

PREVALENCE OF CIGARETTE SMOKING AND ASSOCIATED
FACTORS AMONG PARENTS IN MISRAK BEDAWACHO
WOREDA, SOUTHERN ETHIOPIA

BY

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ABSTRACT

Background: Parental smoking has a key influence in predicting whether children and young people will start and continue to smoke. Therefore, to improve planning and implementation of effective tobacco control measures, there is limited data on the smoking habits of parents in developing countries. The aim of the study was assessment of prevalence of cigarette smoking and associated factors among parents in Misrak Bedawacho Woreda, SNNPR.

Method and Materials: A community based Cross sectional study was conducted from March 15 to April 15, 2016. Multi stage sampling technique was used to select 640 study participants. Data was collected using a pretested structured interviewer administered questionnaire. The data was entered in to Epi-data and analyzed using SPSS. Descriptive statistics for describing data and Logistic regression analyses to identify associated factors were used.

Results: 640 parents participated in the study yielding response rate of 100%. The current smoking rate was 23.6% (95% CI: 20.5, 27.3). The odds of smoking among males were higher as compared to females (AOR=2.6, 95% CI: 1.5, 5). Age group (20-39) and 15-19 were (AOR=19; 95% CI: 9.1, 39) and (AOR=3.7, 95% CI: 1.4, 10) more likely to smoke respectively, as compared to the age groups (40-59 years). Formerly married parents were (AOR=1.6, 95% CI: 1.2-2.8) more likely to smoke than currently married parents. Illiterate (AOR=5; 95% CI: 1.5, 16.8) and high school complete (AOR=3, 95% CI: 1.4, 10.4) had higher odds of smoking as compared to colleges and above. The odds of smoking among daily labor workers were higher as compared to farmers (AOR=3.8, 95% CI: 1.7, 9). Poorest (AOR=4.3, 95% CI: 1.43, 17.6) and poorer (AOR=3.1, 95% CI: 1.13, 12.6) had higher odds as compared to richest. Little knowledge on effects of cigarette smoking 5 times more likely to smoke than high knowledgeable (AOR=5, 95% CI: 1.06-25), khat chewer parents were 2.2 times more likely to smoke than not khat chewer parents (AOR=2.2; 95% CI: 1.2, 4). Having peer smoker (AOR=2, 95% CI: 1.2, 3.5) more likely to smoke as compared to having non-smoking peers.

Conclusion: This study found that a high prevalence of self-reported current cigarette smoking among parents in the Misrak Bedawacho Woreda. Furthermore, this study reveals that parental current cigarette smoking is strongly associated with illiterate, low socioeconomic status, daily labour working, having little knowledge, khat chewing practice and peer smoking. Giving it as public health priority, WHO FCTC should be strengthened. A nationwide health education campaign on the health risks of smoking cigarette is needed. An increase in taxation on tobacco products can decrease its consumption, especially by the poor.

Key words: cigarette smoking, parents, prevalence, Misrak Bedawacho

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LIST OF ABBREVIATIONS

AOR	Adjusted Odds Ratio
CDC	Communicable Disease Control
CI	Confidence Interval
COR	Crude Odds Ratio
CVD	Cardio-Vascular Disease
CHD	Congestive Heart Failure
DHS	Demographic Health Survey
EDHS	Ethiopian Health Survey
EPHA	Ethiopian Public Health Association
ETS	Exposure to Tobacco Smoke
FCTC	Frame Work Convention for Tobacco Control
GATS	Global Adult Tobacco survey
NCD	Non-Communicable Disease
OR	Odds Ratio
SSA	Sub-Saharan African Countries
SHS	Secondhand Smoking
SNNPR	South Nations Nationalities Peoples Region
SPSS	Statistical Package for Social Science
USA	United States of America
WHO	World Health Organization

CHAPTER ONE

1. INTRODUCTION

1.1 BACKGROUND

Cigarette smoking refers to the practice of inhalation of the gases and hydrocarbon vapors generated by slowly burning tobacco in cigarettes [1]. Smoked forms of tobacco include various kinds of cigarettes, cigars and pipes. In some countries of the world other forms like pipe smoking, chewing and sniffing are highly practiced. But, cigarette smoking, particularly manufactured cigarettes, is by far the main form of tobacco smoked globally [2]. In fact, in addition to commercial type of cigarette, hand-rolled cigarettes are more common in rural areas and used by older people [3].

The smoke which comes from cigarettes contains more than 7000 chemicals including nicotine with hazardous adverse effects on almost every organ in the body of smokers as well as of nonsmokers exposed to second hand smoke (SHS) [4]. Despite thousands of scientific studies that have established the carcinogenic and other health effects of tobacco, the number of smokers is increasing. At present, there are over one billion smokers worldwide, and the number of smokers is steadily increasing, especially in developing countries [5]. It has been estimated that about a third of the world's population, aged 15 years above, are smokers [2].

Evidences, suggested that the magnitude of smoking among parents varies from country to country and time to time. Between 1998 -2013 evidences indicated that the proportion of single parents who report being current smokers declined from 36 to 29%, similarly in two parent households declined from 23 -15% [6]. Studies showed that the magnitude of smoking among mothers' ranges from 29.8% to 33.6% and paternal smoking ranges 37.9% to 45.2% [7], 20% of mothers and 25% of fathers [8] were practiced smoking.

Currently, tobacco use in Africa is increasing as the tobacco industry shifts its marketing focus from the developed to developing countries like Africa and Asia [9]. Ethiopia is one of the countries in Sub-Saharan Africa shares the burden of tobacco epidemics [10]. According to World Health Organization (WHO) report, about 4% of Ethiopia's population smoked (approximately 2,065,300 persons) in 2010 and this figures will be going in steadily in the

same state for the next fifteen years if tobacco control efforts continue at the same intensity [11].

Tobacco use is the leading cause of preventable death and a major public health concern and one of the strongest lifestyle behaviors associated with the risk of cardiovascular disease (CVDs). It is anticipated that by 2030, over 8 million people will die annually due to tobacco smoking related health problems, of which 80% will occur in low and middle income countries [12]. Besides the direct costs of treating tobacco-related diseases, economic productivity is lost due to preventable illness and premature deaths among users. Additionally, unnecessary expenditures to purchase tobacco also contribute to household poverty and malnutrition particularly within resource limited settings [13].

In recognition of the threat posed by tobacco use and exposure, WHO adopted the Framework convention on tobacco control (FCTC) in 2003. Later, in 2005 a global tobacco control treaty launched by WHO and ratified by 178 countries to-date and calls on countries to set out specific steps related to tobacco preventive strategy and recommends six evidence-based measures [14]. One important public health approach for controlling tobacco use is to design and implement appropriate policy. Ethiopia has ratified the international tobacco control convention (WHO FCTC) 2014. This is an important step for reducing tobacco use in the country [15].

1.2 STATEMENT OF THE PROBLEM

It is estimated that tobacco epidemic kills nearly six million people every year that is one death every 6 seconds. Almost 63% of all deaths are caused by NCDs, for which tobacco use is one of the greatest risk factors [16]. It was predicted that 2010 to 2050 about 400 million adults especially middle age groups 30-69 years will be killed by tobacco and losing decades of productive life [17]

Every year more than 9,600 Ethiopians are killed by tobacco-caused diseases. Even though fewer men and women die on average in Ethiopia than in other low-income countries, still 131 men and 54 women are killed by tobacco every week [18, 19]. In Ethiopia, Cigarette smoking is prevalent among the male rural town population. Study among student's shows almost 1 in 10 have parents who smoke. A number of factors are related to, and increase the prevalence rates of parental smoking including parents' Sociodemographic status, socioeconomic status, geographic location, as well as psychosocial stressors [20].

Parental smoking habit is not only the main predictors of smoking among youths, but also, increased risk of house fires, diversion of income, likelihood of children's tobacco addiction [21]. Most previous studies in the country gave due emphasis for cigarette smoking in urban populations and specific age groups such as students, while in rural community where the majority of the population lives, with very little or no attention was given.

In fact, different research reports indicated that parental smoking is risk factor for initiation of smoking among adolescents, students and children as well, but the magnitude of smoking not studied among parents specifically. Also, no study was undertaken in my study area. In this regard understanding cigarette smoking and its associated factors is also an important step for targeting interventions. In order to design prevention strategy, Understanding, documenting, and quantifying the characteristics of the tobacco user, or potential user, have been key to tobacco control efforts. Tobacco control policy can only succeed if the practices and factors of smoking are known. This study aimed to assess the magnitude of cigarette smoking and associated factors among parents in the community.

CHAPTER TWO

2. LITRETURE REVIEW

2.1. Prevalence of cigarette smoking

A global adult tobacco survey (GATS) showed that the prevalence of cigarette smoking about 48.6 % of men and 11.3 % of women were tobacco users [2]. Similarly, the study in 15% Pakistan (males 26.6% ,female 0.4%)[22]. Also, in some studies 63.5% fathers 17.1% mothers[23], 35.1% fathers and 0.3% mothers[24] in Taiwan were current cigarette smoker.

Magnitude of smoking varies from country to country depending on economic status, presence of prevention strategy and the surveillance system or definition given for smokers. DHS report between 2006 and 2013 in thirty SSA countries showed that ,Among men, smoking prevalence rates were high in Sierra Leone (37.7%), Lesotho (34.1%), and Madagascar (28.5%); low (<10%) in remaining countries including Ethiopia. Among women, smoking prevalence rates were <5% in most countries [25]. Another studies showed that Smoking prevalence was 45.9% in Nigeria [26], 27.1% vs. 6.8% among men and women respectively in Malawi (increased with increasing age (11.7% vs. 27.5% in 25-34, 55-64 year age group) [27].

Even though regional variation exists, overall EDHS 2011 reported that prevalence of tobacco use is low in Ethiopia which is 4.1 % [28]. Another survey reported an adult current smoking prevalence of 15.8% in the Gilgel Gibe Field Research Center [29], 35.5% in Jimma town [30], 28% in Eastern part of Ethiopia [31], 23.04% in Halaba Kulito town [32].

Regarding the number of cigarette smoking, Daily smokers consumed an average of five cigarettes a day in Bangladesh [33], about eleven cigarettes a day in Vietnam, about 17 cigarettes in the USA, about 16 cigarettes a day in People's Republic of China, and about two cigarettes a day in India [2]. Similarly, 1-5 cigarettes per day in Brazil [3]. Another finding shows majority of the smokers (40.2%) smoked less than five cigarettes per day where as 6.4% smoked more than 20 cigarettes per day [34].

Data showed that most people start smoking before the age of 18 year. Accordingly, some of the studies reported that the age of smoking initiation had an average of 16.9 ± 4.8 years in Brazil [3], 47.2% started smoking at age 16-25 in Nigeria [26]. Accordingly, the study done among smoking parents, found that 43% of parents reported that they seriously planned to

quit smoking within the next 30 days, and 46% had attempted to quit smoking within the previous 3 months [35]. Similarly, 94.1% of smokers reported having tried to quit smoking, but without success [3]. 82.7% attempted to stop smoking [26]. Study done in Ethiopia showed that a total of 68% smokers expressed an interest to quit while 34% had tried to quit previously but without success [31].

