UTILIZATION OF TETANUS TOXOID VACCINATION AMONG WOMEN IN THE CHILD BEARING AGE, GULEMEKEDA WOREDA, TIGRAY REGION, NORTHERN ETHIOPIA

BY

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JIMMA, ETHIOPIA

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Abstract

Background: Literatures revealed that protection of births against tetanus is low with significant urban rural differentials in Tigray region. To solve this problem researching TT utilization among mothers is very crucial.

Objective: To determine and compare utilization status of tetanus toxoid vaccination among urban and rural child bearing women during their index pregnancy and identify the predictors in Gulemekeda Woreda, Tigray region, Northern Ethiopia 2011.

Methods and materials: A community based cross-sectional study design was carried out from March 16 -April 10, 2011 in Gulemekeda Woreda, Tigray region, Northern Ethiopia on 264 mothers of 0–11 month old children. Multi stage stratified random sampling was used to select study subjects. Quantitative data were collected by interviewing mothers and reviewing their vaccination cards whereas qualitative data were collected through in-depth interview and focussed group discussion. Finally quantitative data were analysed using SPSS version 16 through descriptive statistics, univariate (X^2, logistic regression, T-test) and multiple logistic regression methods and qualitative data were analysed by thematic framework analysis.

Results: TT_2+ (full TT vaccination) coverage assessed by card plus history was 81.2 %, 86.4% in urban and 75.5% in rural (P=0.040) where as protection against tetanus at birth assessed by card plus history was 71.2% in both urban and rural. Being fully vaccinated were less likely among respondents who were illiterate (AOR=0.326, 95%CI.0.14, 0.78), infrequently mass media exposed (AOR=0.163, 95%CI.0.05, 0.55), not visited at their home by HEWs (AOR=0.254, 95% CI.0.09, 0.76) and among mothers who had no ANC during their index pregnancy (AOR=0.331, 95% CI.0.14, 0.79). Besides to this mothers whose index pregnancy were planned were almost three times more likely to be fully vaccinated with TT than those whose index pregnancy were unplanned (AOR=2.926, 95% CI: 1.177-7.272).

Conclusions: TT_2+ coverage were 9.9% higher in urban mothers compared to rural mothers ($p<0.05$). Maternal education, media exposure, proximity to EPI centre, HEWs home visit, antenatal care attendance, pregnancy plan and knowing benefits of TT were predictors of full TT vaccination status. Thus, benefits of TT should be widely disseminated in the community and it is recommended to mobilize the community to generate demand for use of maternal health services.

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Acronyms

ANC	antenatal care
DHS	Demographic and Health Survey
DPT	diphtheria-tetanus-pertussis vaccine
DTP1	first dose of diphtheria-tetanus-pertussis vaccine
DTP3	third dose of diphtheria-tetanus-pertussis vaccine
EPI	Expanded Program on Immunization
EDHS	Demographic and Health Survey of Ethiopia
FGD	focus group discussion
HEWs	Health Services Extension Workers
MDG	Millennium Development Goal
MNT	maternal and neonatal tetanus
NT	neonatal tetanus
PAB	protection at birth
SIA	supplemental immunization activity
TT	tetanus toxoid vaccine
TT2+	second and subsequent doses of tetanus toxoid
WCBA	women of child bearing age
WHO	World Health Organization

Chapter .1 Introduction

1.1. Background

Each year, more than half a million women die from causes related to pregnancy and childbirth and nearly 4 million newborns die within 28 days of birth from very preventable causes like tetanus in developing countries, particularly in sub-Saharan Africa including Ethiopia that accounted for 50 per cent of the global total [1-2].

Tetanus can occur in all age groups but an overwhelming majority of tetanus is birth associated that occurs in women who deliver under unhygienic conditions and with low tetanus toxoid (TT) immunization during pregnancy, or within 6 weeks of the end of pregnancy (Maternal tetanus) and in their neonates (neonatal tetanus), both has same risk factor & means of prevention [2-5].

Neonatal tetanus (NT) was estimated for more than half a million deaths every year In the 1980s. But, since the 1989 call for its elimination which is defined as less than one case of neonatal tetanus per 1000 live births in all districts by 1995 mainly with at least two doses of TT for women before or during pregnancy combined with hygienic midwifery. Consequently, NT deaths decreased by more than half from 470,000 to 215,000 and many countries with effective immunization programmes and good standards of hygiene, also achieved elimination [2-5].

However being costly, many third world countries like Ethiopia fail to achieve progress in hygienic delivery and even primary child hood immunization programmes remained ineffective though strengthening of child hood DPT immunization is one of the ways of tetanus prevention. Similarly, in spite of implementing routine TT immunization of pregnant mothers, TT vaccination coverage remained low to achieve elimination and tetanus continued as a public health problem with higher incidence in poor and hard-to-reach communities [2-4, 6, 7].

Therefore, to achieve worldwide tetanus elimination including maternal tetanus, the year 2005 was set as the target date. And to realize this a high-risk approach was adopted that aimed to reach out to those high-risk communities through supplemental immunization activities (SIAs), delivering three sequential doses of vaccine to all women of childbearing age in the high risk communities of tetanus burden countries including Ethiopia [2,4,5,8, 9].However still gaps remain in TT immunization coverage .For example , globally 41% (40 million) pregnant women remained unvaccinated with two doses of TT in 2004 [4,5].The trend of TT2+coverage in Ethiopia is 24%, 29%, 35%, 40%, 45%, and 45% in 2000-2005 respectively [10] and despite

impressive progress, neither of the goals for eliminating maternal and neonatal tetanus (MNT) achieved and MNT continued to be public health problem in many poor countries like Ethiopia.

1.2. Statement of the problem

Maternal and neonatal tetanus is an acute disease caused by tetanus toxin produced by Clostridium tetani. Unhygienic methods of delivery, abortion, or umbilical-cord care exposes to MNT [4].MNT is a deadly disease for newborns, with a case fatality rate of 70-100%. In the absence of medical treatment, case fatality approaches 100%; with hospital care 10–60% of NT cases die, depending on the availability of intensive care facilities [2, 3, 11].

Tetanus as a whole continues to cause about 213 000–293 000 deaths worldwide each year with higher incidence of neonatal and maternal tetanus which accounts for 7% (180,000) of neonatal mortality[1, 2, 5, 9,11] and 15 000–30 000 maternal deaths respectively every year globally[1, 2,9,11, 12] predominantly in low income countries being a public health problem in 48 poor countries mostly in South Asia and sub-Saharan Africa including Ethiopia ;one of the 8 high burden countries which account for 73% of neonatal tetanus deaths [2,4,5,8,11,13].

In Ethiopia over 94% of women give birth without any help from a skilled birth attendant. Most deliveries take place at home, often in conditions of very poor hygiene placing the lives of both mother and child at risk. NT is estimated to account for 4.47 neonatal deaths per 1000 live births every year [2]. Currently tetanus as a whole is also reported to be one of the main mortality causes accounting for 2.4 % [14].

Thus, TT is the safest, cheapest and most effective vaccine that prevents MNT which is evidenced by several literatures that has often suggested its effectiveness in MNT prevention with a reasonable cost in poor countries like Ethiopia. Immunization of pregnant women or women of childbearing age (WCBA) with at least two doses of tetanus toxoid is estimated to reduce mortality from neonatal tetanus by 94% [4, 5, 13].

WHO recommended schedule for TT1 - TT5 administration is: first contact of child bearing mother and/or pregnant mother; + 1, + 6 months; + 1, +1 year respectively. And no protection ,three years protection, five years protection, ten years protection and lifelong protection is acquired by TT1- TT5 respectively starting 15 days after the date of their administration. Thus, for full protection against tetanus for the mothers and their newborns, WHO recommends vaccination of mothers with at least two properly spaced doses of TT. Currently, WHO also recommends five doses of TT for life time protection against MNT [1, 2, 13].

However, globally vaccination coverage among pregnant mothers with at least two doses TT vaccine was estimated at 69% in 2006 and almost 20% (24 million) of newborns were not protected against neonatal tetanus through immunization in 2007 [6,7,15]. And 27% pregnant women globally and 32% in the African region were not protected against tetanus in 2008 [15].This indicates gaps remain especially in poor countries where clean delivery is also low.

Studies and surveys conducted elsewhere also found that TT vaccination coverage is low to achieve tetanus elimination in developing countries including countries with high tetanus burden. For example, study in Pakistan, the 2008 Demographic and Health Survey of Nigeria and Somali land revealed that the TT coverage of mothers for the index pregnancy was 57.3%, 48 %, and 25.3% respectively [16-8].

In Ethiopia, TT is given according to WHO schedule through routine immunization programs, outreaches, and campaigns and its progress is routinely monitored with TT2+ [19,20].The 2005 Demographic and Health Survey of Ethiopia (EDHS) reported that only 32 % last births in the five years preceding the survey were protected against neonatal tetanus nationally and 39.8% in Tigray. This is almost near to ANC coverage and it seems TT immunization is antenatal care (ANC) dependent [2, 21-2].

However; study conducted in Tigray, Tselemti district found that TT1+, TT2+, TT3+, TT4+, and TT5 assessed by card plus history was 95.5%, 91.4%, 75.5%, 47.3%, 29.1%respectively.Births protected at birth assessed by card plus history was 61.8% with significant higher coverage in rural mothers (71.4% rural and 45% urban) which is paradox to the fact that urban women are accessed to information and service easily than rural mothers [23].

Similarly; the 2006 national EPI survey of Ethiopia reported that in Tigray the coverage of TT1+, TT2+, TT3+, TT4+, TT5+assessed by card plus history was 96.2%, 91.4% ,69.8% ,51.3 %,42.1 % respectively. Protection at birth (PAB) assessed by card + history and by card only was also 80.7 % & 42.6% respectively in the region which is much higher to the 2005 EDHS report [24].

From these studies one can imagine that though TT1+ coverage indicating access is high, but compliance with subsequent TT doses is very low. Protection at birth is also very low compared to the 100% WHO recommendation [2].This indicates that in Tigray region there is also a defaulting problem from being fully protected at birth and from being protected for lifelong even among those who accessed.

TT immunization studies have been conducted in Canada, India, Pakistan, Bangladesh; Lao's Peoples Democratic Republic, Nigeria, Somali land and, Sudan and have found various associated factors and /or predictors of faulty coverage and utilization. Among these factors were; low socio-economic characteristics, reproductive factors, health service utilization and EPI programme related factors and knowledge ,perception and attitude related factors as associated factors and /or predictors of TT utilization and immunization status [18, 25-33]. Most of these studies examined urban-rural differentials and have often reported higher coverage of TT vaccination in urban areas than rural areas [17-8, 24, 26,32-3].

In Ethiopia the only study conducted in Tigray Tselemti district reported some socio demographic factors: education, residence and awareness as predictors similar to the demographic and EPI surveys which are focussed on coverage.

Despite considerable resources being invested into EPI programme in Tigray mothers' utilization status of TT immunization during pregnancy is low leaving significant proportion of births unprotected against tetanus with significant urban rural differentials as evidenced by different literatures. However, this issue was not studied well. Thus, this study was intended to evaluate the progress of TT immunization coverage using the protection at birth (PAB) method, which is rarely practiced, and to identify the predictors for utilization status of TT immunization during pregnancy and any urban-rural differentials in the study area.

Chapter.2 Literature review

2.1 Literature review

Utilization and status of TT vaccination is influenced by different factors which can be classified as socio demographic and economic factors, reproductive factors, mother's health service utilization, EPI programme, knowledge and perception related factors. These determinants are going to be discussed evidenced by findings from different studies conducted elsewhere and finally are summarized in the conceptual frame work pictorially below.

1) Socio demographic and economic predictors (maternal age, education, residence, employment, income, and partners' educational and occupational status)

Many studies have been examined age differentials and found mother's age at last birth to be independently associated with receiving one and two/ more doses of TT injection. Mothers giving birth at a younger age (20-29) were more likely to have received two or more doses TT injections during pregnancy period [26]. Similarly, the 2005 EDHS showed that births to relatively younger mothers' age 20-34 years were slightly more likely to be protected against tetanus than births to older mothers [21].

A study conducted in Bangladesh indicated receiving TT injections had been strongly determined by mothers' educational status and occupation .That is, women with primary and above educational status were significantly more likely to receive two or more doses of TT injections than is mothers with no formal education. This study also revealed that women working for cash were significantly more likely to take one dose but less likely to take two or above TT injections than mothers working not for cash [26]. Another study conducted in Pakistan also indicated similar impact of maternal education on TT vaccination status i.e. respondents with educational level of matriculation or above had had two or more doses of TT compared to their counterparts [35].

Utilization of TT vaccine by levels of partner's education and occupational status were also examined and similar results were observed to female educational status and occupation. The study conducted in Bangladesh found that TT vaccination status among mothers with highly educated husbands who are non manual workers to be significantly higher than their counter parts [26].

Studies in Ethiopia also indicated similar effect of educational status of women on their TT vaccination status .For example the 2005 EDHS reported that women with secondary and higher levels of education were three times more likely to have been immunized against tetanus than women with no education [21].Another study conducted in Tigray region, Tselemti district also revealed that protection at birth (PAB) status of children of literate mothers had significantly higher protected at birth (PAB) coverage than children of illiterate mothers(79.4% versus 58.6%).However , educational status was not significant predictor for TT3+ [23].

Residence is another important sciocultural predictor that is usually considered to influence TT utilization. Study on TT utilization in Bangladesh showed that there were urban-rural differentials with rural women less likely than urban women to receive TT vaccine confirming that residence in a rural area, to be independent risk factors for seronegativity (not being immunized against tetanus) [36].Similarly, study in Sudan also indicated that utilization of TT vaccination among urban women was more likely significantly higher (3.7 times) than among rural women [33].

In Ethiopia, the 2005 EDHS reported that mothers living in urban areas were nearly three times more likely to be protected against tetanus than mothers in rural areas (58% versus 22%) and the difference was significant [21].Similarly, a more recently (2006) conducted national EPI survey in Ethiopia indicated that TT2+ coverage was significantly higher among urban than rural areas (83.3% versus 73.6%), and TT2+ coverage was also significantly higher among literate mothers than illiterate mothers (81.0% versus 73.3%) [24].

Contrarily, study conducted in Tselemti district, Tigray indicated that children of rural mothers to be significantly higher and more likely protected at birth against tetanus than children of urban mothers (71.4% versus 45.0%) and rural mothers were significantly more likely to receive TT3+ than urban mothers(81.2% versus 63.8%) [23].Similarly, South Africa Demographic and Health Survey reported higher TT coverage in rural mothers [34].

