

**Assessment of VCT utilization for HIV/AIDS among  
government and non-government employees in Butajira,  
SNNPR, Ethiopia**

**By**

**MULUGETA WONDWOSSEN (MD)**

**A thesis submitted to the school of graduate studies of Addis Ababa  
University in partial fulfillment of the requirement for the degree of  
Masters of Public Health**

**June/ 2007**

**Addis Ababa, Ethiopia**

## **Acknowledgment**

My grateful gratitude and respect go to my advisor Dr. Negussie Deyessa for invaluable comments, scientific criticisms and continuous evaluations throughout my study.

I am also greatly indebted to Dr. Fikre Enquosellassie for him unreserved support when I need help.

I wish to express my thanks to Dr. Alemayehu Negash for him great help when I need help.

I wish also to express my thanks to Ato Girmaye Medhin for him great help in all data analysis.

I am very grateful to the school of graduate Studies, the Department of Community Health Addis Ababa University, who have made my graduate study possible.

I am grateful to the Self Help Development International Ethiopia for supporting the research project financially, especially Dr. Awole Mella Director of Self Help Development International Ethiopia.

I gratefully acknowledge the support of Butajira town Administrative Council and Gurage Zone Health Office for their support throughout data collection period.

I thank all data collectors who have participated in the study for they have sacrificed their precious time to complete the questionnaire.

I would also to extend my respectful acknowledgements and appreciation to all the study participants.

Last but not least, I am very much grateful to my wife, Sr.Shewanesh Kebera for her unconditional love, unreserved moral support, for taking care of our child in my absence during the last 2 years.

<b>Table of contents</b>	<b>Pages</b>
1. Table of contents .....	i
2. List of tables .....	ii
3. List of figures .....	iii
4. List of Annexes .....	iv
5. List of Abbreviations .....	v
6. Acknowledgement .....	vi
7. Abstract .....	vii
8. Introduction .....	1
9. Rationale of the study .....	2
10. Literature review .....	3
11. Objectives of the study .....	6
12. Methods and Materials .....	7
13. Ethical considerations .....	11
14. Results .....	13
15. Discussion .....	30
16. Strengths and limitations of the study .....	33
17. Conclusions .....	34
18. Recommendations .....	34
19. References .....	35
20. Annexes .....	38

## List of Tables

Table	Pages
Table1.Socio-demographic characteristics of the study participants in Butajira town, Guraghe Zone-----	15
Table2. Magnitude of VCT utilization by employment in Butajira town-----	16
Table3. Knowledge stigma and discrimination towards HIV/AIDS and VCT by type of employment in Butajira town -----	27
Table4. Association of Socio-demographic variables of study subjects with VCT utilization, in Butajira town -----	29

## List of Figures

Figures	Pages
Figure1. Reasons for VCT utilization by users in Butajira town Guraghe Zone -----	18
Figure2. Reported reasons for not utilizing VCT service for HIV/AIDS in Butajira town----- -----	20
Figure3. Reported preference of qualification of VCT counselor for HIV test result by type of employment in Butajira town-----	22
Figure4. Preference of ways of receiving HIV test result by employment type in Butajira town-----	24

## List of Annexes

Annex	Pages
Annex1. Focus group discussion participant's description Butajira town -----	38
Annex 2.Quastionnare -----	39
Annex3. Focus Group Discussion Protocol-----	51

## **ABBABATIONS**

VCT	Voluntary counseling and testing
SNNPR	Southern Nation's Nationalities People's Region
NGO	Non-government Organization
HIV	Human Immuno-Deficiency Virus
AIDS	Acquired Immuno-Deficiency Syndrome
OSSA	Organization Social Service for AIDS
DHS	Demographic Health Survey
MOH	Ministry of Health
PMTCT	Prevention Mother- to- Child Transmission
NSS	National Surveillance Survey
CRDA	Christian Relief Development Association
DHS	Demographic Health Survey
STD	Sexual Transmitted Disease
STI	Sexual Transmitted Infection
FGD	Focus Group Discussion
UNAIDS	Joint United Nations Programme on HIV/AIDS
WHO	World Health Organization
FGAE	Family Guidance Association of Ethiopia
OR	Odds Ratio

## **Abstract**

**Background:** It is only recently that voluntary counseling and testing services have been considered important as an entry point for prevention and care interventions for HIV/AIDS. Access to voluntary counseling and testing services, however, remains limited and the demand for the service is often low.

**Objective:** The aim of this study was to assess magnitude of utilization of voluntary counseling and testing for HIV/AIDS and to identify factors and barriers that affect VCT utilization among government and non-government employees in Butajira town, SNNPR.

**Methods:** This was a cross-sectional study that was conducted among 347 government and 349 non-government employee in Butajira town, Gurage Zone, southern Ethiopia. This study used two stage sampling, the first stage was cluster sampling to select randomly seven sectors from government organizations, and another seven blocks from non-governmental organizations, taking sectors and blocks as a sampling unit for government and non-government organizations, respectively. The study used a standardized and pretested questionnaire for the quantitative study and four focus group discussions for the qualitative study. Data was analyzed by binary analysis using the logistic regression in SPSS.

**Results:** A total of 736 study participants were eligible in this study, 696 were willing to participate in the study, among these 347 (49.9%) were government employees and 349 (50.1%) were non-government employees. The mean age of the respondents was 31.2 years. The magnitude of VCT utilization in the study participants was 37.9% with a 95% CI (34.3% and 41.5%). Voluntary counseling test utilization was higher to statistically significant level among female participants, higher educational status, married individuals and individuals having a monthly income of 1000 birr or more than their referents.

**Conclusion:** The current study demonstrated that VCT utilization is low in Butajira town although it is higher than the reported prevalence for urban areas in the country. The result of this study indicates that VCT users are mainly government employees and females.

## **INTRODUCTION**

### **1.1 BACKGROUND**

The impact of HIV/AIDS goes beyond public health concerns because it primarily affects adult population in the productive and reproductive age groups and, as such, in its endemic stage, undermines the social and economic structure of developing countries (1). The report on the UNAIDS 2006 aids report indicated the estimated number of people living with HIV to be adults and children-39, 500,000, 24,700,000 and 2,000,000 globally, in Sub-Saharan Africa and Ethiopia respectively (2). Sub-Saharan Africa is the region with the highest burden, constituting almost 70.0% of people living with HIV/AIDS worldwide (3). The HIV/AIDS situation in Ethiopia has evolved from two-reported AIDS case in 1986 to a cumulative 147,000 by mid 2003. It currently estimated that 2 million people are living with HIV/AIDS and this is a staggering number of copes with in a resource –poor country (5). The global AIDS Epidemic 2006 estimate the national adult HIV prevalence in 2006 to be 6.6% of which 13.7% is urban, and 3.7% rural (5). Many people in Ethiopia living with HIV do not know that they are infected. Up until now, only a small percentage of those with HIV/AIDS have had access to reliable voluntary counseling and testing services (1).

**Voluntary counseling and testing (VCT)** is the process by which an individual undergoes counseling enabling him or her to make an informed choice about being tested for HIV. This decision must be entirely the choice of the individual and he or she must be assured that the process will be confidential (6). Many studies have found that VCT is effective as a strategy for facilitating behavioral change around both preventing HIV as well as getting early access to care and support.

It also showed that VCT is instrumental in bringing about behavioral change, reducing unprotected sex and helping reduce the incidence of HIV and other sexual transmitted infections (STIs). Stigma may actively prevent people accessing care, gaining support, and preventing onward transmission. Many people are afraid to seek voluntary counseling and testing (VCT) service, because they fear stigma and discrimination from their families and communities. Fear and stigmatization associated with HIV testing can minimize public acceptance of the voluntary counseling and testing (VCT), dwarfing the role the service can play in prevention and control initiatives. Lack of perceived benefit for having the HIV test,

limitations related with the economic and physical access to the service etc, are some of the factors that can contribute for the low utilization of the ready available services (7). Although there are important benefits of knowing one's HIV status, knowing HIV infection by others in many communities, is a stigmatizing condition, and it can lead to negative outcomes for people following testing (8).

## **1.2 Rationale of the study**

Various studies undertaken in Ethiopia have shown lack of perception of being at risk, not giving concentration for VCT services, fear of HIV positive results, fear of stigma and discrimination are some of the reasons for the underutilization of Voluntary counseling and testing (VCT) services (9). However there is lack of studies related to utilization and barriers related to the service among the working force in southern Ethiopia where this study was conducted. Identifying factors that play detrimental roles in the acceptance of voluntary counseling and testing services helps to develop interventions that could overcome those barriers for accessing the services. Examining and understanding factors associated with Voluntary counseling and testing services is also a vital and timely activity to facilitate HIV prevention efforts the study also was tried to estimate the magnitude the service look barriers whether it differs from employee to employee. The impact of identifying factors affecting VCT services also helps to promote the services in the prevention and control of HIV/AIDS. The study intends to identify barriers and factors associated Voluntary counseling and testing utilization among different groups of government and non-government employees in Butajira town, SNNPR.

## **2. Literature Review**

### **2.1 Importance of VCT service**

Knowledge of serostatus through Voluntary counseling and testing (VCT) can be a motivating force for HIV-positive and negative people alike to adopt safer sexual behavior, which

enables seropositive people to prevent their sexual partners from getting infected and those who test seronegative to remain negative. This intervention also facilitates access to prevention services for seronegative people and is a key entry point to care and support services for those who are HIV-infected. Knowing and accepting one's HIV status enables more informed planning for the future, including for one's dependents (6). HIV voluntary Counseling and testing (VCT) have been shown to have a role in both HIV prevention and for people with HIV infection, as an entry point for care. Voluntary counseling and testing (VCT) provides people with an opportunity to learn and accept their HIV status in a confidential environment with counseling and referral for ongoing emotional support and medical care. People who have been tested seropositive can benefit from earlier appropriate medical care and interventions to treat and /or prevent HIV-associated illnesses. Pregnant women who are aware of their seropositive status can prevent transmission to their infants (10).

## **2.2 The situation of VCT service in Ethiopia**

In Ethiopia HIV, counseling service began in the late 1980's with services expanding throughout the 1990s. In the early 1990s several national level training programs were conducted by MOH and other NGOs like Christian Relief and Development Association (CRDA) and Organization for Social Service for AIDS (OSSA) for nurses and social workers from all regional hospitals and Addis Ababa. According to a situation assessment of HIV, VCT practice in Ethiopia, there were 80 institutions involved in HIV testing or counseling or both (MOH 2000) (10). The 2000 Ethiopian Demographic Health Survey (DHS) revealed that only 2% of men reported being tested; this means many people with HIV/AIDS in the country do not know their serostatus. From the DHS report the following were survey findings as factors associated with VCT utilization: education status, urban resident, male sex, and younger age less than 40 years and never married (11). Despite the presence of high male migration to bigger towns and an estimated 100,000 HIV/AIDS infections in Gurage Zone. Research on socio-demographic determinants particularly in coverage Zone is scarce (not existence) (12).

## **2.3 Factors associated with VCT utilization**

Studies in Ethiopia on different population groups had indicated that attitude, towards collaboration and participation on control programme including

voluntary HIV test was greater than 74 % (13). The study conducted in Jimma town showed that in spite of high level of knowledge about risk factors of HIV/AIDS and other sexual transmitted disease (STD), greater proportion of subjects do practice high risk sexual practices and had contracted STDS (14). Another community based study conducted in Jimma town also showed that the community has high level of knowledge on HIV/AIDS and also good attitude on its prevention including Voluntary counseling and testing (VCT). Knowledge on HIV/AIDS and VCT was significantly associated with ethnicity, religion and age groups ( $P < 0.05$ ). Muslims and Oromos were found, to have higher level of knowledge as compared to others (15).

