current Smokers

Majority of current smokers (72.4%) reported that they had smoked cigarettes on all the last 30 days prior to the survey, and about 8 in 10 current smokers consume more than 5 cigarettes a day on average. (Table 7)

Table 7: Percentages of Current Smokers by Number of Days Smoked over the Last 30 Days and Average Number of Cigarettes Smoked per Day			
Smoking behavior		Number of HPs	
	weighted percent	weighted	unweighted
Smoking rates over the last 30 days			
1 or 2 days	3.6	1	1
3 to 9 days	3.6	1	1
6 to 9 days	4.6	1	1
10 to 19 days	14.0	4	4
20 to 29 days	1.8	1	1
All 30 days	72.4	22	29
Number of cigarettes smoked per day			
less than 5	16.0	5	5
5-10 cigarettes	52.6	16	18
11-20 cigarettes	27.5	8	12
more than 20	3.9	1	2
Total	100.0	30	37

7.6.2 Tobacco Use Quit Attempts

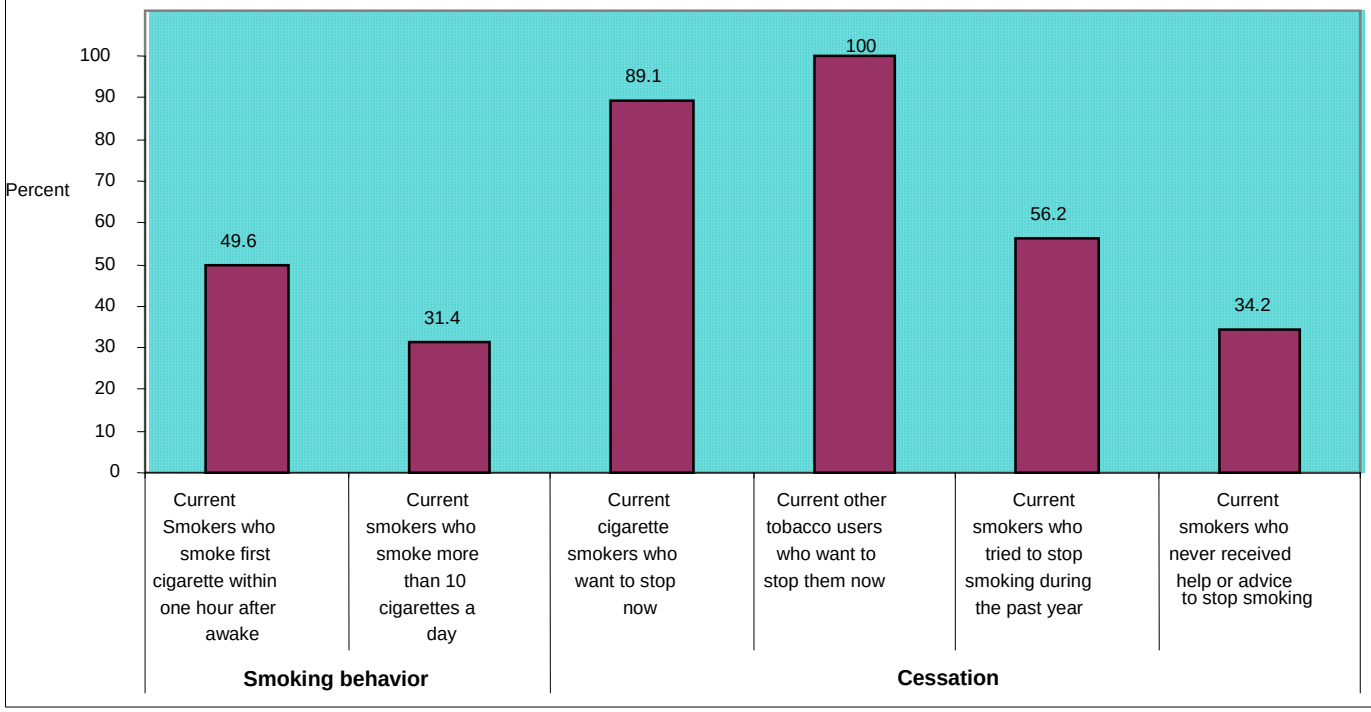
Among current smokers, about half of them (49.6%) smoke their first cigarette within one hour after they awake.

Regarding cessation attempts of current smokers, about 9 in 10 (89.1%) of them reported that they want to stop smoking cigarettes now. Actually, among those who were current smokers, 56.2% of them reported that they had unsuccessfully tried to stop smoking cigarettes during the past year.

About 34.2 % of current smokers reported that they had never received help or advice to help them stop smoking cigarettes. Among current smokers who have received help or advice to help them stop smoking cigarettes, majority of them (97.6%) received help or advice from family members or friends (not shown in Table/Figure).

All current users of other forms of tobacco reported that they want to stop using them now. (Fig. 3)

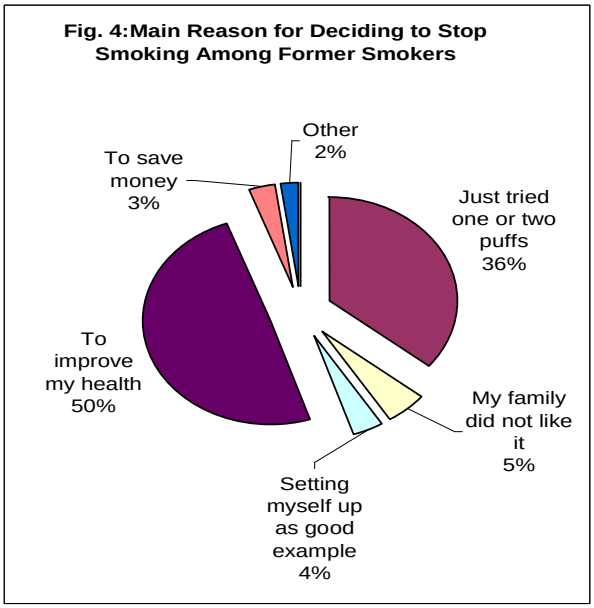
Fig. 3: Smoking Behavior and Cessation Attempts among Current Users of Tobacco Products

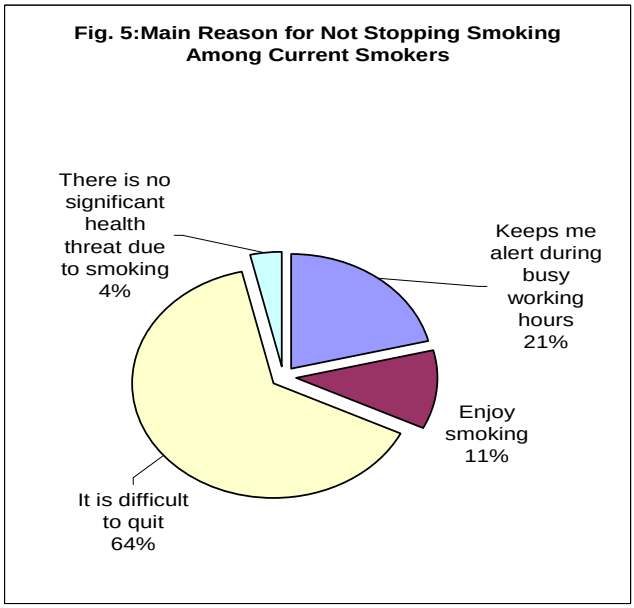


7.6.3 Reasons on the Desire to Stop Smoking and Not Stopping

Ever smokers were asked to state their **main** reason they had stopped smoking. Half of ever smokers stopped it to improve their health, and 36% just tried it – that they did not make it their habit (Fig. 4).