Different studies conducted elsewhere assessed the predictors for urban rural differentials and reported different variables. For instance, recently a study conducted in Bangladesh reported wealth index, mother's age at last birth, education, husband's occupation, ever using contraception, fertility preference, wanted last child, having permission to go to hospital/health centre, telling about pregnancy complications and mass media exposure for receiving TT injection as predictors for all mothers and for rural mothers. Besides, this study also reported ever using contraception, wanted last child, telling about pregnancy complications, mass media exposure and wealth index to be significant determinants of receiving TT injection for mothers of urban area [37].

The effects of marital status, source of information, mass media exposure and mobility status of mothers on their TT vaccination status were also examined by different literatures. For example a study conducted in Pakistan revealed that the probability of receiving TT vaccine among married reproductive age women were significantly higher than their counter parts which was also obtained to be significantly affected by source of information [28].

Another study conducted in Pakistan also showed that out of the 65% (202) respondents who had knowledge on the importance of TT, 62.5%(192) receive the information from health staff .Very few respondents reported the other sources of information like media, relatives/ friends and neighbours [29]. Another study conducted in Canada also reported that the likely hood of receiving tetanus immunization was significantly increased with nurse or physician recommendation [30].

Another study in Bangladesh also found that those who didn't own radio but listened to a radio at least once per week had a significant higher chance of being immunized than those who didn't listen to radio frequently [38]. In Ethiopia, World Bank reported that women exposed to mass media had a higher probability of obtaining at least one dose of tetanus injection than women who had not been exposed to mass media [39].

A study conducted in Bangladesh examined religious differentials and showed that receiving one dose and two or above doses TT were significantly higher among non-Muslim mothers than Muslim mothers (1.6 and 1.1 times more respectively). This might be attributed to objection of Muslims husbands to allow wives to go to doctors or outside their home [26]. Similarly, another study conducted in Pakistan reported that the TT vaccination status of reproductive mothers was significantly associated with restriction on mothers' mobility status [28]. Paradoxically, in Ethiopia World Bank report suggested that Muslims were more likely to receive at least one dose of TT than non Muslims [39].

Study in Bangladesh also revealed that economic status (wealth index) as a predictor of utilization TT vaccination; that is, receiving two or more doses of TT injection was almost 3 times higher among respondents using modern toilet facility and also shows that higher proportion of respondents belonging to upper category regarding household asset and quality index received two/more doses TT injection than their congruent parts [26].

Similarly, in Ethiopia World Bank report indicated that the probability of receiving at least one TT vaccine dose was significantly higher among mothers with middle(1.49 times) and highest

(2.19 times) wealth index than mothers with poor wealth index. The 2005 EDHS also confirmed that mother's TT vaccination status to increase significantly with an increment in their wealth index [21].

2). Knowledge, perception, and Belief related predictors

Studies conducted elsewhere showed knowledge, and perception of respondents on tetanus and TT vaccination to be determinants for vaccination status .For example, study in Pakistan reported that TT vaccination status of reproductive mothers were significantly higher among those with better knowledge regarding TT vaccination than their counter parts. [28]. A study conducted in Indonesia also showed that mothers who have ever been heard about TT, mothers who knew the use of TT and those who knew at least one symptom were significantly more likely to have been immunized than those who didn't[40].

Even though their significance was not examined, another study conducted in Pakistan revealed poor knowledge on the importance of TT (32%), the place and time to get vaccination (18%) and misconceptions about TT vaccination (e.g. that it was a contraceptive) as the main reason for non vaccination [35].

Though it is important to know the schedule of TT, to determine the need for the next dose Study in India one of the high tetanus burden countries, reported that only negligible proportion (15.6%) of general public correctly knew immunization schedule against tetanus in pregnant women [41].

A qualitative study conducted in Somali Land also reported mothers' attitudes toward immunisation to be influenced by their perceptions of the EPI diseases. This study reported that where the disease was believed to be serious, susceptibility to be high and the cause unrelated to spiritual phenomena, motivation for seeking out immunisation was greater. Alternatively, mothers generally felt immunisation could not be effective against diseases like neonatal tetanus which were believed to be caused by spiritual phenomena [41].

Another study in Ivory Coast also found that perceived effectiveness of TT vaccine to be the only barrier for receiving TT injections [43]. Study in Canada also revealed that being up-to-date with tetanus immunization was independently associated with belief that an adult should be immunized against tetanus and perception that tetanus is life-threatening [30]. Though knowing its importance was not a predictor, those who believed that TT immunization is a good thing were received tetanus immunization higher than those who didn't.

Coming to Ethiopia, study conducted in Tselemti district, Tigray also indicated that the probability of being protected at birth and utilizing TT3+ was significantly higher among mothers with higher mean score of TT immunization awareness [23]. However different studies conducted elsewhere reported awareness or knowledge of TT vaccination to be affected and /or predicted by mass media exposure, receiving antenatal care (ANC), and educational status [23, 26]. Paradoxically; though being accessed to information and health service, urban mothers are expected to be better aware as reported by many literatures, the study conducted in Tselemti district reported TT immunization awareness mean score among rural illiterate mothers who received TT3+ to be significantly higher than the urban illiterate mothers who received TT3+[23].

3). Reproductive health related predictors (birth order, number of pregnancies and wanted index pregnancy)

Correlates of tetanus toxoid vaccination in Bangladesh examined which women were more likely to TT vaccination. In general, it has been observed that birth order was independently associated with receiving one and two/ more doses of TT injection. For example, the 2005 EDHS showed that lower order births (3 and below) were slightly more likely to be protected against tetanus than higher order births [21]. A study conducted in Canada also indicated that having had children and ever received advice about updating their own immunization during a child's visit to a doctor or nurse was a predictor for being up to date with TT immunization among adults [30].

Having been pregnant only once were independent risk factors for seronegativity [36].Similarly ,recently conducted research in Pakistan reported that among respondents up to dated with TT,22(7.2%),124(40.4%) and 93(30.3%) were first, second and third gravida respectively [29]. This showed that the likely hood of getting TT increases with number of pregnancies. Aside to number of pregnancy, study conducted in Bangladesh also indicated wanted index pregnancy to be other predictor of for acceptance of TT injection [26, 37].

4).Mothers' Health service utilization and EPI programme related predictors (ANC, ever contraceptive use, HEWs home visit, distance of static or outreach EPI site, availability outreach site, card retention, EPI programme continuity, missed opportunities, and adherence to schedule)

Studies also examined the effect of mother's health service utilization and EPI programme related factors. For example, study in Pakistan reported higher Tetanus toxoid coverage among women utilizing antenatal care (92%) compared to those who were not (59.2%) though significance for

difference was not done [44]. Similarly, another study in Bangladesh also reported not receiving antenatal care during the last pregnancy as independent risk factor for seronegativity [36].Not only receiving ANC service but the number of ANC service received also matters for instance ; another more recent study in Pakistan, revealed an increase in ANC visit by woman significantly increased the TT coverage [35].However,ANC is determined by factors like residence ,income, birth order, and educational status as indicated by different studies [21,33,44].For example study conducted in Pakistan showed that higher income women were twice likely to use antenatal care services than those of lower income [45].

Besides to low antenatal care, studies also indicated the source of antenatal care and missed opportunities as another causes for not being vaccinated with TT .For example, a study somewhere else reported that only 25.7% of women who received antenatal care (ANC) had received tetanus vaccinations and women who received ANC from primary healthcare facilities were more likely to have been vaccinated than those who received ANC from hospitals or private practice [46].In Nigeria findings showed that, although 54.9% had clinic based ANC, only 36.4% had TT [31].Similarly, a study in Bangladesh reported that though there was good access for TT , there was 42% dropout rate which is by far greater than10% that usually indicate a serious quality problem with the programme and need to be addressed. [18,32].

Studies conducted elsewhere also reported utilization of TT vaccine to be significantly predicted by mothers ever use of contraceptives [26, 37].

Study in Pakistan showed that mothers who visited by lady health worker (LHW) in the last pregnancy to a household had a significant higher likely hood of receiving TT vaccine than those who didn't visited [28]. Different studies elsewhere examined physical accessibility differential. For example, study conducted in Bangladesh revealed that higher proportion of mothers who were living near to the nearest immunization centre received two or more doses of TT and the difference was significant [47]. A higher quality of care and shorter walk-time were significantly associated with more utilization of routine antenatal care services and its components (TT vaccines) in Sudan [33].

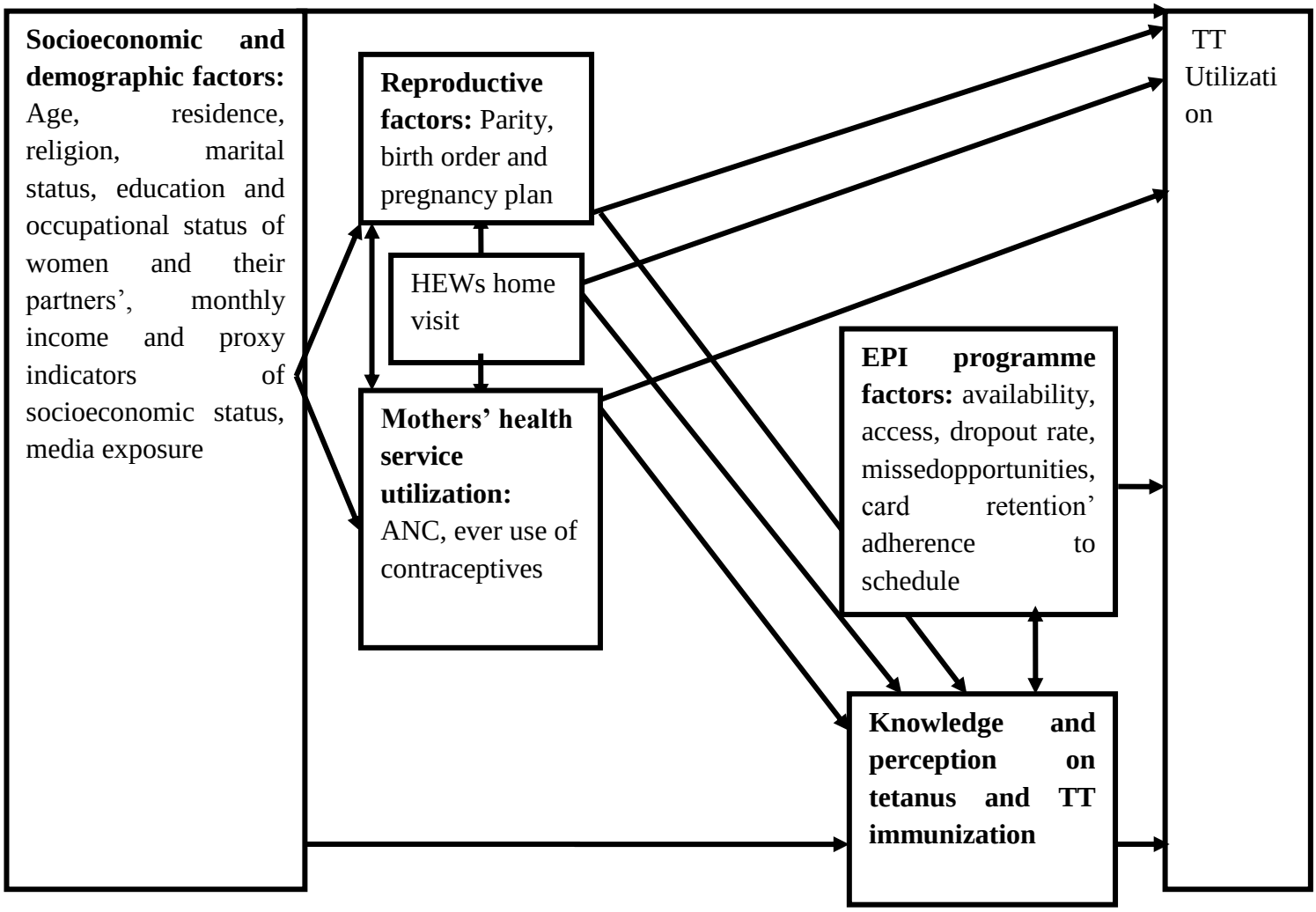


Figure 1.conceptual frame work of utilization of tetanus toxoid vaccination among women in the child bearing age, Gulemekeda Woreda, Tigray region, Northern Ethiopia, 2011

2.2 Significance of the study

In Ethiopia the overwhelming majority of births occurred at home in unsanitary condition(unclean hand, unclean cord cut ,unclean cord tie, and unclean delivery surface) and majority of the population live in rural areas having agriculture based economy which increase the risk of tetanus. Unsafe abortion; one of the most maternal killer, is also high which might expose mothers to tetanus causing bacteria. And, as evidenced by different literatures many lives continued to be claimed from this very preventable disease in Ethiopia. Thus, in developing countries like Ethiopia, tetanus immunization is the most reliable way of tetanus prevention.

However, different literatures reported that the rate utilization and status of TT immunization is low in Tigray and Ethiopia nationally, compared to the 100% recommendation of at least two doses TT vaccination for mothers during pregnancy. This indicated that births are not routinely protected in Ethiopia against tetanus and tetanus risk is high compounded with unclean delivery practices. This lags Ethiopia behind the progress towards achieving MNT elimination and MDG realizing maternal and child mortality reduction.

Thus, to address the problem, information related to utilization status of TT immunization and regarding any urban rural differential is important .But, no similar study has been carried in the study area except few that report urban-rural differentials somewhere else. This study, therefore, aimed at determining utilization status of TT vaccination using PAB method and identifying the predictors for utilization and any urban-rural differentials in Gulemekeda Woreda, Tigray region, Northern Ethiopia. And, the findings of this study could be used by local health planners to critically look at the problem during their planning process and hereby could lead to reforms that encourage TT vaccination which may ultimately improve the health status of mothers and their newborns.

Chapter.3 Objectives of the study

3.1. General Objective

To determine and compare utilization status of TT vaccination among urban and rural child bearing women and identify the predictors in Gulemekeda Woreda, Tigray region, Northern Ethiopia 2011.

3.2. Specific Objectives

1. To determine utilization status of TT vaccination among WCBA in urban and rural areas of Gulemekeda Woreda, Tigray region, Northern Ethiopia
2. To compare utilization coverage of TT vaccination among WCBA in urban and rural areas of Gulemekeda Woreda, Tigray region, Northern Ethiopia
3. To determine predictors of utilization of TT vaccination among WCBA in urban and rural areas of Gulemekeda Woreda, Tigray region, Northern Ethiopia

Chapter .4 Methods and materials

4.1 Study area and period

Gulemekeda Woreda is found in Eastern administrative zone of Tigray region, Northern Ethiopia. It is located 862 km away from Addis Ababa and 142 km from the regional capital city, Mekelle. The Woreda has 17 rural and 2 urban kebeles with a total population of 93,785. It is bounded by Eritrea in the north and Ahferom Woreda and Eritrea in the west, Erobe and Saesie Tsaeda Emba woreda in the east and Ganta Afeshum in the south. More than 90% of the population is engaged in agriculture. Regarding health facilities, the woreda has 21 Health institutions (14 health posts, 1 clinic and 6 health centres).