People have different reasons for smoking. Accordingly, finding from Nigeria showed 30% always smoked to relieve stress, 60% due to addiction [26]. Similarly, another study indicated that 61.9% of the still smoked because they were addicted to it [3].

2.2. Factors leading to cigarette smoking

The health consequences of tobacco use are serious; therefore identifying the factors that lead to cigarette use is important in improving the health and preventing deaths. Tobacco use varies in the developed and the developing countries and with respect to demographic and individual characteristics.

2.2.1 Sociodemographic factors

The prevalence of cigarette smoking varies considerably according to marital status. In 2010, people who were divorced or separated were most likely to smoke (30%), while those who were widowed were least likely (13%) [32], formerly married adults were more likely to use tobacco as compared to never married [28].

Study showed that a person's working status and their age are good predictors of a specific smoking pattern. A positive association of smoking and age, in that the more a person grows old, the more they are likely to be smokers [36]. But, some reports indicated that the prevalence of smoking generally decreases with parent's age; parents in two families who were between 18-24 were more than twice as likely as parents 35-44 and 12% among parents ages 45 and older [6]. Recent finding from Ethiopia indicates that, tobacco use among adults in the age group 20–24 and 45–49 years slightly higher compared to adolescent [28].

Various studies indicated that male gender was positively associated with cigarette smoking. Due to different cultural background females were less likely to use cigarettes [28, 37, and 38]. Study in Pakistan shows among males, current cigarette smoking decreased with increasing level of education and increased with having a father who used tobacco [6, 39]. Illiteracy was significantly associated with tobacco use. Compared to respondents who had no formal education, respondents who had attained primary level of education were more

likely to smoke, and those who attained college or university level of education were less likely to smoke [37,38].

Evidences also indicated that occupation is associated with smoking initiation. Accordingly, adults who were professionally working had less likely to use cigarettes than non-working adults. Depending on where one is employed can tell whether they have a higher chance of following a particular smoking status [28, 36].

Also Older age, marital status, occupation, education was strongly associated with smoking [25, 26, 33, and 38]. Another study shows Traditional religion, Catholics and Islamic followers had higher odds of using tobacco as compared to Orthodox religion followers [28]. Tobacco use for rural residence compared to urban residence was higher [38]. Studies indicates that adults in the poorest wealth quintile more likely to use tobacco as compared to the richest wealth quintile [28]. Lower household income was associated with current cigarette smoking among rural males only [39].

2.2.2 Personal related factors

Knowledge level was also determines tobacco use. Accordingly, the prevalence of smoking among adults varies depending on knowledge level; studies done in Bangladesh indicated that knowledge has no association; But, other studies found that positive association especially little knowledge groups had higher odds of smoking [33]. Also, another survey showed that only 51.5% adults knowing that smoking can cause all three diseases of stroke, heart attack, and lung cancer. Regarding knowledge of health harms of active and passive smoking, current nonsmokers were 1.6 and 1.7 times likely to have better knowledge than current smokers, respectively [2].

One study demonstrated that khat use was the main predictor for smoking among students. The most important variables explaining tobacco use were the use of khat and smoking status of friends [40]. The study done in Zambia indicates that Respondents who did not consume alcohol were 50% less likely to smoke compared to those who consumed alcohol [37]. On the other hand, a lower level of education is related with unawareness of the harmful effects of smoking [41]. Study in Halaba; About 53% of them had awareness on health effect of cigarette smoking. However, 23.13% smoke cigarette when they had adequate knowledge on its health impact. Some of the health risks mentioned by respondents were, lung and respiratory system problem (81.85%), bad smell of the users mouth (25.2%), and heart problem (18.4%) [32].

2.2.3 External factors

It appears consistently in different parts of the world that the tobacco use of friends and family members is the strongest risk factor of the individual's tobacco use. A study shows that most of the smokers (59.0%) had started smoking due to peer pressure, followed by curiosity (10.8%) [34]. Since existence of motivating factors such as presence of smoker or chat chewer family member in home was found strong predictor variables for high prevalence of tobacco use [32].

The development of nicotine dependence and smoking habitinitiation is linked to social influence from family and friends. Smoking of a current close friend was strongly associated with participants' own smoking. The smoking of a close friend during schooldays was similarly associated[42].Similarly, finding from Nigeria revealed that 26.3% had fathers that smoked; friends and relatives had high influence [26].

2.3. Literature reviewsummary

Most of studies show that the prevalence of cigarette smoking varies in different countries of the world. The study indicated that 63.5% in Hong Kong [23], 15.2% in Pakistan [38], 19% in Nepal [22], and of current smoking. These studies focused on over all adult smoking status but, parental smoking status is not specifically well studied. Although some of Sociodemographic variables assessed, but external factors, other substance use, peer influence not considered. Several independent studies at international level, national level and sub national level from developing countries have shown association of tobacco use with social and economic determinants such as age, education, gender, occupation, ethnicity, place of residence and alcohol consumption [25,26,37 and 43], but the personal related factors like knowledge of health effect of smoking and others not discovered.

Surprisingly, the magnitude of tobacco use among rural adults is high compared to urban area. Studies in Pakistan showed that tobacco use was more prevalent in the rural areas (21%) as compared to urban areas (12.2%).Similarly,the prevalence of smoking was higher in residents of rural areas compared to those in urban areas [22], But, occupation, personal factors are not studied in these studies.Although in most studies parental smoking is predictor of adolescent smoking, limited data on prevalence of parental smoking in developing countries. But, adult smoking prevalence reported from different parts of the countries [28, 32 and 41] and in each of studies factors related with individuals like; Alcohol, knowledge...etc is not adequately studied rather than Sociodemographic factors

2.4. CONCEPTUAL FRAME WORK

Although cigarette smoking is an individual behavior, it is greatly influenced by knowledge regarding health effects of smoking, family smoking and peer smoking practices. Conceptual frame work for this study developed after review of relevant literatures. **(Figure 1)**

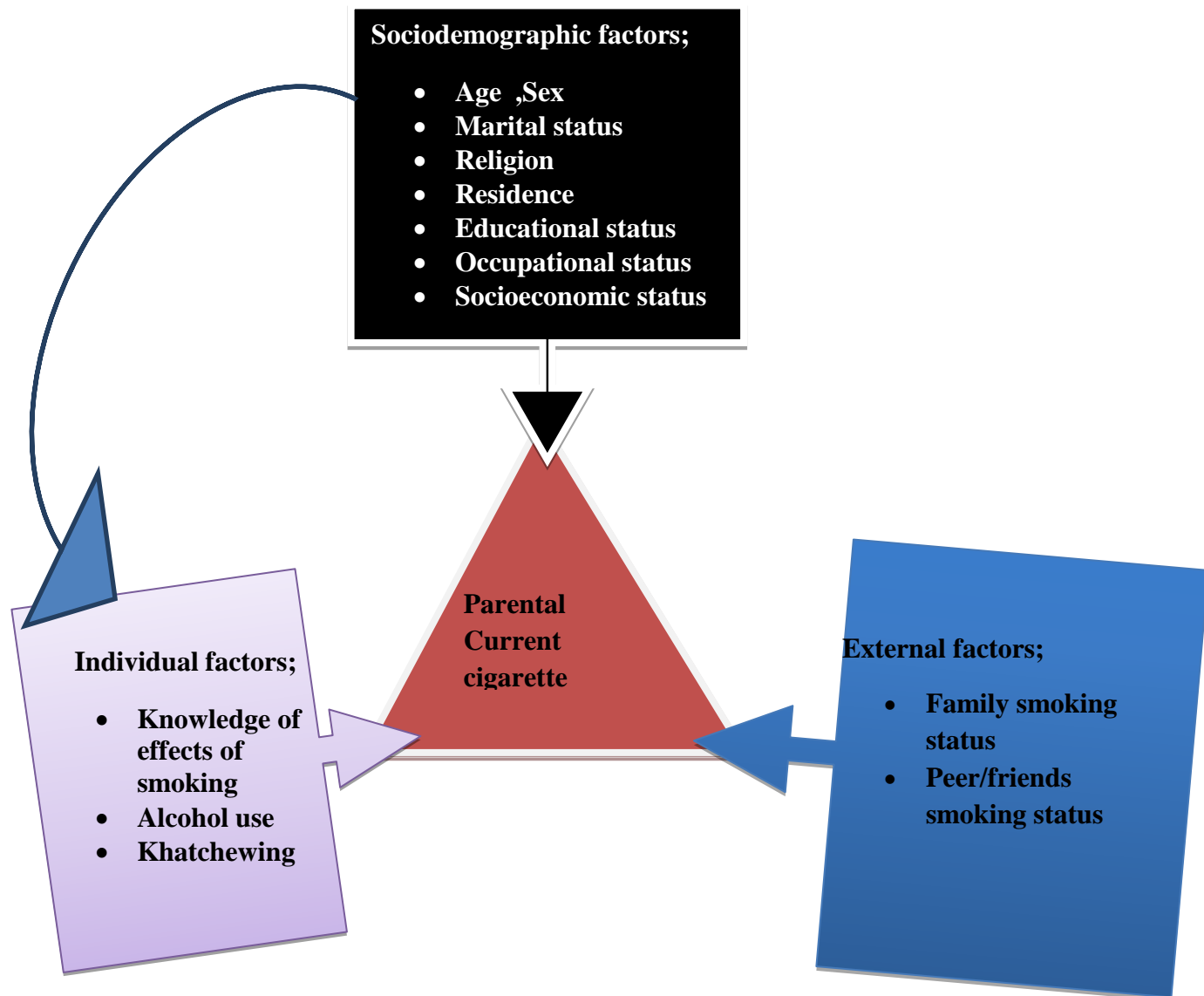


Figure 1: conceptual framework of the prevalence and associated factors of parental cigarette smoking developed by investigator after reviewing various literatures.

2.5. SIGNIFICANCE OF THE STUDY

For the better understanding of the prevalence and main factors associated with parental cigarette smoking in the study area. To prevent or reduce identified factors, the need to determine the factors that initiate and maintain, smoking behavior remains important.

Knowing the magnitude of and factors associated with parental cigarette smoking will help the primary prevention employed against it to be easy, safe and cost effective. Furthermore, the findings of this study will help policy makers and health planners to design strategies for improvement of parental health as well as to reduce child exposure to tobacco in the home. The findings of the study can also help as a secondary data for further study in same area of inquiry. Additionally, it can add new knowledge to the public health practice in such a way that the evidences can be used in setting prevention to avoid risk factors that can contribute to parental smoking.

CHAPTER THREE

3. OBJECTIVES OF THE STUDY

3.1 General objectives

- ✚ To assess the prevalence of cigarette smoking and associated factors among parents in Misrak Bedawacho Woreda, Hadiya zone, SNNPR, 2016.