The study conducted in South and North Gonder showed that age group of 15-19 to be the most receptive group to voluntary counseling and testing (VCT) services compared with the other age groups and educational status did not show statistically significant with voluntary counseling and testing (VCT) acceptance. This study also showed that health professional and high school teachers were found to have fewer acceptances to VCT compare to other community groups including the study (16). Study conducted in Zambia showed readiness for VCT in the general population was found to be very low. The overall HIV test rate was 6.5%, but rates appeared to be considerably biased towards higher educational groups. Provision factors such as concerns about confidentiality and length of time waiting for the test result contributed to the low utilization rate (17). Studies in Harare on barriers to VCT utilization showed that knowing a colleague or friend had been tested would encourage 74% of participants to have a test themselves. Fear of testing positive was cited as the main barrier to VCT by 71% participants, with only 12% citing logistic barriers (18). Stigma, fear of HIV positive results, lack of treatment options and concerns confidentiality are still major barriers to seeking VCT in all countries studied (19). A community based study done in Bahir Dar town showed 94.2% believe that VCT service is necessary. Desire to know

HIV status and avoiding risk behavior are the two common reasons stated by 83.6% and 54.4% of those who know about VCT. This study also showed that (92.7% Know about HIV/AIDS) with a very low level of perceived vulnerability to HIV/AIDS (50.2% feel are at risk for HIV/AIDS) (20). Many studies in developing and developed countries described barriers to access to Voluntary counseling and testing (VCT) as: distance, cost for the services, fears of knowing one's status, self-efficacy expectation and stigma (21). Meanwhile on motivation to voluntary counseling and testing (VCT), studies reported factors such as: feeling sick, experiencing family events e.g. marriage or new partner, fear of having been exposed to HIV by the actions of one's spouse or partner and job circumstances e.g. scholarships (22).

The study conducted in Addis Ababa showed that VCT schemes preferred by most respondents included setting up integrated VCT centers, ensuring confidential testing, appointing medical doctors as counselors, and arranging face-to-face ways of disclosing VCT results and this study also showed that schools, parents, neighbors and religious leaders were found to be major information sources about HIV but not about VCT (23). The study conducted in Uganda showed that most frequent reason for not testing for HIV was unavailability of VCT services (44%). Due to lack of VCT services, the communities were not aware of the PMTCT programme and therefore did not encourage the women to test for HIV. This study also showed that the reason for not testing for HIV was lack of counseling (42%) even when VCT services were available in the health facility (24). Culture, Norms and Practices little progress has been made in the understanding of culture and its interactions with the determinants of HIV/AIDS prevention thus utilization of VCT. There is need to look at the cultural practices and beliefs that negate the fight against AIDS and the utilization of VCT services by women and men. This is partly attributed to social cultural vulnerability in females. Societal attitude towards HIV can have a strong impact on individual choices, and if people known to have HIV face discrimination and stigma, VCT is unlikely to be a popular intervention (25).

### **3. Objective**

#### **3.1 General Objective**

To assess the magnitude of VCT utilization for HIV/AIDS among government and non-government employees, and identify factors that affect VCT utilization in Butajira town, SNNPR.

#### **3.2 Specific Objective**

1. To determine magnitude of VCT utilization for HIV/AIDS among government and non-government employees in Butajira, SNNPR.
2. To assess knowledge and attitudes of the employees towards HIV/AIDS and VCT services in Butajira, SNNPR.
3. To identify factors associated with VCT utilization among employees in Butajira, SNNPR.

## **4. METHODS**

### **4.1 Study design:**

The study used both qualitative and quantitative study methods. The study used a survey as a quantitative study design to assess magnitude of VCT utilization, and factors associated with its utilization among governmental and non-governmental employees. The qualitative design was utilized four focus group discussions (FGDs), to explore barriers for use of VCT in Butajira Town.

### **4.2 Description of the Study Area**

The study was conducted in Butajira town, found in Meskan Woreda, Gurague Zone of the South National Nationalities and Peoples Regional State (SNNPRS). Butajira is the capital town of the Woreda, and is found in the main road to Hossana town, with about 130 kms distance from Addis Ababa. Butajira town is divided in to four kebeles, and as projected from Census 1994, the town has a total population of 36, 0064. In the town, 51% of the population computes for female sex, 26 % of the population lives within active reproductive age. There are 22 governmental sectors that have a total of 1350 employees, and 14 non-governmental organizations having 800 employees. The town has a hospital and a health center that both provide voluntary counseling and testing for HIV/ AIDS.

### **4.3 Study population:**

Both for the quantitative survey and the FGD qualitative studies, governmental and non-governmental employees were the source population. For the survey, adult employees who stayed in the town for six months or more were the study population.

### **4.4 Sample size**

For the focus group discussions, a total of four FGD among men and women having 10 participants was made till information about VCT utilization was super-saturated in each type of employees. The survey used single proportion for population sample size determination formula. Since the comparative and available data on the proportion of people utilizing VCT for HIV/ AIDS is the national demographic and health survey, we took its magnitude of 18% (26). Thus, the study assumed a prevalence of 18% to utilize VCT of HIV/ AIDS in the town, to obtain the maximum sample size at 95% certainty and a maximum discrepancy of  $\pm 3\%$

between the sample and the underlying population; an additional 10% was added to the sample size as a contingency to increase power, and a total of 736 people enough for the survey were used. Thus, a total of 368 people from each type of employees were included.

#### **4.5 Sampling procedure**

For the focus group discussion (FGDs), the study used convenient methods of sampling to find and select employees both from government and non-government organizations. The FGDs were also structured by sex and age to maximally make homogenous. For the survey, the study used two stage sampling. Prior to selection, governmental employees were categorized by sectors and non-governmental organizations were categorized by type of organization into blocks. The first stage was a cluster sampling to select randomly seven sectors from government organizations, and another seven blocks from non-governmental organization, taking sectors and blocks as a sampling unit for governmental and non-governmental organizations, respectively. The second stage of sampling was systematic sampling to identify employees after taking list of employees as a sampling frame. After determining total number of employees in each blocks or sectors, the sampling interval was determined, and employees were selected systematically (every sample interval), after identifying the first employee randomly.

#### **4.6 Data collection procedure**

**Instrument:** Two focus group discussions (FGD) were conducted in each employee type. An FGD guide was developed that contains a list of questions that was designed to explore barriers of not utilizing voluntary counselling and testing HIV/ AIDS as major study question. The discussion was made by a moderator, the principal investigator, assisted by a reporter, who took notes and was supported by a tape recorder. A standardized questionnaire that was able to explore the objectives of the study was designed according to the local culture and norm, prepared first in Amharic and translated to English and back translated to Amharic language. Most of the questions were close-ended. Ten data collectors who had completed 10<sup>th</sup> and 12<sup>th</sup> grade, who could speak the local language and having experience in data collection were recruited. Training was given for two days on the questionnaire, data collection and interviewing techniques.

A pre-test was conducted on 20 employees selected from sectors/ blocks not selected for the survey, and some modifications were made based on the findings. Data was collected using the structured and pre-tested questionnaire. Regular daily supervision of the data collectors, checking of the completeness and accuracy of data was made by the two nurse supervisors.

#### **4.7 Data quality control**

Training was conducted to increase reliability of the data collectors. Two supervisors were performing the supervision of data collection procedure on a daily and each questionnaire checked for completion and accuracy of data. Additionally the principal investigator was assisting the supervisor by technical assistance and guidance on site. Data entry was done using programmed template and rechecked of randomly selected questions was made by principal investigator.

#### **4.8 Variables**

*Dependent variables:* include knowledge about HIV/AIDS and VCT, VCT utilization, attitudes, stigma, discrimination towards HIV/AIDS

*Independent variables:* (socio-demographic characteristics) age, sex, religion, ethnicity, occupation, marital status, education, type of employment.

#### **4.9 Measurement of variables**

*Knowledge towards HIV/AIDS transmission:* was measured using four “Yes” and “No” questions on knowledge of HIV/ AIDS transmission. Summated score of knowledge about HIV/AIDS transmission was taken by summing positive responses for the questions. After revising the score of knowledge for HIV/AIDS transmission, a cutoff point 2 was taken as having a better awareness; thus participants with 2 or more scores were considered as having a good knowledge for HIV/AIDS transmission.

*Knowledge towards HIV/AIDS prevention:* was measured using eight “Yes” and “No” questions for HIV/ AIDS prevention. Summated score of HIV/IDS prevention was taken by summing positive response for the questions. After revising the summated score of

knowledge on HIV/AIDS prevention, a cutoff 5 was taken as having knowledge towards HIV/AIDS prevention, therefore subjects who scored 5 or more were considered as having a good knowledge about HIV/AIDS transmission.

*Stigma towards HIV/AIDS:* was also measured using thirteen “Yes” and “No” questions on stigma towards *HIV/AIDS*. Total score of stigma about HIV/AIDS was taken by summing positive responses as well. After revising the summated score of stigma for HIV/AIDS a cutoff 8 was taken. The study subjects having 8 or more scores were considered as being worried of stigma if they had HIV/AIDS.

*Discrimination towards HIV/AIDS* was also measured using thirteen “Yes” and “No” questions on discrimination of *HIV/AIDS*. Total score of discrimination for HIV/AIDS was taken by summing positive response for the questions. After revising the summated scores, a cutoff point of 8 was considered as positive response if one turned out positive for HIV/AIDS.

*Discrimination towards VCT:* was measured using eight “Yes” and “No” questions on discrimination of VCT. Total score of discrimination towards VCT was taken by summing correct answers for the questions. After revising the summated score, a cutoff point of 4 was taken as a response that attending VCT is discriminating.

#### **4.10 Operational definitions:**

*Government employees:* All workers working as a permanent employee in the Government sectors in Butajira town.

*Non-government employees:* All workers working outside the governmental sector (self employed or employed to private sector) of Butajira town.

*Voluntary counseling and testing (VCT)* is the process by which an individual undergoes counseling enabling him or her to make an informed choice about being tested for HIV (6).

*Discrimination:* treating a person or particular group of people differently for example, because of their skin color, illness status (HIV, Leprosy, mental illness etc).

*Knowledge about HIV/AIDS:* Knowledge about the nature of the illness, mode of transmission and prevention.

*Stigma:* a deep feeling that other people do not respect you or have a good opinion of you.

#### **4.9. Data Analysis procedure**

Data was coded, entered and cleaned in to computer using Epi info version 6 packages. Analysis was performed using SPSS/PC package. The data from FGD were transcribed and analyzed. From different variables, frequencies, odds ratio 95% confidence intervals and p-value were computed to assess the presence and degree of association between dependent and independent variables and compare result between government and non-government according to the objectives. Logistic regression was done to assess the relative effect of varies explanatory variables on the dependent variables. The result of the FGD was also translated to English and narrated to answer unanswered questions by the quantitative data. Finally, triangulation of the quantitative and qualitative data results was made to give the final conclusion of the study. The result of the study will be presented in tables and figures for further descriptions and interpretation.

#### **4.10 ETHICAL CONSIDERATIONS**

A formal letter was written from Department of Community Health, Addis Ababa University Medical Faculty to the Gurage Zone Health desk, Administrative Council of Butajira town and the Meskan woreda Health Office. Verbal consent to participate in the study was secured before conducting the interview. For this a one-page consent letter was attached to the cover-page of each questionnaire stating about the general purpose of the study and issues of confidentiality to the discussed by interviewers before proceeding with the interview. Additionally, participants were informed that they have a full right to refuse or discontinue participating.

#### **4.11 COMMUNICATION OF RESULTS**

The finding of this study will be communicated to Administrative Council of Butajira town, Meskan woreda Health Office, Gurage Zone Health Desk and SNNPR Regional Health Bureau, for policy making. Publication of the paper through pioneer Journal of public health i.e. Ethiopian Journal of Health Development by which the relevant decision makers can have easily accessed is also planned.