The study was conducted from March 16 -April 10, 2011.

4.2 Study design

Community based cross-sectional study design both descriptive and comparative

4.3 Populations

4.3.1 Source population

For quantitative

The source population for the study was women of child bearing age (15-49) who had 0 – 11 months old children during the data collection.

For qualitative

EPI managers of governmental primary health care units (health centres and clinics), health extension workers, religious leaders, and WCBA who had 0-11 months old children.

4.3.2 Study population

Study population was representative sample of women of child bearing age with 0-11 month old children selected from the source population.

4.4. Inclusion criteria for the study population

Inclusion criteria:

Being women in child bearing age and being the mother of 0-11 month old child was criteria for inclusion. The reason the age range of 0-11 month was used for evaluating TT utilization rate is

that this would provide information about the most recent immunization activities and the protection of the most recently born children and their mothers [48] and also reduces maternal recall bias as mothers tends to remember pregnancy and birth associated events [49].Immunization cards and other evidences if any were used to know the birth date of the infants and subtracting exactly 12 months from the date of the interview, mothers of infants with exactly 12 months or below including the day of interview were included[50].

4.5. Sample size and sampling technique

4.5.1. Sample size

For quantitative study

Assuming the proportion of mothers who used TT vaccine in urban population to be $\mathbf{P_1}$ = 0.45 & in rural population $\mathbf{P_2}$= 0.71 from similar study [23] which assess TT coverage in terms of PAB which is recommended by WHO as a golden standard method that provides more accurate estimates of the level of TT protection than the traditional tetanus toxoid coverage method (TT_2+) in countries or regions with high DPT_1 coverage (above 80 per cent) [2, 24, 51], sample size was detrmined as:

$$n1=n2 = D \times \frac{[z1-\alpha/2\ \sqrt{2P(1-P)} + z1-\beta\ \sqrt{P1(1-P1) + P2(1-P2)}]2}{(P1-P2)2}$$

Z1-α = the z-score corresponding to the probability with which it is desirable to be able to conclude that an observed change of size (P_2 - P_1) could not have occurred by chance; and

Z1-β = the z- score corresponding to the degree of confidence with which it is desirable to be certain of detecting a change of size (P_2 - P_1) if one actually occurred = 0.05 (Z1-α/2 = 1.65); β=0.10 (Z1-β=1.28).

D= 2 is the design effect

P = (P1 + P2) / 2;

$\mathbf{n_1}$ = sample size for rural, n_2 = sample size for urban

r = urban to rural ratio was taken to be 1 considering the limited resources

Using the above formula $\mathbf{n_1 = n_2}$=60, since multiple stages was used to select study subjects it was recommended to apply design effect. Thus; considering the limited resources, and taking D to be 2, $\mathbf{n_1 = n_2}$=120. Finally; including 10% for non response rate as reviewed from the previous works experience of non response rate, the final sample size became 264 ($\mathbf{n_1}$=132 & $\mathbf{n_2}$=132) mothers.

For qualitative Study:

Seven focussed group discussions (FGDs); each with eight discussants, were held with child bearing women who are mothers of 0-11 month old children.

Similarly, one EPI unit head of each governmental PHC units (health centre and clinic); one health extension worker (HEW); and one religious leader from Orthodox, Muslim and Catholic religions were included from each selected kebele for key informants' in-depth interview.

4.5.2. Sampling technique

For quantitative study

Multi stage, stratified random sampling method were employed for the study. The total 19 kebeles found in the Woreda were stratified in to urban and rural strata. There were 2 urban kebeles and 17 rural kebeles. But, one of the two urban kebeles had a population of less than 5000 while the other had a population greater than 5000. Thus, while random kebele selection was applied to the urban strata the kebele with a population of less than 5000 didn't have source population that couldn't fulfil the minimum sample size required for representing urban population and therefore the two urban kebeles were included for convenience.

However; due to limited resource and somewhat scattered rural households, it was very difficult to study all the 17 rural kebeles. Thus, since there were immunization service delivering health facilities in all rural kebeles, assuming that all rural kebeles had access to EPI service delivering facilities, five rural kebeles were randomly selected by using lottery method.

List of households with mothers of 0-11 month old children was obtained from kebele and health extension workers' registration book of each selected kebele of both strata and thereafter making sure that household list was reasonably complete and the sample for urban population was proportionately allocated to the two urban kebeles and then to "ketenas" according to their size.Similarly,the sample for rural population was proportionately allocated to the five randomly selected rural kebeles and then to "kushets" according to their size. Finally, simple random sampling technique was employed to select study subjects. When a woman refused, interview of woman in the next randomly selected household was continued.

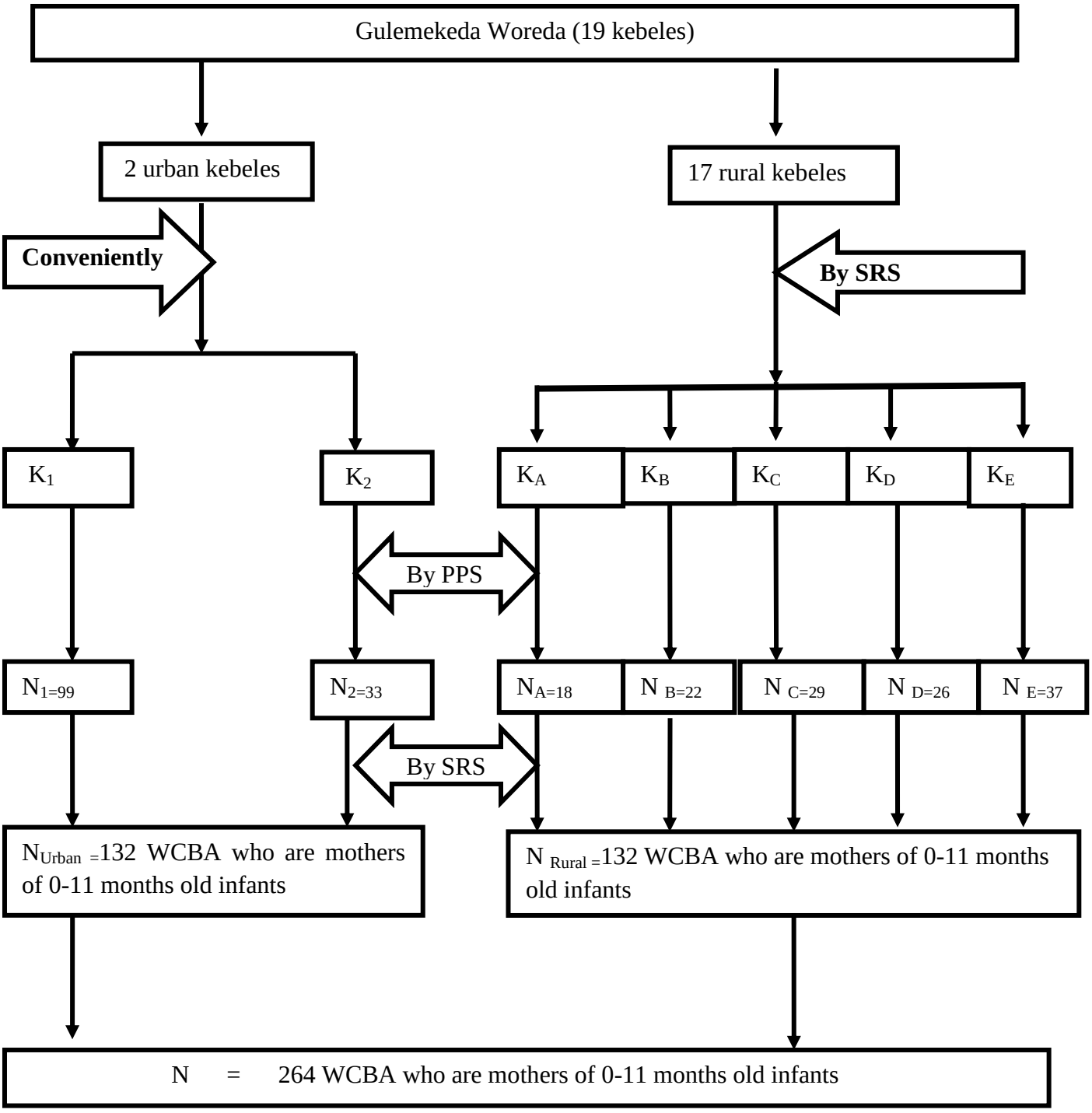


Figure 2. Schematic presentation of sampling procedure for selecting study units in Gulemekeda Woreda, Northern Ethiopia, 2011

Key: K_1=Zalambessa town, K_2=Fasti town,K_A=Ambesete fekada kebele,K_B=Haben kebele ,K_c=Kilat kebele ,K_D=Marta kebele, and K_E=Sebeya kebele

For qualitative study:

Women of child-bearing age who were mothers of 0-11 month old children were recruited conveniently for a total of seven focussed group discussions; one in each selected kebele.

For the key informants in-depth interview: one EPI unit head of each PHC unit (health centre and clinic); one health extension worker (HEW); and one religious leader from Orthodox, Muslim and Catholic religions were included purposively from each of the selected kebeles.

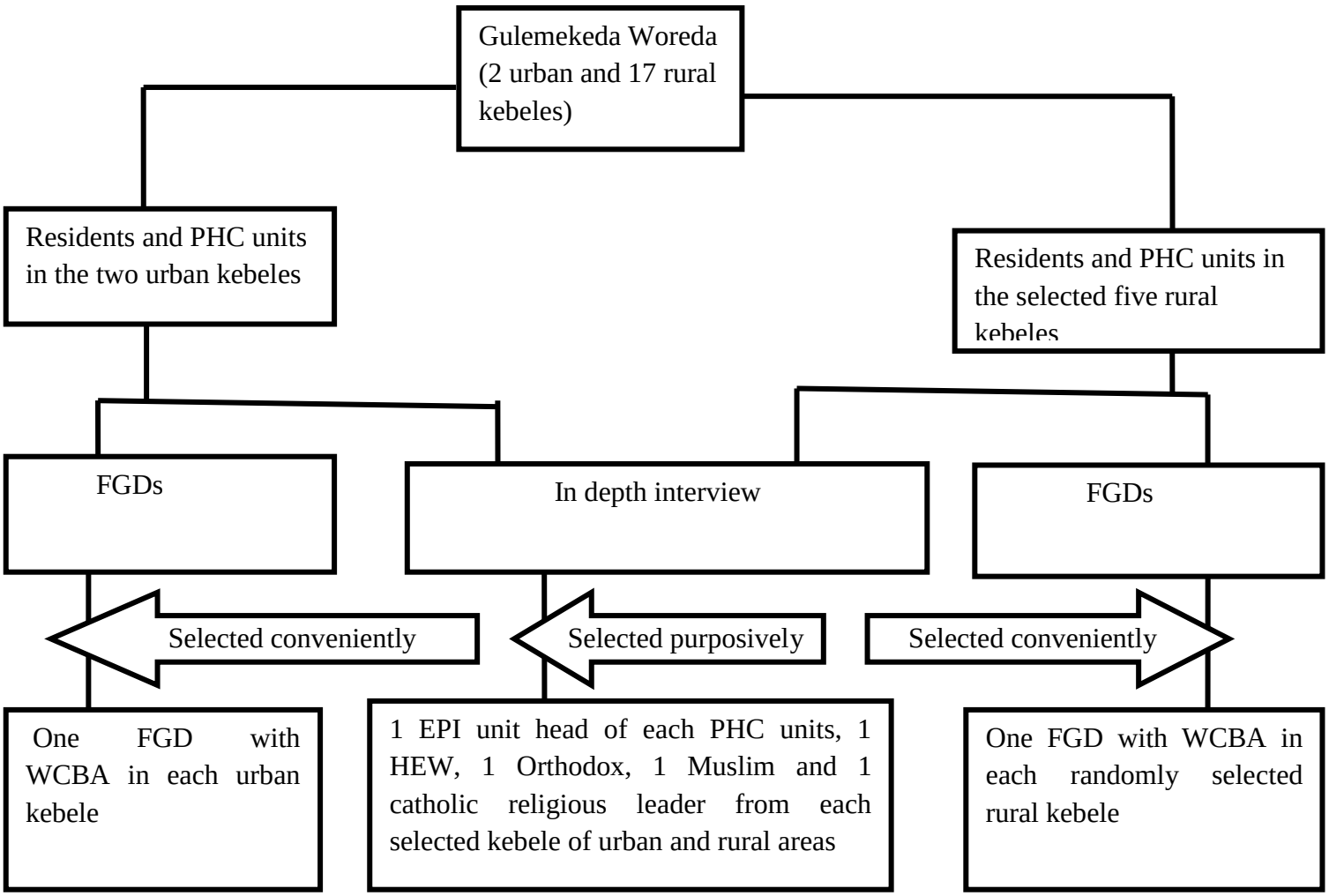


Figure 3. Schematic presentation of sampling procedure for qualitative method in Gulemekeda Woreda, Northern Ethiopia, 2011

4.6. Measurements

4.6.1 Variables

Dependent variables

TT utilization status

Independent variables

- Socio demographic and economic factors (maternal age at last birth; religion; residence; monthly income; proxy indicators of economic status such as house type, latrine type , household assets; marital status; media exposure; mothers' and their partners' educational status and occupation).
- Knowledge and perception on tetanus
- Knowledge and perception on TT vaccination
- Reproductive factors (parity, birth order, and pregnancy plan)
- Mothers' health services utilization related factors (ANC attendance, number of ANC received ,source of ANC, ever use of modern contraceptives)
- EPI related factors (HEWs home visit, availability of outreach EPI service,access to immunization, distance to static EPI site, card retention, programme continuity, adherence to schedule)

4.6.2 Data collection instrument

Quantitative study

Data was collected using structured questionnaire adapted from different literatures and modified according to the local context. The questionnaire consists of questions on socio demographic and economic characteristics, reproductive history, health service utilization of mother including TT injections, EPI programme related services [21,23,49-50],mothers' knowledge and perception on tetanus and TT vaccination [23,30,52-5].The questionnaire was translated first to Tigrigna (the local language of the study area) to make data collection process simple and translated back to English language by another person to check its consistency in the meaning of words and concepts. Consequently, little modifications have been done.

Qualitative study

Semi structured FGD and in-depth interview guides were used to collect qualitative data. FGDs were facilitated by principal investigator with the assistance of trained note taker and tape recorder whereas the in-depth interview was held by one of the two supervisors.