3.2 Specific objectives

- ❖ To determine the prevalence of cigarette smoking among parents in Misrak Bedawacho Woreda, Hadiya zone, SNNPR 2016
- ❖ To identify associated factors for cigarette smoking among parents in Misrak Bedawacho Woreda, Hadiya zone, SNNPR 2016

CHAPTER FOUR

4. METHOD AND MATERIALS

4.1. Study Area and period

The study was carried out in Misrak Bedawacho Woreda in Hadiya zone, SNNPR. The study site is 335 kilometers away from the center, Addis Ababa. It is geographically bounded by Oromia region from the East, Kambata zone and Halaba Woreda from the North, Woliya zone from south and west direction. According to annual plan report, the Woreda has 43,642 households and a population of 213,846 (male; 106,495 and female; 107,351). It has 33,381 under five children; 103,287 (male; 51,312, female; 51,975) adult population; 49,826 reproductive age woman. Shone town has 2,986 households and 22,432 populations. It has one town which has six zones/kebeles and thirty three rural Kebele. Rural kebele (33 kebele) has 37,670 households. The Woreda have 1 primary hospital, 7 health center and 39 Health Post [64]. The study was conducted from March 15 to April 15 in 2016.

4.2. Study design

Community based cross sectional study

4.3. Population

4.3.1. Source population

- All Parents who are residing in Misrak Bedawacho Woreda, Southern Ethiopia

4.3.2. Study population

- All Sampled eligible Parents residing in Misrak Bedawacho Woreda, Southern Ethiopia

4.3.3. Study unit

- A Parent/father or mother/household head

4.4. Eligibility criteria

4.4.1. Inclusion criteria

All Parents in the updated family folder of selected Kebele's Health post
If no parents in the family folder, head of household was included

4.4.2. Exclusion criteria

Mentally and chronically ill and unable to speak parents were excluded.

Adults/household heads who did not experience child bearing or child caring

4.5. Sample Size Estimation and Sampling Technique

4.5.1 Sample Size Estimation

Sample size was calculated using single population proportion formula by considering 50% proportion of Parental cigarette smoking, 95% confidence interval and 5% margin of error follows:

$$n_0 = (z^2 \alpha / 2) [p (1-p)] / d^2 \text{Where;}$$

z = the standard score corresponding 95% confidence level = 1.96
 P = 50% proportion of Parental cigarette smoking assumed, since no studies done in similar settings and similar study populations.

d = margin of sampling error = 5%

$$n_0 = (1.96)^2 (0.5) (1-0.5) / (0.05)^2 = 384$$

When design effect 1.5 is used, the sample = 576

By assuming 90% response rate, final sample size ~ **640**

4.5.2. Sampling technique

Multi stage sampling method was used. Misrak Bedawacho Woreda has of thirty nine kebeles. At first stage, the Woreda stratified by residence (Rural and Urban) then the lists of kebeles including their names were taken from Health office of the Woreda and the frame was prepared by giving number starting from one to thirty three for rural kebeles and one to six for urban kebeles. Then after, two and ten kebeles was selected by simple random sampling (lottery method) from urban cluster and rural cluster respectively. At second stage, totally twelve kebeles having 12839 households were identified from the family folder at Health Post of each respective selected kebele. The lists of households in each selected kebeles were identified. The total sample size of **640** was distributed for selected kebeles proportionally. Then after, by using Simple Random Sampling the final samples was taken.

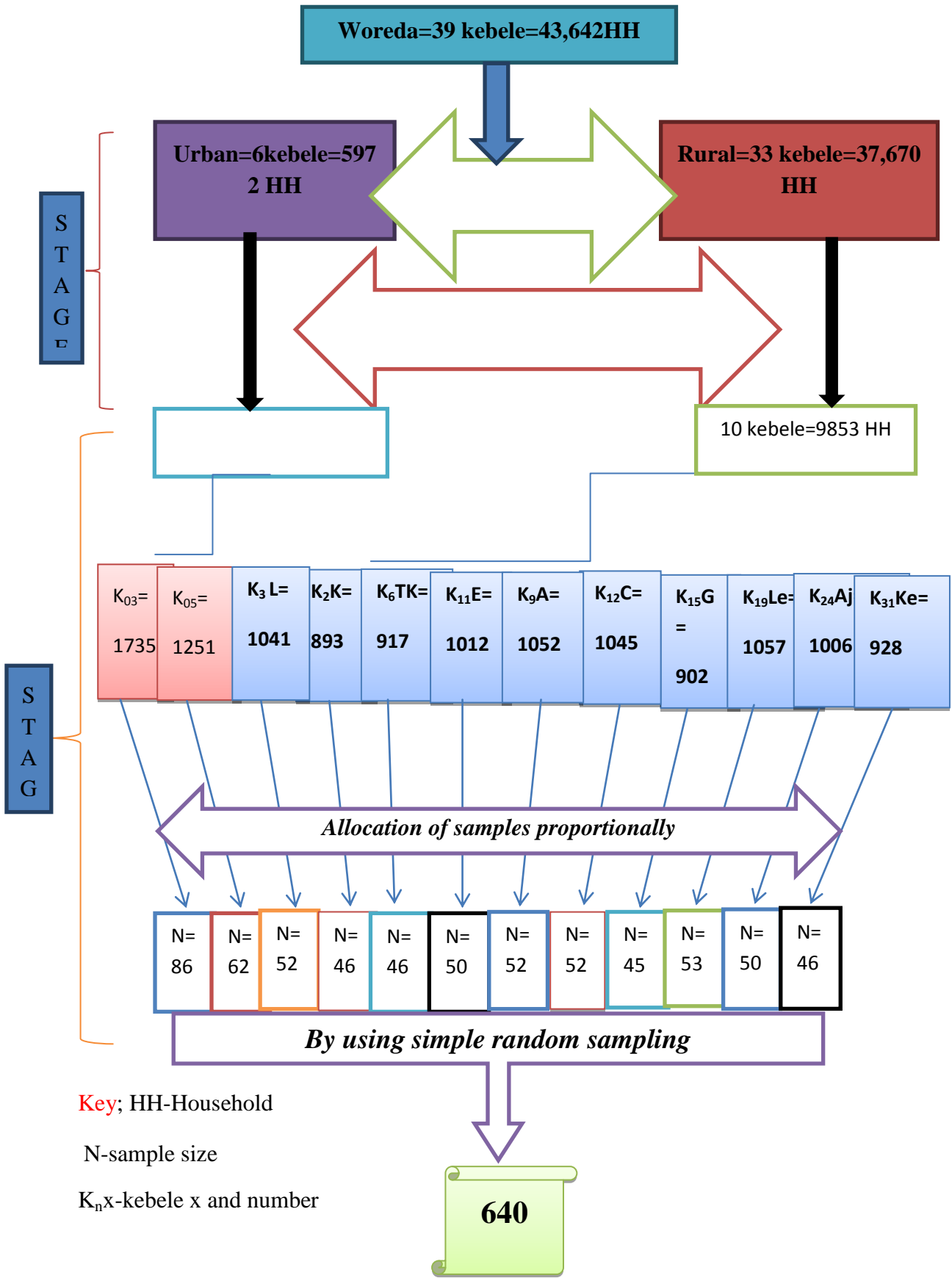


Figure 2; Schematic representations of sampling techniques

4.6. Study Variables

4.6.1. Dependent variable

- ✚ Parental Current cigarette smoking

4.6.2. Independent variables

- ❖ Socio-demographic variables(Age, sex, religion, ethnicity, educational level, marital status, Income/wealth, occupation)
- ❖ External factors (peer smoking status, Family smoking status)
- ❖ Personal related variables (Knowledge of health effect, Alcohol use /drinking habit, khat chewing practice)

4.7. Terms and Operational definitions

For the purpose of this research, the following term and operational definitions of the variables was used [*Remember: (word or sentence) * =Terms and (word or sentence)*

*** =Operational definitions]*

Alcohol use**: If a parents with practice of alcoholic drinks/beverages preceding last six months.

Cigarette* : is a small cylinder of finely cut tobacco leaves rolled in thin paper for smoking

Khat using habit** : If a parents with practice of chewing khat in the last six months.

Current smoker** : defined as an individual who smoked a whole or part of a cigarette within the last 30 days.

Current non-smoker** : defined as an individual who was not smoking currently (former smoker and Never smoker)

Current Prevalence of smoking** : is the proportion of study population who had practiced smoking within 30 days preceding the study.

Ever smoker** : any parent answering ‘Yes’ to the question: Have you ever smoked part or all of cigarette? But not smoking within 30 days preceding the study

External factors** : factors which are outside to an individual, which expose an individual became smoker

Hand rolled cigarettes* : refers to cigarettes made from loose tobacco and rolling paper which is prepared locally.

High Knowledge** : a person who have 4-6 score/ answered 4-6 questions correctly from the total knowledge questions on effects of smoking.

Little/Low Knowledge** : a person who have 0-1 score/answered ≤ 1 questions correctly from the total knowledge questions on effects of smoking

Household* : defined as a person or group of persons who normally reside together in the same compound under one or several roofs, are answerable to the same head, and share a common cooking arrangement. A House hold-represented by a single parent (father or mother)

Manufactured cigarettes* : refers to any brand cigarettes prepared in factories which are filtered and includes reconstituted tobacco and other additives

Middle**: group of individuals having 21-40% of household assets score and ranked in third quintile of socioeconomic index classification

Never smoker** : A parent who did not smoke during his whole life.

Rich**: group of individuals having 41-80% of household assets score and ranked in fourth quintile of socioeconomic index classification.

Richest**: group of individuals having 81-100% of household assets score and ranked in fifth quintile of socioeconomic index classification

Parents** : are defined as Adults/household heads that experience child bearing/child caring. Includes both fathers and mothers.

Parental current cigarette smoking** : defined as parental (paternal or maternal) Habit/status of smoking whether manufactured or Hand rolled cigarette in last 30 days of prior to the survey.

Personal factors** : are individual factors which initiates a person became smoker of cigarettes

Poorest**: group of individuals having 1-20% of the household asset score and ranked in first/lowest quintile of socioeconomic index classification.

Poorer**: groups of individuals having 21-40% of the household asset score and ranked in second/lower quintile of socioeconomic index classification.

Some Knowledge/medium Knowledge** : a person who have 2-3 score/ answered 2-3 questions correctly from the total knowledge questions on effects of smoking

4.8. Procedure for data collection and Instruments.

Data was collected using a pre-tested semi-structured interviewer administered questionnaire. This is developed from different literatures and adapted from Global Adult Tobacco Survey (GATS) [44]. Also, twelve Health professionals (6 Bachelor degrees and 6 diplomas) were selected for Data collection and two supervisors were assigned. Before data collection, 1 day training was given by principal investigator. The lists of final sample including the names of kebele, identification number and random number was prepared for each kebeles and given for supervisors and data collectors. Only one parent was chosen by lottery method for interview if both parents are available at the time of interview. If both parents absent for temporary period, repeated visit was under taken.