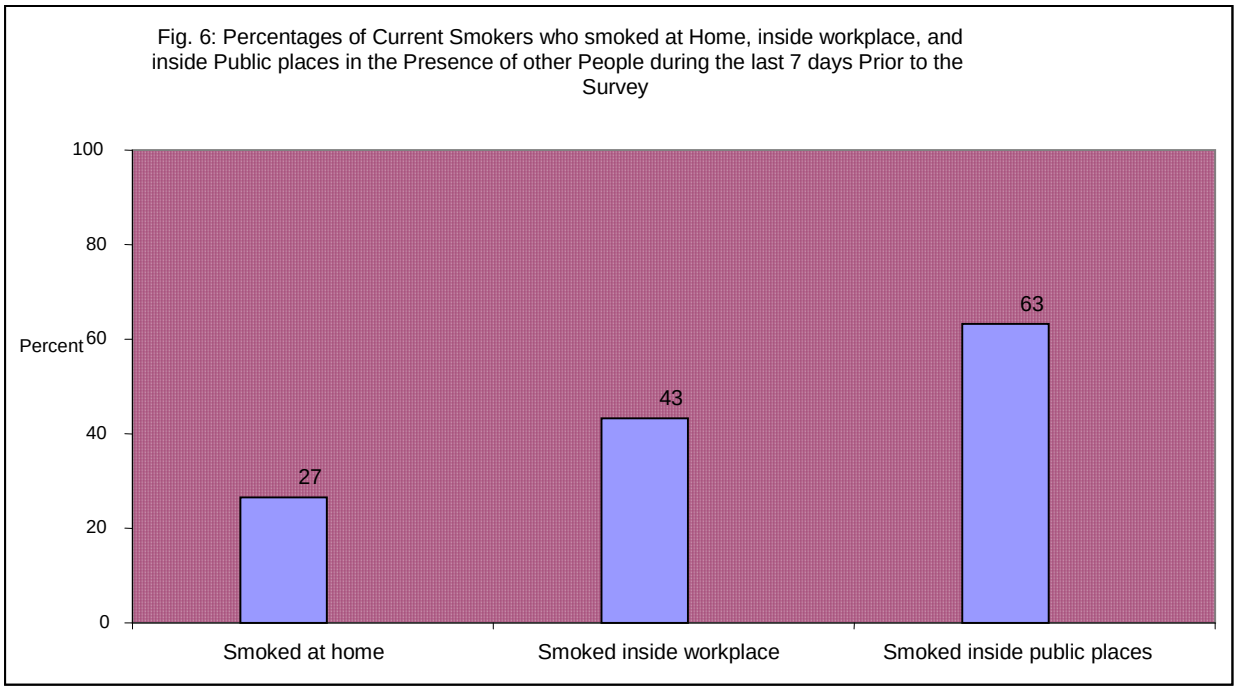
Similarly, current smokers were asked to state the **main** reason they had not stopped smoking. Over 6 in 10 (64%) of current smokers reported that they smoke because it is difficult for them to quit. 21% of current smokers smoke because they believe it keeps them alert during busy working hours (Fig. 5).





7.6.4 Smoking Behaviors of Current Smokers in Presence of other Peoples

Current smokers were also asked about their smoking behaviors with respect to their smoking at home, work place and inside public places in the presence of other people during the last 7 days prior to the survey. The survey findings showed that current smokers who smoke inside public places in the presence of other people were (63%) , inside work place (43%) and at home (27%). Considering the expected roles health professionals should play regarding tobacco use control, though the last two proportions are relatively small, still they are a cause for concern (Fig. 6)

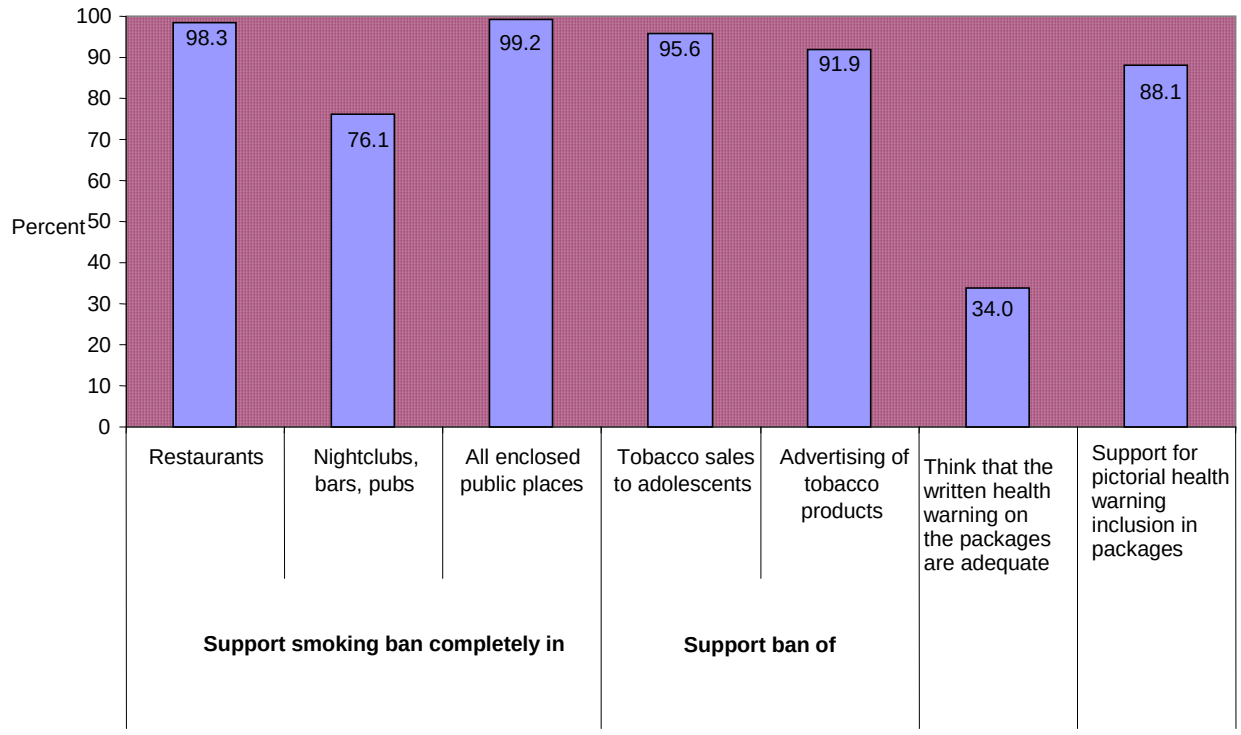


7.7 Attitudes of Health Professionals towards Tobacco Use Regulation

Over 98% of health professionals supported a complete smoking ban in restaurants and in all enclosed public places, while only 76.1% supported a complete smoking ban in night clubs, bars and pubs. Majority of health professionals supported ban of tobacco sales to adolescents (95.6%) and advertising of tobacco products (91.9%).

Almost 9 in 10 (88.1%) health professionals supported the inclusion of pictorial health warnings on cigarette packages, and only 34% thought that the present written health warning on the packages of cigarettes adequately provides information about the health hazards of smoking (Fig. 7).

Fig. 7: Attitudes of Health Professionals towards Tobacco Use Regulation



7.7.1. Attitudes of Health Professionals towards Complete ban of Smoking in Bars, Night Clubs and Pubs.

Analysis of the attitudes of health professionals towards complete ban of smoking in nightclubs, bars, and pubs by sex, age and health profession type revealed that there was no statistically significant difference in attitude between the categories of sex (p=0.076), as well as between the age groups (p=0.139). On the other hand, significant difference in attitude was found between the health profession types (p=0.0004). Nurses (80.6%) and Associated Nurses (79.4%) were more likely to support complete smoking ban in nightclubs, bars, and pubs compared to the other health professionals (Table 8).

Table 8: Percent Distribution of Health Professionals on their Attitude towards Complete Ban of Smoking in nightclubs, bars, and pubs by Sex, Age, and Health Profession type

	Support Complete ban on smoking at nightclubs/bars/pubs		
Background Characteristics	Yes	No	Number of HPs
Gender			
Female	79.1	20.9	302
Male	72.9	27.1	287
Age			
<24	64.7	35.3	52
25-29	71.9	28.1	96
30-34	69.8	30.2	71
35-39	79.7	20.3	88
40-44	76.2	23.8	69
45-49	78.7	21.3	114
50-54	85.8	14.2	54
55+	82.3	17.7	45
Health Profession			
Physician	63.4	36.6	34
Pharmacy Personnel	58.7	41.3	28
Nurses	80.6	19.4	186
Associate Nurses	79.4	20.6	291
Medical Lab Personnel	58.0	42.0	50
Total	76.1	23.9	589

7.8 Tobacco Control Policy

7.8.1. Knowledge of Health Professionals of the Existence of Tobacco Control Proclamation and Official Policy on Banning Smoking in Health Facilities.

Over half of the health professionals (56.4%) knew about the existence of Tobacco Control Proclamation in Eritrea (Table 9). Of those who knew about it, only 9% thought that it is implemented as it should be with regard to prohibiting smoking in public places (Fig 8). Further, while the Proclamation actually does not completely ban smoking inside bars, night clubs and pubs, 31% of those who claimed to know about the existence of the Proclamation thought that it does completely bans smoking inside bars, nightclubs and pubs (Fig. 9).

Analysis by health profession type revealed that there was no statistically significant difference among health professionals (p=0.18) with regard to their knowledge of the existence of Tobacco Control Proclamation in Eritrea (Table 9).