4.6.3 Training data collectors and pre-testing data collection tool

4.6.3.1 Pre-test

Before the actual data collection, the quantitative questionnaire was pre-tested on 5% of the total sample size on similar but different setting. The purpose of the pre-testing was to ensure that whether the questions were understandably phrased; whether the interviewers and the respondents understand the questions and the instructions; to check and estimate the time it takes to collect the information for each woman; whether the design of the data collection tool in translated version allows for legible recording of the data, as they were collected and to see if the logic and skip order of the questions were in a sensible way to the respondents. And necessary modifications in the questionnaire were made based on the nature of gaps identified.

Having discussed the pre-test results, some corrections and changes were made on the questionnaire. Some of the corrections were; some questions like question number 417 and 422 were omitted, missing responses like " Do not know " on question number 306 and 308 were included and skipping patterns were also corrected for question number 405.

4.6.3.2 Training data collectors

As getting experienced data collectors and supervisors was impossible, twelve data collectors (6 males and 6 females), who completed grade 12 and can speak Tigrigna and two BSc nurse supervisors were recruited. They were given training for three days (two days training and one day field practice) on objectives of the study, the concepts of using the proposed sampling technique and eligibility criteria; structure of the data collection tool and the purpose of each item included in the tool; techniques and ways of collecting the data as well as roles and responsibilities of the field team members. And then after, supervisors have had field practice in the role of interviewers before the field practice of the interviewers takes place. And finally, a field practice was done with the interviewers and field supervisors using a pretested questionnaire covering: identification of households; identification of target individuals; asking questions; data recording and interview duration.

Finally, having brief discussion and taking corrective measures on the problems observed during the field practice, data collectors and supervisors were ready to start the actual data collection and therefore data collection began the next day.

4.6.4 Data collection Process

Quantitative study

Data were collected through interviewer administered technique. Twelve trained data collectors (6 males and 6 females) who completed grade 12 and can speak Tigrigna were used for collecting data by interviewing mothers using pretested and translated questionnaire and by reviewing their TT vaccination cards. The data collection period was entirely supervised by two trained BSc nurse supervisors and the principal investigator.

Mothers were asked to show TT immunization cards and the number of doses received and the dates of immunization were copied when available.If immunization cards lost then the maternal report of immunizations was recorded.

Qualitative study

In order to supplement the data obtained by the use of a quantitative survey, seven FGDs each with eight discussants were conducted in order to provide more insight in to the problem under study. The discussants of each FGD were selected on convenient bases by the supervisors and the principal investigator and moderated by principal investigator with the assistance of trained note taker (one of the supervisors) and tape recorder,. FGD guide were used to guide the discussions.

In-depth interview of key informants; who were selected purposively, was conducted using semi-structured interview guide by the supervisors.

4.6.5. Operational definition

TT utilization: using at least one TT dose. Thus, for mothers who used the service their immunization status were evaluated as fully immunized (fully vaccinated) if they received two or more doses, otherwise as not fully immunized(not fully vaccinated) [48, 56-7].

Perception: perception pertaining tetanus risk, and severity, TT vaccine safety and effectiveness will be assessed using Likert Scale questions .Finally, perception score was computed for each construct and used for analysis as a continuous variable [30, 52-4].

Access to EPI service: presence of EPI service delivering health facility within 10 Km radius [36].

Access to TT immunization: is receiving the first dose of TT vaccine (TT1) [36].

Knowledge on TT vaccination: pertaining tetanus (TT) immunization, mothers were asked if they have ever been heard about TT vaccine, if they know its importance, priority groups, number of doses required, and its schedule. Each correct answer was given a score of '1', and incorrect answer '0'. Then based on TT score, knowledge on each construct was categorized as "know" for respondents who correctly answer and don't know for respondents who didn't answer correctly and used in the analysis .But for the purpose of urban rural comparison, score of each construct was summed to obtain TT immunization awareness score and used to compare TT immunization awareness mean score between urban and rural mothers [23, 40].

Knowledge on tetanus: Regarding tetanus mothers were asked if they know the causes, risk behaviours (factors), symptoms and ways of prevention. Then, each correct answer were given a score of '1', and incorrect answer '0' and then after knowledge score for each construct were computed ,categorized as "know" to each construct for which respondents scored at least one otherwise as "don't know" and used for analysis [40].

TT utilization coverage using PAB method: percentage of infants who were protected at birth by card only and by card plus history. An infant was considered fully protected if any of the following criteria are met:

- The mother had two tetanus toxoid injections during the index pregnancy;
- The mother had two lifetime injections, with the last injection received within three years of the last birth;
- The mother had three lifetime injections, with the last injection received within five years of the last birth;
- The mother had four lifetime injections, with the last injection received within 10 years of the last birth; or
- The mother had at least five lifetime injections [17, 48-9].

TT utilization coverage using TT_2+ method: Percentage of women who have received their second or higher dose of TT during the index pregnancy by card only and by card plus history [48].

Immunization card retention: Percentage of women with card at the time of data collection [48].

Dropout rate: percentage difference in coverage between TT_1 & TT_2+(card or card and history)[18,48].

Missed opportunities: percentage difference in antenatal clinic (ANC) attendance and TT_1 coverage [18, 48]

Index/last/ pregnancy: pregnancy that led to the child aged 0-11 months during survey [18, 48].

Valid doses: Doses recorded in TT vaccination cards, administered with proper spacing according to the national schedule. Four weeks , six months, one year , and one year interval between TT_1 & TT_2 , TT_2 & TT_3 , TT_3 & TT_4, and TT_4 & TT_5 respectively [18,48].

Invalid dose administration/adherence to schedule/: A dose is considered invalid when it does not meet the immunization schedule criteria (dose given before a minimum age or after a too short interval). A vaccine dose administered after an invalid dose is considered as in valid, even when the interval had been respected [18, 48].

'Gibri': local measurement of agricultural land

Media exposure: listening to radio and/or TV at least once a week will be considered as frequently exposed to media otherwise as infrequently exposed [21, 36].

Pregnancy/fertility plan: is whether the birth or pregnancy was wanted then (planned), wanted later (mistimed), or not wanted at all (unplanned) at the time of conception [24].

Literacy: ability to read and write [23, 24].

4.6.6. Data processing and analysis

The collected data were coded, entered into a databasen and cleaned for any inconsistencies and missing values using SPPSS version 16 (SPSS Inc...2007). Descriptive analyses such as (frequencies, means, proportions, standard deviations and graphs) were calculated to describe some variables. Means of some selected characteristics such as respondents' mean score of knowledge on tetanus, TT immunization mean score and others as well as proportions for some selected characteristics such as TT utilization coverage were compared between the groups of the study using independent t test and x^2 test, respectively. Thus, univariate analyses such as x^2, T-test and logistic regression were used to compare and describe the association between independent and dependent variables. $P<0.05$ was considered as cut off point for significant association as well as for significant difference.

Multivariate logistic regression analysis was carried out to determine predictors of TT vaccination utilization status by controlling the effect of confounders. Those who used at least two TT doses (fully vaccinated) were coded as 1 and those who utilized only one TT dose (partially vaccinated) or totally unvaccinated were coded as 0 and thereafter stepwise backward logistic regression was fitted by entering all variables at one step and removed according to the tolerance statistic. And among those used the vaccine, to evaluate their status of protection against tetanus at birth, those who received at least two doses and protected at birth were coded as 1 otherwise as 0 and thereafter, to assess the predictor variables stepwise backward logistic regressions were used in a similar way mentioned above. Finally, variables remained in the model were reported as predictors.

To evaluate the strength of association, odds ratios with their 95% confidence intervals (CI) were calculated and results were reported.

Data from in-depth interview and FGD of participants were transcribed into the local language word by word and then translated in to English .Then data were summarized in narrative forms in congruent with the respondents' own words and analysed by thematic framework analysis. Finally, results of the qualitative part are presented integrated with the quantitative results.

4.7. Ethical considerations

Prior to data collection, ethical clearance was obtained from the ethical clearance committee of the College of Public health and Medical Sciences of Jimma University and formal letter of permission was produced from Gulemekeda Woreda health office administrative bodies of to the respective kebeles selected for study and for pretesting the data collection tool. Thereafter, detailed

explanations were given on the purpose of the study including the benefit of the study and the potential harm of being participant of the study. Finally, respondents were requested for their verbal consent to participate in the study after informing their participation is entirely based on their willingness to do so. Moreover, confidentiality was assured for the information provided by using coding system rather than stating the name of study participants was applied. And all randomly selected study subjects were willing to participate in the study.

4.8. Data quality control

To ensure the quality of data, a range of mechanisms were employed to address major areas of bias introduction during the data collection process. First, the questionnaire was pre- tested by taking 5 percent of the sample size on similar but different setting and necessary modification in the questionnaire was made based on the nature of gaps identified. A three days training were given for data collectors and supervisors on how to gather the appropriate information, procedures of data collection techniques and the whole contents of the questionnaire. A day to day on site supervision was given out during the whole period of data collection by three supervisors. At the end of each day, the questionnaire was checked for completeness, and consistency by the supervisors and investigator and corrective measure were taken after brief discussion with all the data collectors and the supervisors.

4.9. Dissemination plan

The findings will be presented to the Jimma University scientific community and the findings will also be communicated to local health planners and other relevant stake holders at zonal and Woreda level in the area to enable them take recommendations in to consideration during their planning process. It can also be communicated to health planners and managers at regional level. Publication in peer reviewed, national or international journals will also be considered

Chapter.5 Results

Socio-demographic characteristics of respondents

From the total 264 sampled WCBA (132 from urban and 132 from rural) who were mothers of 0-11 month old children, all of them were included in the study with a response rate of 100 percent.

The mean age of respondents was 29.28 ±5.65 years. Most respondents 155(58.7%) belonged to 25-34 years of age. Mean parity was found to be 3.280±0.150(3.614 + 1.983 for rural versus 2.947 ± 1.540 for urban,t=3.05,p=0.003). Majority of the respondents 255 (96.6%) were orthodox in religion.

Of the 264 respondents 103(39%) of them were illiterate; with 60(45.5%) in rural and 43(32.6%) in urban by residence. Out of the literates 106(40.2%) were attained primary school .Of which 48(36.4%) were from rural and 58(44%) were from urban. Similarly, 28(10.6%) of the study subjects were attained secondary school or above. Of them 9 (6.8%) were from rural and 19(14.4%) were from urban. The rest were only read and write. Pertaining the partners education 21(15.9%) for rural & 12(9.1%) for urban had no formal education, 67(50.8%) for rural &57(43.2%) for urban had primary education, the rest 44(33.3%) for rural& 63(47.7%) for urban had secondary or higher education**.**

Majority of the study subjects, 230 (87.1%) were married. Of the rest 20(7.6%), 5(1.9%), 9(3.4%) were divorced, widowed, and single respectively. By occupation more than half of the study subjects 171(64.8%) were house wives. Of them 97(73.5%) were rural and 74(56.1%) were urban by residence (See table 1.).

88(66.7%) rural and 44(33.3%) urban mothers had less than two hundred birr average monthly family income, 25(18.9%) rural and 39(29.5%) urban had two hundred up to five hundred birr average monthly family income .Moreover, 16(12.1%) rural and 43(32.6%) urban mothers had five hundred up to one thousand birr.The rest 3(2.3%) rural & 6(4.5%) reported greater than one thousand birr. 64(48.5%) rural and 68(51.5%) urban had radio in their households whereas the rest 74(56.1%) rural and 58(43.9%) urban hadn't.Aside to this, only 4(3%) rural and 48(36.4%) urban mothers had TV in their households. 90(68.2%) rural and 56(42.4%) urban mothers hadn't frequent exposure to media whereas 42(31.8%) rural and 76(57.6%) urban had.

The respondents households were found at a mean distance of 1.620 ± 1.407 from the nearest EPI centre (2.231 ± 1.705 for rural and for urban 1.009± 0.556, t=7.825, p=0.000).

Table 1.Selected socio-demographic characteristics of respondents (N=264) in Gulemekeda Woreda, Tigray Region, North Ethiopia, March-April 2011

Characteristics	Response	Rural	Urban	Total
		No (%)	No (%)	
Age	<20	4(3.00)	9(6.80)	13(4.90)
	20-24	18(13.60)	20(15.20)	38(14.40)
	25-29	39(29.50)	44(33.30)	83(31.40)
	30-34	37(28.00)	35(26.50)	72(27.30)
	35-39	28(21.20)	20(15.20)	48(18.20)
	40-44	5(3.80)	4(3.00)	9(3.40)
	45 & above	1(0.80)	0(0.00)	1(0.40)
Educational status	Illiterate	60(45.50)	43(32.60)	103(39.00)
	Literate	72(55.50)	89(67.40)	161(61.00)
Occupation	Farmer	14(10.60)	1(.80)	15(5.70)
	Daily labourer	2(1.50)	2(1.50)	4(1.50)
	Merchant	9(6.80)	12(9.10)	21(8.00)
	Employed	6(4.50)	13(9.80)	19(7.20)
	House wife	97(73.50)	74(56.10)	171(64.80)
	Unemployed	3(2.30)	28(21.20)	31(11.70)
	Student	1(0.80)	2(1.50)	3(1.10)
Marital status	Married	116(87.90)	114(86.40)	230(87.10)
	Single	3(2.30)	6(4.50)	9(3.40)
	Divorced	12(9.10)	8(6.10)	20(7.60)
	Widowed	1(0.80)	4(3.00)	5(1.90)

Service utilization of women in the child bearing age during the index pregnancy

Out of the total 264 mothers, 204(77.3%) of them had health facility visits while they were pregnant for the index pregnancy for antenatal care .Of which 150(58.6%) had attended ANC four times and above; 54.7% from rural and 45.3% from urban. Urban mothers had significantly higher ANC visits compared to rural mothers (3.04 ± 1.93 versus 3.61 ± 2.31, $t=3.05$, $p = 0.003$). Majourity, 131 (49.6%) of mothers made their first ANC attendance for their index pregnancy in the third trimester.Aside to this 86(32.6%) had at least one other visit to health facility. But only 97(36.7%)

were told about TT vaccination by health staff during any of their visits to health facility including visits for ANC. Besides to this, out of the 98(37.1%) mothers, 47(35.6%) in rural and 51(38.6%) ln urban who were visited by health extension works at their home while they were pregnant for the index pregnancy, 83(31.4%) of them were told about TT vaccination. Of those who were told about TT by HEWs 37(28%) were rural whereas 46(34.8%) were urban by residence. This indicated that there was a significant opportunities to aware mothers about TT vaccination but not utilized.This study also showed that out of the total 264 mothers only 98(37.1%) where attended by skilled attendants during the delivery of the index child.Majourity of the respondents 159(60.2%) delivered at their home not attended by skilled attendants. Of them 91(42.8%) were urban, 68(57.2%) were rural by residence. The great majority of mothers 110(41.7%); 65(49.2%) in rural and 45(34.1%) in urban, who delivered at home were attended by their relatives. Only 31(11.7%) were attended by HEWs (See table 2.)