## **5. Results**

### **5.1. Description of study participants in Butajira town, Gurge Zone.**

Of the total study population (government and non-government employees) during the study period 736 study participants were eligible to participate according the set criteria of the study. Six hundred ninety six study participants completed the interview giving a response rate was 94%. Reasons for non-response were being absent from working place, not willing to participate in the study and not wanting to interrupt their business in hand. There was not much difference between the respondents and non respondents for sex and type of employment.

Of the 696 who participated in the study, 347 (49.9%) were government employees. Three hundred fifty six (51.3%) of study participants were males. Three hundred twenty (46.0%) were in the age group of 20-29, 221 (31.8%) were in the age group between 30-39 years, and 120 (18.5%) were in the age group of 40 or more years. The mean age of the study subjects was 31.2 with a standard deviation of  $\pm 8.84$  years. Majority, 333 (47.9%) of the study participants had educational level of above Grade 12, the 118 (17%) between 7<sup>th</sup> -10<sup>th</sup>, the rest 110 (15.8%) were between 1-6 grades. Regarding religion of the study participants 355 (51.2%) were Orthodox, 231 (33.3%) respondents were Muslim. Four hundred one (57.6%) of the study subjects were Guraghe and 295 (42.4%) were represented by other ethnicity groups. Married study subjects were 425 (61.2%) followed by 239 (34.4%) who were never married. Three hundred ninety seven (57.1%) were below 500 birr monthly income, the rest were 193 (27.8%), 105 (15.1%) 500-999 and 1000+ respectively. There was no much difference between government and non-government employees by sex and ethnicity of the study subjects. Similarly government employees were more educated, religiously more Orthodox Christian followers, having higher monthly income compared to non-government employees. Distribution of study subjects by age, educational status, religion, marital status and monthly income was statistically significant between the two groups of employees ( $P < 0.05$ ). Study participants, government and non-government employees had no statistically significance difference regarding in sex and ethnicity ( $P > 0.05$ ).

### **5.2 In the qualitative study**

Four focus group discussion was undertaken, two among males and the other two among females. Participants were two FGDs from government and the other two from non-government employees, two FGDs among young people between 19-20 and the other two focus group discussions among people between the age group of 30-39 years. (Annex I).

**Table1. Socio-demographic characteristics of study participants in Butajira town, Guraghe Zone, SNNPR, July 2007**

Characteristics	Government	Non-government	Total	<i>P-value</i>
	N (%)	N (%)	N (%)	
<b>Sex</b>				
Male	178 (51.6)	178 (51.0)	356 (51.3)	<b>0.880</b>
Female	167 (48.4)	171 (49.0)	338 (48.7)	
<b>Age in years</b>				
<20	1 (0.3)	25 (7.2)	26 (3.7)	<b>0.001</b>
20-29	154 (44.4)	166 (47.6)	320 (46.0)	
30-39	135 (38.9)	86 (24.6)	221 (31.8)	
40+	57 (16.4)	72 (20.6)	129 (18.5)	
<b>Education</b>				
Illiterate	-----	67 (19.1)	67 (9.6)	<b>0.000</b>
Grade 1-6	5 (1.4)	105 (30.1)	110 (15.8)	
Grade 7-10	20 (5.8)	98 (28.1)	118 (17.0)	
Grade 11-12	25 (7.2)	42 (12.0)	67 (9.6)	
Above Grade12	296 (85.5)	37 (10.6)	333 (47.9)	
Mean age $\pm$ SD 31.2 $\pm$ 8.84				
<b>Religion</b>				
Orthodox	200 (58.0)	155 (44.4)	355 (51.2)	<b>0.000</b>
Muslim	91 (26.4)	140 (40.1)	231 (33.3)	
Other Christian	53 (15.4)	54 (15.5)	107 (15.4)	
<b>Ethnicity</b>				
Gurage	196 (56.5)	205 (58.7)	401 (57.6)	<b>0.591</b>
Others	151 (43.5)	144 (41.3)	295 (42.4)	
<b>Marital status</b>				
Never married	107 (31.0)	132 (37.8)	239 (34.4)	<b>0.016</b>
Married	228 (66.1)	197 (56.4)	425 (61.2)	
Others	10 (2.9)	20 (5.7)	30 (4.3)	
<b>Mon. income</b>				
<500	62 (17.9)	335 (96.0)	397 (57.1)	<b>0.000</b>
500-999	182 (52.6)	11 (3.2)	193 (27.8)	
1000+	102 (28.4)	3 (0.9)	105 (15.1)	
<b>Total</b>	347 (49.9)	349 (50.1)	696 (100)	

### **5.3 Description on magnitude of VCT utilization**

The magnitude of VCT utilization in the study participants was 37.9% (95% CI 34.3, 41.5) in the total study population. This magnitude was 45.2% (95% CI 40.0, 50.5) among the governmentally employed population, whereas it was 30.7% (95% CI of 25.8, 35.5) among the non-governmentally employed population.

**Table2. Magnitude of VCT utilization by employment in Butajira town, Guraghe Zone, SNNPR, July 2007**

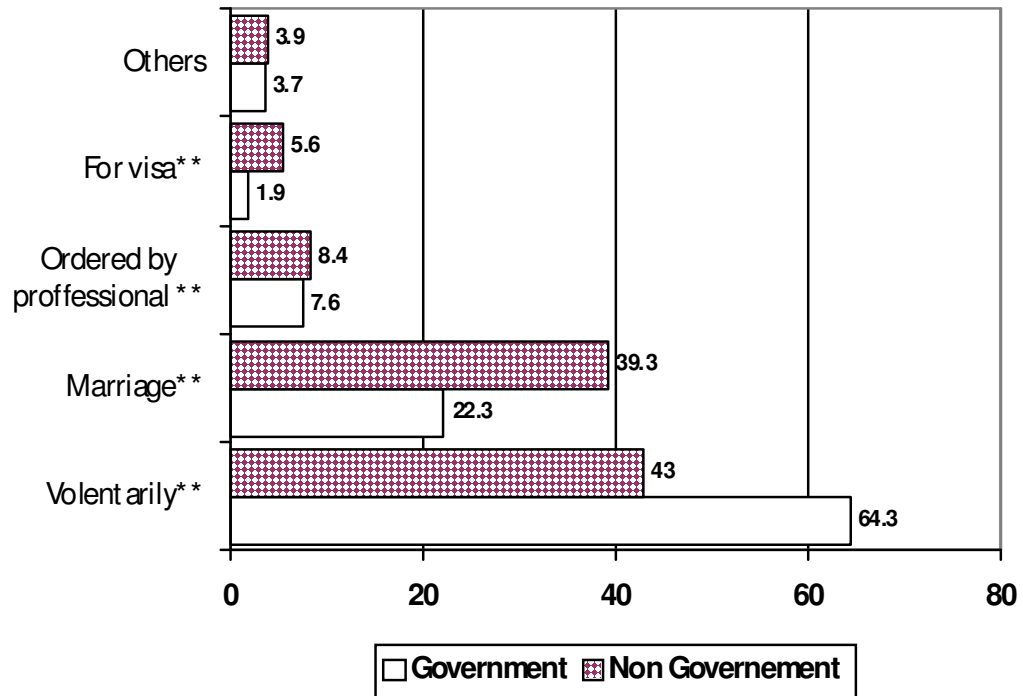
<i>Type of employment</i>	<i>Sample</i>	<i>Prevalence</i>	<i>(95% CI)</i>
Government	347	45.2	(40.0, 50.5)
Non-government	349	30.7	(25.8, 35.5)
Overall	696	37.9	(34.3, 41.5)

#### **5.4 Reasons for VCT utilization.**

About 101 (64.3%) of the government employee and 46 (43.0%) non-government employees reported utilization of VCT service was voluntarily. Thirty-five (22.3%) of the government employees and 42 (39.3%) of non-government employees reported utilization of VCT service was due to engagement in marriage. Twelve (7.6%) of the government employee and 9 (8.4%) non-government employees reported utilization of VCT service due to an order made by health professional. Participants given reason for visa, 3(1.1%), 6(2.3%) government and non-government respectively. Five (1.9%) of the governmentally employed participants and 6 (5.4%) of non-government employee participated in VCT service searching for visa. There was statistically significance difference between government and non-government employees regarding reasons for VCT utilization, ( $P<0.05$ ). As more governmental employees utilize VCT service than non-governmental for voluntarily ( $P<0.005$ ). On the contrary, non-government employees utilize more VCT service than government employees for marriage, and to find a visa.

**Fig1. Reasons for VCT utilization by users in Butajira town, Guraghe Zone, SNNPR, July 2007**

(Governmental, n=157; non governmental, n=107)



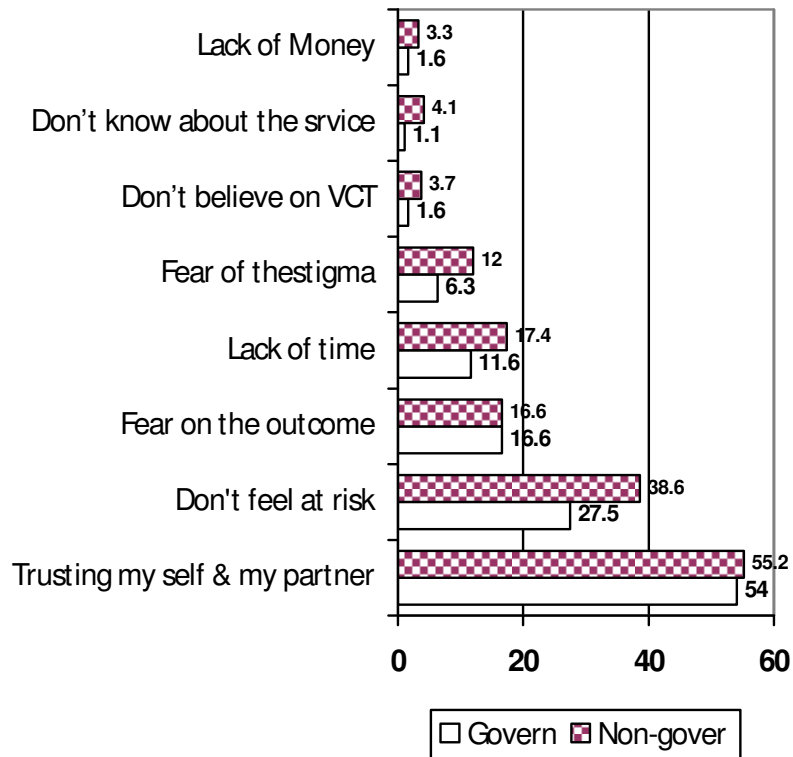
\*\* P < 0.005

### **5.5 Reported reasons for not utilization of VCT service**

Study participants were compared for reported reasons of not utilizing VCT service for HIV/AIDS, multiple reasons were given, from the multiple reasons reported, trusting themselves and their partners were reported by 102 (54.0%) of government employee and 133 (55.2%) non-government employee. Fifty two (27.5%) of government and 93 (38.6%) non-government employee reported that they do not feel they were at risk, and 31 (16.6%) government employee and 40 (16.6%) non-government reported that they did not utilized the VCT service fearing the outcome of the service. Some 22 (11.6%) of government employee and 42 (17.4%) non-government employee have reported that it was lack of time for the service. Other reasons were mentioned by the participants were fear of stigma, lack of money and lack of knowledge about the service. There was not statistically significant difference between governmental and non-governmental employees on reasons for not utilizing VCT service.