Only 13.4% of health professionals reported that their health facility has an official policy banning smoking inside their health facility (Table 9). Among those who reported that their health facility has an official policy banning smoking, 69% thought that their health facility's official smoking ban was enforced (Fig. 10). Health professionals who reported that their health facility has an official policy banning smoking inside it were asked whether their health facility has a team, as important component, to implement and enforce smoke free facility. And, only 13 % of them reported that their health facility has a team to implement and enforce the policy. However, it is important to note that the presence or absence of health facility policies regarding the control of tobacco use in the health facilities reported are only opinions of the respondents, hence the validity of the results are subject to the individual respondent's perception.

No significant difference was observed between health professionals of the different types (p= 0.47) in their knowledge whether their health facility has official policy banning smoking inside it or not (Table 9).

Table 9: Percent Distribution of Knowledge of Health Professionals of the Existence of the Proclamation on Tobacco Control in Eritrea and the Presence of an Official Policy Banning Smoking inside their Health Facility by Health Profession

Background Characteristics	Know of the Tobacco Control Proclamation in Eritrea		Number of HPs	Health facility has official policy banning smoking inside it			Number of HPs
	Yes	No		Yes	No	Don't know	
Health Profession							
Physician	70.9	29.1	34	21.9	55.8	22.3	34
Pharmacy Personnel	69.8	30.2	28	15.9	69.8	14.3	28
Nurses	53.5	46.5	186	14.7	77.6	7.6	186
Associate Nurses	54.5	45.5	291	11.5	82.3	6.2	291
Medical Lab Personnel	60.2	39.8	50	12.5	77.3	10.2	50
Total	56.4	43.6	589	13.4	78.3	8.3	589

Fig. 8: HPs who Think that the Law that Prohibits Smoking inside Public Places is Implemented as it should be (Among those who claimed to Know the Presence of Proclamation in Eritrea)

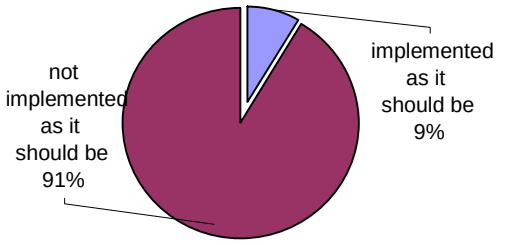


Fig. 9: HPs who Think that the Proclamation on Tobacco Control Policy Completely Bans Smoking inside bars, night clubs and pubs (Among those who claimed to Know the Presence of Proclamation in Eritrea)

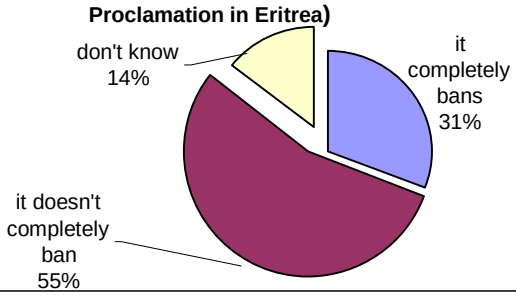


Fig. 10: Health Facility's Official Smoking Ban Enforcement (Among those who claimed that their Health Facility has Official Policy)

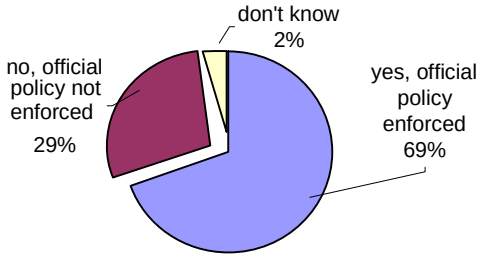
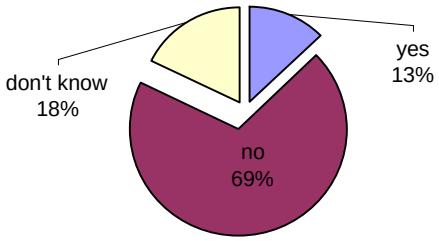


Fig. 11:Presence of a Team in Health Facility to Enforce and Implement for a Smoke Free Facility (Among those who claimed that their Health Facility has Official Policy)



7.8.2. Presence of No-Smoking Signs in Health Facilities

Tobacco use control in health facilities was further investigated by asking health professionals about the presence of No-Smoking signs posted in their facilities. 45% of the health professionals reported that No-Smoking signs are posted inside the buildings in their health facility (Fig. 12), and 25% reported that No-Smoking signs are posted inside the premises (out door) of their health facility (Fig. 13).

Fig. 12: No-Smoking Signs Posted inside the Buildings of Health Facility

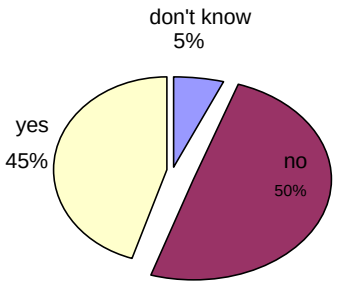
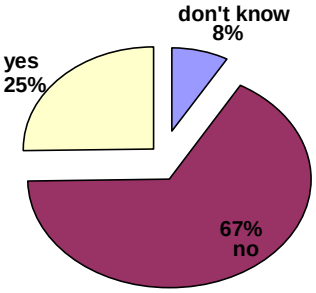


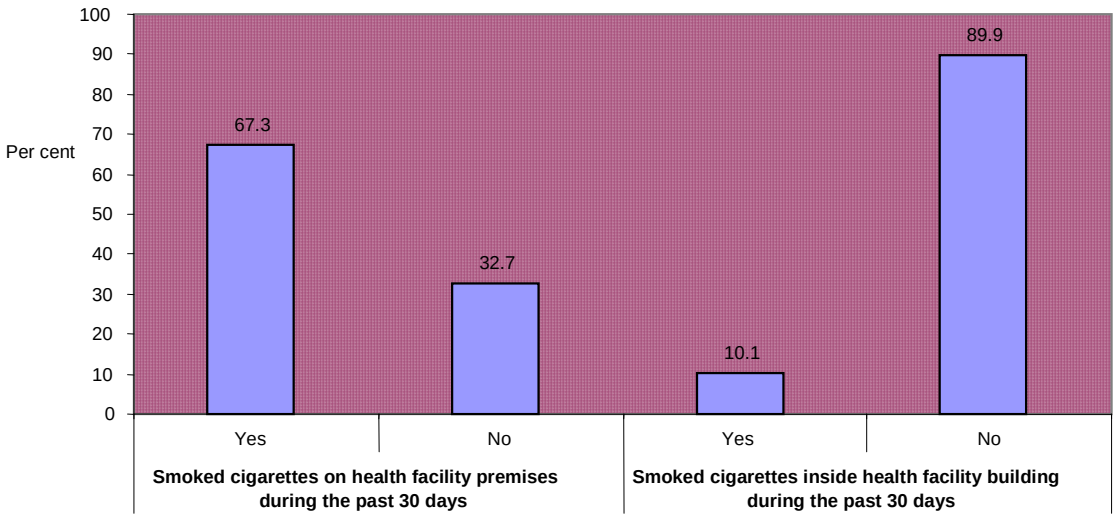
Fig. 13: No-Smoking Signs Posted inside the Premises of Health Facility



7.8.3. Smoking on Health facilities building and Premises

The figure below (Fig. 14) provides insight into the smoking behavior of current smokers within their workplaces. 67.3% of health professionals who currently smoke reported that they had smoked cigarettes on health facility premises during the last 30 days prior to the survey, and 10.1% reported that they had smoked cigarettes inside health facility building in the above specified time.

Fig. 14: Percent Distribution of Current Smokers by Smoking in Health Facility Premises and in Health Facility Building Practices during the last 30 days Prior to the Survey