Table 2. Information related to service utilization of women in the child bearing age during the index pregnancy, in Gulemekeda woreda, North Ethiopia, from March-April 2011

Type of service & response categories		Residence		Total
		Rural No (%)	Urban No (%)	
Number ANC visit	Four or above	68(51.50)	82(62.10)	150(56.80)
	Three times	24(18.20)	15(11.40)	39(14.80)
	Twice	7(5.30)	2(1.50)	9(3.40)
	Once	4(3.00)	2(1.50)	6(2.30)
	No visit	29(22.00)	31(23.50)	60(22.70)
Time of first ANC visit	Third trimester	2(1.50)	1(0.80)	3(1.10)
	Second trimester	72(54.50)	59(44.70)	131(49.60)
	First trimester	29(22.00)	41(31.10)	70(26.50)
Delivery attendant	Relative	65(49.20)	45(34.10)	110(41.70)
	TTBA	13(9.80)	18(13.60)	31(11.70)
	HEWs	9(6.80)	1(0.80)	10(3.80)
	Skilled attendants	45(34.10)	68(51.50)	113(42.80)
Delivery place	Health post	5(3.80)	2(1.50)	7(2.70)
	Gov't Hospital/HC	36(27.30)	62(47.00)	98(37.10)
	Home	91(68.90)	68(51.50)	159(60.20)

Knowledge of Respondents on Tetanus

Out of the total respondents 236(89.4%) have been already heard about tetanus .This left 28(11.6%); 18(13.6%) in urban and 10(7.6%) in rural, unaware of the disease under study. Pertaining source of information, 217(82.2%) of the respondents heard from public health institutions, 79(29.9%) from school, 23(8.7%) from media and 8(3%) from HEWs. Out of those who have been heard about tetanus only 36(13.6%) knew the ethiology of tetanus.

Of the total respondents only 39(29.6%) of rural women and 26(17.7%) of urban women knew at least one risk factor for maternal and neonatal tetanus (MNT).Similarly, of the 69(26.1%) of respondents who knew at least one sign and symptom of tetanus 42(31.8%) were rural and 27(20.5%) were urban women. 89(67.4%) of rural mothers and urban mothers knew that tetanus can be prevented. But, 76(57.6%) of the rural respondents and 81(61.4%) of the urban respondents knew at least one method of prevention; namely, TT vaccination (See table 3.).

Table 3.Knowledge of respondents on tetanus (N=264) in Gulemekeda Woreda, Tigray Region, North Ethiopia, March-April 2011

Variable	Response	Residence		Total
		Rural No (%)	Urban No (%)	
Have ever heard about tetanus	Yes	122(92.40)	114(86.40)	236(89.40)
	No	10(7.60)	18(13.60)	28(10.60)
Know ethiology of tetanus	Yes	14(10.60)	15(11.40)	29(11.00)
	No	118(89.40)	117(88.60)	235(89.00)
Know at least one risk factors	Yes	39(29.50)	26(19.70)	65 (24.60)
	No	93(70.50)	106(80.30)	199(75.40)
Know at least one sign and symptom of tetanus	Yes	42(31.80)	27(20.50)	69(26.10)
	No	90(68.20)	105(79.50)	195(73.90)
Know that tetanus is preventable	Yes	89(67.40)	89(67.40)	178(67.40)
	No	43(32.60)	43(32.60)	86(32.60)
Know at least one method of tetanus prevention	Yes	76(57.60)	81(61.40)	157(59.50)
	No	56(42.40)	51(38.60)	107(40.50)

Knowledge of Respondents on Tetanus Toxoid Vaccination

Out of the total 264 respondents 247(93.6%) of them have ever been heard about TT vaccination. And their source of information were public health institutions, school, media and HEWs for 89%, 29.2%, 9.8%, and 4.2% respectively.

Out of the total respondents 238(90.2%) knew that TT vaccination is important for WCBA during pregnancy but only 125(47.3%) knew that TT vaccination can prevent the newborn from NNT. Similarly, only 72 (27.3%) knew that it can prevent the mother from maternal tetanus (MT).

Only 8(3%) of the respondents knew the least number of TT injections a pregnant mother required for full protection at birth against tetanus whereas 74(28%) knew the number of TT injections required for full protection.More surprisingly, though 207(78.4%) of the respondents knew that completing TT vaccination according to the schedule is important, only 31(11.7%) knew the correct schedule (See table 4.).

This was supported by the following qualitative data: *A young single FGD discussant said: "I was not happy because I did not understand why I took the vaccine. I was only forced to take it." Another rural women FGD discussant said: "I took two TT injections at school. It was a must to take the vaccine. The Kebele and the health workers forced me to take the vaccine. They make TT vaccine obligatory. It was the Kebele and the health worker; I did not take the vaccine voluntarily."* Generally, TT immunization mean score was found significantly higher among urban mothers than rural mothers (3.36± 1.76 versus 2.89±1.55, t=-2.30, p=0.022)

Table 4.Knowledge of Respondents on Tetanus Toxoid Vaccination (N=264) in Gulemekeda Woreda, Tigray Region, North Ethiopia, March-April 2011

Variables	Response	Residence		Total
		Rural No (%)	Urban No (%)	
Ever been heard about TT vaccination	Yes	125(94.70)	122(92.40)	247(93.60)
	No	7(5.30)	10(7.60)	17(6.40)
Know TT use	Yes	57(43.20)	60(45.50)	117(44.30)
	No	75(56.80)	72(54.50)	147(55.70)
Know number of TT doses required for life time protection	Yes	28(21.20)	46(34.80)	74(28.00)
	No	104(78.80)	86(65.20)	117(44.30)
Know schedule for TT vaccine	Yes	20(15.20)	11(8.30)	31(11.70)
	No	112(84.80)	121(91.70)	23(88.30)
Know the least TT doses a pregnant woman required for full protection against tetanus at birth	Yes	4(3.00)	4(3.00)	8(3.00)
	No	128(97.00)	128(97.00)	256(97.00)

Sources of information

Out of the total 236(89.4%) mothers who have been heard about tetanus 217 (82.2%) heard from public health facilities, 23(8.7%) heard from media, 79 (29.9%) heard from school, and 8(3%) heard from HEWs about tetanus. Mothers were also asked their source of information about TT vaccination and 235(89%) cited public health facilities, 26(9.8%) cited media, 77 (29.2%) cited school, 11(4.2%) cited HEWs (See table 5.).

Table 5.Respondents' Sources of Information on Tetanus and Tetanus Toxoid Vaccination (N=264) in Gulemekeda Woreda, Tigray Region, North Ethiopia, March-April 2011

Source of information	For tetanus		For TT vaccination	
	Number	Percent	Number	Percent
Public health facilities	217	82.20	235	89.00
Schools	79	29.90	77	29.20
Media	23	8.7 0	26	9.80
HEWs	8	3.0 0	11	4.20

Note: The totals are more than 100% because of multiple responses

Utilization Status of Tetanus Toxoid Vaccination among Child Bearing Women during their Index Pregnancy

Tetanus toxoid immunization with two doses of TT vaccine provides protection of newborns against tetanus for three years. The protection is considered as being effective two weeks after the second injection, for a period of three years. A mother protected against tetanus will pass her immunity on to her newborn child for the first two or three months, who will be considered protected as long as the delivery takes place two or more weeks after the second injection.

If two doses were received in the last pregnancy, it was considered as TT_2.However, if any doses had been received previously; only one dose received in the last pregnancy were included, as the second dose will have been invalid.

From the survey it was found that the utilization coverage of TT_1+,TT_2+,TT_3+,TT_4+, and TT_5 assessed by card plus history were 85.2%,81.4%,69.7%,53%,and 43.9% respectively. For TT vaccination received during the index pregnancy, the source was health centre for 99.1% of the respondents the rest 0.9% was school. This indicated the contribution of outreach immunization was

nil.The card retention rate for TT vaccination received during the index pregnancy was found to be 65.1% whereas 23.5% misplaced their TT cards and 11.4% were not given TT card at all.

Among the surveyed study subjects 215(81.4%) were fully vaccinated, 10(3.8%), were partially vaccinated and 39(14.8%) were not vaccinated at all. Of those who were fully vaccinated (women who received at least two doses of TT vaccine), 101 (76.5%) were rural and 114(86.4%) were urban by residence.

It was also found that the utilization coverage of TT_3+ to be 88(66.7%) in rural mothers and 96 (72.7%) in urban mothers. Similarly TT_4+ utilization coverage was found to be 70(53%) in both rural and urban mothers. Aside to this, the TT_5 utilization coverage was found to be 59(44.7%) in rural mothers and 57(43.2%) in urban mothers. This indicated that eventhough taking all the five doses is required for life time protection against tetanus but this study has showed that the complete utilization of TT (receiving all five doses of TT/ TT_5) to be very low in both urban and rural women.

Since TT_2+ coverage found to be 215(81.4%) during the index pregnancy of the mothers included in the study, it is expected that 215(81.4%) of the respondents to be protected against tetanus at birth .However, this survey showed that only 188(71.2%) were protected against tetanus at birth. This left 76(28.8%) women and their newborns unprotected against tetanus at birth.

Table 6.Tetanus Toxoid Vaccination Status of WCBA by Residence (assessed by card plus history), in Gulemekeda Woreda, North Ethiopia, March-April 2011

TT vaccination status	Rural		Urban		Total	
	Number	Percent	Number	Percent	Number	Percent
TT_0(Not vaccinated at all)	25	18.90	14	10.60	39	14.80
TT_1+	107	80.90	118	89.30	225	85.20
TT_2+(Fully vaccinated)	101	76.40	114	86.30	215	81.40
TT_3+	88	66.60	96	72.70	184	69.70
TT_4+	70	53.00	70	53.00	140	53.00
TT_5	59	44.70	57	43.20	116	43.90

Among those who were found to be totally unvaccinated 25(18.9%) were rural and 14(10.6%) were urban. The proportion of totally unvaccinated rural mothers was almost twice that of the urban

mothers. The difference was not statistically significant. Similarly, 6(4.55%) of rural mothers were partially vaccinated compared to 4(3.03%) urban partially vaccinated mothers. This difference was also found to be insignificant statistically.

Among the 215 fully vaccinated mothers, 101(76.4%) were rural and 114(86.3%) were urban by residence. This indicated that the proportion of being fully TT vaccinated was almost 10% higher among urban mothers when compared to rural mothers. This difference were found to be statistically significant (P<0.05).

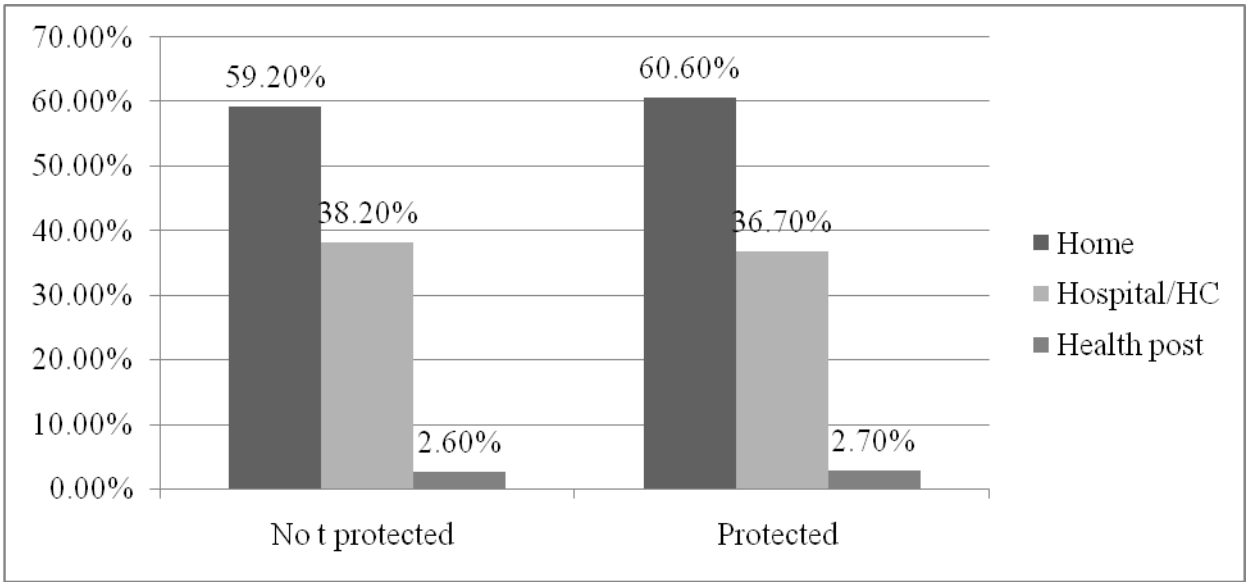
Table 7.Comparison of TT vaccination status by residence among WCBA during their index pregnancy in Gulemekeda Woreda, Tigray region, North Ethiopia, March-April 2011

Vaccination status	Rural	Urban	X^2	P value
	Number(percent)	Number(percent)		
Not vaccinated at all	25(18.90)	14(10.60)	3.009	0.830
Partially vaccinated	6(4.55)	4(3.03)	3.009	0.830
Fully vaccinated	101(76.40)	114(86.30)	4.235	0.040

Protection at birth of the index pregnancy

A child was considered protected at birth against tetanus by card if the mother had received documented tetanus-toxoid vaccine doses recorded and/or by history whether mother of infants has been immunized with sufficient recent doses of TT reported by history, indicating that her child was protected against neonatal tetanus at birth if the child was born within a time where the up-to-date TT status of the mother confers immunity.

Out of the total respondents 188(71.2%) were protected against tetanus at birth of their index pregnancy. This showed that 45(59.2%) of the mothers who were unprotected against tetanus were delivered at home and they were at high risk for tetanus. This accounts for 17% of the total respondents. Thus, risks of tetanus were worsened by the unhygienic delivery practice.



Protection against tetanus at birth(PAB)

Figure 4. PAB versus place of delivery of the index pregnancy among WCBA, Gulemekeda Woreda, North Ethiopia, 2011

TT vaccination service programme continuity

Taking the first dose of TT, majority 225(85.2%) of the respondents were accessed to TT immunization service .However, a significant number of respondents had been failed to be fully vaccinated and protected at birth against tetanus. The dropout rate (DOR) from TT_1 to TT_2 was 4.7% where as from TT_2 to TT_3 the dropout rate was found to be 14.4%.This indicated a problem with completion of the immunization schedule.

Invalid doses that did not meet immunization schedule criteria (i.e. dose given before a minimum age or after a too-short interval) were noted during the survey. 47(35.6%) of rural mothers and 38(28.8%) of urban mothers were received at least one invalid dose. This indicated that adherence to the national TT immunization schedule is very low.