4.9. Measurement of variables

A Smoking questionnaire was adapted from GATS questionnaires and also, other literatures were used to assess factors associated with smoking. It is a standardized international questionnaire with carefully chosen questions to assess tobacco use and also enable comparison of data across settings.

The current smoking status was measured through asking respondents “have you smoked part or all of a cigarette every day or someday within 30 days preceding the study [32], those parents answering ‘yes’ to the question are classified as current smoker and those parents answering ‘No’ classified as current non-smoker for further analysis.

Knowledge of health effects of cigarette smoking;

The level of knowledge on effects of smoking was measured using six core questions [44]. Each of them has three responses (Yes, No and don't know). Each correct answer for the smoking-related health effects was represented by 'yes' and other two options classified as incorrect answer (no, don't know). "Based on what you know or believe, does smoking tobacco cause serious illness? Does cigarette smoking cause lung cancer, heart disease? Does Smoking affect children's health? Does Smoking harm smokers and non-smokers? Does Smoking increase health expenditure?" Correct responses was given a score 1 and incorrect responses as 0. The six items was summed to form the knowledge index with values ranging from 0 to 6. The knowledge index was re-coded for analysis by categorizing the values to make arated knowledge index with values ranging from 0 to 1=1 as little knowledge, 2 to 3=2 as some knowledge, 4 to 6=3 as good/high knowledge (47).

Family smoking status; the respondents answering 'yes' to the question 'did your father/mother smoke in your life time?' were considered to have had a family smoking history in their life time. **Peer smoking status;** The respondents answering 'yes' to the question 'Does your close friend/relatives smoke?' were considered as to currently have a smoking best friend/relatives [42].

The wealth index was constructed by using principal component analysis done on variables extracted from EDHS 2011. Asset information covered household ownership of a number of items, such as electricity, flush toilet, field telephone, cell telephone, television, radio, refrigerator, car, motorcycle, bicycle, table, bed or cot, chair or bench, watch or clock, as well as the type of main material used for the roof of the main house (cement, tin and katcha such as bamboo/thatched/straw). Each asset was assigned a weight (factor score) generated through principal components analysis, and the resulting asset scores was standardized in relation to a normal distribution with a mean of zero and standard deviation of one. Each household was then assigned a score for each asset, and the scores were summed for each

household; individuals were ranked according to the total score of the household in which they resided. The sample was then divided into quintiles from one (lowest) to five (highest). A single asset index was developed for the whole sample; indices will not be prepared for urban and rural populations separately. Accordingly, first quintile (poorest), second quintile (poorer), third quintile (middle), fourth quintile (rich) and fifth quintile (richest) was calculated (28).

4.10. Data management and quality control

Data quality assurance was maintained by performing different measures. The English version of the questionnaire was translated in to local language for better understanding by both data collectors and supervisors. Also, Consistency was checked by retranslating Hadiyisa version back to English by another individual who is expert in both languages. The data collectors and supervisors were trained for one day by the investigators prior to the data collection time. Pretest was done on 5% of the sample on parents from unselected kebele a week before the actual day of data collection. Based on the pretest, questions were revised, edited, and those found to be unclear or confusing was removed or modified by the investigator. Supervisors and the principal investigator was closely followed the day-to-day data collection process both during the pretest and actual study.

4.11. Procedure for data processing and analysis

Data was entered using Epi data version 3.1 and exported to IBM SPSS version 20.0 for analysis. After cleaning data for inconsistencies and missing value, in SPSS descriptive analysis was done such as percentages, frequency distributions and mean and measures of dispersion (SD) was used for describing data. For further analysis smoking status recoded in to 1 for Current smokers and 0 for Current Non-smokers (Former smoker and Never smokers). Binary Logistic regression analysis was used to identify factors associated with current smoking. All variables associated with current cigarette smoking in the Binary

logistic regression with a p-value ≤ 0.25 were entered together into a multivariable logistic regression by using backward method. The degree of association between independent and dependent variables was assessed using odds ratio with 95% confidence interval. P-value <0.05 was considered as statistically significant. Multicollinearity was checked. The Hosmer-Lemeshow goodness-of-fit statistic was used and the model had p-value >0.05 which prove the model is good.

4.12. Ethical consideration

Ethical clearance was obtained from the Ethical Review Committee (ERC) of Jimma University College of health sciences. Permission letter was obtained from the Misrak Bedawacho Woreda after the objectives of the study was explained. Verbal consent was sought from selected participants to confirm willingness to participate in the study before the interview. Privacy and confidentiality was ensured throughout the process of the study. The study participants were ensured that refusal to consent or withdrawal from the study would not alter or put at risk their access to health care.

4.13. Dissemination plan

The final report will be presented to the department of Epidemiology, College of health sciences, Jimma University. Also the study findings will be disseminated to the Misrak Bedawacho Woreda and other relevant bodies. Attempts will be made to publish the findings in a peer reviewed scientific Journal.

CHAPTER FIVE: RESULT

5.1: Socio-demographic Characteristics of respondents

A total of 640 parents were interviewed for the study, all were involved in the study yielding a response rate of 100%. The mean age of the study participants in this study was 38.80 (SD± 12.1) years. A majority of parents 300 (46.9%) were 20-39 years old. About 82(12.8%) of participants were 15-19 years old. By their marital status, 400(62.5%) were married and 69(10.7%) were single. About educational status of the parents, 231(36.1%) were illiterate and 139(21.7%) were college and above. Four hundred ninety two (76.9%) of the respondents were from rural areas. Majority of respondents 237(37.0%) were farmers and 163(25.5%) were government employed. Regarding Wealth index poorest group accounts for 203(31.7%) and highest group accounts 77(12%) (**Table1**).

Table 1; Socio-demographic characteristics of the study participants in Misrak Bedawacho Woreda, Southern Ethiopia, March 15 to April 15, 2016 (n=640).

Sociodemographic variables	Category	Frequency	%
Residence	Urban	148	23.1%
	Rural	492	76.9%
sex	Male	379	59.2%
	Female	261	40.8%
Marital	Married	400	62.5%
	Single	69	10.7%
	Divorced	100	15.6%
	Widowed	72	11.2%
Religion	Muslim	257	40.2%
	Orthodox	95	14.8%
	Catholic	63	9.8%
	Protestants	225	35.2%
Age	15-19	82	12.8%
	20-39	300	46.9%
	40-59	188	29.4%
	>60	70	10.9%
Ethnicity	Hadiya	343	53.6%

	Wolaita	108	16.9%
	Kambata	121	18.9%
	Halaba	45	7%
	Oromo	23	3.6%
Educational status	Illiterate	231	36.1%
	Elementary complete	179	28.0%
	High school complete	91	14.2%
	Post high school/colleges	139	21.7%
Occupation	Government employ	163	25.5%
	Farmer	237	37.0%
	Private employ	55	8.6%
	Daily laborer	54	8.4%
	Merchant	42	6.6%
	Homemaker/Housewife	51	8.0%
	Others* ¹	38	5.9%
Wealth index	Lowest(Poorest)	203	31.7%
	Lower(Poorer)	153	23.9%
	Middle	112	17.5%
	High(Rich)	95	14.8%
	Highest(Richest)	77	12.0%

NB:*I=(students.)

5.2 Cigarette Smoking status among study participants

Among study Participants, 151(23.6 %) were current cigarette smokers and 94(14.7%) were former smokers and the never smoker accounts for 395(61.7%) (**Figure3**)

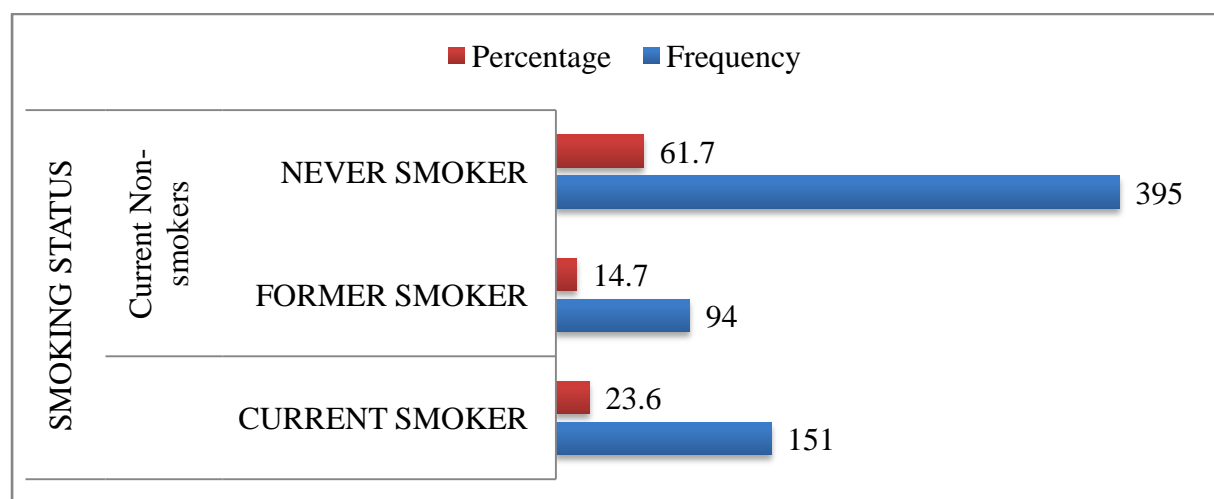


Figure 3; Distribution of smoking status among study participants in Misrak Bedawacho Woreda, Southern Ethiopia, March 15 to April 15, 2016(n=640)

5.3 Characteristics of current cigarette smokers

Among current smokers, the median age of smoking initiation was 18 years. Majority, 70% of current smokers started smoking within 16-20 years. Fifty five percent of them used manufactured cigarettes and they got them from Kiosks/markets 74(49%). About 13% reported that they started smoking due to peer pressure and 94 (62.25%) smokers indicated that they had tried to quit smoking in the past (**Table 2**)

Table 2; Distribution of smoking characteristics of among current smokers of study participants in Misrak Bedawacho Woreda, Southern Ethiopia, March 15 to April 15, 2016

characteristics	Category	Frequency	Percent (%)
Age of initiation of smoking (yr)	≤15	17	11.3
	16-20	106	70.2
	≥21	28	18.5
Types of cigarettes	Manufactured cigarettes	83	55
	Hand rolled cigarettes	61	40.4
	Other types*0	7	4.6
Source of cigarettes	Kiosks/market	74	49
	Garden/Surroundings	68	45
	Other*1	9	6
Number of cigarette consumed per day	<10	55	36.4
	10-20	72	47.7
	>20	24	15.9
Estimated cost per day(ETB)	<5	57	37.75
	5-10	71	47.02
	>10	23	15.23
Main reason for smoking initiation	Peer influence	20	13.2
	family smoking	18	12
	To relieve stress/anxiety	35	23.2
	Viewing socially attractive	14	9.3
	For excitement	32	21.2
	Other substance use	28	18.5
	Other*2	4	2.6
Ever tried to stop/cease smoking	Yes	94	62.25
	No	57	37.75

NB: Other (*0=*bidis, chewing, snuf*), other*1=*contraband, relatives*; Other*2 (*sexual exitment, facilitate digestion..*)

5.4. Factors Influencing Current cigarette smoking

5.4.1. Factors influencing current smoking in Binary logistic regression

Current cigarette smoking assessed for its association among its selected variables/factors. Accordingly, the result indicated that residence of parents was positively associated with current smoking (COR=2.3; 95%CI: 1.4, 3.9) meaning that the odds of smoking among rural parents were two-fold increase compared to Urban parents. Similarly, smoking among males two-fold times more likely compared to females (COR=2.2; 95%CI: 1.3, 3.3). Thoroughly, all factors were analyzed by bivariate analysis using binary logistic regression (**Table 3**).