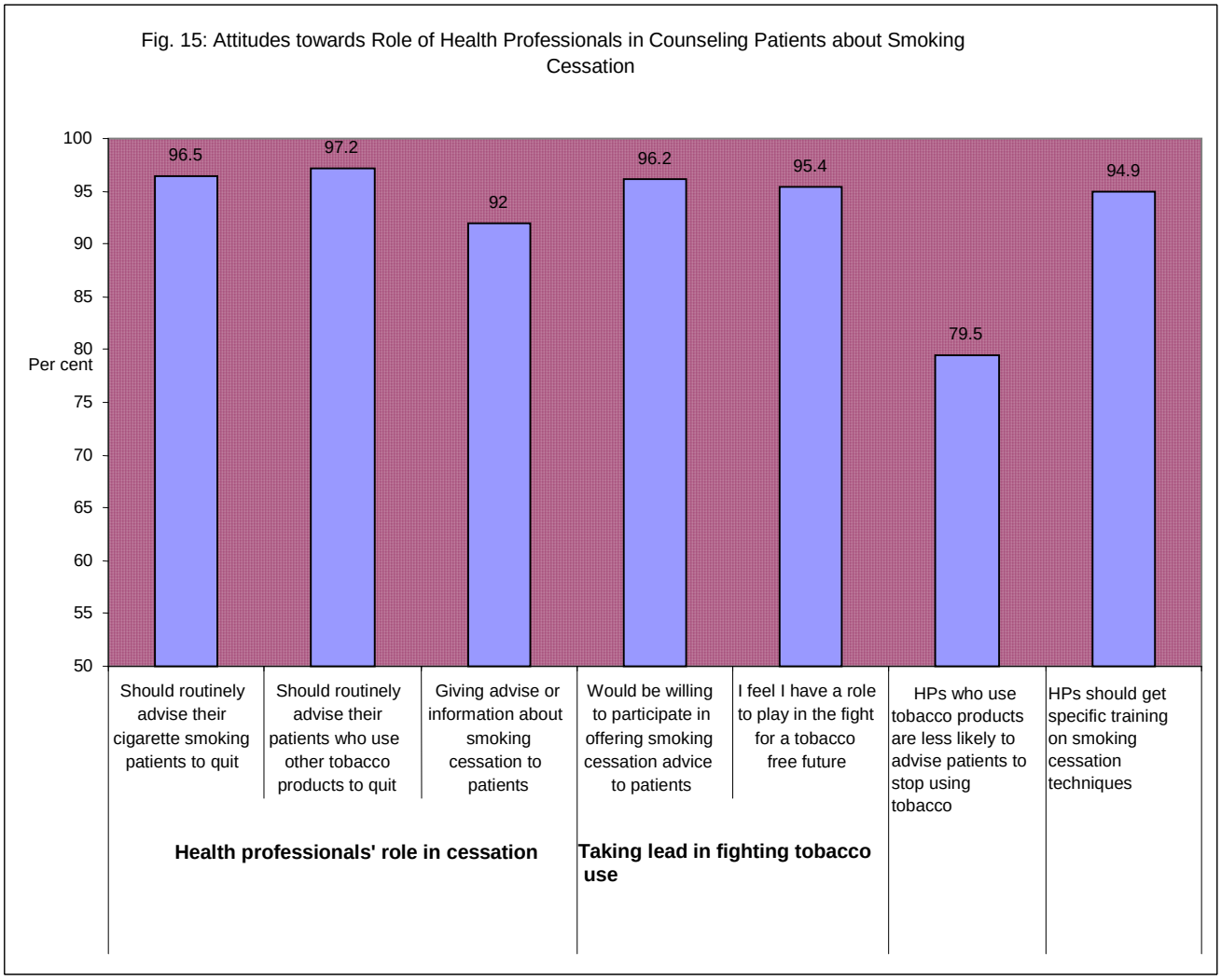
7.9 Attitudes towards the Role of Health Professionals in Counseling Patients about Smoking Cessation

Almost all health professionals were of the attitude that they should routinely advise their patients who smoke (96.5%) or use other tobacco products (97.2%) to quit smoking/tobacco use. A little over 9 in 10 (92%) health professionals reported that they have a role in giving advice or information about smoking cessation to patients.

Almost all health professionals expressed their willingness to participate in offering smoking cessation advice to patients (96.2%).About 95% of them felt that they have a role to play in the fight for a tobacco free future.

About 3 in 4 health professionals were of the attitude that health professionals who use tobacco products are less likely to advise patients to stop using them. Nearly 95% of health professionals expressed that health professionals should get specific training on smoking cessation techniques. (Fig. 15)

Fig. 15: Attitudes towards Role of Health Professionals in Counseling Patients about Smoking Cessation

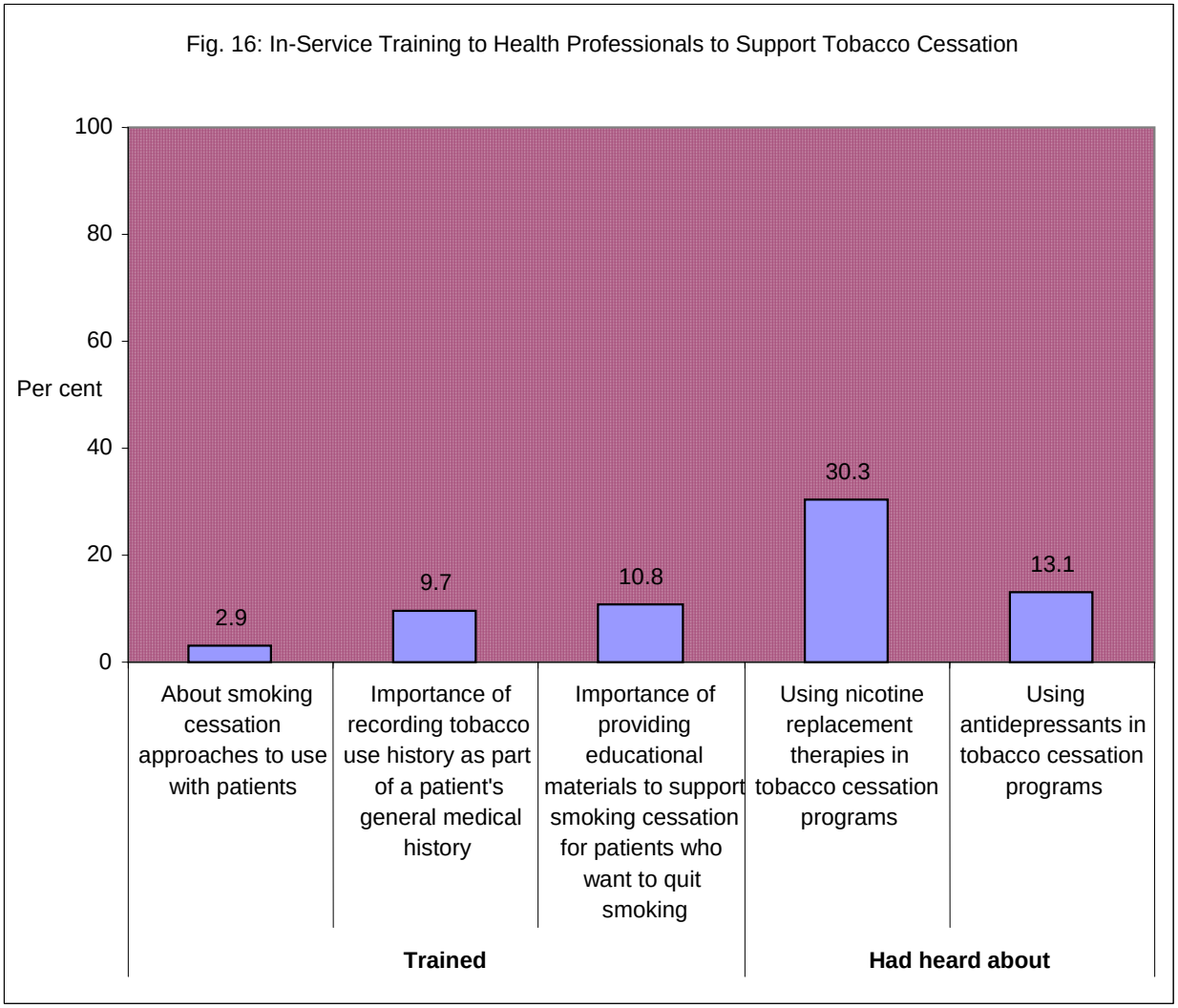


7.9.1. Training of Health Professionals in Smoking Cessation Counseling

Training received so far by health professionals regarding tobacco cessation approaches to help them better counsel their own patients are not encouraging. An insignificant proportion of health professionals (2.9%) ever received any formal training in smoking cessation approaches to use with patients. Close to 10% of health professionals

were trained about the importance of recording tobacco use history as part of a patient's general medical history, and about the same percent (10.8%) were trained about the importance of providing educational materials to support smoking cessation for patients who want to quit smoking (Fig. 16).

Fig. 16: In-Service Training to Health Professionals to Support Tobacco Cessation



7.9.2. Health Professionals who have ever heard about Nicotine Replacement Therapies (NRT) and Anti Depressants.

About 3 in 10 health professionals had heard about using nicotine replacement therapies (NRT) in tobacco cessation programs, and around 13% had heard about using antidepressants in tobacco cessation programs. Physicians (80.5%) were more likely to have ever heard about using NRT in tobacco cessation programs, followed by pharmacy personnel (52.4%) (p=0.0). A similar pattern was observed in the percent distribution of knowledge of health professionals with respect to using antidepressants in tobacco cessation programs by health profession type (p=0.0278).