**Fig2. Reported reasons for not utilizing VCT service for HIV/AIDS in Butajira town, Guraghe Zone, SNNPR, July 2007**

**(Government, n=190; non-government n=242)**

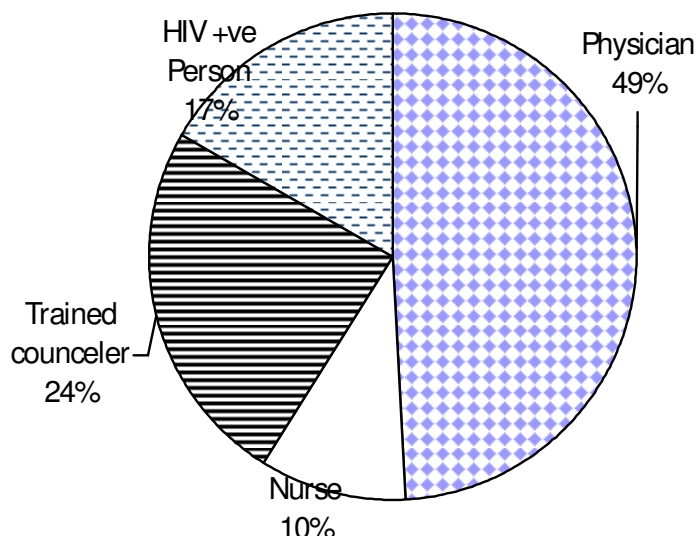


### **5.6 Preferences of qualification of VCT counselor**

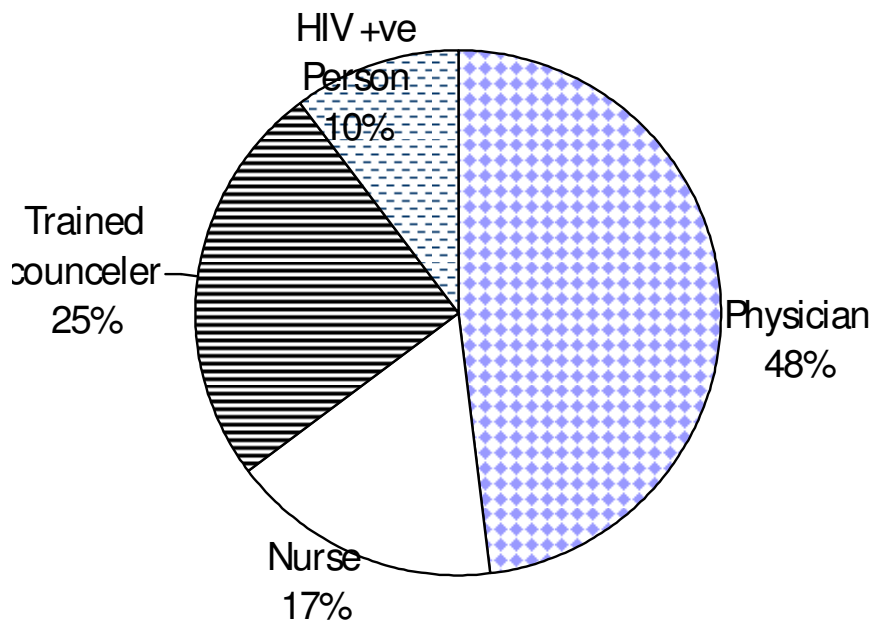
Study participants were compared on their preferences towards counselor's qualification and ways of getting HIV VCT test result. Out of 696 who had heard about VCT, majority 171 (49.0%) of respondents from government employee and 168 (48.0%) from non-government preferred physician to be their counselor, followed by trained counselor 84 (24.0%) of government 88 (25.0%) of the non-government. Fifty eight (17.0%) of governmentally employed and 36 (10.0%) non-government employees preferred counseling be performed by people with HIV/AIDS, and the rest 34 (10.0%) of governmental and 58 (17.0%) non-government employees preferred nurses as their counselor. There was statistically significance difference between government and non-government employees regarding choice preference of selecting nurses and people living with HIV/AIDS as their canceller ( $P < 0.05$ ).

**Fig 3 reported preference of qualification of VCT counselor for HIV test result by type of employee, in Butajira town, Guraghe Zone, SNNPR, July 2007**

**Governmental (n=347)**



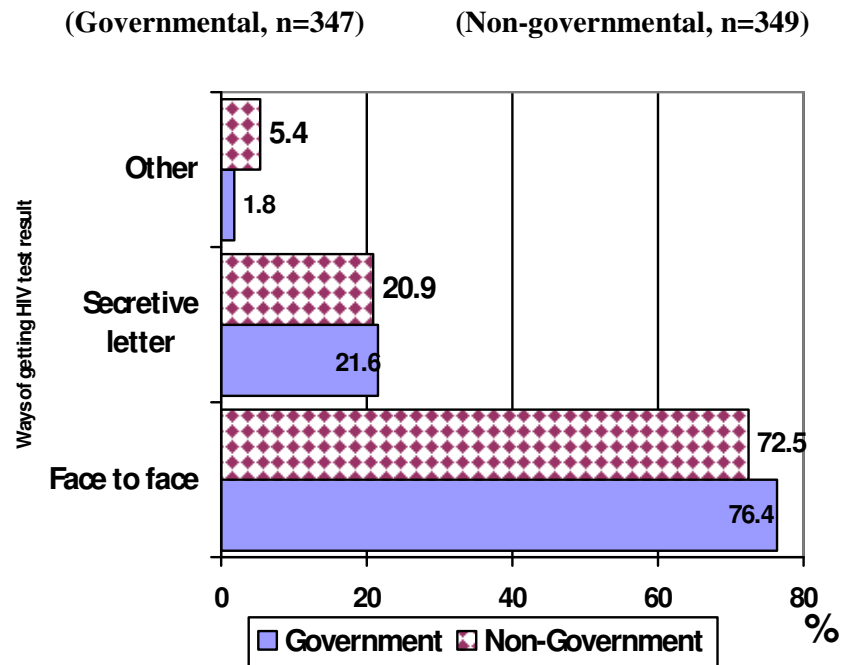
**Non-Government (n=349)**



**5.7 Preferences of ways of receiving test result**

Preferences of ways of getting HIV test result; majority 265 (76.4%) governmental and 253 (72.5%) non-government preferred face-to-face receiving their testing result. Followed by 75 (21.6%) government and 73 (20.9%) non-government preferred to receive their results by a secretive letter, and the rest preferred other different methods of receiving their results. There was not statistically significance difference between government and non-government employee regarding ways of getting VCT test result, ( $P>0.05$ ).

**Fig 4 Preference of ways of receiving HIV test results by employment type in Butajira town, Guraghe Zone, SNNPR, July 2007**



( $P > 0.05$ ).

### **5.8 Knowledge, stigma and discrimination on HIV/AIDS and VCT.**

Study participants were asked regarding knowledge towards HIV/AIDS transmission, prevention, stigma and discrimination attached with it. Of the 347 government employees 137 (39.5%) and of the 349 non-government employees 80 (22.9%) were quite knowledgeable about HIV/AIDS transmission and this difference between the groups was statistically significance ( $P < 0.001$ ). Regarding knowledge towards HIV/AIDS prevention, 100 (28.8%) of the government employees and 97 (27.8%) of the non-government employees are knowledgeable, and there was not much difference between governmental and non-governmental employees at ( $P > 0.05$ ). Twenty one (6.1%) of the government employees and 55 (16.5%) of the non-government employees felt to be at a higher risk of discrimination if they had contracted HIV/AIDS. Similarly, 23 (6.6%) government and 44 (12.6%) from non-government had a fearing of being discriminated if they had attended VCT service to HIV/AIDS. Furthermore, 44 (12.7%) of the government and 64 (18.3%) of non-government employee reported to be at a greater risk of being stigmatized if they were positive for HIV/AIDS.

From the focus group discussion most of the participants have mentioned about the method of transmission and means of preventions of HIV/AIDS. They have also stressed about the severity of HIV/AIDS mentioning as one of their top priority health problem. Regarding knowledge of voluntarily counseling and testing (VCT) most of the participants have knowledge about VCT, through different means, but few women participants from non-governmental group have little knowledge about it.

A 37 years old woman from non-governmental group mentioned what she knows.....

***“I heard about VCT recently from the church, but not much”.***

Focus group discussants have also mentioned about importance of testing for HIV. They mentioned that HIV blood test is a “Must” before marriage. The other benefits mentioned were planning for better life, planning for future, prevent partner and prevent others. Despite the mentioned benefits, if ones test result is HIV positive, fear, stigma and discrimination, from neighbors and the community, were the prominent mentioned problems. As mentioned

by the participants these were the reasons not to have VCT openly among the community. Lack of adequate information and sometimes people negotiations not to have HIV VCT test were mentioned as reasons not to have VCT.

A 29 years old woman from governmental group

*“Sometimes people, especially the elders, mask HIV/AIDS patients, by depicting as if the person has tuberculosis. They also try to convince others not to have VCT result and treated properly; this is a cultural tolerance in our area.”*

**Table3. Knowledge stigma and discrimination towards HIV/AIDS and VCT by type of employment in Butajira town, Guraghe Zone, SNNPR, July 2007**

Characteristics	Government n (%)	Non-government n (%)	X <sup>2</sup> value	(df) P-value
Knowledge HIV transmission	137 (39.5)	80 (22.9)	22.234	(df=1, P<0.001)
Knowledge HIV prevention	100 (28.8)	97 (27.8)	0.090	(df = 1; P>0.05)
Discrimination towards VCT	23 (6.6)	44 (12.6)	7.150	(Df = 1; P<0.05)
Stigma towards HIV	44 (12.7)	64 (18.3)	4.249	(Df = 1; P<0.05)
Discrimination towards HIV/AIDS	21 (6.1)	55 (16.5)	18.508	(Df =1; P<0.001)

### **5.5. Association of Socio-demographic characteristics of study subjects to VCT Utilization, Butajira town.**

Socio-demographic variables were analyzed if there were associations with VCT utilization. The odds of VCT utilization was statistically significance among females, crudely and after adjusting for common socio-demographic characteristics of study participants with AOR of 2.03 (95% CI 1.39, 2.95). The likelihood of utilizing VCT for HIV/AIDS was higher among educational group grade 11-12 and above grade 12 with AOR 3.91 (95% CI 1.63, 9.41) and 3.61 (1.49, 8.74) respectively. It was statistically significant crudely and after it was adjusted for type of marital status and monthly income with Adjusted OR of 2.19 (1.40, 3.43) and 2.64 (1.21, 5.77) respectively.

Study participants having higher monthly income of (>1000 Birr) were utilizing more VCT service for HIV/AIDS to statistically significance level than participants having lower monthly income of <500 Birr. The odds of utilizing VCT services for HIV/AIDS was higher to statistically significance level, among government than non-government employees; however after it was adjusted for the above socio-demographic characteristics it was association has failed. The likelihood of utilizing VCT for HIV/AIDS was not associated by difference in age group, religion and ethnicity both crudely and adjusted for the common socio-demographic characteristics.