Table 3; Binary logistic regression analysis to show factors associated with cigarette smoking among parents in Misrak Bedawacho, Southern Ethiopia, March 15 to April 15, 2016

Variable	Category	Current smoking (%)		COR 95%CI	P-Value
		Yes	No		
Residence	Rural	131(26.8%)	361(73.2%)	2.3(1.4-3.9)	0.001
	Urban	20 (13.5%)	128(86.5%)	1	
Sex	Female	41(15.7%)	220(84.3%)	1	
	Male	110(29%)	269(71%)	2.2(1.5-3.3)	<0.001
Age	15-19	10(12.2%)	72(87.8%)	0.2(0.1-0.5)	0.001
	20-39	112(37.3%)	188(63.7%)	1	
	40-59	17(9%)	171(91%)	2.13(1.5-3.4)	<0.001
	≥60	12(17%)	58(83%)	0.35(0.2-0.7)	0.002
Marital Status	Currently Married	90(22.5%)	310(77.8%)	1	
	Formerly Married	58(33.7%)	114(66.3%)	1.8(1.2-2.8)	0.005
	Never Married	3(4.5%)	66(95.5%)	0.2(0.05-0.5)	0.002
Education	Illiterate	85(36.8%)	146(73.2%)	16(6.1-39.6)	<0.001
al Status	Elementary Complete	41(23%)	138(77%)	8(3.0-20)	<0.001

	High school Complete	20(22%)	71(78%)	7(2.7-21)	
	College and above	5(3.6%)	134(96.4%)	1	
Occupatio	Farmer	87(36.7%)	150(63.3%)	1	
nal Status	Employed	17(7.8%)	201(92.2%)	0.2(.08-0.6)	<0.001
	Daily Laborer	36(66.7%)	18(33.3%)	3.5(1.8-6.5)	<0.001
	Merchant	5(12%)	37(88%)	0.2(.09-0.6)	0.003
	Home maker	4(7.8%)	47(92.2%)	0.35(.05-1.3)*	0.067
	Other**	2 (5.3%)	36(94.7%)	0.4(.02-1.04)*	0.054
Religion	Muslim	89(34.6%)	168(65.4%)	6(3.5-10.5)	<0.001
	Protestant	18(8%)	207(92%)	1	
	Orthodox	28(29.5%)	67(70.5%)	5(2.5-9)	<0.001
	Catholic	16(25.4%)	47(74.6%)	4(1.8-8)	
Wealth	Poorest	50(24.6%)	153(75.4%)	4.7(1.8-12)	.002
Index	Poorer	42(27.5%)	111(72.5%)	5(2.5-14)	.001
	Middle	30(26.8%)	82(73.2%)	5(1.9-14)	
	Rich	24(26.3%)	71(74.7%)	4(1.7-13)	.002
	Richest	5(6.5%)	72(93.5%)	1	
Knowledge	Little Knowledge	72(27.7%)	188(72.3%)	6(2.3-15)	<0.001
level	Some Knowledge	74(25%)	222(75%)	5(2-13.5)	0.001
	High Knowledge	5(6%)	79(94%)	1	
Khat chewing practice	Yes	114(38.8%)	180(61.2%)	5.3(3.5-8)	<0.001
	No	37(10.7%)	309(89.3%)	1	
Alcohol using Practice	Yes	101(39.3%)	156(60.7%)	1	
	No	50(13.1%)	333(86.9%)	0.2(.15-0.3)	<0.001

Family Smoking habit	Yes	61(34.7%)	115(65.3%)	2(1.5-3.2)	
	No	90(19.4%)	374(80.6%)	1	
Peer Smoking habit	Yes	101(39.8%)	153(60.2%)	4(3-6.5)	<0.001
	No	50(13%)	336(87%)	1	

NB: Other ^{**= students}, (COR)*=*non-significant*

5.4.2. Factors influencing current smoking in Multivariable logistic regression

Accordingly, the variables with P-value ≤ 0.25 in the bivariate analysis were entered into multivariable logistic regression analysis. Multivariable analysis in the multivariable logistic regression model showed that sex, age, educational status, marital status, occupation, religion, wealth index, khat chewing practice and peer/friends smoking status were significantly associated with current cigarette smoking at p-value < 0.05 .

In this finding the residence (AOR=0.6; 95% CI: 0.3, 1.3, P=0.2), Family smoking status (AOR=0.7; 95% CI: 0.4, 1.4, p=0.36) and Alcohol using practice (AOR=1.5; 95% CI: 0.7, 3.4, P=0.32) were not statistically significant at $p < 0.05$. In this study the result showed that parents whose ages were between 20-39 years 19 times more likely smoke than those parents between 40-59 (AOR=19, 95% CI: 9.1, 39) and above 60 years 60% times less likely to smoke (AOR=0.4; 95% CI: 0.013, 0.78). Similarly, age groups 15-19 were time more likely smoke than 40-59 age groups (AOR=3.7, 95% CI: 1.4, 10). In this study the finding revealed that male were 2.6 times more likely smoke than females (AOR=2.6; 95% CI: 1.5, 5). In this study the result showed that parents whose marital status were formerly married 1.6 times

more likely smoke than currently married parents (AOR=1.6; 95%CI:1.2,2.8).In this study the result indicated that parents whose religion were muslim 2.6 times more likely smoke than whose parents which were protestants(AOR=2.6;95%CI: 1.23,5.5).In line with this,parents who were catholic two times more likely smoke than protestants(AOR=2,95%CI:1.16,8).In this study the result showed that parents whose educational status were illiterate five times more likely to smoke than those parents who were colleges and above (AOR=5;95%CI:1.5,16.8)..In this study the result showed that parents whose occupation were daily laborer 3.8 times more likely smoke than parents who are employed (AOR=3.8; 95%CI: 1.7, 9).In this study the result indicate that parents whose socio economic status were poorest 4.3 times more less likely to smoke than those parents who were Richest(AOR=4.3; 95%CI: 1.43, 17.6).This study found that khat chewer parents were two times more likely smoke than non khat chewer parents(AOR=2,95%CI:1.25,4)(**Table 4**)

Table 4; Multivariable logistic regression analysis showing factors associated with cigarette smoking among Parents in Misrak Bedawacho Woreda, South Ethiopia, March 15 to April 15, 2016

Variable	Category	Current smoking (%)		AOR 95%CI	P-Value
		Yes	No		
Sex	Female	41(15.7%)	220(84.3%)	1	
	Male	110(29%)	26(71%)	2.6(1.5-5)	0.001
Residence	Urban	20(13.5%)	128(86.5%)	1	
	Rural	131(26.6%)	361(73.4%)	0.6(0.3- 1.3)*	0.2
Age	15-19	10(12.2%)	72(87.8%)	3.7(1.4-10)	0.011
	20-39	112(37.3%)	188(63.7%)	19(9.1-39)	<0.001
	≥60	12(17%)	58(83%)	0.4(.013-.78)	0.014

	40-59	17(9%)	171(91%)	1	
Marital	Currently Married	90(22.5%)	310(77.8%)	1	
Status	Formerly Married	58(34%)	113(66%)	1.6(1.2-2.8)	0.005
	Never Married	3(4.5%)	66(95.5%)	0.6(0.3-1.06)*	0.07
Education	Illiterate	85(36.8%)	146(73.2%)	5(1.5-16.8)	0.007
al Status	Elementary Complete	41(23%)	138(77%)	2.6(0.93-4.3)*	0.23
	High school Complete	20(22%)	71(78%)	3(1.4-10.4)	0.04
	College and above	5(3.6%)	134(96.4%)	1	
Occupatio	Farmer	87(36.7%)	150(63.3%)	1	
nal Status	Employed	17(7.8%)	201(92.2%)	0.3(.13-0.6)	0.003
	Daily Laborer	36(66.7%)	18(33.3%)	3.8(1.7-9)	0.001
	Merchant	5(12%)	37(88%)	0.25(.07-0.6)	0.025
	Home maker	4(7.8%)	47(92.2%)	0.4(.06-1.8)*	0.075
	Other**	2 (5.3%)	36(94.7%)	0.3(.06-1.09)*	0.064
Religion	Muslim	89(34.6%)	168(65.4%)	2.6(1.23-5.5)	0.012
	Protestant	18(8%)	207(92%)	1	
	Orthodox	28(29.5%)	67(70.5%)	3(0.75-5.2)*	0.72
	Catholic	16(25.4%)	47(74.6%)	2(1.16-8)	0.014
Wealth	Poorest	50(24.6%)	153(75.4%)	4.3(1.43-17.6)	0.04
Index	Poorer	42(27.5%)	111(72.5%)	3.1(1.13-12.6)	0.031
	Middle	30(26.8%)	82(73.2%)	7.1(0.96-11)*	0.09
	Rich	24(26.3%)	71(74.7%)	1.5(0.2-2.8)*	.061
	Richest	5(6.5%)	72(93.5%)	1	
Knowledg	Little Knowledge	72(27.7%)	188(72.3%)	5(1.06-25)	0.05

e level	Some Knowledge	74(25%)	222(75%)	1.9(0.4-9.5)*	0.42
	High Knowledge	5(6%)	79(94%)	1	
Khat chewing practice	Yes	114(38.8%)	180(61.2%)	2(1.25-4)	0.009
	No	37(10.7%)	309(89.3%)	1	
Alcohol using Practice	Yes	101(39.3%)	156(60.7%)	1.5(0.7- 3.4)*	0.32
	No	50(13.1%)	333(86.9%)	1	
Family Smoking habit	Yes	61(34.7%)	115(65.3%)	0.7(0.4, 1.4)*	0.36
	No	90(19.4%)	374(80.6%)	1	

NB: (AOR)=non-significant^{other** (student, jobless)}, 1= reference, Note: Hosmer and*

Lemeshow Test = 0.610 therefore the model adequately fits the data.

CHAPTER SIX:DISCUSSION

The main objective of this study was to determine the prevalence of cigarette smoking and associated factors among parents. Accordingly, this study revealed that the prevalence of current smoking was 23.6%. Similarly illiterates, having low knowledge, poorest economically, daily laborers, male, middle age category, formerly married (divorced and widowed), khat chewing practice and peer smoking were strong predictor of current cigarette smoking among parents. The magnitude of cigarette smoking is on a rise despite fact that numerous scientific studies had reported a morbidity and mortality associated with it.