Table 10: Percent Distribution of Knowledge of Health Professionals (ever heard of) of Nicotine Replacement Therapies and Antidepressants, Both used in Cessation Tobacco Programs, by Health Profession

Background Characteristics	Ever heard of using nicotine replacement therapies in cessation programs		Number of HPs	Ever heard of using antidepressants in cessation programs		Number of HPs
	Yes	No		Yes	No	
Health Profession						
Physician	80.5	19.5	34	26.9	73.1	34
Pharmacy Personnel	52.4	47.6	28	23.8	76.2	28
Nurses	24.1	75.9	186	13.5	86.5	186
Associate Nurses	25.4	74.6	291	10.0	90.0	291
Medical Lab Personnel	36.4	63.6	50	13.6	86.4	50
Total	30.3	69.7	589	13.1	86.9	589

8. DISCUSSION

8.1 Tobacco Use Prevalence among Health Professionals

The survey showed that around 30.1% of the health professionals have ever smoked cigarettes and around 5.3% have ever used other forms of tobacco. Current prevalence of cigarette smoking among health professionals is about 5.1%, while current use of other forms of tobacco is about 1.8%. Overall, current use of any tobacco product is about 7.0%.

This representative tobacco use survey among health professionals was conducted for the first time; therefore comparative analysis of the status of the current prevalence of tobacco use cannot be conducted. However, tobacco use related survey conducted by Non-Communicable Diseases (NCD) of the Ministry of Health (Eritrea) in 2004 showed that tobacco use prevalence among the general population was 7.2%. Also a survey conducted by the Department of Regulatory Services of the Ministry of health in 2005 among adolescent students aged 13-15 years found that prevalence of current cigarette smoking was 2.0%, while any tobacco use was 8.2%. Generally, recent data on the prevalence of tobacco use either in the general population or in sections of the population are scarce.

Analysis of smoking prevalence among the health professionals by sex showed that smoking rates were higher among males (10.5%) than females (0%). In general, no female health professional has reported to be current user of any tobacco product.

Significant difference was observed in regard to the prevalence of smoking among health professionals in the different health profession types. The highest smoking prevalence was among physicians (17%) compared to the other groups of professionals.

Tobacco use prevalence among health professionals by age showed that health professionals aged 50 or above were more likely to be current smokers or current users of other forms of tobacco than health professionals in other age groups. The study showed that there were no current smokers aged 24 or under, however, 15.8% of health professionals in that age range reported having ever smoked cigarettes.

More than 80% of ever smokers experimented with smoking before they reached age 24. As to their level of education at initiation, 47.9% of ever smokers were Secondary School, 21.7% were College/University, 19.7% were Junior School levels. These findings should be linked and associated with surveys on tobacco use among youth, to help in drawing-up strategies on how to best prevent a tobacco use epidemic by identifying the risky age groups.

8.2 Exposure to Second Hand Smoke at Home, Work and Public Places

The Proclamation on Tobacco Control completely bans smoking in enclosed public places and workplaces though it may allow a designated smoking area within an enclosed premises; nevertheless the study revealed that there is still high exposure to second hand smoke at all these places. Almost half of the health professionals (48.9%) reported that they had been exposed to second hand smoke at public places, 23.3% at workplaces, and 12.7% at their homes at least once during the last 7 days prior to the survey.

Exposure to second hand smoke at home varied across age and across current smoking status of the health professionals. In general, younger health professionals were more likely to report that they were exposed to second hand smoke at their homes than older health professionals. Ever smokers but not current (18.3%) and current smokers (17.2%) were more likely to report that they were exposed to second hand smoke at their homes compared to never smokers (10.4%). No significant variation on exposure to second hand smoke at home was observed between the sexes and across health profession types.

Exposure to second hand smoke at workplace varied between the sexes and across current smoking status of the

health professionals. Males (31.2%) were more likely to report that they were exposed to second hand smoke in the workplace during the last 7 days prior to the survey than females (15.8%). With regard to smoking status, current smokers (48.4%) were more likely to report that they were exposed to second hand smoke in the workplace during the last 7 days prior to the survey than either ever smokers but not current(28.7%) or never smokers (19.6%). And, exposure to second hand smoke in the workplace showed no significant variation across age and across health profession types.

Exposure to second hand smoke in public places varied across sex, age, health profession type, and smoking statuses of health professionals.

The study showed that around 22% and 47% of health professionals who do not currently smoke are involuntary exposed to second hand smoke in workplaces and public places, respectively. It is important to underscore that smoking harm both the smoker and anyone exposed to the smoke. The latter, through their involuntary exposure, get the harmful effects of smoking, and it is those people who deserve protection from involuntary exposure.

8.3 Knowledge of Health Professionals of the Health Effects of Tobacco Use

Less than half (44.3%) of health professionals reported that their current knowledge about the health hazards of smoking is sufficient. The study showed that there is a gap among health professionals in regard to their current knowledge about the health hazards of smoking. It is important to note that in all groups, other than physicians, more than half of them indicated that they do not have sufficient knowledge. And even among the physician group, more than one-quarter of them reported having insufficient knowledge of health hazards of tobacco use. That is a very high proportion.

Significant difference existed between the health profession types and between the smoking statuses in their claim that their current knowledge about the health hazards of smoking is sufficient. Current smokers (72.5%) were more likely to claim to have sufficient knowledge about the health hazards of smoking than either ever smokers but not current (55.7%) or never smokers (38.2%).

The findings also showed that there is high level of knowledge among the health professionals (96.8%) with regard to the harmfulness of exposure to second hand smoke.

8.4 Smoking Behavior and Cessation Attempts of Current Smokers

Almost 7 in 10 (68.6%) fall into the category of light smokers (those who consume between 1-10 cigarettes a day)[3], and 27.5% are moderate smokers (those who consume between 11-20 cigarettes a day) [3]. About half of current smokers (49.6%) smoke their first cigarette within one hour after they awake.

According to the findings of this survey, smoking in and around health facility buildings by health professionals is not an uncommon phenomenon. 67.3% of current smokers reported that they had smoked on health facility premises during the last 30 days prior to the survey. And, 10.1% of current smokers reported that they had smoked inside their health facility building during the last 30 days prior to the survey. Cigarette smoking by health professionals at home, workplace, and public places in the presence of other people are also not uncommon. Considering the expected roles health professionals should play in regard to tobacco use control, the above findings are a cause for concern.

The desire to quit among current smokers is high. Almost 9 in 10 (89.1%) of current cigarette smokers and all current users of other forms of tobacco reported that they want to stop using them now. However, almost none of them reported to have received any type of formal smoking cessation assistance.

About 64% of current smokers reported that they smoke because it is difficult for them to quit.

[3] http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/research-recherche/stat/ctums-esutc_term-eng.php (accessed, August 2009)

8.5 Involvement of Health Professionals in Tobacco Cessation Activities

Cessation counseling is one of the important approaches in reducing tobacco use among current tobacco users. The majority of the health professionals reported that they have not received any training on how to counsel their patients or to help them become involved in cessation activities. Only 2.9% reported that they have been trained on smoking cessation approaches to use with patients, only 9.7% reported that they have been trained on the importance of recording tobacco use history as part of general medical history, and only 10.8% on the importance of providing educational materials to support smoking cessation for patients who want to quit.

Only about 3 in 10 (30.3%) health professionals had heard of using nicotine replacement therapy (NRT) in tobacco cessation programs. There is quite a significant difference among the health professional groups in their knowledge of using NRT in tobacco cessation programs, with physicians (80.5%) and pharmacy personnel (52.4%) leading the others. Compared to NRT, anti depressants were less known by the health professionals to using them in tobacco cessation programs, with 13.1% reporting that they had ever heard using them in tobacco cessation programs.

Though the majority of health professionals have not received training that could help them become involved in tobacco cessation activities, the study found that there is widespread willingness among health professionals to offer smoking cessation advice to their patients. Over 95% of heath professionals expressed their willingness to advise their patients to quit and felt that they have a role to play in the fight for a tobacco free future. Also, 94.9 % of the health professionals reported that they require specific training on smoking cessation techniques.

These findings could suggest that there is a serious gap between the knowledge of health professionals in combating tobacco and the demand for the involvement of the health professional on cessation approaches.

8.6 Knowledge and Attitude towards Current Tobacco Control Policies in Eritrea

The Proclamation on Tobacco Control in Eritrea entered into force in 2005. Since then, no studies or monitoring has been done to assess its implementation status. This study tried to assess, among others, knowledge among health professionals of the existence of the Proclamation in Eritrea. Only a little more than half of them (56.4%) reported that they knew of the Proclamation. And, 91% of those who reported to know about the Proclamation believed that it is not implemented as it should be with regard to implementation and enforcement of smoking-free places. Added to this, only 55% correctly stated that the Proclamation does not completely ban smoking in bars, night clubs and pubs. This shows that there is a very high proportion of health professionals who do not know the Proclamation.

According to the respondents, only 13.4% reported that their health facility have an official policy banning smoking inside it. This may indicate that the tobacco control in health facilities is not strong.