Percent of mothers received invalid doses

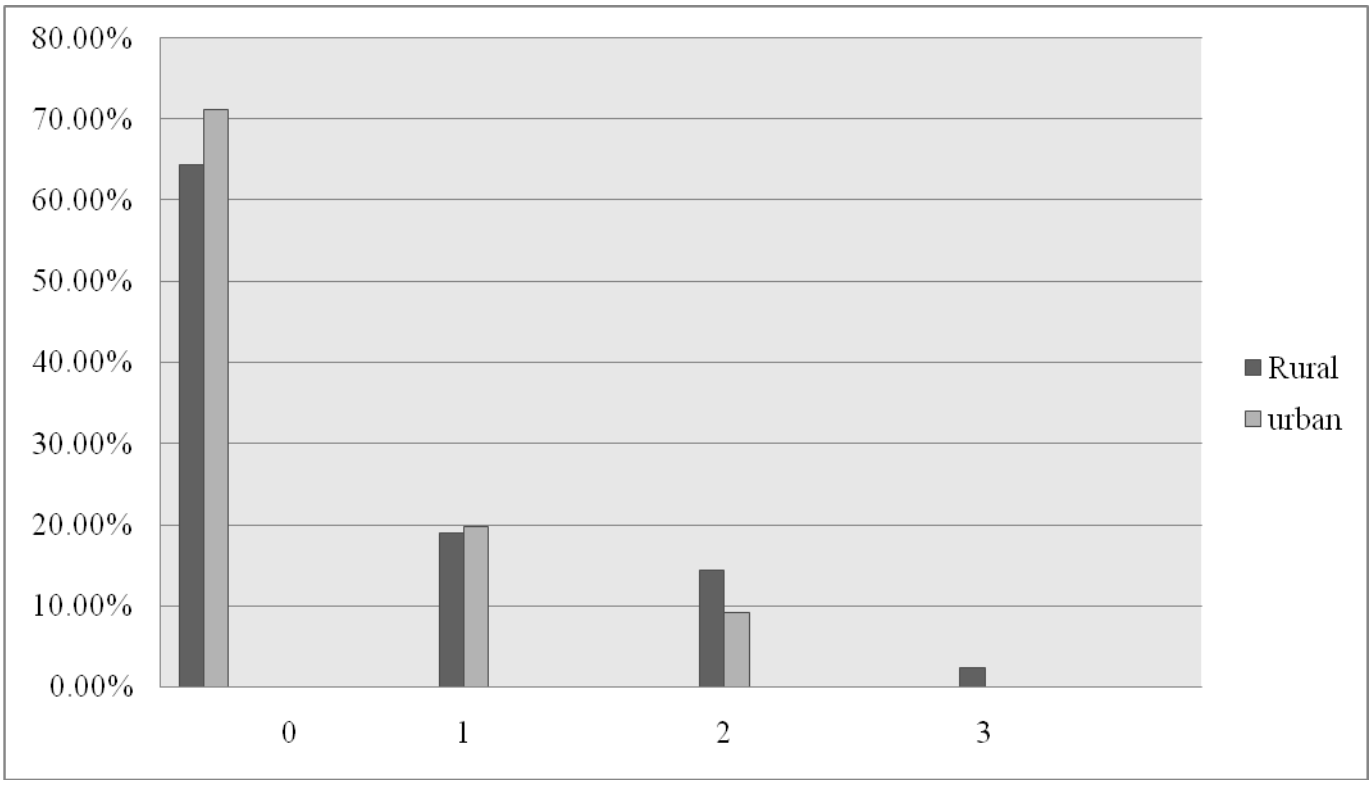
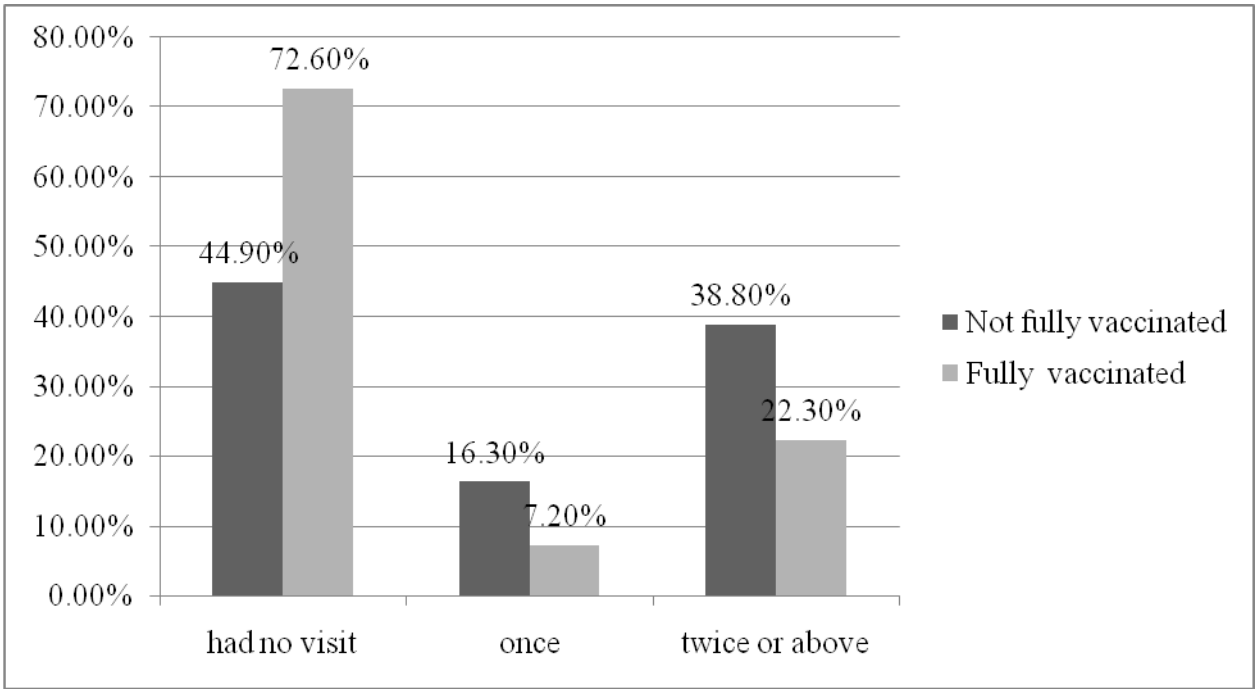


Figure 5.Invalid TT doses administered among WCBA during their index pregnancy, Gulemekeda Woreda, North Ethiopia, 2011.

Missed opportunities

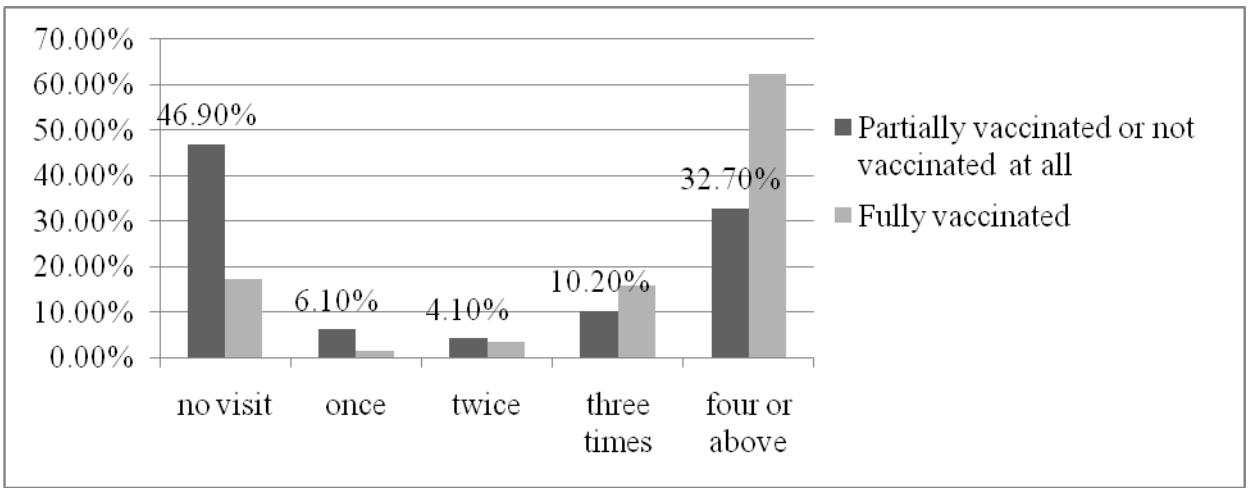
Of those who were not totally vaccinated with TT and/or partially vaccinated with TT 8(16.3%) had a single visit to a health facility, 19 (38.80%) had two or more times visits to a health facility during their index pregnancy. However those opportunities for TT vaccination were missed. If these opportunities had been utilized, the TT utilization rate would have been increased by 10.23%.



Health facility visits other than visits for ANC

Figure 6. Number of facility visits other than ANC versus TT vaccination status of WCBA during their index pregnancy, Gulemekeda Woreda, North Ethiopia, 2011

Of those who were not totally vaccinated with TT and/or partially vaccinated with TT 23(47%) had at least two ANC visits, during their index pregnancy. However those opportunities for TT vaccination were missed. If these opportunities had been utilized, the utilization coverage of TT would have been increased by 8.7%.



Number of ANC Visits

Figure 7. TT vaccination status versus number of ANC visits for the index pregnancy, Gulemekeda Woreda, North Ethiopia, 2011

Reasons for vaccination failure for target women

To address for the potential reasons this study has also tried to collect data from mothers who were found to be partially vaccinated or not be vaccinated at all during the survey asking about reasons for non-vaccination. Results indicated that out of the 49 women who were partially or totally unvaccinated, most (25) women failed to get TT doses due to lack of awareness of the need of vaccine followed by unaware of the need of the second or higher doses of TT (9).Besides to this some mothers also reported that worker failed to inform mothers (3), too far place of immunization(2), fear of injection(3), mother were too busy to seek service(4), the rest (3)were unaware when to take TT immunization.

This was supported by qualitative data as follows:*In rural site women FGD discussants said that it was a must for every woman in reproductive age to take the vaccine: "If we refused the vaccine we will be fined. As a result we received the TT vaccine…. Since it was a government order, our husbands did not prevent us from receiving the vaccine."*

One health provider said... "There are women who refused to take TT immunization because they fear the injection, especially students at school and the contracting of HIV/AIDS." Another health care provider who were EPI coordinator said ..."I think the main barrier for women for not taking TT immunization is because they don't know the benefit of TT vaccine"

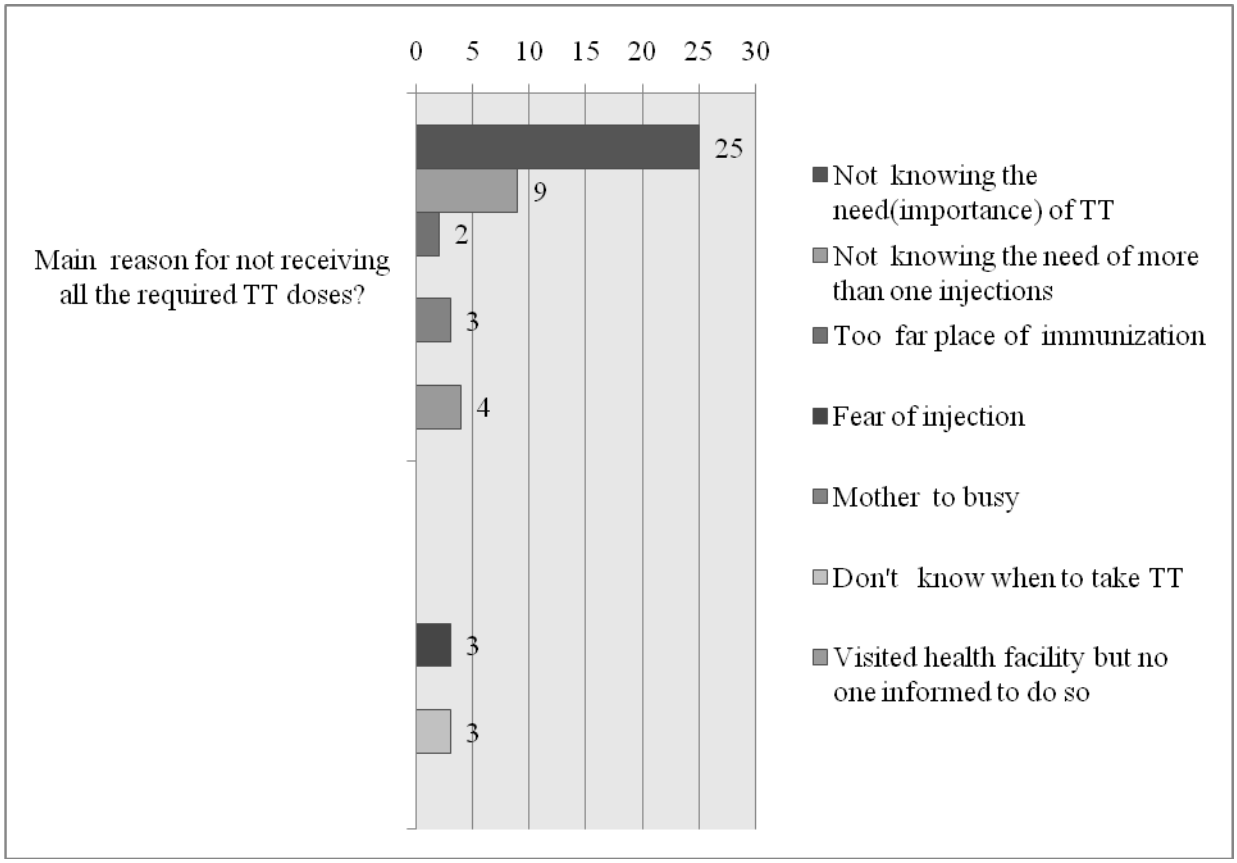


Figure 8. Reasons for not being fully TT vaccinated among WCBA during their index pregnancy, Gulemekeda Woreda, North Ethiopia, 2011

Independent predictors TT vaccination status

Predictors of TT vaccination status among all study mothers

Logistic regression analysis was done to identify independent predictors of TT_2+ coverage (being fully TT vaccinated) among all mothers (both urban and rural) together; residence has lost its significance whereas variables such as maternal educational status have maintained their significance. Illiterate respondents were 0.326 times less likely to be fully vaccinated with TT than literate respondents (AOR=0.326, 95%CI.0.14, 0.78).

Women who had toilet facility were found more likely to be fully TT vaccinated compared to their counter parts (AOR= 5.499 ,95%CI.1.68, 7.99).Similarly, respondents having no frequent mass media exposure (regularly watching TV and/or listening to radio) were less likely to be fully vaccinated than mothers who had exposure (AOR=0.163,95%CI.0.05, 0.55).