**Table4 Association of Socio-demographic variables of study subjects with VCT utilization, in Butajira town, Guraghe Zone, SNNPR, July 2007**

<b>Characteristics</b>	<b>Prevalence</b>	<b>Crude</b>	<b>Adjusted</b>
	<b>N (%)</b>	<b>OR (95% CI)</b>	<b>OR (95% CI)</b>
<b>Employer</b>			
Government	157(45.2)	1.00	
Non-government	107(30.7)	0.54 (0.39, 0.73)	1.99 (0.85, 4.67)
<b>Sex</b>			
Male	113 (31.7)	1.00	
Female	151 (44.7)	1.74 (1.27, 2.37)	2.03 (1.39, 2.95)*
<b>Age in years</b>			
<20	8 (30.8)	1.00	
20-29	137 (42.8)	1.68 (0.71, 3.99)	1.01 (0.40, 2.60)
30-39	83 (37.6)	1.35 (0.56, 3.25)	0.58 (0.21, 1.63)
40+	36 (27.9)	0.87 (0.35, 2.18)	0.46 (0.15, 1.39)
<b>Education</b>			
Illiterate/read &write	13 (19.4)	1.00	
Grade 1-6	29 (26.4)	1.49 (0.71, 3.12)	1.85 (0.83, 4.12)
Grade 7-10	35 (29.7)	1.75 (0.85, 3.61)	1.97 (0.88, 4.39)
Grade 11-12	28 (41.8)	2.98 (1.37, 6.48)	3.91 (1.63, 9.41)*
Above Grade 12	158 (47.4)	3.75 (1.97, 7.13)	3.61 (1.49, 8.74)*
<b>Religion</b>			
Orthodox	139(39.2)	1.00	
Muslim	76(32.9)	0.76 (0.54, 1.08)	0.97 (0.66, 1.43)
Other Christian	47(44.9)	1.26 (0.82, 1.96)	1.23 (0.76, 1.97)
<b>Ethnicity</b>			
Gurage	149(37.2)	1.00	
Others	115(39.0)	1.08 (0.79, 1.47)	1.04 (0.74, 1.47)
<b>Marital status</b>			
Never married	82(34.3)	1.00	
Married	170(40.0)	1.28 (0.92, 1.78)	2.19 (1.40, 3.43)*
Others	11(36.7)	1.12 (0.50, 2.44)	2.03 (0.81, 5.08)
<b>Monthly income</b>			
<500	121(30.5)	1.00	
500-999	92(47.7)	2.08 (1.46, 2.96)	1.64 (0.86, 3.12)
1000+	51(48.6)	2.15 (1.39, 3.34)	2.64 (1.21, 5.77)*

## 6. Discussion

Voluntarily Counseling and Testing (VCT) is one of those approaches that are adopted at the national level for HIV/AIDS prevention and control. This study tried to look in to some of the important factors that affect the utilization of VCT among government and non-government employee groups in the study area. It also tried to look at the magnitude of VCT utilization between government and non-government employees in Butajira town

### **Prevalence**

The overall magnitude of VCT utilization of 37.9% in the study subjects is higher than that reported for the urban areas of the country (18%) (26). This difference in the magnitude could be explained by the possibility that the town has more active intervention activities by governmental and non-governmental organizations including Addis Ababa university. Another possible explanation could be the fact that the population of the town has more mobility due to engagement in commercial activities. Unlike other communities, social organizations like edirs have a requirement rule of pre-marital certificate for HIV serostatus which is sanctioned by the community itself. This magnitude was 45.2% for the government employees whereas it was 30.7% for non-government employees. However, the study showed that there was not significant difference in VCT utilization between government and non-government employees. This lack of difference between the two groups may be confounded by educational status and income in which most non-governmental employees may be reluctant to tell the true monthly income fear of governmental tax.

### **Factors associated with VCT utilization**

This study demonstrated that female's individuals were utilizing more VCT than their male counter parts. This may be due to women in reproductive age may be noticed to involve in VCT during ANC for PMTCT. This study also showed that higher educational status of Grade 11-12 and above Grade 12 to be statistically association with higher rate of VCT utilization. The study is supported by a study done in Jimma found out that better educational status was associated with a higher chance of VCT utilization (15). This could be due to the fact that as people's knowledge increases about the seriousness of the health problem. However, it was not consistent with the finding done in South Gonder showing educational

status did not show statistically significance association with VCT utilization (16). The study done in South Gonder educational status did not show statistically significance association with VCT utilization. The reasons for the difference could be timing of more than 5 years and the knowledge on VCT might have increased since then, and other possible explanation may be difference in the setting.

This study indicated that married individuals were found to have more VCT users compared with never married included in the study. This could be due to the fact that in the area there is a trend making a marriage with out VCT is forbidden. This was also well displayed during focus group discussion (FGD). All group of discussant have mentioned about the importance and they have mentioned that HIV blood test is a “Must” before marriage. The study demonstrated that participants with 1000 Birr or more monthly income to statistically associate with higher utilization of VCT than individuals with an income below 300 birr. This may be explained that individuals with higher monthly income may have higher educational status and devises that increase access to information on HIV/AIDS and VCT.

This study indicated major reported reasons for VCT utilization to be utilizing voluntarily and a test that would take before marriage and was also reflected during FGD. The study conducted in Malawi showed that reasons for VCT utilization were feeling sick, experiencing family events (e.g. marriage or new partner), fear of having been exposed to HIV by the actions of one’s spouse or partner and job circumstances e.g. scholarship (22). This study also indicated that reasons for not utilizing VCT among non-VCT utilizes, and the major reasons demonstrated included trusting their partner and themselves, not feeling at risk, fear of the outcome, lacking of time for the service and fear of stigma. The study was supported by the study in Harare depicting fear of testing positive was cited as the main barrier to VCT by 71% (18). Stigma, fear of HIV positive result, lack of treatment options and concerned confidentiality were still major barriers to seeking in all countries studied (19).

This study identified that knowledge of VCT and its importance was 99.7%, this finding is relatively consistent with study conducted in Bahir Dar, which was 94.2% (20). This may be explained that most of the participants living in the town and expected access to have knowledge towards VCT and have higher educational status in this study groups. Regarding preference of VCT counselor qualification most of the study participants preferred Physician.

This also was suggested by focus group discussion. This study was supported by the study conducted in Addis Ababa (23). This study also identified preferences of ways of getting HIV test result, in this case study subjects preferred face-to-face ways of getting HIV test result. This study also was supported by the study conducted in Addis Ababa (23).

This study showed statistically significance difference between government and non-government employees regarding knowledge of HIV/AIDS transmission. This may be explained that government employees could have more exposure information/ knowledge regarding HIV/AIDS in their working area and they have higher educational status compared with non-government employees. This study supported by Ethiopian study conducted in Jimma (15). This study demonstrated that stigma and discrimination towards HIV/AIDS has shown statistically significance difference between government and non-government employees. Non-government employees were found more to stigmatize and discriminate a person with HIV/AIDS than government groups. This also explained by the above reason of having a higher access to information among governmental than the non-governmental employees.

In general, stigma and discrimination towards HIV/AIDS is deep-rooted among the community and difficult to eliminate at once. The involvement of the other support is crucial and important as it was also reflected during focus group discussion. One of the focus group discussant mentioned that *“Sometimes people, especially the elders, mask HIV/AIDS patients, by depicting as if the person has tuberculosis. They also try to convince others not to have VCT result and treated properly; this is a cultural tolerance in our area.”* Also mentioned that stigma and discrimination from neighbors and the community, were prominent mentioned problem towards HIV/AIDS. Many people are afraid to seek VCT services because of fear of stigma and discrimination from their families and community (6, 9).

## **7. Strengths and limitations of the study.**

### **7.1 Strengths**

Probably this is the first study of its type in Butajira that tried to explore associations of socio-demographic variables with VCT utilization.

Other strength of this study is that it explored the magnitude of VCT utilization among government and non-government employees of the town.

Further more, this study used standardized structured questionnaire adopted from WHO, BSS.

## **7.2 Limitations**

As this study mainly focused on government and non-government employee on urban areas, the rural and unemployed group of urban population were not addressed. There fore the result of this study may not be representative of the stated groups of the population

Shortage of literature particularly studies on similar topics could be mentioned as source of limitations.

## **8. Conclusions.**

The current study demonstrated that the prevalence of VCT utilization among employees is low in Butajira town although it is higher than the reported prevalence for urban areas in the country.

The result of this study indicates that VCT use is not different between government and non government employees.

However, voluntary counseling test utilization was higher to statistically significant level among female participants, higher educational status, married individuals and individuals having a monthly income of 1000 birr or more than their referents.

Fear of stigma and discrimination are still problems among the working force of the study area.

## **9. Recommendation**

There should be continued effort to further maximize pre-marital counseling testing utilization, with proper and tailored information dissemination involving all possible stakeholders focusing on the whole community.

Possible and appropriate sustained activities to bring behavior change regarding stigma and discrimination related with HIV/AIDS and VCT is necessary using local resources like church and mosques.

Possible and appropriate activities should be focused on males, lower educational status, unmarried individuals and individuals with <500 birr monthly income.

Further study may be needed for the representativeness of the whole community.

## 5. References

1. MOH: National Guideline for Voluntary HIV counseling and testing in Ethiopia, Addis Ababa, Ethiopia: 2000.
2. UNAIDS: 2006 aids report. <http://unaids.org>
3. WHO: Client perception of HIV/AIDS Voluntary counseling and testing (VCT) in Mozambique. Training in sexual health research. Geneva 2005.
4. MOH: AIDS in Ethiopia, 5<sup>th</sup> edition, Addis Ababa Ethiopia, 2004.
5. The Global AIDS Epidemic 2006: [unaids.org](http://unaids.org)
6. UNAIDS: HIV Voluntary counseling and testing. A gateway to prevention and care. Case study June 2002, <http://unaids.org>
7. UNAIDS: Tools for Evaluating HIV Voluntary counseling and testing March 2000. <http://unaids.org>
8. Karim Q, Karim S, Soldan K, Zondi M, Reducing the stigma of HIV infection among South Africa sex workers: Socio-economic and Gender barriers, American Journal of public health 1995,85
9. UNAIDS; Voluntary counseling and testing (VCT), 2000, <http://unaids.org>
10. MOH; National Guideline for VCT in Ethiopia Addis Ababa 2002,8-10
11. UNAIDS: A review of household and community response to the HIV/AIDS epidemic in the rural area of Sub-Saharan Africa. Geneva; 1999: 5-14
12. Ethiopian Journal of Health Development Special issues on HIV/AIDS prevention and control in Ethiopia Addis Ababa, 2003; 17:13-14
13. Mohammed F, Demeke B, Ismael S. Determinants of Voluntary HIV counseling and testing among age group of 15-49 year in Harar town. Ethiopian public health association 10<sup>th</sup> Annual public health conference abstract and programme, November 2000: 3.
14. Larson C, Asefa M, Aboud F, Shiferaw T. Risk behavior for HIV infection their, occurrence and determinants in Jimma town. Ethiopian medical journal 1991; 29: 127-135
15. Belachew T, Jiral C, Mamo Y. Knowledge, attitude and practice about HIV/AIDS and voluntary counseling and testing, among the urban communities in Jimma town and its

- rural surroundings, southwest Ethiopia. Ethiopian health Journal Sci. Vol. 14, Special issue July 2004.
16. Admassu M, Fitaw Y. Factor's affecting acceptance of VCT among different professional and community groups in North and South Gonder Administrative zones, North West Ethiopia. Ethiopian Journal of Health Devevelopment.
  17. Haworth A, Rosensvard C, Kwapa PM. HIV counseling and testing: overemphasizing high acceptance rates a threat to confidentiality and the right not to know. PMID: 10597789 [PubMed-index for MEDLINE] AIDS.1999 Dec. 3; 13(17): 2469-74
  18. Ethel D, Ronnie M, Peter M, Steven C. Attitudes to HIV and barriers to accepting voluntary counseling and testing (VCT). Organization of biomedical Research and Training Institute.
  19. Joseph D, RicherK. Creating demand for VCT: a multi-country examination social marketing programme for VCT. Rio de Janeiro 24-27 July 2005. <http://www.ias-2005.org/planner/abstract.aspx?aid=1243>
  20. Dejene M. Study on factors affecting accessibility and acceptability of voluntary counseling and testing services for HIV/AIDS in Bahir Dar town, North West Ethiopia. FGAE/North West Branch/ November 2001
  21. Nuwaha F, Kabatesi D, Muganwa M, Whalen CC. Factor's influencing acceptability of voluntary counseling and testing for HIV in Uganda. East Africa. Medical Journal 2002 Dec; 79(12): 626-32. (PubMed)
  22. Yoder P, Matinga S, Matinga P. VCT for HIV in Malawi: public perspective and resent VCT experience. Calverton. Maryland, USA: ORC Marco. 2004.
  23. Habte D, Deyessa N, Davey G. Assessment of the utilization of premarital HIV testing and determinants of VCT in Addis Ababa, 2003. Ethiopian Journal Health Development 2006; 20(1).
  24. Karamagi C, James K, Tylleskar T. Antenar HIV testing in rural eastern Uganda in 2003: incomplete rollout of the prevention of mother-to-child transmission of HIV programme. Heggenhougen<sup>3,4</sup>
  25. Barongo F, Ms. Margeret. Happy women's access to and utilization of VCT services in HIV/AIDS prevention and care: A case study of Kawempe division. November 2004. <http://www.paho.org/genderand> health
  26. CSA: Demographic and Health Survey Ethiopia Addis Ababa 2006.