The health professionals have strong support for tobacco control as substantiated by the findings of this study which showed that well above 90% are in favor of banning smoking on restaurants, enclosed public places, and on prohibiting tobacco sales to adolescents and tobacco advertising. About 75 % of the health professionals are also in favor of a complete ban of smoking in bars, pubs and night clubs. Strength of support for tobacco control may be further observed in the finding that only about 34% have reported that the written health warning is adequate, and more than 85% are in favor of the inclusion of pictorial health warning on cigarette packages.

9. CONCLUSIONS AND RECOMMENDATIONS

Tobacco use is one of the most preventable causes of death, and health professionals have a pivotal role in combating this epidemic. The current prevalence of smoking among the health professionals, especially among male physicians, is a cause for concern in their role as public health leaders as their smoking behavior will not only affect their own health, but indirectly affects the effective delivery of their anti-tobacco counseling to their patients.

Tobacco prevalence is relatively low among young health professionals. Tobacco control initiative should be a continuous exercise. If it goes unchecked, the current relatively lower prevalence among younger health professionals could make a hike.

The survey findings showed that it is not an uncommon practice for current smokers to smoke in or around health facility buildings. This practice contradicts to the expected role health professionals should play in leading the public towards a healthy living. Considering the fact that those people are working in health facilities, the Ministry of health has to put in place a comprehensive smoking ban, with special attention to the health facilities.

Though tobacco control policy is in place, knowledge of the health professionals regarding the Proclamation and its content is not promising.

A brief advice from health professional can increase the chances of quitting patients who were smoking.[4] However, trainings received by health professionals so far regarding tobacco cessation approaches are almost nonexistent.

The study is able to derive the following recommendations:

- Considering the prevalence of smoking among the health professionals, especially among male physicians, the Ministry of Health should take a leading role in minimizing the smoking prevalence among its staff and should lead by being a good example.

- The study indicated that the prevalence of tobacco use among the young health professionals is lower in comparison to that among the older once. Tobacco use incidences changes with time, therefore every effort must be made to maintain or lower the existing prevalence among the young health professionals.

- The study also tried to look at the age of initiation and the findings invite all the relevant stakeholders, especially the Ministry of health and Ministry of education, to put in place a comprehensive tobacco control measures which increases the awareness of the health hazards of tobacco use and discourages smoking initiation among the youth, especially among youth of school age.

- There is a substantial chance of exposure to second hand smoke at public places, workplaces and home. Therefore, the Ministry of Health, as guardian of the Proclamation on Tobacco Control Act, should lead by example by ensuring that all health facilities are 100% smoke-free areas. Taking the opportunities of the existing Proclamation on Tobacco Control, all the stakeholders should take their part in enforcing the implementation of a smoke free public places, and ensure the rights of every individual to breathe a smoke free air.

- The study revealed that there exists gap in knowledge among health professionals about the health hazards of tobacco and tobacco control, especially low is among nurses and associate nurses, which form the majority of the health servants. Lack of adequate knowledge on cessation approaches are also hindering health professionals from taking a proactive role in combating the tobacco epidemics. Training on tobacco

control, cessation techniques should be incorporated, as components of capacity building in various forms such as seminars, conference and on job training.

- Taking into account the high desire of the current smokers to quit, and increasing trend of Non-communicable diseases (NCDs) (12), the Ministry of Health needs to integrate tobacco cessation programs with the existing health care setting as one of the primary health care components.

- The study demonstrates that there is weak implementation of the existing Tobacco Control Proclamation. However, recognizing the fact that there is high support among health professionals for curbing tobacco use, expanding the smoke free areas across the country would enable Eritrea to ratify the FCTC and implement the principles of the FCTC.

- The current survey was conducted among health professionals who work in the public sector. The generalizations of results from this study apply only to health professionals in the public sector. Health professionals in the private sector also serve the public in health issues that are directly or indirectly related to tobacco use effects. However, data regarding tobacco among health professionals who work in the private sector is lacking. Therefore, future studies should consider them.

Annex-I

Questionnaire

Tobacco Use Survey among Health Professionals in Eritrea

2009

Introduction and Greeting:

Each interviewer should:

- **Begin by introducing himself/herself and thank the respondent for her/his participation and her/his time;**
- **Explain what will happen during the interview, approximately howl long will take, and how the information will be used:**
- **Assure the respondent that her/his name and hers/his answers are confidential and will not be revealed to anyone;**
- **Ask the respondent if she/he has any questions or concerns before the interview begins.**

General Information:

Questionnaire no._____

Zoba:_____ Sub-Zoba:_____

Health Facility Name:_____

Interviewed by:_____ Interview date:_____

Starting Time (hr/min):_____ Ending Time (hr/min):_____

Supervised by:_____ Signature of supervisor:_____

I. Prevalence of Cigarette Smoking and Other Tobacco Use Among Health Professionals

1. Have you ever smoked a cigarette, even one or two puffs?	1. Yes 2. No (**If No Please Skip To Q.No. 9**)
2. How old were you when you first smoked a cigarette, even one or two puffs?	1. Age10 or younger 2. Age 11-15 3. Age 16- 17 4. Age 18-19 5. Age 20-24 6. Age 25-29 7. Age 30 or older
3. What was your educational level when you first smoked a cigarette?	1. Before I started school 2. Primary school 3. Junior school 4. Secondary school 5. College/University level 6. Vocational school 7. After School
4. Do you currently smoke cigarettes?	1. Yes 2. No (**If No Please Skip To Q.No. 9**)
5. During the past 30 days (one month), on how many days did you smoke cigarettes?	1. I did not smoke cigarettes during the past 30 days 2. 1 or 2 days 3. 3 to 5 days 4. 6 to 9 days 5. 10 to 19 days 6. 20 to 29 days 7. All 30 days
6. How many cigarettes do you smoke a day?	1. Less than 5 cigarettes a day 2. 5-10 cigarettes a day 3. 11-20 cigarettes a day 4. More than 20 cigarettes a day
7. Have you smoked cigarettes on health facility premises (out door premises) during the past 30 days?	1. Yes 2. No
8. Have you smoked cigarettes inside health facility buildings during the past 30 days?	1. Yes 2. No
9. Have you ever used chewing tobacco, snuffing tobacco, shisha (bango), cigars, or pipes?	1. Yes 2. No (**If No Please Skip To Q.No. 17**)
10. Which of the following tobacco products have you ever used?	1. Chewing tobacco 2. Snuffing tobacco 3. Shisha 4. Cigars 5. Pipes 6. Others (please, specify): _____
11. How old were you when you first used chewing tobacco, snuffing tobacco, shisha (bango), cigars, or pipes?	1. Age10 or younger 2. Age 11-15 3. Age 16- 17 4. Age 18-19 5. Age 20-24 6. Age 25-29 7. Age 30 or older
12. What was your educational level when you first started using chewing tobacco, snuffing tobacco, shisha (bango), cigars, or pipes?	1. Before I started school 2. Primary school 3. Junior school 4. Secondary school 5. Vocational school 6. College/University level 7. After School
13. Do you currently use tobacco products (other than cigarettes)?	1. Yes 2. No (**If No Please Skip To Q.No. 17**)
14. During the past 30 days (one month), on how many days did you use chewing tobacco, snuffing tobacco, shisha (bango), cigars, or pipes?	1. I did not use any of the tobacco products listed in the past 30 days 2. 1 or 2 days 3. 3 to 5 days 4. 6 to 9 days 5. 10 to 19 days 6. 20 to 29 days 7. All 30 days
15. Have you used chewing tobacco, snuffing tobacco, shisha (bango), cigars, or pipes on health premises(out door premises) during the past 30 days?	1. Yes 2. No

16. Have you used chewing tobacco, snuffing tobacco, shisha (bango), cigars, or pipes inside health facility buildings during the past 30 days?	1. Yes 2. No

II. Exposure to Second Hand Smoke

17. Do you think smoke from other people's cigarettes is harmful to your health?	1. Yes 2. No 3. I do not know
18. During the past 7 days, on how many days have people smoked cigarettes ,in your presence inside your home?	1. 0 days 2. 1 to 2 days 3. 3 to 4 days 4. 5 to 6 days 5. All 7 days
19. During the past 7 days, on how many days have people smoked cigarettes in your presence, inside your workplace?	1. 0 days 2. 1 to 2 days 3. 3 to 4 days 4. 5 to 6 days 5. All 7 days
20. During the past 7 days, on how many days have people smoked cigarettes in your presence, inside public places other than inside your home or workplace?	1. 0 days 2. 1 to 2 days 3. 3 to 4 days 4. 5 to 6 days 5. All 7 days
21. During the past 30 days (one month), have you seen other health professionals smoking cigarettes inside the health facility buildings or on health facility premises?	1. Yes 2. No
Please ask Q 22, 23 & 24 for Smokers only	
22. During the past 7 days, on how many days have you smoked cigarettes inside your home in the presence of other people?	1. 0 days 2. 1 to 2 days 3. 3 to 4 days 4. 5 to 6 days 5. All 7 days
23. During the past 7 days, on how many days have you smoked cigarettes inside your workplace in the presence of other people?	1. 0 days 2. 1 to 2 days 3. 3 to 4 days 4. 5 to 6 days 5. All 7 days
24. During the past 7 days, on how many days have you smoked cigarettes inside public places other than your home or workplace in the presence of other people?	1. 0 days 2. 1 to 2 days 3. 3 to 4 days 4. 5 to 6 days 5. All 7 days