The findings of this study showed that the overall self-reported prevalence of cigarette smoking was 23.6 % (95% CI: 20.5, 27.3) with 17.2 % (95 % CI: 14.3, 20.1) for males and 6.4 % (95 % CI: 4.5, 8.3) for females. Similarly, prevalence of cigarette smoking in urban 3.1% (95 % CI: 1.8, 4.4) and rural 20.5% (95 % CI: 17.4, 23.6). This high magnitude might be due to availability of hand rolled cigarettes and tobacco growers in the area.

The finding from this study was consistent with the study done in 23.9% Halaba [32], 28% Eastern Ethiopia [31], 27.1% Malawi [40], 28.5% Madagascar [25], 23.19% Bangladesh [45]. This finding result was much higher than a national study done in Ethiopia 3.1 % (8.1% in males and 0.8 % in females) [28], Butajira 4.4% (11.8% male and 0.8% female) [47], Gilgel Gibe research field center Jimma (9.4%) [29] and 16% in Mexico [47]. But lower than study conducted in Jimma town (35.5%) [30], Amhara region (57%) [41], 31.8% China [48] and national study conducted in Madagascar (48.9% in males and 10.3% in females). This discrepancy could be due to difference in study setting, socio cultural differences, level of study (national and Woreda level), time of the study and the way of outcome measurement.

In fact, the cigarette smoking prevalence in the current study population is much higher than the national average of 4.4% [36]. Interestingly, it is nearly consistent or comparable to reports from countries such as Kenya 22.9%, Tanzania 21%, and Tunisia 30.4% [49].

Previous studies in the countries [28, 32] as well as abroad [48] indicated that prevalence of smoking was higher in rural area than urban area. Specifically this study revealed that the prevalence of cigarette smoking in urban 3.1% and in rural 20.5% but, residence was not significant in this study.

In this study the result indicated that Males had higher odds to use tobacco as compared to females. Similarly, most studies in Ethiopia and other African countries have shown that cigarette smoking is associated with male gender [28, 31, and 30]. In Ethiopia, cigarette smoking in females is condemned by the community and results in stigma and discrimination. Furthermore, familial relationships including care and family related activities may protect females from involving in tobacco use.

It was also found that respondents with lowest wealth index/poorest and second/poorest wealth index were most likely to smoke and respondents with higher wealth index were least likely to smoke. This study identified that the poorest/poorer groups of the population were more likely to smoke cigarettes as compared to the richest quintile group. This finding is consistent with studies [28, 36, and 45]. Why poor or poorest people smoke is attributed to lack of awareness about adverse effects of smoking or the stresses of poverty causing individuals to take up smoking as a coping mechanism and availability of locally prepared cigarettes [50].

Educational status was strong predictor of cigarette smoking. In this study illiterate or uneducated parents were more likely smoking habit than educated parents. This consistent with other studies reported nationally [28, 32] and internationally [47, 48 and 61]. This association between smoking and lack of education has been reported in other studies in Pakistan, Bangladesh, and India [43]. This might be due to lack of awareness about the health effects of tobacco products.

In this study, the result showed that Compared to the age group (20–39 years), odds ratios were lower in almost all age groups. This study is consistent with studies done middle income countries [45, 47] but, inconsistent with previous studies [28, 31 and 46] elsewhere reported that odds of cigarette smoking was found to increase among older age groups.

The discrepancies due to study setting, culture, level of exposure to substances, since they are less likely to engage in income generating activities, so this forced them dependency on family to buy cigarettes. But the onset of earning age group is found to smoke more. The increase in prevalence among them might have indication about their job stress or family stress. Unless effective tobacco control measures are strengthened soon, the future disease burden in Ethiopia will probably be influenced by the high level of smoking in young male adults in age group 20-39 years. Therefore, targeting cessation in these age groups would be

extremely important as a component of overall policy initiatives for reducing tobacco use prevalence [47, 51]. Also, this the result of this finding indicated that youngest age group (15-19) has been found to smoke tobacco. This is in line with other studies [28, 31]. Similarly, this study found a lower prevalence of smoking nearly 1.3% among those aged 60 years and above, which is consistent with reports from other Asian countries [52-54]. This may be due to the reason that older people have less pressure and more time to accept health information and medical advice and confront smoking-related diseases, thus increasing the health consciousness following physical decline with age. Also, in this finding the middle age groups or working age were more likely engaged in smoking. Tobacco use-related deaths tend to occur during the most productive middle-age years; therefore, impacting the economy of the entire nation. This suggests a potential target group for future tobacco control campaigns.

There was a statistically significant difference in tobacco use across different religious groups. Islamic religion followers were six fold more likely to smoke cigarettes compared to Protestant faith followers. This finding mirrors a number of studies conducted in Ethiopia [28, 36 and 45] and abroad [48, 55 and 56]. So that these Islam community reside in these area is cultivate tobacco plants and prepare for local markets and exposed to these cigarette. This could also be the reason why this study found that those Islamic religion followers have had higher odds of using cigarettes. Similarly, catholic religion followers were two times more likely smoke than protestant faith followers. This is consistent with other reports [28].

Separated or divorced adults were more likely to be smokers than married ones. This finding is consistent with those reported by others [48, 57 and 58]. This can be explained by marriage protection theories because married people have greater economic, social, and psychological support, while separated or divorced people have emotional distress that may lead them to become smokers for comfort. The odd of tobacco use among formerly married individuals was higher as compared to never married individuals. This study consistent with [28]. This could be due to the fact that formerly married individuals might use tobacco to relieve their stress or loneliness. On the other hand, divorce could be one of the social consequences of tobacco use. Tobacco use might cause conflict among couples and result in divorce.

In this study the result indicated that occupation type was associated with cigarette smoking. The odds of smoking fivefold increase among daily labor workers than those who are

employed parents and this finding was also reported in [28, 36, 45, and 46], European and Asian populations [48, 59 and 60]. A possible explanation is that labor workers have a lower socioeconomic status, more physical pressure, and psychosocial and emotional problems. Daily labor workers with a low level of education and income had a lower level of socioeconomic status. This group of people had financial stress and unhealthy lifestyles, and they lacked health care.

In this study the result showed that the odds of smoking was higher among parents with little knowledge category. This is consistent with studies [2, 33 and 47]. An inverse relationship was observed for level of knowledge and cigarette use; as level of knowledge increased, the odds of tobacco use decreased. This due to awareness of health effects, organizations may influence smoker in order not to smoke with in their organization. Also, there was relatively low level of knowledge about health effects of smoking among respondents; their awareness about health effects of cigarette smoking was deficient. Thus, it necessitates well designed intervention in order to minimize the overall effects of the current practice especially onto the new generation.

This study also found that that the khat chewing practice was twofold increases the odds of current cigarette smoking among parents. This is consistent with other studies [32, 63]. Since most khat chewers use cigarette to enhance their level of excitement, proportion of smokers observed among khat chewers were high. Even though smokers studied were parents, certainly their current action will contribute for future increment of youth's smoker at community, school and universities in the area. Since existence of motivating factors such as presence of smoker, peer smoking or family member in home was found strong predictor variables for high prevalence of cigarette smoking.

Smoking of a current close friend was strongly associated with participants' own smoking. The development of nicotine dependence and smoking habit is linked to social influence from family and friends. Accordingly In this study the result indicated that the odds of smoking among parents who had smoking friends or families two times more likely than counterpart. This finding was consistent with studies done [43, 62]. The smoking behavior of a close friend is significantly associated with participants' own smoking behavior in adulthood. The impact of this association is much greater than the impact of smoking family members. This should be taken into consideration in attempts to prevent smoking initiation or continuation.

Limitation of the study

Nevertheless, as the study has employed self-reporting as a proxy measure for the study of smoking status, it is liable to self-report bias which can underestimate the prevalence of the smoking under study. Underreporting could happen due to social desirability bias. The questionnaire was administered by interviewers and thus there was risk of interviewer bias. It was attempted to minimize these issues by using previously validated questions, pretesting of the questionnaires, interviewer training and supervision, as well as back-checking. The finding of this result should be interpreted in light of these limitations.

Strength of the study

The major strengths of our study include; high response rate, the coverage of men and women, and the coverage of both rural and urban areas. Since, a standardized questionnaire employed that enabled to compare to other studies conducted in similar settings. Some of the social influences on smoking were studied in this population. Population based nature of the study alongside with the use of random selection of study participants are the strengths of this study.

CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS

Conclusion:

This study found that considerably high prevalence of self-reported current cigarette smoking among parents in the Misrak Bedawacho Woreda. Furthermore, this study reveal that cigarette smoking is strongly associated with illiteracy, male, low socioeconomic status (poorest and poorer), age group 15-19 and 20-39, daily labour working, formerly married, having little knowledge, khat chewing practice and having peer smoking. Giving it as public health priority, WHO FCTC should be strengthened. In addition, a nationwide campaign is needed to educate parents about the health risks of smoking cigarette

Recommendations:

For ministry of Health and Regional health Bureau

- Should ensure strengthening the Tobacco Control Program and Targeting smoking cessation on: daily labor workers, formerly married groups, poorest and poorer category of wealth index, males, khat chewers, age groups 20-39 and 15-19.
- An increase in taxation on tobacco products can decrease its consumption, especially by the poor.
- Setting out strategy to control locally prepared hand rolled cigarettes in the markets and focusing on tobacco growers in the community.
- Regular surveys on prevalence and determinants of all forms of tobacco use in the general population should be carried out at timely.

For Zonal health department and Woreda health office

- ✓ Anti-smoking, smoking cessation campaigns and Health education programs on cigarette smoking should be needed to be emphasized.
- ✓ Health professionals and Health Extension workers should try to give health education at outreach session and as much as possible

For researchers

- ✚ Further research is recommended on passive smoking and active smoking with strong epidemiological design of the study to overcome the limitation of this study.

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Annex 1.Questionnaire (English)

A. SECTION ONE

Instruction: consent form

A Questionnaire prepared to collect data on Prevalence of Cigarette Smoking and associated Factors among parents in Misrak Bedawacho Woreda, Southern Ethiopia.

Questionnaire Number _____

Hello! Good Morning/ Evening? I am _____. I am a Health Worker; I am working as data collector for Mr Terefe Markos from Jimma University post graduate program. This Research Topic is aimed to assess the Prevalence of Cigarette Smoking and Associated Factors among Parents in Misrak Bedawacho Woreda, Southern Ethiopia. The result of this study will produce information that will be useful in implementing health policy. You are selected at random to be included in to this study. Your responses are very important to us and the community, as these answers will represent many other persons. The interview will last around 20 minutes. Your participation in this survey is entirely voluntary. The information that you will provide us will be kept strictly confidential, and you will not be identified by your responses. Personal information will not be shared with anyone else, not even other family members. You can withdraw from the study at any time, and may refuse to answer any question. Therefore, you are kindly requested to respond genuinely and voluntarily with Patience.

Do you have any Question? Are you willing to Participate in the interview?