Women whose houses were a health facility nearby (within 1 km) were more likely to be fully vaccinated than those whose houses was found at a distance of 1 Km or greater than 1 km from the nearest static immunization centre (AOR= 8.593, 95% CI.2.58, 28.62).Women who didn't know the benefit of TT were also found less likely to be fully vaccinated than who knew (AOR=0.335, 95% CI.0.13, 0.90).

Respondents who were not visited at their home once or more and who were told about TT vaccination while they were pregnant for the index pregnancy were less likely fully vaccinated than mothers who were visited by HEWs at all (AOR=0.254,95% CI.0.09, 0.76).

Similarly, mothers who had no ANC during the index pregnancy were significantly less likely to be fully vaccinated than those who had three times or more (AOR=0.331, 95% CI.0.14, 0.79). Besides to this mothers whose index pregnancy were planned were almost three times more likely to be fully vaccinated with TT than those whose index pregnancy were unplanned (AOR=2.926, 95% CI: 1.177-7.272)(see table 8).

Table 8.Logistic regression analysis of full TT vaccination status predictors among all child bearing women during their index pregnancy, Gulemekeda Woreda, Tigray region, North Ethiopia, March-April 2011

Variables & responses	TT Vaccination status		COR(95%CI)	AOR(95%CI)
	Not fully vaccinated	Fully vaccinated		
Education				
Literate(Ref)	20	141	1	1
Illiterate(1)	29	74	0.362(0.192,0.683)***	0.326(0.14,0.78)***
Distance				
>Or=1Km(ref)	42	136	1	1
<1Km(1)	7	79	3.485(1.494,8.129)***	8.593(2.58,28.62)***
Media exposure				
Exposed(ref)	6	112	1	1
Not exposed(1)	43	103	0.128(0.052,0.314)***	0.163(0.05, 0.55)***
Type of toilet				
No(ref)	14	21	1	1
Pit latrine(1)	25	164	4.373(1.972,9.699)***	5.499(1.68, 7.99)***
VIP(2)	9	30	2.222(.813, 6.077)	0.321(0.07, 1.43)
Know TT use				
Yes(ref)	12	105	1	1
No(1)	37	110	0.340(0.168,0.687)***	0.335(0.13, 0.90)***
Pregnancy plan				
Unplanned(ref)	25	58	1	1
planned(1)	24	157	2.820(1.493,5.326)***	2.926(1.18, 7.27)***
ANC visits				
Three/more(ref)	21	168	1	1
None(1)	23	37	0.201(0.101,0.401)***	0.331(0.14, 0.79)***
Once/twice(2)	5	10	0.250(0.078,0.802)***	0.460(0.11, 1.88)
HEWs home visits				
Twice/more(ref)	7	66	1	1
No (1)	38	128	0.357(0.151,0.844)***	0.254(0.09, 0.76)***
Once (2)	4	21	0.557(0.148, 2.091)	0.452(0 .09, 2.27)

N.B *** statistically significant

Predictors of TT vaccination status among rural mothers

Multiple logistic regression was also fitted to rural respondents to identify the predictors of being fully vaccinated with TT during their index pregnancy and illiterate women were significantly less

likely to be fully vaccinated than their rural counterparts (AOR=0.181,95% CI.0.081,0.950). Similarly women whose house roof constructed from corrugated iron sheet were also found seven times more likely to be fully vaccinated with TT compared to those whose houses were thatched (AOR=7.157, 95% CI.0.028, 25.262).Though it was not a significant predictor, it was also found that house wives were 3.331 times more likely to be fully vaccinated compared to all others (AOR=3.331, 95% CI 0.908, 12.214).

Women who were not visited at all at their home by HEWs while they were pregnant for their index pregnancy were 0.131 times less likely to be fully vaccinated than their counter parts (AOR=0.131, 95% CI.0.029, 0.585).Similarly, women who had no ANC for their index pregnancy were 0.220 times less likely to be fully vaccinated when compared to those who had at least three visits (AOR=0.220, 95% CI. 0.059, 0.818).

Table 9.Logistic regression analysis of full TT vaccination status predictors among rural child bearing women during their index pregnancy, Gulemekeda Woreda, Tigray region, North Ethiopia, March-April 2011

Variables	Vaccination status		COR(95%CI)	AOR(95%CI)
	Not fully vaccinated	Fully vaccinated		
Occupation				
All other(ref)	13	22	1	1
House wife(1)	18	79	2.593(1.102,6.102)***	3.331(0.908, 12.214)
House construction				
Thatched(ref)	25	39	1	1
Corrugated iron (1)	6	6 2	6.624(2.494,17.595)***	7.157(2.028,25.262)***
Media exposure				
Exposed (Ref)	1	41	1	1
Not exposed(1)	30	60	0.049(0.006,0.372)***	0.187(0.021,1.649)
HEWs home visits				
Once or more(Ref)	22	44	1	1
None	28	57	0 .139(0.040,0.486)***	0.131(0.029, 0.585)***
ANC visits				
Three or more(ref)	14	78	1	1
None	13	16	0.221(0.087,0.558)***	0.220(0.059, 0.818)***
Once or twice	4	7	0.314(0.081,1.216)	0.291(0.046, 1.846)
Maternal education				
Literate(ref)	8	64	1	1
Illiterate	23	37	0.201(0.082,0.495)***	0.181(0.081, 0.950)***

N.B *** statistically significant

Predictors of TT vaccination status among urban mothers

Urban women who were not frequently exposed to mass media were 0.264 times less likely to be fully vaccinated during their index pregnancy compared to those who were frequently exposed to mass media (AOR=0.264,95% CI.0.074,0.943). Similarly, the probability of being fully vaccinated with TT during the index pregnancy was also found to be increased with an increase in the TT vaccination perception score of respondents (AOR=1.134, 95% CI.1.054, 1.219).

Telephone ownership status of urban mothers was also observed to be a predictor of urban mothers' TT vaccination status. That is urban mothers who had telephone service were 6.33 times more likely to be fully vaccinated during their index pregnancy compared than to those who hadn't such a service (AOR= 6.330,95% CI.1.146,34.964). Even though distance of the mothers' houses from the nearest static immunization centre was not significant, it remained in the final model and it showed 4.091 greater likely hood of being fully vaccinated among women whose houses were within 1 Km distance compared to those whose houses were greater than 1 Km from the nearest immunization centre (AOR=4.091, 95% CI. 0.754, 22.179) (See table 10).

Table 10.Logistic regression analysis of full TT vaccination status predictors among urban child bearing women during their index pregnancy, Gulemekeda Woreda, Tigray region, North Ethiopia, March-April 2011

Variables	TT Vaccination status		COR(95%CI)	AOR(95%CI)
	Not fully vaccinated	Not fully vaccinated		
Media exposure				
Exposed(Ref)	5	71	1	1
Not exposed(1)	13	43	0.233(0.078,0.699)***	0.264(0.074,0.943)***
Have telephone				
No(Ref)	16	72	1	1
Yes(1)	2	42	4.667(1.022,21.304)***	6.330(1.146,34.964)***
TT perception score			1.138(1.068,1.212)***	1.134(1.054, 1.219)***

N.B *** statistically significant

Predictors of protection at birth among urban mothers

Even though the TT_2+ vaccination status of mothers was high, the status of protection against tetanus was low .Thus it was interesting to identify the predictors of protection at birth (PAB) against tetanus and after adjusting for confounding factors exposure to media maintain its significance; that is women who were not frequently exposed to media were 0.098 times less likely to be protected against tetanus at birth. This also suggested that neonates born from infrequently media exposed mother were 10.204 times more risky of tetanus than their counterparts (AOR=0.098, 95% CI.0.031, 0.306).

Aside to media exposure, urban women who didn't know the importance (use of TT) were 0.146 times less likely to be protected against tetanus at birth compared to women who knew the use of TT (AOR=0.146,95% CI.0.045, 0.478).Similarly, women whose houses were at a distance of less than 1Km from the nearest static immunization centre were 3.578 times more likely to be protected at birth against tetanus compared to their counter parts(AOR=3.578,95%CI. 1.070,11.965)(See table 11).

Similarly, the probability of being fully vaccinated with TT during the index pregnancy was also found to be increased with an increase in the TT vaccination perception score of respondents (AOR=1.122, 95%CI.1.055, 1.194) (See table 11.).

Table 11.Logistic regression analysis of predictors for status of protection against tetanus at birth of their index pregnancy among urban mothers, Gulemekeda Woreda, North Ethiopia, March-April 2011

Variables & responses	Status of protection against tetanus at birth		COR(95%CI)	AOR(95%CI)
	Not protected	Protected		
Media exposure				
Exposed(ref)	8	68	1	1
Not exposed(1)	30	26	0.102(0.041,0.251)***	0.098(0.031,0.306)***
Know TT use				
Yes(ref)	5	22	1	1
No(1)	33	72	0.175(0.070,0.437)***	0.146(0.045, 0.478)***
Distance from EPI centre				
> or = 1Km(ref)	31	50	1	1
<1Km(1)	7	44	3.897(1.561,9.728)***	3.578(1.070, 11.965)***
TT perception score			1.111(1.062,1.162)***	1.122(1.055, 1.194)***

N.B *** statistically significant

Predictors of protection at birth among rural mothers

For rural mothers the PAB status were 0.174 times significantly lower among illiterate rural mothers compared to literates (AOR=0.174,95% CI.0.061,0.498). Similarly protection against tetanus at birth of the index pregnancy was 0.124 times significantly lower among rural mothers who hadn't been visited by HEWs at their home during their index pregnancy compared to those who had atleast one visit (AOR=0.124, 95% CI.0.034, 0.452).Rural mothers who didn't work for cash were 0.260 times less likely to be protected against tetanus at birth of their index pregnancy than their counter parts (AOR=0.260, 95% CI.0.073, 0.926). Mothers who didn't Know the benefit of TT were 0.233 times less likely to be protected against tetanus at birth of their index pregnancy than their counterparts (AOR=0.233, 95% CI.0.075, 0.725) (See table 12).

Table 12.Logistic regression analysis of predictors for status of protection against tetanus at birth of their index pregnancy among rural mothers, Gulemekeda Woreda, North Ethiopia, March-April 2011

Variable	Status of Protection against tetanus at birth		COR(95%CI)	AOR (95.0% C.I.)
	Not protected	Protected		
Education				
Literate(ref)	10	62	1	1
Illiterate	28	32	0.184(0.080,0.426)***	0.174(0.061,0.498)***
HEWs home visit				
Once or more(ref)	4	43	1	1
No visit	34	51	0.14(0.046,0.425)***	0.124(0.034,0.452)***
ANC visits				
Three or more(ref)	19	73	1	1
None	15	14	0.243(0.100,0.589)	0.254(0.079,0.814)***
Once or twice	4	7	0.455(0.121,1.719)	0.431(0.090,2.055)
Type of payment				
Paid on cash(ref)	9	8	1	1
Not paid on cash	29	86	0.300(0.106,0.849)***	0.260(0.073,0.926)***
Know TT use				
Yes (ref)	6	51	1	1
No	32	43	0.158(0.060,0.414)***	0.233(0.075,0.725)***

N.B *** statistically significant

Chapter.6 Discussion

All study Kebeles had access to health facilities that deliver TT immunization services. And as a result 85.2% of the respondents had had access to TT immunization service. However, significant proportion of mothers 18.6% were partially vaccinated or not vaccinated at all.

TT_2+ (full TT vaccination) coverage assessed by card plus history was found to be 215(81.4%), where 101 (76.5%) in rural mothers and114 (86.4%) in urban mothers.The urban rural TT_2+ (full TT vaccination) coverage difference was 9.9% and this difference was statistically significant(P=0.040).This finding is almost similar with the findings of the 2006 national EPI coverage survey of Ethiopia which reported urban rural difference to be 9.7% [24].This may be attributed to the lack of awareness of the importance of vaccination among mothers in rural areas in comparison to those in urban areas. However, unlike to study conducted in Tselemti district, Tigray which reported urban rural difference to be 8%, with higher coverage in rural, this study has determined higher TT_2+ (full TT vaccination) coverage in urban mothers compared to rural mothers .This may be due to difference in community mobilization experience which was cited by the same study to be high in rural areas of Tselemti district, Tigray [23].

During the survey, mothers who were found totally unvaccinated or partially vaccinated were asked for main reason of not being fully vaccinated and the most common reason cited by the women was that they were not aware of the importance of TT vaccination (51.02%) and did not know the need for the second or higher doses of TT (18.37%). During the focus group discussions with women and during in-depth interview of key informants almost similar reasons were mentioned as in the household level community survey. This finding was almost similar with the findings of other similar studies [35, 57].

TT utilization coverage in terms of protection at birth was also found to be 188 (71.2%) by card plus history in both urban and rural mothers. For rural this is comparable with findings of a study in Tselemti, Tigray which was 71.4% but for urban it was high compared to the 45% coverage reported by similar study, in Tselemti district, Tigray region [23].The possible explanation for this might be easy access to information, increase in literacy rate as well as introduction of the health extension package [3, 24, 28, 29,35,47,56, 58].

Utilization coverage of TT vaccination in terms of TT_2+(full TT vaccination) coverage and PAB was very low compared to 100% WHO recommendation[2].This indicated that a significant proportion of births were not protected at birth against tetanus and therefore they were at risk of getting tetanus.

TT_3+ coverage was also found to be 88(66.6%) in rural mothers compared to 96(72.7%) in urban mothers. TT_4+ coverage was 70(53%) in both urban and rural mothers.And TT_5 coverage was 59(44.7%) in rural and 57(43.2%) in urban mothers.This indicated that having complete five series of TT injections was very low in both urban and rural mothers.These findings are almost inline with the findings of the 2006 Ethiopian national EPI survey [24].

This study also showed that the dropout rate (DOR) from TT_1 to TT_2 was 4.7% whereas from $TT_1$to TT_2 the dropout rate was found to be 18.19%. This indicated a problem with completion of the immunization schedule. Aside to this, invalid doses were also noted during the survey. That is, 47(35.6%) of rural mothers and 38(28.8%) of urban mothers were received at least one invalid dose. This indicated that adherence to the national TT immunization schedule was very low. These findings are consistent with findings of other study in Bangladesh [32].

WHO recommends reducing missed opportunities for TT vaccination, including at visits mothers make to health facilities to have their children vaccinated or for other purpose. However, this study revealed that missed opportunity for tetanus toxoid immunization was 8.7%.This indicates that leaving the other visits to health facility other than for ANC, 23(47%) of totally unvaccinated or partially vaccinated mothers had at least two ANC visits, during their index pregnancy. However those opportunities for TT vaccination were missed. If these opportunities had been utilized, the utilization coverage of TT would have been increased by 8.7%.This finding is almost similar with the findings of other study conducted in Southern Ethiopia which reported 11.6% [59].