III. Attitudes

25. Should tobacco sales to adolescents (persons younger than 18 years old) be banned?	1. Yes 2. No
26. Should there be a complete ban of the advertising of tobacco products?	1. Yes 2. No

27. Should smoking be completely banned in restaurants?	1. Yes	2. No
28. Should smoking be completely banned in nightclubs/bars/pubs?	1. Yes	2. No
29. Should smoking in all enclosed public places be completely banned?	1. Yes	2. No
30. Do you think the written health warning on the packages of cigarettes is adequately provides information about the health hazards of smoking?	1. Yes 3. I do not know	2. No
31. Should pictorial health warnings be included in the packages?	1. Yes	2. No
32. Should health professionals get specific training on smoking cessation techniques?	1. Yes	2. No
33. Do health professionals serve as "role models" for their patients and the public?	1. Yes	2. No
34. Should health professionals routinely advise their cigarette smoking patients to quit smoking?	1. Yes	2. No
35. Should health professionals routinely advise their patients who use other tobacco products to quit using these products?	1. Yes	2. No
36. Do health professionals have a role in giving advice or information about smoking cessation to patients?	1. Yes	2. No
37. Are a patient's chances of quitting smoking increased if a health professional advises him or her to quit?	1. Yes	2. No
38. Do you feel you have a role to play in the fight for a tobacco free future?	1. Yes	2. No
39. Would you be willing to participate in offering smoking cessation advice to patients?	1. Yes	2. No

IV. Knowledge on Health effects of Tobacco use and Tobacco Control Policy

40. Do you think that your current knowledge about the health hazards of smoking is sufficient?	1. Yes	2. No	
41. Is tobacco use addictive?	1. Yes	2. No	
42. Does tobacco use cause lung cancer?	1. Yes	2. No	
43. Does tobacco use cause heart disease?	1. Yes	2. No	
44. Do you think that using smokeless tobacco is safer than cigarettes?	1. Yes	2. No	3. I do not know

45. Have you ever heard of using nicotine replacement therapies in tobacco cessation programs (such as nicotine patch or gum)?	1. Yes 2. No
46. Have you ever heard of using antidepressants in tobacco cessation programs (such as bupropion or Zyban)?	1. Yes 2. No
47. Do you currently have any patient educational materials on tobacco cessation techniques?	1. Yes 2. No
48. Do you know that there is a proclamation on tobacco control in Eritrea?	1. Yes 2. No (**If No Please Skip To Q.No. 51**)
49. Do you think that the law that prohibits smoking inside public places (such as in restaurants, public transports, cinemas and theaters, hospitals and office buildings, gyms and sport arenas) is implemented as it should be?	1. Yes, it is implemented as it should be 2. No, it is not implemented as it should be 3. I do not know the law
50. Do you think that the proclamation on tobacco control completely bans smoking inside bars, nightclubs and pubs?	1. Yes, the proclamation on tobacco control completely bans smoking inside bars, nightclubs and pubs? 2. No, the proclamation on tobacco control does not completely ban smoking inside bars, nightclubs and pubs? 3. I do not know
51. [The proclamation on tobacco control bans smoking in any enclosed public places], during the past 7 days have you ever been exposed to cigarette smoke in any enclosed public place where you have visited?	1. Yes 2. No
52. Does your health facility have an official policy banning smoking inside the health facility?	1. Yes, the health facility has an official policy 2. No , the health facility does not have an official policy 3. I do not know
53. Is your health facility's official smoking ban enforced?	1. Yes, the health facility's official policy is enforced 2. No, the health facility's official policy is not enforced 3. The health facility has no official policy banning smoking 4. I do not know
54. Does your health facility have a team to enforce and implement a smoke free facility?	1. Yes 2. No 3. I do not know

55. Can cigarettes or tobacco products be smoked or used in any of the available cafeterias inside the health facility premise?	1. Yes 2. No 3. I do not know 4. Not Available
56. Are no-smoking signs posted inside the buildings in your health facility?	1. Yes 2. No 3. I do not know
57. Are no-smoking signs posted inside the premises in your health facility?	1. Yes 2. No 3. I do not know
58. How well does your facility enforce its policy on prohibiting the use of tobacco products among its patients, visitors, and staff inside health facility buildings or on health facility premises?	1. Completely 3. Not at all 2. Partially 4. It doesn't have a policy 5. I do not know
59. During the past 30 days (one month), have you seen a "no smoking" signs posted at smoking prohibited public places where you have visited?	1. Yes 2. No 3. I do not remember

V. Behavior/Cessation

Please ask Q 60—69 for Smokers Only

60. How soon after you awake do you smoke your first cigarette?	1. I do not currently smoke cigarettes 2. Less than 10 minutes 3. 10-30 minutes 4. 31-60 minutes 5. After 60 minutes
61. Do you want to stop smoking cigarettes now?	1. I do not smoke now 2. Yes 3. No
62. Do you think you would be able to stop smoking if you want?	1. Yes 2. No
63. During the past year, have you ever tried to stop smoking cigarettes?	1. I did not smoke during the past year 2. Yes 3. No
64. How long ago did you stop smoking cigarettes?	1. I have not stopped smoking cigarettes 2. Less than 1 month 3. 1-5 months 4. 6 – 11 months 5. One year 6. 2 years 7. 3 years or longer

65. What was the **main** reason you decided to stop smoking?	1. I did not decide to stop smoking cigarettes 2. To improve my health 3. To save money 4. Setting myself up as good example 5. My family did not like it 6. My friends did not like it 7. Other (please specify): _____
66. What was the **main** reason you did not decide to stop smoking?	1. I have already stopped 2. It is difficult to quit 3. There is no significant health threat due to smoking 4. Alerts me during busy working hours 5. Helpful to fight boredom 6. Other (please specify): _____
67. Have you ever received help or advice to help you stop smoking cigarettes?	1. Yes 2. No (**if no please skip to Q.No. 69**)
68. Who advised you?	1. I have never received advice 2. Tobacco cessation counselor..... 3. Health Professional 4. Family 5. Friends 6. Others (please specify): _____
69. Do you want to stop using chewing tobacco, snuffing tobacco, shisha (bango), cigars, or pipes now?	1. I do not use any of the listed forms of tobacco now 2. Yes 3. No
70. Are health professionals who use tobacco products less likely to advise patients to stop using tobacco?	1. Yes 2. No
71. Do you regularly record your patients' tobacco use history as part of their general medical record?	1. Not applicable 2. Yes 3. No

VI. In Service Training (During Practice)

72. During your practice, were you trained about the health hazards of smoking?	1. Yes 2. No
73. During your practice, were you trained that it is important to record tobacco use history as part of a patient's general medical history?	1. Yes 2. No
74. During your days of practice, have you ever received any formal training in smoking cessation approaches to use with patients?	1. Yes 2. No
75. During your days of practice, did you learn that it is important to provide educational materials to support smoking cessation for patients who want to quit smoking?	1. Yes 2. No

VII. Demographic Data

76. Age (in completed years):	_____
77. Gender	1. Male 2. Female
78. Marital Status	1. Single 3. Widowed 2. Married 4. Divorced/separated
79. Specific profession	1. Physician 2. Pharmacy personnel (Pharmacist, Pharmacy technician) 3. Nurses (BSc Nurse, Midwifery Nurse, Registered nurse) 4. Health Assistant 5. Medical Laboratory personnel (CLS, MLT) 6. Others (please specify) :_____
80. Ethnicity	1. Tigrigyna 6. Kunama 2. Tigre 7. Hidareb 3. Saho 8. Bilen 4. Rashaida 9. Afar 5. Nara 10. Other (Specify):_____
81. Religion	1. Orthodox Christian 2. Catholic Christian 3. Protestant 4. Muslim 5. Other (Specify):_____

Ending Time (hr/min):_____

Comment:_____

_____

_____

_____

Thank You!! Thank You!!

Annex-II

Sampling Methodology

The target population was all health professionals who work for the Ministry of Health. The sampling frame that was used for the study was obtained from HRD of the Ministry of Health and respective zonal ministry offices. The sampling frame contained information on workplace addresses as well as professional qualifications of the health professionals.