If yes, give thanks! Go to the Next Page, If No, Thank them and stop the interview

Name and Signature of the Consenting Interviewer _____

Result of the Interview: 1. Completed 2. Partially Completed 3.The Interviewee Refused

Supervisor's Name _____ Sign _____

Date of Interview _____ Time Interview Started _____ Time Interview Finished _____

General information; Kebele....., Gote....., family folder number..., House hold position.....random number-----

B.SECTION TWO

Part 1.Assessment on Sociodemographic characteristics of respondents

INSTRUCTIONS - Fill answer on the space provided and encircle answer for the questions given with options or choices.

Serial no	Questions	Response and coding category	R
101	How old are you?	1.-----yr	
102	Sex	1.male 2.female	
103	What is the highest education level you have attained?	1.Illiterate 2. Primary school (1 -6) 3. Junior high school (7-8) 4. Secondary high school (9-12) 5. College and university	
104	What is your religion?	1.Orthodox 2.Muslim 3.Protestants 4.Catholics	
105	What is your ethnicity?	1. Hadiya 2.wolayita3.kambata 4. Halaba 5.oromo 6.others	
106	What is your marital status?	1.Single 2.Married 3.Divorced 4.Widowed	
107	What is your occupation?	1. Employed 2.Farmer 3.Private 4.Daily laborer 5. Merchant 6.home maker 7.others	
108	Place of residence	1.urban 2.rural	

C.SECTION THREE

Part 1: Assessment of smoking habit of respondents

109. Have you smoked part or all of a cigarette every day or someday within 30 days preceding the study?

1. Yes

2. No

[if, No skip to Q #117]

110. Which types of cigarette have you most commonly used?

1. Manufactured cigarette 2.hand rolled cigarette 3.others

111. How old were you when you first started smoking cigarette (in years)? -----

112. On average, how many cigarettes do you currently smoke per day...?

113. The last time you purchased cigarettes for yourself, where did you buy them?

1. Kiosks/Market
2. From another Person
3. Others

114. In total, how much money did you pay for this purchase? (In birr)-----

115. What were the main reasons that you started smoking?

1. Peer influence
2. Parental or sibling
3. To relieve stress
4. For feeling coldness
5. Viewing smoking as socially attractive
6. Low price of cigarettes
7. Other substance use
8. others

116. Have you tried to stop smoking? 1. Yes 2.No

NB; Skip to #120, if either one of options was selected.

Instruction: for former smokers and Never smokers

117. Have you ever smoked part or all of a cigarette in your entire life before 30 days whether manufactured or hand rolled?

1. Yes
2. No → [If NoSkip to Q#120]

118. How long has it been since you stopped smoking? -----

119. What were your most important reasons for quitting smoking/tobacco use?

1. Did not want to smell like a smoker
2. Wanted to get rid of addiction
3. Spend money more reasonably
4. Wanted to be healthier
5. Wanted to be a better role model for children
6. Others

Instruction: for never smokers, ever smoker and current smoker

120. Did you ever see or hear any harm of smoking or anti-smoking advice anywhere?

1. Yes 2. No → [If, No Skip to Q#122]

121. Where did you see or hear the information?

1. Media 2. Health Professional 3. Newspaper/ magazine
4. Health warning on cigarette packs 5. Other

Part 2: Assessment of personal and external related factors among respondents

Instruction: For Never smokers, Ever smokers and Current smokers

1; Assessment of personal factors of respondents

A; Assessment of Knowledge on effect of smoking

122. Based on what you know or believe, does smoking tobacco cause serious illness?

1. Yes 2. No 3.dont know

123. Based on what you know or believe, does cigarette smoking cause lung cancer?

1. Yes 2.No 3.Don't know

124. Based on what you know or believe, does cigarette smoking cause heart disease?

1. Yes 2.No 3.Dont know

125. Smoking affects children's health 1.yes 2. No 3.dont know

126. Smoking harms smokers and non-smokers 1.yes 2. No 3.dont know

127. Smoking increases health expenditure 1.yes 2. No 3.dont know

B; Assessment of Other Substance Use History Rather than Smoking

128. Do you have history of khat chewing with in last six months?

1. Yes
2. No

129. Do you have Alcohol, beer...etc drinking habits with in last six months?

1. Yes

2. No

2; Assessment of External factors of cigarette smoking among respondents

130. Did your father/mother/family member smoke cigarette in your life?’

1. Yes 2.No

131. Do you have friends/peers who is/are smokers? 1. Yes 2.No

D. SECTION THREE

Instruction: Socioeconomic/wealth was assessed through asking the following questions.

Household Characteristics	
132 What is the main source of drinking water for members of your household?	1. Piped water into dwelling 2. Piped water to yard/plot 3. Public tap/standpipe water 4. Borehole water 5. Protected Dug well 6. Unprotected Dug well 7. Protected spring Water 8. Unprotected spring Water 9. River 10. other SPECIFY _____
133 What kind of toilet facility do members of your household usually use?	1. Pit latrine 2. Pit latrine with slab 3. Pit latrine without slab/Open pit 4. Hanging toilet/hanging Latrine 5. No facility /bush/field 6. Other specify_____
134 Does your household have:	1 YES 0/ NO
a. Electricity?	1 yes 0. No
b. A watch/clock?	1 yes 0. no
c. A radio?	1 yes 0. no
d. A television?	1 yes 0. No
e. A mobile telephone?	1 yes 0. no

	f. A table?	1 yes 0. no
	g. A chair?	1 yes 0. no
	h. A bed with cotton/sponge/spring mattress?	1 yes 0. No
	i. Spring mattress	1 yes 0. no
	j. A kerosene lamp/pressure lamp?	1 Yes 0.No
	k. Lamp	1 yes 0. No
135	Main material of the floor. Record observation	1. Earth/sand 2. Dung 3. Wood 4. Cement 5. Otherspecify_____
136	Main material of the roof. Record observation	1. No roof 2. Thatch/leaf 3. Corrugated iron /metal 4. Otherspecify_____
137	Main material of the exterior walls. Record observation.	1. No walls 2. Bamboo/wood with mud 3. Reused wood 4. Finished walls 5. Otherspecify_____
138	Does any member of this household own:	a. A bicycle? 1. Yes 0. No b. Car? 1. Yes 0. No c. An animal-drawn cart? 1 Yes 0. No
139	Does any member of this household own any agricultural land?	1. Yes 0. No
140	Does this household own any livestock, herds, other farm animals, or poultry?	1. Yes 0. No (If no skip to Q. no. 142)
141	If "yes for Q 140" How many of the following animals do this household own? Write the number for each and If none, enter '00'.	a. Milk cows _____ b. Oxen or bulls _____ c. Horses _____ d. Donkeys _____ e. Mules _____ f. Goats _____ g. Sheep? ____, h) Chickens? ____
142	Does any member of this household have a bank account?	1.Yes 2.No

Annex 2.Questionnaire (Hadiyyis Version)

A.BAXXANCHCHI MATO

Awonsa: littanchcha teim hayy'mma xamm'kkami beyyo

Hadiyyis Saga'llissinne Gudaakoo Xamm'ichchuwwa

Ku xammichchuwwi sujaara agimm (wiriisim) bikinaa kiisanso maskauwwa annonnee amoonee saraya isoothane bedawwachchi woraxxi qooxone

Xa'mmichchi xigo.....

Xumma gattaa/xumma hossaa? Ani,.....yamamomo.Ku, sarrayyi sujaara wiriissimmi bikinaa wiriisakamisina isoo luwwa teim mashkauwwa xa'mmo saraya.kanii wixxoo dabachchuwwi lobakat luwina fayyao' mm shoganne uwwoo awwaadi yohane.Eebikina mahami badimmi hasisooyo, ati kutoo luwwi muli manina kunoom bee'ane. Xammichchoomi Hofi qaxi amanem aaookko.Hassi beelasi utteena xantooto.xammichcha xammona iitanttoo?

Galaxxoommo.

Xa'mmoo manchchi summaa furmaa'a.....

Kebele.....,gooxa/zoona.....household number/family folder number.....random number.....

B. Baxxanchi lamo

Anichi qaranchi hagara xamm'akam xamichchuwa

Awwonssa; bonane teimi uwammu doo'llichchane horoorene xaaxe

Xigo	Xa'mmichchuwa	Dabachchi hagara	Remark
101	Ummuri mee'oo?	1.-----hiincho	
102	Fikkanoi hagari/tsootaa	1.goonchcho 2.landichcho	
103	Ki lossa'nni qaxxoomi?	1.mahami laoo beeane 2. matii loho afeebe(1 -6) 3. lamarii sadeenti afeebe (7-8) 4. honsii tomi afeebe (9-12) 5. collejiinsee hananette	
104	Ki ammanati maruchcho?	1.Orthodox 2.Muslim 3.Protestants 4.Catholics	
105	Ati hinka beera /ayimancho?	1. Hadiyicho2.wolayticho 3.kambaticho4. halabichcho 5. Oromkicho 6.others	
106	Kiki eebim hagari hinkidette?	1.eebu beeane 2.eebaakoohane 3.anani ihaakohane 4.lehako/lettooko 5.mulekim	
107	Ki baxi maruchcho?	1. Mangist baxo 2.abuullancho 3.muli teim gaqi baxo 4.malayi baxo 5. dadaro 6.mullekim yooko	
108	Hee'lloo beyyi hanno	1.meerane/katamane 2.meeri bee beyyone	

C. Baxxanchi saso

Sujaara wiriissim bikina xa'mmoo xa'mmichchuwa

109. Ka aga'nni woronne hoffokam lobokam agittoyyoni??

1. Eeyya

2. Horriyyem agummoyyo→[hige Xamichi #117]

110. Hinka sujaara lophitaa awwaxitoo? 1. Fabriikiinse waaroohane 2. anginne xaxamohane
3. mullane

111. Sujaara agimma asheeti ummuri mee'oo...

112. Mati balane mee'I sugaara wiriisitto...

113. Haanninsee sujaara bittaa'lloo? 1. Suuqiinsete 2. muli maniniste 3. Bittaaummoyo
/Duubbone kaasumaaninste 4. mulkeenim

114. Mati balane mee'I birra fisitto?

115. Sujaara agimma asheetiti luxi mashkai maruwa?

1. Beshuwi gafeansaatete
2. eyyano agumi bikina
3. Kichchechi waru bikinate
4. manina daneena hasattete
5. Bushaal ihu bikinate
6. chaata iicoomi bikibina
7. mulkeenim yooko

116. Sujaara agimma uuliseena yakitaa? 1. Eeyya 2. Horiyyemi yakummoyyo

Qoose! [Lamii mato doolakolas hige→]

Awonsa; Gaase sujaara agoo keenina agoo beei keenina xale'i

117. Ki hee'lli heechchane teim ka aganii illagoone sujaara wirisitaa laqoo?

1. Eeyya

2. Heriyyem agummoyyo → [hige Xamichi #120]

118. Sujaara agimma uulisitaani hinkaa'ni amane ihaa? -----

119. Mahinatte uulisitoki sujaara agimma? 1. Bobeena hasumbeei bikinate 2. Illenne ullaa
hundamanemi hawissu bikinate 3. buxooma eeboo bikinate 4. fayya'ooma hasaatette