## List of Annexes

### Annex 1- Focus Group Discussion participants' description Butajira town, 2007.

#### Characteristics

Sex	Age	Number of participants	Place	Duration of session	Date	Remark
Female	19-29	10	Butajira finance	75 min.	25/1/2007	Government employees
	30-39	10	Butajira cooperation	80 min.	29/1/2007	Non-government employees
Male	19-29	10	Butajira Metal work	80 min.	5/2/2007	Non-government employees
	30-39	10	Butajira high school	90 min	8/2/2007	Government employees

Annex 2 Questionnaire (English version)

Barriers and factors associated VCT utilization in Butajira town, Gurage Zone, SNNPR. Ethiopia 2007.

Ser.No. \_\_\_\_\_

Time at the beginning of interview \_\_\_\_\_

001 questionnaire Identification No \_\_\_\_\_

002 sites \_\_\_\_\_.003 study participant 1=government employee

2=non-government employee

**Introduction**

My name is \_\_\_\_\_. I am working for \_\_\_\_\_. We are interviewing people here in \_\_\_\_\_ (name of site) about Voluntary HIV counseling and testing service utilization.

**Confidentiality and content:** I am going to ask you some very personal questions that some people find difficult to answer. Your answers are completely confidential, your name will not be written on this form, and will never be used in connection with any of the information you tell me. You do not have to answer any questions that you do not want to answer and you may end this interview at any time you want to. However, your honest answers to these questions will help us better understand about VCT utilization in the town. We would greatly appreciate your helping. Would you willing to participate?

If Yes, \_\_\_\_\_ (1) Continue

If No, \_\_\_\_\_ (2) Stop.

(Signature of interviewer certifying that informed consent has will be given verbally by respondent) \_\_\_\_\_ 004 Result code, \_\_\_\_\_

1. Completed

2. Refused

3. Partially completed

Interviewer Name, \_\_\_\_\_. Signature\_\_\_\_\_

Date of interview \_\_\_\_\_

Checked by supervisor: Name \_\_\_\_ Signature \_\_\_\_ Date \_\_\_\_\_

**1. Socio-demographic characteristics of the study population, Butajira town  
Gurge Zone, SNNPR.**

No	Questions and filters	response	code	skip
101	Sex of the respondent	Male = 1 Female = 2		
102	Age in year (completed)	<20 20-29 30-39 40+		
103	Level of education	Illiterate/ Read and write = 1 Grade 1-6 = 2 Grade 7-10 =3 Grade 11-12 =4 Above grade 12 =5		
104	What religion are you?	Orthodox=1 Muslim=2 Protestant=3 Catholic=4 No response=9		
105	To which ethnic group do you belong?	Mixed ethnicity=1 Gurage=2 Siltie =3 Amhara=4 Oromo=5 Others (specify)=6		
106	What is your current occupation?	Merchant =1 Office =2 Health professional =3 Agricultures =4 Others =5		
107	What is your monthly income?	-----Birr Eth. Do not know =8 No response =9		
108	Current marital status	Single =1 Married =2 Divorced =3 Widowed =4 Separate =5		

**2. Sexual history and condom use of study population Butajira town, Gurage  
Zone, SNNPR.**

No	Questions and filters	Response	Code	Skip
201	Have you ever had sexual intercourse?	Yes =1 No =2 No response =9		202
202	If yes, at what age did you first have sex?	Age in year ----- Don't know=1 No response =9		
203	Have you had sexual intercourse in the past one year?	Yes =1 No =2 No response =9		204
204	With how many different people have you had sex during the past one year?	-----number Never =1 Do not know =8		
205	If you had sex with non-regular partner how often did you use a condom?	Always =1 Sometimes =2 Never =3 No response =9		

### 3. Knowledge, attitudes and practice towards HIV/AIDS.

No	Questions and filters	Response	Code	Skip
----	-----------------------	----------	------	------

301	Have you ever heard of a disease called HIV/AIDS?	Yes =1 No =2 Do not know =8 No response=9		302
302	From where did you hear about HIV/AIDS? (multiple response is possible)	Family =1 Friend =2 Neighbors =3 Mass media (TV, radio, newspaper ) =4 Church =5 Mosque =6 Health workers (facility) =6 Others (specify) =7 No response =9		
303	Do you think that a healthily looking person including you can be infected with HIV?	Yes =1 No =2 Do not know =8		
304	Can a person who has HIV/AIDS be cured?	Yes =1 No =2 Do not know =8		
305	How is HIV/AIDS transmitted?	Sexual intercourse =1 Mother-to-child =2 Transfusion of infected blood=3 Body contact, greeting =4 Inhalation =5 Eating together =6 Others (specify) =7 Do not know =8		

306	How can a person find out if he/she has HIV/AIDS?	Simply by looking =1 By physical exam., of health professional =2 Go to traditional healer =3 Go to counseling testing/service =4 Others(specify) =5 Do not know =8		
307	How can people protect themselves from getting HIV/AIDS	Avoiding sex (abstinence)=1 Avoiding multiple sexual partner =2 Avoiding sharing sharps =3 Using sterile needle =4 Avoiding physical contact =5 Avoiding eating together=6 Avoiding living together=7 Others (specify) =8 Do not know =9		

#### 4. Voluntary counseling and testing (VCT).

No	Question and filters	Response	Code	Skip
401	Have you heard of voluntary HIV counseling and testing?	Yes =1 No =2		402

402	If yes q401 where did you get this information?	Family =1 Friends =2 Neighbors =3 Mass media =4 Health workers =5 Others (specify) =6		
403	(Please do not tell me the result) have you ever had VCT in the past?	Yes =1 No =2 No response =9		405
404	(Please do not tell me the result) did you find the result?	Yes =1 No =2 No response =9		
405	If yes to q403, what was the reason for having VCT?	Voluntary =1 Ordered by health worker=2 Require (visa, work, etc) =3 Blood donation =4 Marriage = 5 Others (specify) =6		
406	Did you agree VCT is important?	Yes =1 No =2 Do not know =8 No response =9		407
407	If yes to q406, what is the advantage?	Prevention of partners/others=1 Knowing self =2 Self care for future =3 To plan future life =4 To have wife/husbands/friends=5 Others (specify) =6 Do not know =8		
408	What was the reason you did not have	Don't know where to get =1		

	VCT before?	Do not believe it will help= 2 Partners and self trust =3 Afraid to get the result =4 Don't know about it =5 Lack of money =6 Lack of time =7 Do not feel at risk =8 Partner refusal =9 Fear of stigma =10 No near by service =11 Others (specify) =12 No response =13		
409	Generally, who should go for an HIV/AIDS test?	Sex workers =1 User of sex workers =2 Drivers, soldiers, traveling sells=3 Any one at risk =4 Those with multiple partners =5 Any one sexually active =6 Those who are sick =7 Everyone =8 Others (specify) =9 No response =10		
410	By whom do you prefer to get VCT counseling?	Physician (doctor) =1 Nurse =2 Trained counselor =3 Religious leader =4 Community leader =5 HIV/AIDS positive people =6 No need of counselor =7		

		Others (specify) =8 No response =9		
411	Which way do you prefer to obtain the HIV test result?	Face to face =1 Secretive letter =2 Partner =3 Relative= 4 Others (specify) =5 Do not know =8 No response =9		
412	If a member of your family became ill with HIV, the virus that causes AIDS, would you want it to remain secret?	Yes =1 No =2 Don't know =3 No response =4		415
413	If yes, to q414 can you specify the reason?	Fear of stigma =1 Fear of discrimination =2 Since no change =3 Since difficult to tell =4 Others (specify) =5 No response =9		
414	Do you know that the VCT service available in Butajira town?	Yes =1 No =2 Do not know =8		
415	What should a person do if the test result indicates there is HIV in the blood?	Abstain from sex =1 Avoid pregnancy =2 Avoid marriage =3 Get divorced =4		

		Use condoms =5 Others (Specify) =6		
416	Do you think that testing for HIV is something scary?	Yes =1 No =2 Do not know =8 No response =9		

### 5. Stigma and Discrimination.

501. When people hear that somebody has decide and gone to be tested for HIV, what would be the reaction?

No	Questions and response	Yes =1	No =2	No response=9
----	------------------------	--------	-------	---------------

1	People would think that the person has AIDS	1	2	9
2	People would say nothing	1	2	9
3	People can have both positive and negative attitudes	1	2	9
4	People would suspect that something is wrong is wrong with him/her	1	2	9
5	People would think that the person has no confidence on himself/herself	1	2	9
6	People will point their finger at him/her	1	2	9
7	People not have good attitude about him/her	1	2	9
8	People would think that the person is courageous (has confidence in him/her)	1	2	9

502.If your blood test positive for HIV would you tell any of the following individuals about your HIV test result?

No	Questions and response	Yes=1	No=2	No response=9
1	Your spouse	1	2	9
2	Your family (mother, father, brother, sister).	1	2	9

3	Your sexual partner	1	2	9
4	Your relatives	1	2	9
5	Your neighbors	1	2	9
6	Your religious leaders	1	2	9
7	Your community leaders	1	2	9
8	Your children	1	2	9
9	Your employers	1	2	9
10	Do not tell any body	1	2	9
502	If you test positive for HIV and prefer to disclose your HIV test result, how likely is it that the following might happen to you? (Please read all the options and circle that apply).			
1	Neglected by family	1	2	9
2	Marital breakage	1	2	9
3	Physical abuse by spouse/sexual partner	1	2	9
4	Neglected by friends	1	2	9
5	Increased emotional support from family/relatives.	1	2	9
6	Increased emotional support by peers	1	2	9
7	Strengthening of relationships with spouse/sexual partner	1	2	9
8	Increased emotional support from health professionals	1	2	9
9	Break up of sexual relationship	1	2	9
10	Increased emotional support from religious leaders	1	2	9
11	Increased emotional support from	1	2	9

	community leaders			
12	Discrimination by health professionals	1	2	9
13	Discrimination by religious/community leaders	1	2	9

Annex-3 Focus group discussion guideline protocol

Tentative program topic guide

Good morning (after noon), thank for your coming here

My name is \_\_\_\_\_

My college beside me is called \_\_\_\_\_

We came from Zonal Health Department and AAUMF/DCH

**This will be read for them:**

We will conduct brief introduction and will talk several different issues. We will ask some questions about your general experience with the current disease HIV/AIDS in your locality and issues of voluntary counseling and testing (VCT). We will end the session by asking you for your suggestions on how VCT program can be improved and strengthened in your community in the future.

### **Potential issue of data**

The information we are going to gather in relation to VCT program will be utilized to improve the program particularly in the Zone in a better way.

### **Issues of confidentiality**

Please be certain that any information collected here is completely confidential. The research team or other participants will not directly share the gathered information in away that would reveal an individuals personal identity.

### **Consent for participation and Tape-recording**

It is necessary that we obtain your comment to conduct the session. Please understand that this is more for your protection than any thing else.

### **Read consent form loud the group:**

Your remaining in this session indicates that you are volunteer and agreed to participate for the discussion you have the right to refuse to answer any questions and end the discussion if

you find it necessary to do so. For the sake of accuracy and efficiency, we will tape-record the session, unless there are no objections.