The determination of sample size was based on a book by W.G.Chocran, titled 'Sampling Techniques', third edition, Wiley 1976.

1. The sampling approach was two stage-stratified random sampling.

2. On sample size determination we assumed the following:

i. Simple random sampling.

ii. Based on an article by Winkler and Becher, it is assumed that the prevalence of smoking in African countries range between 20 and 65%. Putting Eritrea within this given range we assume that the proportion of smokers as being 40%. The following formula was applied to determine the sample size.

$$n_0 = \frac{z^2 pq}{d^2}$$

Where: p = proportion of smokers and q=1-p
z=value of standard normal corresponding to significance level of 5%.
d=desired degree of precision assumed to be 4%.
The provisional sample size was thus

$$n_0 = \frac{(1.96)^2 (0.4)(0.6)}{(0.04)^2} = 577$$

After adjusting for a non response rate of 4%, the final sample size was approximated to n=600.

3. In selecting the sample of 600, a two-stage stratified random sampling was used. In the first stage, the population was stratified by "type of health profession". Five distinctions were identified for health profession types; namely, physician, pharmacy personnel, nurse, associated nurse, and medical laboratory personnel. In the second stage, each health professional category was stratified by zoba. Ministry head quarter and National referral hospital were treated each as a zoba due to their comparably big size and nature of their work. Thus, the study had 8 zobas.

The sample of 600 was allocation to the health professional types using a square root allocation, this allocation method allowed the study to sample enough personnels from some health professional types, which under proportional sampling would have been severely under sampled due to their small sizes in the study population. The sample numbers of health professionals for each health professional type (stratum) were then allocated to the 'zobas' in proportion to their respective sizes of health professionals of the type in each zoba.

Zoba	Medical doctors	Medical lab. Practioners	Nurses	Pharmacy Professionals	Health assistants etc	Total
Maekel	17	15	46	17	42	137
Anseba	4	6	13	4	20	47
Debub	7	12	27	8	42	96
Gash-Barka	8	12	15	7	33	75
Northern Red Sea	5	11	14	5	26	61
Southern Red Sea	2	2	6	3	8	21
Head Quarters	8	19	9	13	2	51
National Referral Hospital	20	11	38	8	35	112
Total	71	87	167	65	208	600
Sampling fraction	0.399	0.335	0.174	0.436	0.137	

References

1. **National Statistics and Evaluation office (NSEO) and ORC Marco**. Eritrea Demographic and Health Survey 2002. Calverton, Maryland, USA: National Statistics and Evaluation Office and ORC Marco, Eritrea,2003.

2. Bestrat Hagos , Eyasu Hadgu , Shashu Ghebreselassie, Ministry of Health:Eirtean Health Profile, Eritrea,2000.

3. **World Health Organization**, A Global Agenda for Tobacco Control Research, Geneva, Switherland, July 1999.

4. **World Health Organization**, The Role of Health Professionals in Tobacco Control, World No Tobacco Day-31 May, 2005.

5. **Work for Better Bangladesh Anti-Tobacco Alliance PATH-Canada**, British American Tobacco'sYOuth Smoking Prevention Campaign:What are its True Objectives? Dhaka, Bangeladesh, August 2001.

6. **World Health Organization** ,Report on the Global Epidemic,2008: The MPower package, Geneva, World Health Organization, 2008.

7. **World Bank Publication**. Curbing the Epidemic: Governments and the Economics of Tobacco Control. Washington D.C,1999.

8. **UICC ,Global Cancer Control** http://www.treatobacco.net/English/demographics/key_findings.cfm.html **(Accessed On May,2008)**

9. **World Health Organization**, Tobacco and the Rights of the Child, 2001.

10. **Ministry of Health**, National non communicable disease (NCD) Risk factors Baseline Survey, Eritrea, 2004.

11. **Proclamation 143/2004**: A Proclamation to provide for Tobacco Control. Gazette of Eritean Laws.

12. **Ministry of Health**, ,HMIS Report, Eritrea .2007

13. **Judith Mackay.Dr,. Michael Eriksen. Dr,. Omar Shafey .Dr** :The Tobacco Atlas, 2nd Edition. American Cancer Society 2007. (http://www.cancer.org/docroot/AA/content/AA_2_5_9x_Tobacco_Atlas.asp)(Accessed on June,2008)

14. **World Health Organization**, Leave the pack Behind, 1999.

15. **Lorraine Greaves, Natasha Jategaonkar and Sara Sanchez**, The global epidemic of tobacco use among women and girlsHow gender-based policies can help limit the spread of tobacco use among girls and women and improve their lives: Canadian Women's Health Network Magazine. Spring/Summer 2007 Volume 9, Number 3/4. (**http://www.cwhn.ca/network-reseau/9-34/9-34pg10.html) (Accessed on June,2008)**

16. Campaign for tobacco free kids. (http://www.tobaccofreekids.org/research/) (Accessed on May,2008)

17. **Terry Martin**,The Health Consequences of Smoking : Report of the Surgeon General,2004.http://quitsmoking.about.com/od/tobaccostatistics/a/SGR2004.htm)(Accessed on July,2008)

18. Australian Government Initiative :Health Insite, Health Effects of Smoking,2007. (http://www.healthinsite.gov.au/topics/Health_Effects_of_Smoking (Accessed on June 2008)

19. **Paul H. Brodish**, The irreversible Health Effects of Cigarette smoking American Council on Science and Health:1998. http://www.healthinsite.gov.au/topics/Health_Effects_of_Smoking (Accessed on July,2008)

20. **Heikkinen H**, **Jallinoja P**, **Saarni SI**, **Patja K** : The impact of smoking on health-related and overall quality of life: A general population survey in Finland. National Public Health Institute (KTL), Department of Health Promotion and Chronic Disease Prevention, Helsinki, Finland. Nicotine Tob Res. 2008 Jul;10(7):1199-207: PMID: 18629730 [PubMed - in process]. http://www.ncbi.nlm.nih.gov/pubmed/18629730?ordinalpos=16&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum(Accessed on June,2008)

21. **Ministry of Health,Environmental Health Unit** in conjunction with Health Education Unit, , Gaborone,Botswana, 2001.

22. **World Health Organization**, Women and the Tobacco Epidemic, 2001.

23. British Medical Association Board of Science.. *Breaking the cycle of* children's *exposure to tobaccosmoke.* London: BMA. 2007.

24. **Office of Research and Development, and Office of Air and Radiation.** Fact Sheet: Respiratory Health Effects of Passive Smoking" EPA Document Number 43-F-93-003, January 1993. http://www.epa.gov/smokefree/pubs/etsfs.html)(Accessed on July,2008)

25. **Judith Mackay.Dr,. Michael Eriksen. Dr,. Omar Shafey .Dr** :The Tobacco Atlas, 1st Edition. American Cancer Society. http://www.cancer.org/docroot/AA/content/AA_2_5_9x_Tobacco_Atlas.asp(Accessed on June,2008)

26. .Babu Ram Pokhrel, K.R. Thankappan, G.K. Mini, P.S. Sarma,,Tobacco use among health professionals and their role in tobacco cessation in Nepal.Prevention and Control. Vol 2.issues3, pages 117-125(September 2006).http://www.journals.elsevierhealth.com/periodicals/precon/article/S1573-2088(07)00005-0/abstract).(Accessed on April,2008)

27. **Kalpalatha K. Guntupalli, et al,** TOBACCO USE AMONG INDIAN MEDICAL STUDENTS.American College of Chest Physicians.2007. (http://meeting.chestjournal.org/cgi/content/abstract132/4/527c)(Accessed on May,2008)

28. Dao Thi Minh An, Nguyen Van Huy ,Dao Ngoc Phong,::Smoking Among Vietnamese Health Professionals: Knowledge, Beliefs, Attitudes, and Health Care Practice. Asian-Pacific Journal of Public Health Vol.20, No.1,7-15,2008.(Aph.sagepub.com/cgi/content/abstract/20/1/7) (Accessed on April,2008)

29. ***John, U; Hanke, M:***. Tobacco-smoking prevalence among physicians and nurses in countries with different tobacco-control activities. European Journal of Cancer Prevention 12(3):235-237, June 2003. (http://www.eurjcancerprev.com/pt/re/ejcp/abstract.00008469-200306000-00011.htm;jsessionid=LT7Q4kJbps6St5pZDcK72J4NfzhppQ6mv9spPxYzsT2J2TnJkXb5!1629792715!181195629!8091!-1) (Accessed on June, 2008)

30. **Ministry of Health, Department of Regulatory Services**, Global Youth Tobacco Survey(GYTS) &Global school Personnel Survey(GSPS), Eritrea (2005).