5. Ciiluwi losoo bee'isinate

Awwonsa; Hundem hagara manina gudaakoo xamichchuwa

120. Sujaari bikina sogitano teim losano maceesaa laqqoo?

1. Eeyya

2. horiyyemi laoomoyyo

121. Hanninsette maceesitoki

1. Televishiinsette
2. fayyaooma egerro manininsette
3. gaaazeexxinsette
4. sujaarane kitaabamu luwinsette
5. mulibeyyinsette

Hundem hagara manina gudaakoo xamichchuwa

Luxxi gabala A; sujaarine waaroo hawwo laimmi bikina xa'mmo xa'mmichchuwa

122. Ati laqoo luwiinse ki'llaa, sujaara xuuximi kee'mmali hawwo eeboo?

1. Eeyya
2. Horiyyemi eebooyyo
3. Ani laummoyyo

123. Ati laqoo luwiinse ki'llaa, sujaara agimmi fooshshechchi sono'i jaboo eeboo?

1. Eeyya
2. Horiyyemi eebooyyo
3. Ani laummoyyo

124. Ati laqoo luwiinse ki'llaa, sujaara agimmi woda'nni jaboo eeboo?

1. Eeyya
2. Horiyyemi eebooyyo
3. Ani laummoyyo

125. Ati laqoo luwiinse ki'llaa, sujaara agimmi ciiluwwa hawadooko?

1. Eeyya
2. Horiyyemi eebooyyo
3. Ani laummoyyo

126. Ati laqoo luwiinse ki'llaa, sujaara agimmi, agoo manaa agoobee'ekam hawadookko?

1. Eeyya
2. Horiyyemi eebooyyo
3. Ani laummoyyo

127. Ati laqoo luwiinse ki'llaa, sujaara agimmi, buxooma eebooko?

1. Eeyya
2. Horiyyemi eebooyyo
3. Ani laummoyyo

La'mmi gabal B; Sujaariinse tochchone muluwaa awaximi bikina xa'mmo xa'mmichchuwa

128. Caata qama'lla laqoo lohi agani worone? 1. Eeyya

2. Horiyyemi eebooyyo

129. Aga agaa laqoo ka lohi agani worone? 1. Eeyya

2. Horiyyemi eebooyyo

Baxanchchi lamo; Kiininse tochchi ihaa sujaara agoisaa isso luwwi bikina xa'mmo xa'mmichchuwa

130. Ati heeliti umurane, ki anno sujaara xuuxaa la'oo? 1. Eeyya 2. Horiyyemi la'ooyyo

131. Ki beshshuwi sujaara agoo keeni hee'aa? 1. Eeyya 2.Horiyyemi eebooyyo

D. Baxxanchchi sooro

Awonsa; siixo'i/godimma keenoo/ xa'mmo xa'mmichchuwa

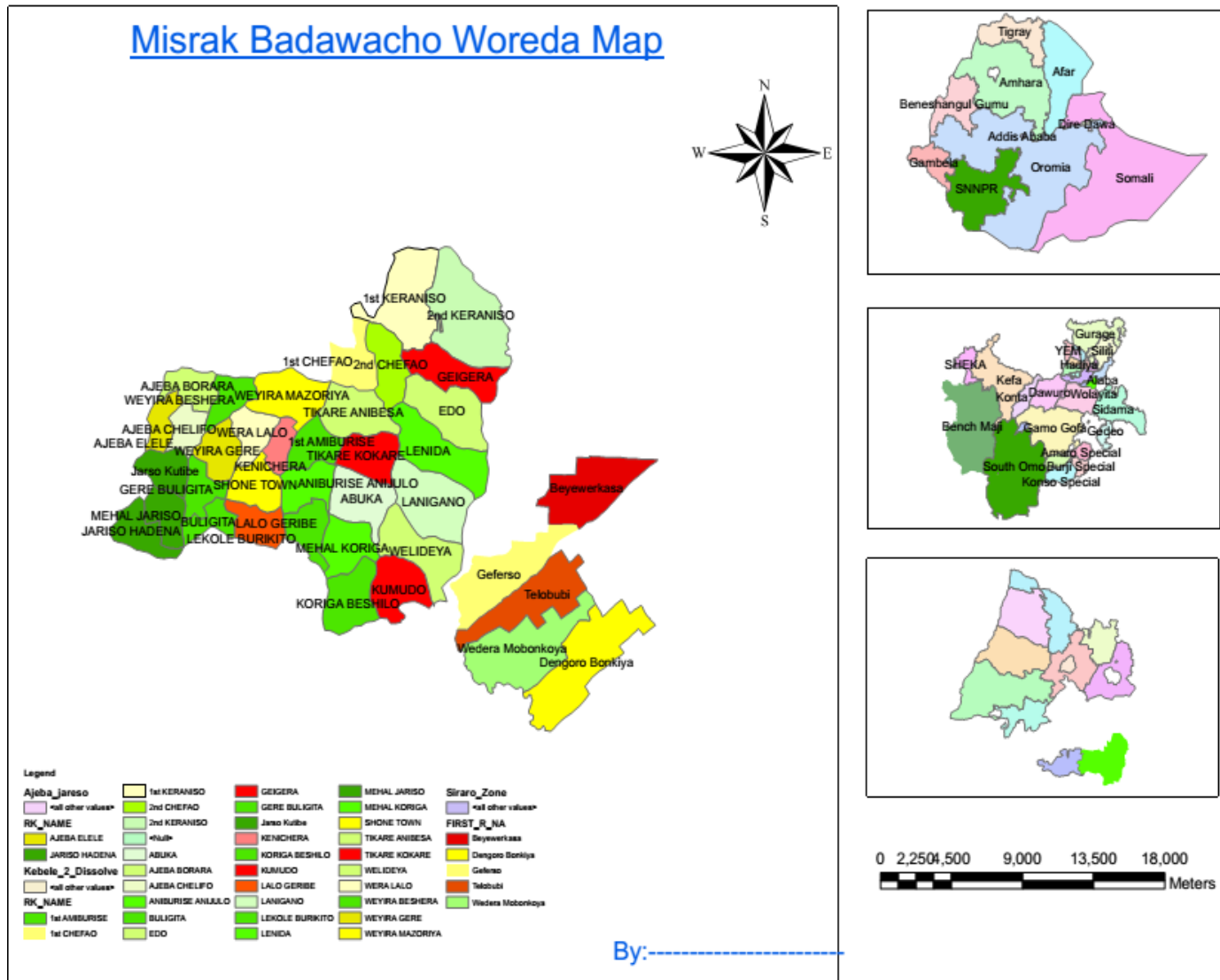
Abaroosi mi'n hagara		
132	Ki mi'n abaroosi aggi wo'o Hanninsette awaaxoo?	11. Boomba'i wo'o (piped water into dwelling) 12. Tubo'i wo'o (piped water to yard/plot) 13. Tankeerinsette (public tap/standpipe water) 14. Ba'lli wo'o (borehole water) 15. Egerakko'o kure'e (protected dug well) 16. Egerakko'i bee'i kure'e (unprotected dug well) 17. Egerakobe'ii bu'oo wo'o (protected spring water) 18. Egerakobe'ii bu'oo (unprotected spring water) 19. Daaje teim waara (river) 20. Mulikeenim (other specify) _____
133	Ki mi'n abaroosi awaaxookoki hinka shu'mi min hagara?	7. Weregaali shu'mi mine (Flashi toilet) 8. Bare hinakone ifiishaanch yohane (Pit latrine with slab) 9. Bare hinakone ifiishaanch bee'ane (Pit latrine without slab/Open pit) 10. Hanging toilet/hanging Latrine 11. Shu'mi min bee'e (No facility /bush/field) 12. Mulikeenim (Other

		specify)_____	
134	Ki minene awonoo keeni hee'aa?	1.Eeyya 0.bee'e	
	l. Koronte'e (Electricity)? m. Amane xigaanchi (A watch/clock?) n. Radoona (radio)? o. Television hee'aa? p. Mobile teim telephone hee'aa? q. Barcumma (A table)? r. Xarapheezi hee'aa (A chair)?` s. Ara'I dakii, bakechchi (A bed with cotton/sponge/spring mattress)? t. Barkuma (Spring mattress) u. Maasho'o (A kerosene lamp/pressure lamp)? v. kuraazi	1.Eeyya 0.bee'e 1.Eeyya 0.bee'e 1.Eeyya 0.bee'e 1.Eeyya 0.bee'e 1.Eeyya 0.bee'e 1. Eeyya 0.bee'e 1.Eeyya 0.bee'e 1.Eeyya 0.bee'e 1.Eeyya 0.bee'e 1.Eeyya 0.bee'e 1.Eeyya 0.bee'e	
135	Mineki uuli worori ahinsette gudukkoki? <i>Mool'tuuya woonshshe</i>	6. Buchcha(Earth/sand) 7. Ora'a(Dung) 8. Haqa(Wood) 9. Siminto'o (Cement) 10. Mulikeenim (Other specify)_____	
136	Mineki imani mahinette baxamukkoki. <i>Mool'tuuya woonshshe</i>	5. Imani bee'ane (No roof) 6. Buyya (Thatch/leaf) 7. Qorqoro'o (Corrugated iron /metal) 8. Mulikeenim (Other specify) _____	
137	Gat mi'ni baxamu muuta. <i>Mool'tuuya woonshshe.</i>	11.Haqi goda'a 12.Goda'I bee'e 13.hacca 14.haqaa harinette 15.Uncovered adobe 16.Plywood 17.Dabaraka'aa awaxakami haqqa (Reused wood) 18.Kina(Finishedwalls) 19.shashara (Bricks) 20.mulikenome (Other specify)_____	
138	Ki mi'n abaroosina ku keeni hee'aa?	d. Fishkiliiti? 1. Eeyya 0.bee'e e. Camme'i? 1. Eeyya 0. bee'e f. Gaare'i? 1 Eeyya 0. bee'e	
139	Ki mi'n abaroosina uuli hee'aa?	2. Eeyya 0.Bee'e	
140	Ki minene mi'ni dinat hee'aa?	2. Eeyya 0. Bee'e	(Beelas, hige to

			xa. xi. 142)
141	Eeyya yitlase xa' mmichchi 154" mee' I dinata hee' aa? Xigo kitaabe, Bee' e yitlas, aagise '00'.	<ul style="list-style-type: none"> h. Axxi saaya _____ i. harqoota _____ j. farashsho _____ k. halichcho _____ l. baquchcho _____ m. felakichcho _____ n. Gereechcho? _____ o. Antabakichcho? _____ 	
142	Ki mi' n abaroosina banki mi' n teim microfinance qawiixxoi (account) yoo?	<ul style="list-style-type: none"> 1. Eeyya 2. Horiyyemi bee' e 	

Araqisa Galaxxoommo!!!!

Annex 3; The map of study area (Misrak Bedawacho Woreda)



Source; Misrak Bedawacho Health office [64]