### **Responsibility of note taker/ moderator**

The moderator will facilitate the discussion. The moderator will keep track of the discussions along main issues. The moderator will not give any indication (verbal/physical) that encourages certain type of comments or discourage other type of comments. Generally, the moderator will guide the session if necessary, but taking care not to lead the discussion. Our role will be facilitation and your role will be telling as what you think.

The note taker will be responsible to capture the session as accurately as possible. This will include not only the participant's responses, but also nonverbal actions, physical, environmental, atmosphere of the session as well as other important peculiar manifestations of that particular session.

### **Importance of total group/response**

In this group and session every body should feel free and talk freely. Each and every options/idea is important and wanted. It is vital that all the group participants get a chance to express their ideas.

In this session there is no wrong or right answer. Every body can express the opinion or attitude pertinent to him/her. When you express your opinion idea, you are encouraged to be honest in your view of HIV/AIDS prevention and VCT service program. We want you to focus your comments on the program and toward each other or member of the group.

Focus group discussion:-topic guide

## Part1:-introduction

At this moment, we would like you to introduce yourself to the rest of the group.

Let's start with the research team.

Name

Age

Education

Work experience----etc (in short)

## **Part2:-Ice breaking question/warming up.**

To show concern about people, start by asking them how they cope with life, their jobs, health etc.

Next we would like to hear a little about your experience or knowledge about HIV/AIDS.

Tell us what HIV/AIDS is?

We would like you to tell us how a person gets HIV/AIDS?

Probes: 1. would you explain further?

2. Would you give me an example?

3. Has anyone else had similar experience?

4. Is there any thing else?

## **Part3: voluntary HIV counseling and testing program**

Now we would like to ask you about voluntary HIV counseling and testing (VCT) service.

Have you heard of voluntary counseling and testing?

What do you know about testing for HIV/AIDS? What is positive HIV test result mean? What is negative result mean?

What do you think about testing and counseling for HIV/AIDS? Is it good or bad? Why?

What are the usual reasons people go for VCT in this area? Where do people go for VCT service?

What are the benefits and harms of VCT?

Why do people decline HIV testing and counseling?

Is there any service delivery related problem that could prevent VCT service utilization?

Is there any cultural and religious practice in the area that could promote/prevent VCT service utilization? Example? Is it acceptable? Why?

What could be done to encourage people go for VCT service utilization?

#### **Part4. Type and method/ preferences of VCT.**

Now we would like you to share a little bit about how VCT service should be delivered to meet the demand of your community.

What organization or where do think appropriate to give such a service?

Who should be involved to make VCT better accepted in the community? How?

What type of people do you think be involved in counseling?

How should VCT be done?

Which way do you think more preferable to get VCT test result?

After giving a sample for testing, when do you think preferable to hear (get) the result?

#### **Part5. Recommendations/suggestion**

Up to now we have talked one of the preventive programs of HIV/AIDS; VCT. We would like to ask you what other things could be done to make this program (VCT service) better acceptable in the community.

Thinking about the issues we have discussed, what recommendations/suggestions would you make on VCT program?

Probes: - 1. What do the rest of you think?

2. Would you explain further?

4. Is there any thing else?

Annex 4 Questionnaire (Amharic Version)

®®1 ¾SÖÃp SK¾ IØ`

©©2 ¾É`İ~ SKÁ IØ \_\_\_\_\_

®®3 ¾Ø“~ }d▯ò-( 1 ¾S”Óef W^}—

2 S"Óe|© ÁMJ' W^}—

eT@\_\_\_\_\_ÃvLM::

$${}^3_4\text{Ue}^{\wedge}<\text{U}\quad\text{c}=\text{J}^{\text{''}}\text{ }^2=\text{I}\text{ }^{\text{E}}\text{ }^{\text{I}}\text{ }^{\text{f}}\text{ }^3_4\text{S}\ddot{\text{O}}^{\text{''}}</\text{A}\text{K}^{\text{''}}</$$
$$u\partial n\mathring{A}\sim f\mathring{L}\tilde{A}^{\frac{3}{4}}\{Sc\}^{\frac{3}{4}}?(\cdot)\mathring{A}\cdot y^{\frac{3}{4}}\mathring{A}U\mathring{U}^{\mathring{S}^{\mathring{A}}}\mathring{)}cSM_{j\cdot}KT>\mathring{A}[\tilde{N}^{\sim}<\emptyset^{\mathring{A}}f\emptyset\mathring{A}oKS\mathring{O}^{\frac{3}{4}}k^{\mathring{A}}\mathring{A}<::$$

đnÃ~' f UeÖ=^©' f /KG<K<~U É'İ„</

›"Ç"É ¾ÓM Ñ<ÇÃ-" ¾T>SKÿ~ ØÁo-< K=• Ä<LK<:: ÁU u=J" ¾T>cÖ<~ SMf<- LÃ eU- ›ÃÇövt<U  
 uðèU UeÖ=^Ø'††<" ¶[ÖØØM-<K" SSKc ¾TÃðMÑ<f" ØÁo ÁKSSKc Swf- ¾)Öuk '"<:: u=J"U KØÁo-‡  
 ¾T>cÖ<" SMf< uµ'< "<eØ eKT>ÿ""< uðñÁ" f LÃ ¾)SW[} ¾)?< ›Ã y= U`S^ ›ÑMÓKA,,< ¶"Á""<p Ä[Ç"M  
 fww`-" uxU ¶"Á"nK":

KSkÖM önskar -f; 1 >-” kØM

2 3 ÅKG<U 3IU

$$\{ \ddot{O} \dot{A} m \} < \check{n} \dot{A} - KSG < ' < \frac{3}{4} S \ddot{O} \tilde{A} p \succ p^{\wedge} u = '' <$$

ò`T

®®4 ¾SÖÃI " <Ö?f 1 u}TEL ¾}SKc

2 uÿòM w%<sub>00</sub> ¾}SKc

3 K?L

$$\frac{3}{4} \ddot{O} \dot{A} m'' < eU$$

ò`T\_\_\_\_\_

k"\_\_\_\_\_

Á[ÒÑÖ" < }qxx] eU\_\_\_\_\_

ò`T\_\_\_\_\_

k"\_\_\_\_\_

# 1. ÖpLL ÓKcv© S[í- <

}.l	SÖÄp	SMe	çÉ	ÄKö
1®1	¾ÖÄm" < ë	1 ""É 2 c?f		
1®2	°ÉT@	19 _Sf 88 ›L" <pU 99 SMe ¾KU		
1®3	¾fUl`f Ä[-	1 T"uwU SéöU ¾TÄK< 2 T"uw" Séö w% 3 Ý1-6— jöM 4 Ý7-1®— jöM 5 Ý11-12— jöM 6 Ý 12— jöM uLÄ		
1®4	¾¾f—" < GÄV• < }ÝÄ ' -f;	1 *,Éjc j`e+Ä" 2 S<eK=U 3 ýa,e" f 4 ",K=i 99 SMe ¾KU		
1®5	Ý¾f—" <	1 pMpM 2 N<^N@ 3 eMÖ? 4 ›T^ 5 *[V 6 K?L ÄÓKè/ 99 SMe ¾KU		
1®6	SÄu— e^ -;	1 'ÖÉ 2 u=a W^}— 3 Ö?" vKS<Á 4 Ów" 5 SUI' 6 K?L ÄÓKè/		
1®7	¾"" Nü=- u"" e" f ÄJ"M;	----- ¾>=f.w` 88 ›L" <pU 99 SMe ¾KU		
1®8	¾Öw% G<' @[-;	1 ÄLÑv 2 ÄÑv 3 ¾}ó 4 ¾V}uf		

		5 ¼}KÁŁ		
--	--	---------	--	--

2. ¾Ów[ eÒ Ó"–<'f" ¾¢"ÊU ›ÖnkU u)SKŸ}

.l	SÖÄp	SMe	¢É	ÄKö
201	¾Ów[ eÒ Ó"–<'f ðêS"< Á"<nK< ;(LLÑw w% ¾T>Ö¾p)	1 ›"– 2 ›LÄ[Ÿ<U 99 SMe ¾KU		202
202	SMc< ›" ŸJ' ¾SÉS]Á ¾Ów[ eÒ Ó"–<'f c=ÄÄ'Ñ< °ÉT@- e" f 'u`;	----- Sf 88 ›L" <Pu 99 SMe ¾KU		
203	vKö"< ›"É" Sf ¾Ów[ eÒ Ó"–<'f ðêS"< Á"<nK< (LLÑw w% ¾T>Ö¾p)	1 ›"– 2 ›LÄ[Ÿ<U 99 SMe ¾KU		204
204	SMc< ›" ŸJ' vKö"< ›"É" Sf Ñ>²? "<eØ Ÿe" f ¾}KÁŁ e-< Ö" ¾Ów[ eÒ Ó"–<'f ðêS" M;	1 ulØ"----- 2 uß^i 99 SMe ¾KU		
205	ŸvKu?f- ŸÖÄ— "<Ü ¾Ów[ eÒ Ó"–<'f "Ä[Ñ< U" ÄIM Ñ>²? ¢"ÊU }ÖpS"< 'u` ;	1 G<M Ñ>²? 2 ›"Ç"É Ñ>²? 3 uß^i 99 SMe ¾KU		

2 ¾›?< ›Ä. y= ›?Éc °" <kf Ó"u?" ¾}SKŸ} SÖÄp

.l	SÖÄp	SMe	¢É	ÄKö
301	¾›?< ›Ä y= ›?Éc eK}vK u   cU}"< Á"<nK<;	1 ›- 2 ›McTG<U 88 ›L" <pU 99 SMe ¾KU		302
302	SMc< ›" ŸJ' ¾›?< ›Ä y= ›?Éc cK }vK"< ug   uU" Ÿ¾f cS<; (Ÿ"É SMe uLÄ Ä%LM)	1 Ÿu?}cw 2 ŸÖÄ— 3 ŸÖ[u?f 4 Ÿ²?" Tc^Ý _Ç=Ä +g= Ö²?x/ 5 u?} j'e+Ä 6 SeÑ>É 7 ŸÖ?" vKS<Ä 8 ŸK?L/ ÄÖKè 99 SMe ¾KU		
303	Ö?"T ¾T>SeK< e-<   e-"	1 ›"–		

	ÚUa u>?< >Ã y= zÃ[e ÃÁ³K< wK"< ÃÑU]K<;	2 >ÃÉ"U 3 SMe ¾KU		
3@4	>?< >Ã y= >?Ée ÁKuf ÓKcw uQ;U" ÃÉ"M	1 >-" 2 >ÃÉ"U 99 SMe ¾KU		
3@5	>?< >Ã y= >?Éc ¾T>}LKõv†"< S"ÑÊ< (Ÿ>"É SMe uLÃ Ã%LM)	1 ¾Öw[eÖ Ö"<f 2 Ÿ" f "Ã ê"e KĪ 3 uÄU SKÑe 4 eK]U "Ñ_<" uS"" f 5 K?L ÄÖKè 99 SMe ¾KU		
3@6	>"É c"< uc"<~ "<eØ >?< >Ã y= >?Ée S•\ "Èf T[ÖÑØ Ã%LM; (Ÿ>"É SMe uLÃ Ã%LM)	1 uT¾f 2 uÖ?" vKS<Á ¾,"M U'S^ 3 ¾vIM ;U" >^m uSH@É 4 uõnÄ- f LÃ ¾}SW[] ¾ÄS U'U^ uTÉ[Ö 5 u] Ö" "pf Ÿ" f "ÄMĪ 6 K?L ÄÖkc< 99 SMe ¾KU		
3@7	c-< >?< >Ã y= >?Ée "ÇÃ³†"< ^d†"< "Èf ÄÖwnK<; (Ÿ>"É SMe uLÃ Ã%LM)	1 uSqÖw 2 Ÿ>"É S'Öf S}TS" 3 ø"ÉU SÖkU 4 S`ô" >"É Ñ>²? w% uSÖkU 5 Ÿc-< Ö` ¾NL "Ÿ=Ÿ=" SqÖw 6 u;U" Ÿ" f "Ã ê"< "ÇÄ}LKö uTÉ[Ö 7 >wa ŸS•` SqÖw 8 K?L ÄÖkc< 99 SMe ¾KU		

### 3. uõnÄ- f LÃ ¾}SW[] ¾U'S^ ,ÑMÓKAf ØÁo

.l	SÖÄp	SMe	çÉ	ÄKö
4@1	uõnÄ- f LÃ ¾}SW[] ¾}> >Ã y= U'S^ ,ÑMÓKAf "ÇK cU}^M;	1 >-" 2 >McTG<U		4@2
4@2	SMc< >-" ŸJ' ŸT" Ÿ¾f cS<f Ÿ>"É SMc uLÃ Ã%LM	1 Ÿu?}cw 2 ŸÖÄ— 3 ŸÖ[u? f 4 Ÿ²?" Tc^Ÿ_Ç=¿ +y= Ö²?x 5 Ö?" vKS<Ä 6 K?L ÄÖkc< 99 SMe ¾KU		
4@3	[v]-f "<Ö?~" >Ã"Ñ\— uõnÉ- Ÿ²=I uòf ¾}>?< >Ã y= U'S^ ,É"Ñ"< Ä"<nK<;	1 >-" 2 >LÄ[Ÿ<U 99 SMc ¾KU		4@5
4@4	[v]-f "<Ö?~" >Ã"Ñ\— "<Ö?~" cU}^M; >Ö}^M; K}S[S\ w% ¾T>Ö¾p	1 >-" 2 [McTG<U 9 SMe ¾KU		
4@5	KØÁo 4@3 SMc< >-" ŸJ' KSS'S' U;"Äf- U" 'u`;	1 uõnÄ- f 2 uÖ?" vKS<Á f]³' 3 ¾Y^ "Ä "<ß KSH@É 4 ÄU KSKÑe		

		5 KÖw% <sub>00</sub> 6 K?L ÄÓKè		
4@6	uðñÄ" f LÄ ¾}S[ç² ¾} ?ç Ä y= >?Éc U'S^ y=c=+ >eðLÑ> "'< ÄLK<;	1 >-" 2 >ÄÄKU 88 >L "<pU 99 SMe ¾ÄKU		4@7
4@7	SMc< >- ÝJ' ØpS< U"É "'<; Ý"É SMe uLÄ Ä%LM)	1 ÖÄ™¿™ K?KAç" KSYLYM 2 ^e" KT"K 3 K"Äðf K^e Ø"no TÉ[Ó 4 K"Äðf °pÉ TÉ[Ó 5 vM T>c f "ÄU ÖÄ— KTÓ-f 6 K?L ÄØkc< 99 SMe ¾ÄKU		
4@8	Ý>G<" uðf ¾} ?ç >Ä y= >?Ée y=c+ U'S^ ÄLÄ[Ñ<uf Uj"Äf- U" 'u'; LK}S[S\ w% ¾T>SKe Ý"É SMe uLÄ Ä%LM	1 >ÑMÓKaf ¾} f "ÄT>cØ eLTL "<p 2 Ä[Ç—M wÄ eKTLU" 3 uÖÄ—Ä" u^c? eKU}TS" 4 "<Ö?~" T¾} f eKUð^ Ý>Kw~ 5 eK²=I Ñ<ÇÄ eKTL "<p 6 ¾ÄÑ"²w Ø[f 7 ¾ÄÑ>²? Ø[f 8 ÄÄ²—M wÄ eKTMcÖ 9 ¾ÖÄ—}n "<V 1@ uSÑKM" uSð^ f 11 up`w >ÑMÓKA~ vKS\l 12 K?L ÄØkc< 99 SMe ¾ÄKU		
4@9	uðñLÄ ¾} ?ç >Ä y= >?Ée U'^ TÉ[Ö ÄKu f T" "'< uK"< ÄU"K<;(Ý"É SMe uLÄ Ä%LM)	1 ¾u<" u? f c?,"ç 2 ¾u<" u? f c?,"ç Ö` Öw  eÖ Ö" <' f ÄK"< 3 jð< SÄÄa<" }²aa] 'ÖÉ< 4 T"—<U }ÖLß ÖKcw 5 Ýw²< Ö` Ö" <' } ¾T>ðêS< 6 T"—S KÖw  eÖ ¾Ä[c ¾Ä[cç 7 uj}™ç 8 Ä"Ç"Æ G<K<U 9 K?L ÄØkc< 99 SMe ¾ÄKU		
41@	uT"—< c"< uÄuMØ ¾} y=c=+ >?ç >Ä y= U'S^" Uj` >ÑMÓKaf u=ÄÑ<- ÄðpÇK<; Ý"É uLÄ SMe SeÖf Ä%LM	1 NÝ=U Äj}` 2 `e 3 ¾eKÖ' ¾Uj` >ÑMÓKaf cÜ 4 ¾GÄT•f S] 5 ¾Qw[]cw S] 6 uÄT†"< "<eØ >?ç >Äy= ÄKv†"< 7 ¾Uj` >ÑKÓKaf >ÄeðMÓU 8 K?L ÄØkc< 99 SMe ¾ÄKU		
411	¾} ?ç >Äy= ÄU U'S^ "<Ö? f- uU" >Ä' f S"ÑÉ u=Ñ` - ÄðpÇK<;	1 ðf Kðf 2 uÉwp ÄwÇu? 3 uðp[— ÖÄ— 4 uu?}cw 5 K?L ÄÖke		

		88 ›L"‹pU 99 SMe ¾KU		
412	Ÿu?}cw- ›vLf ›"É c"‹ u?Ée ›UÜ"‹ Q <sup>a</sup> e ›?‹ ›Ä y= u=SU Ÿ <sup>^</sup> e- UeÖ=´ ›É"Ñ"‹ Áq¿M;	1 ›-" 2 ›LÄ ÖU 3 ›L"‹pU 88 ›L"‹pU 99 SMe ¾KU		
413	SMc‹ ›- ŸJ' U <sub>i</sub> "Áf-" Ä"Ñ\—M;	1 SÉM-" uSö <sup>^</sup> f 2 SÑKM" uSö <sup>^</sup> f 3 K"‹Ø eKTÄ•[´‹ 4 KS"Ñ` eKT>ŸwÉ 5 K?L ÄÖkc 99 SMe ¾KU		
414	uu<Ÿ <sup>^</sup> Ÿ}T "‹eØ uöñÄ" f LÄ ¾}ScŸ} ¾}¿‹ ›Ä y= U <sub>i</sub> ` ›ÑKÓKAf" U'S <sup>^</sup> Ÿ"ÇK Ä"‹nK<;	1 ›-" 2 ›L"‹pU		
415	›"É c"‹ uÄS< "‹eØ ¾}¿‹ ›Ä y= zÄ[e u=Ñ" U" TÉ[Ó ›Kuf;	1 ŸÖw[ eÖ Ö"‹> SqÖu 2 Ÿ"Ö" Te"É 3 Öw% " Te"ÑÉ 4 SóŸ} 5 ø"ÉU SÖkU 6 K?L ÄÖke		
416	¾}¿} ›Ä y= U'S <sup>^</sup> TÉ[Ó ›eð] "‹< wK"‹ ÄevK<;	1 ›-" 2 ›ÄÄKU 88 ›L"‹kU 99 SMe ¾KU		

#### 4. SÉKA“ SÑKM ØÁo-‹

}.I	ØÁo	SMe	›-	›ÄÄKU	S/¾KU
501	›"É c"‹ ¾}¿‹ ›Ä y= U <sub>i</sub> " ¾ÄU U'S <sup>^</sup> öMÖ u=H@É" u=S[S´ ¾}"vu="‹ / K?KA‹ c-‹ eKc"‹¾"‹ eK <sup>2</sup> =Ä U" ÄLK<;	1. c-‹ ›?Ée ›Kuf wK"‹ ÄcvK<	1	2	99
		2. c-‹ U"U ›ÄK<U	1	2	99
		3. c-‹ uØ\ "ÄU uSöö Ö"‹ Ä"eÇK<	1	2	99
		4. c-‹ uÖKcvD "ÄU uÖKcu< LÄ ›"É ‹Ö' ›K wK"‹ ÄÑUŸK<	1	2	99
		5 e-‹ ÑKcvD "ÄU ÖKcu< u <sup>^</sup> X†"‹ ›Ä}TS'<U wK"‹ ÄXvK<	1	2	99

		6. c- $\langle$ uÓKcvD "ÁU uÓKcu< LĂ × $\uparrow$ "<" Ăke^K<	1	2	99
		7 c- $\langle$ eK ÓKcvD "ÁU ŃKcu< Ø\ ›SK"Ÿ} ›Ă•^†"<U	1	2	99
		8 c- $\langle$ uÓKcvD "ÁU uÓKcu< u^X†"< Ă}TS"K< wK"< ¾evK<	1	2	99
	¾ÁU U'S^ " <Ö? f- uÁU- " <eØ ›?‹ ›Ă y= zĂ[e S•" u=ÁXĂ ŸT>Ÿ}K<f e- K¾f—" < Ă'Ó^K<;	1. KvKu?f-	1	2	99
		2. Ku?}cw- "f ›vf "ÉU "f	1	2	99
		3. Kōp[— ŌĂ—	1	2	99
		4. K²SÉ	1	2	99
		5. KŌ[u?f	1	2	99
		6 KGĀT•f S]	1	2	99
		7. K›vu= S]	1	2	99
		8. KMĐ<-	1	2	99
		9. KW^}™, <-	1	2	99
		10. KT"U ›M"Ń"U	1	2	99
503	¾ÁU U'S^ " <Ö? f- ›?‹. ›Ă. y= "ÇKw- u=ÁXĂ Ăα""U KT'<×f u=ðMŃ< ŸT>Ÿ}K<f ¾f—" < ĂĂ'ew—M wK"< ĂevK<;	1.uu?}cw ‹L SvM S[Xf S×M	1	2	99
		2. ¾Ōw%ō`	1	2	99
		3. ŸvKu?f "ÁU Ÿōp[— ¾T>S× ¾)"M Ń<Çf	1	2	99
		4. uŌĂ— ‹L /S[Xf/ SvM	1	2	99
		5. uu?}cw "ÁU Ÿ²SÉ ¾'ĪH@ ÉŌō TŌ—f	1	2	99
		6. ŸŸ<Ă- ¾'ĪH@ ÉŌō Ÿō ĄLM	1	2	99
		7. ŸvKu?f" Ÿōp[— Ō` ÁK"< Ó"—<'f Ÿō ĄLM	1	2	99
		8. ¾Ō?" vKS<Ă- ÉŌō ĄŮU^M	1	2	99
		9. Ów[eŌ Ó"—<'f ĄqTM	1	2	99
		10. ¾GĀT•f S]- ÉŌō ĄŮU^M	1	2	99
		11. ¾)"vu= S]- ÉŌō ĄŮU^M	1	2	99
		12. uŌ?" vKS<Ă SÉM- ĂĂ[ŌM	1	2	99
		13. uGĀT•f" u)"vu= S]- SÉKA ĂĂ[ŌM	1	2	99

## ASSURANCE OF PRINCIPAL INVESTIGATOR

The undersigned agrees to accept responsibility for the scientific ethical and technical Conduct of the research project and for provision of required progress reports as per terms and conditions of the Research Publications Office in effect at the time of Grant is forwarded as the result of this application.

Name of the student: MULUGETA WONDWOSSEN (MD)

Date\_\_\_\_\_ Signature\_\_\_\_\_

Approval of the primary Advisor

Name of the primary Advisor: NEGUSSIE DEYESSA (MD, MPH)

Date.\_\_\_\_\_ Signature \_\_\_\_\_