As not being up to dated with TT vaccination and unhygienic delivery are risks for tetanus, this study was also tried to assess the place of delivery for the index pregnancy, and it was found that only 98(37.1%) of births were attended by skilled birth attendants. The rest majority were delivered at home, which increase risk of tetanus. Of those who were not protected at birth 45(59.20%) were not attended by skilled birth attendant. Thus; the risk of tetanus in such births was very high.

Logistic regression analysis was also done to identify predictors for being fully vaccinated for all mothers (urban and rural mothers together). The most important variables that predicted full TT vaccination status were proxy indicators of economic status such as housing condition, type of toilet facility, having access and frequent exposure to mass media (TV and/or radio), maternal education,

knowledge on the importance (benefit) of TT, pregnancy plan, number of ANC visits, HEWs home visit, and proximity to the nearest static immunization centre were independent predictors TT vaccination status.

Of the socio demographic and economic characteristics of the study subjects' proxy indicators of economic status: quality of house(type of house construction),type of toilet facility, access and frequent exposure to mass media (TV and radio) were found to be predictors for full TT vaccination status of mothers. That is, mothers who had toilet facility were found more than five times more likely to be fully vaccinated with TT. Similar studies elsewhere also showed similar finding [26].Similarly mothers' full TT vaccination status were found to be higher among those who had access and frequent exposure to media than those who hadn't access and /or frequent exposure to media. Similar studies elsewhere had similar findings [37-9]. This might be due to access to information which may ultimately results in service seeking.

Besides to the proxy indicators of economic status, educational status of mothers was found to be significant predictor of their TT vaccination status. That is literate mothers were more likely to be fully vaccinated than their counter parts. Similar findings were found by a study conducted in Tselemti district, Tigray [23] and others[21,24,26,37-9].This might be due to having awareness among literate mothers that results in better utilization of preventive health services such as TT vaccination.

Mothers' knowledge on the importance of TT was also found to be predictor for their TT vaccination status. That is, mothers who knew that TT prevents new born from tetanus were almost threee times more likely to be fully vaccinated than their counter parts. Similar studies such as a study conducted in Indonesia showed that knowledge of mothers on TT use to be a predictor of their TT vaccination status [40]. This may be due to increased service seeking among those who know the importance of TT. *This was supported by data obtained from EPI coordinator in-depth interview who said ..."I think the main barrier for women for not taking TT immunization is because they don't know the benefit of TT vaccine" Similarly this was supported by a data from FGDs; for example, A young single FGD discussant said: "I was not happy because I did not understand why I took the vaccine. I was only forced to take it."*

This study has also identified that mothers' utilization status of TT vaccination to be predicted by ANC. Mothers' who had three or more ANC visits were found almost three times more likely to be fully vaccinated than mothers who had no ANC visits. Similarly, many similar studies showed similar findings [36,40].This might be partly explained due to the fact that ANC visits produce opportunities for getting information about TT vaccine which encourages women to take TT vaccine [29,35].

Moreover, mothers with planned index pregnancy were found more likely to be fully TT vaccinated than those whose index pregnancy was unplanned. Similar study in Bangladesh had similar finding [26].This may be due to greater health service seeking among mothers with planned pregnancy.

This study also examined programme related factors if they could independently predicted mothers TT vaccination status and found that proximity to the nearest immunization centre to be an independent predictor. Mothers who lived within 1Km distance from the nearest static immunization centre were almost nine times more likely to be fully vaccinated with TT than those who lived at a distance of more than 1Km. Similar studies conducted in Bangladesh revealed similar finding [38,47].

Aside to distance from the nearest static EPI centre, being visited at home by HEWs was found to be another programme related predictor. Mothers who visited once at their home during their index pregnancy were four times more likely to be fully vaccinated with TT than those who were not visited at all and/or not told about TT. Similar studies in Pakistan and Sudan also reported similar findings [28, 33, and 38].This may be due to health education which might be imparted and motivation for ANC attendance by the health extension workers.

Among rural mothers, literate mothers were more likely to be fully vaccinated than illiterate mothers. Similar findings were found by other studies[21, 23-4, 27, 37-9].This may be due to having information and knowledge in literate mothers.Similarly mothers whose houses were constructed from corrugated iron were more likely to fully vaccinate with TT[26].

Rural mothers who were visited by health extension workers during their index pregnancy were more likely to be fully vaccinated than their counter parts. This study result is consistent with findings of studies in Pakistan & Bangladesh [28, 33, and 38].This might be partly explained by the educational opportunity obtained in those visited by health extension workers which can encourage mothers to use ANC as well as TT vaccination. Similarly; rural mothers who had ANC visits for the index pregnancy were more likely to be fully vaccinated than those who had no ANC attendance. This might be due to the opportunity received by ANC attendants for health education and TT vaccination, one of the ANC components. The findings of this study are similar to the findings of other studies conducted in Indonesia, Pakistan, and Bangladesh [28, 36, 40].

Among urban mothers ,media exposure were found to predict being fully TT vaccinated; that is mothers who had frequent media exposure were more likely to be fully vaccinated than their counterparts. These findings were consistent with the results of [37].This might be partly explained by easy access of information. Aside to this the likely hood of being vaccinated were found to increase

with an increase in perception score of mothers on TT vaccination which is similar with the findings of other studies [30].

Despite 81.4 % of mothers were fully vaccinated with TT vaccination, only 188(71.2%) were protected against tetanus at birth which is very lo w compared to the 100%WHO recommendation. Thus, it was thought worthwhile to know the predictors so that analysis was done and predicting variables were identified.

Literate rural mothers were also more likely to be protected against tetanus at birth than illiterate rural mothers. This is consistent with findings of other studies [21, 23, 26-7, and 37-8].This could be due to having better awareness which probably can lead to service utilization. Similarly, rural mothers who were visited by health extension workers two or more times were more likely to be protected at birth against tetanus than these who were not visited. Similar findings were reported by other studies [38, 47].This might be due to the opportunity they received for ANC and TT vaccination pertaining information. Rural mothers who worked for cash were also found to be more likely to be protected against tetanus at birth against tetanus than those who didn't. This finding is consistent to the findings [26].This may be due to the reason that most women who work for cash are employed and educated.

Knowledge on TT use was found to be a predictor being protected against tetanus at birth for both rural and urban mothers .That is, mothers who knew use of TT were more likely to be protected at birth [40].This was supported by qualitative data from FGD*: a young single FGD discussant said: "I was not happy because I did not understand why I took the vaccine. I was only forced to take it."* Further more, urban mothers who scored higher TT perception score were more likely to be protected against tetanus at birth compared to their counter parts [30].

Among urban mothers, frequent media exposure was also found to be one of the strong predictors of being protected at birth against tetanus in urban mothers. That is; mothers who had frequent exposure to media were more likely to be fully vaccinated than those who hadn't frequent media exposure. This finding is consistent with the findings of similar studies in Bangladesh [37-9].This may be due to better access of information among those who are frequently exposed to media that might result in better health service seeking and utilization.

Strength and limitations of the study

Strengths

Using the PAB method of estimating utilization of TT vaccination

Assessing the place of delivery of the index pregnancy so as to estimate the risk of tetanus among those who were not fully vaccinated

Using study population of women who delivered within the previous one year so as to minimize recall bias

Limitations

As the card retention rate is low, it would have been good if facility document review were done but for different reasons it was not done

As it is expected that the utilization of TT vaccination among non pregnant child bearing mothers is very low, it was necessary to include them but for reasons of limited budget and time this was impossible to realize it.

Chapter.7 Conclusion and Recommendations

7.1. Conclusion

TT_2+(full TT vaccination) and PAB coverage assessed by card plus history were found to be 81.4% and 71.2% respectively.TT_2+ coverage were 9.9% higher in urban mothers compared to rural mothers(P=0.040). Though access to TT immunization was high, there was a substantial drop out rate, missed opportunities, and lack of adherence to TT immunization schedule.

Being fully vaccinated with TT was found to be predicted by ANC, HEWs home visit, mothers' knowledge on the benefit of TT, proximity to static immunization centres, proxy indicators of economic status, pregnancy plan, media exposure and educational status for all mothers. Maternal occupation, education, house construction, HEWs home visit, and antenatal care for rural mothers whereas media exposure and TT perception score for urban mothers were found to be TT_2+ predictors.

Being protected against tetanus at birth were found to be predicted by media exposure,education, HEWs home visit, and type of payment were found to be predictors for rural mothers were as media exposure ,knowledge on TT use, and TT perception score were significant predictors for urban mothers.

Therefore, before women's universal education programme can succeed which will take time, health education could be imparted to mothers to improve the immunization coverage. So, providing health education to mothers, particularly the illiterate mothers and mothers with lower SES, and the adolescent girls who are the future mothers may be a key factor in increasing the TT coverage and sustaining the achievement. As poor and illiterate mothers usually have restricted access to mass media, efforts should also be made to educate these mothers through interpersonal communication by health care providers at the community level. Furthermore, each contact with any health facility for any illness should be utilized, based on the missed opportunity concept, to educate mothers and immunize them.

In conclusion, to increase the immunization coverage, an important strategy may be to educate mothers with appropriate health education on tetanus and TT vaccine with special attention to the poor illiterates.

7.2. Recommendations

To regional health bureau, zone health bureau, Woreda bureau, and heads of health facilities

Due attention should be given in availing, scaling up and sustaining wider range vaccination at the community level (outreaches)

Health extension package should be encouraged as it is very much promising in TT utilization rate increase

TT immunization service should be integrated with other maternal services so as not to miss opportunities

Mass media promotion programs should be undertaken so that mothers understand the beneficial effect of immunization coverage and to encourage them to fully immunize

To health care providers

HEWs should not miss opportunities for providing health education during home visit

Health workers at facilities should not miss opportunities for TT vaccination

Health workers at facilities should not miss opportunities for health education regarding tetanus and TT vaccination.

Health workers should adhere to the national schedule of TT administration and should properly document the vaccination status related information of users either in their card or in the TT registration book so that invalid dose administration and missed opportunities will be minimized.

To Tigray region broadcast bureau

Media has to give coverage about vaccination including TT vaccination of mothers'

To Researchers

Recommended to study utilization of TT vaccination and its predictors among all reproductive women

Recommended to study health service related predictors for utilization of TT vaccination

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Annex 1.Questionnaire English version

JIMMA UNIVERSITY

COLLEGE OF PUBLIC HEALTH AND MEDICAL SCIENCES DEPARTMENT OF EPIDEMIOLOGY AND BIOSTATICS

UTILIZATION OF TETANUS TOXOID VACCINATION AMONG WOMEN IN THE CHILD BEARING AGE, GULEMEKEDA WOREDA, TIGRAY REGION, NORTHERN ETHIOPIA , 2011

Dear Respondent: good morning/good afternoon?

My name is ---------- and I am working in research team of Jimma University College of Public health &Medical Sciences Post Graduate School on a study pertaining to utilization of tetanus toxoid vaccination among WCBA with an objective of determining the rate of utilization and its predictors in urban and rural areas of this Woreda. As part of this study, I am collecting information on TT vaccination status and related factors among women in the sampled households. You are selected and included in the study as part of the sample population to complete the questionnaire designed for this purpose.

The information obtained in this study will be used only for research purposes. No identifiers such as respondents' name will be used rather codes will be given instead. Thus, any other person can't know any information obtained from you. Involvement in this study is optional and in voluntary basis and you can drop any individual question or the whole questionnaire. But your participation and contribution in the study is very important to achieve the intended objectives of the study and thereafter to come up with important findings which may help local health planners to devise means of improving immunization service.

Thank you for your cooperation!!!

Do you have any opinion regarding this study?

Do you agree to participate in this study? Yes, continue _____No, thank you!_____

Id number of the respondent_____

Name of the data collector _____Sign_____Date of interview_____

Name of the supervisor _____Sign_____ Date of approval_____

Part I: SOCIODEMOGRAPHIC CONCERNING QUESTIONS

No	Question & filter	Coding responses	Skip to
101	What is the index child's date of birth? (Check & copy from immunization card & continue only if age of index child is ≤ 1 year)	Day month year [ ][ ] [ ][ ] [ ][ ][ ][ ]	
102	Residence	Woreda: Gulemekeda Kebele:_____Kushet/ketena_____	
103	How long have you been living continuously in your current residence?	Years..... [__|__] Always .....50 →	**105**
104	Just before you moved here, did you live in urban, or rural?	Rural……1 Urban……...2	
105	How old are you?	_____years	
106	What is your educational status in terms of the highest grade completed?	Illiterate.....1 Only Read & Write.....2 1-6.....3 7-8.....4 9-12.....5 Above grade 12.....6	
107	What is your religion?	Orthodox.....1 Catholic .....2 Moslem .....3 Others/specify/_____	
108	What is your ethnicity/clan?	Tigre.....1 Erobe.....2 Others /specify/_____	
109	What is your main occupation?	Farmer.....1 Daily labourer.....2 Merchant .....3 Governmental employee.....4 House wife.....5 → Unemployed .....6 → Others /specify/_____	**Q111** **Q111**

110	Are you paid in cash or kind for this work or are you not paid at all?	Cash only . . . .1 Cash and kind . . . .2 In kind only . . . .3 Not paid 4	
111	What is your current marital status?	Married.....1 Single.....2 Divorced.....3 Widowed.....4 Others/specify/_____	**if not skip to Q114**
112	What is your husband's education status?	Illiterate.....1 Only Read & Write.....2 1-6.....3 7-8.....4 9-12.....5 Above grade 12.....6	
113	What is your husband's occupation?	Farmer.....1 Daily labourer.....2 Merchant .....3 Governmental employee.....5 Unemployed .....6 Others/specify/_____	
114	What is your average monthly family income in birr including the various sources?	.....in birr	
115	How far is the nearest health facility from your current residence in Km?	_____ km	
116	How often do you listen to radio?	Almost every day .....1 At least once a week .....2 Less than once a week.....3 Not at all 4	
117	How often do you watch television?	Almost every day .....1 At least once a week .....2 Less than once a week.....3 Not at all 4	

PART II- KNOWLEDGE AND PERCEPTION QUESTIONS ON TETANUS

201	Have you ever been heard about tetanus?	Yes..... 1 No ..... 2 →	**301**
202	If yes, from where did you hear? *(multiple responses is possible)*	Public health facility.....1 Health extension worker ..... 2 Mass media (TV/Radio)..... 3 School.....4 Others /specify/_____	
203	What causes MNT infection? *(**Multiple response** is possible.Thus, **probe** for any additional response but **don't read** responses)*	Bacteria..... 1 Evil spirit.....2 Don't know.....98 Others /specify/_____	
204	What are the risky behaviours for MNT infection? ***(Multiple response** is possible.Thus, **probe** for any additional response but **don't read** responses)*	Not taking TT immunization.....1 Cutting the cord with rusted razor/knife.....2 Unclean cord ties.....3 Unclean hands of birth attendant.....4 Unclean delivery surface.....5 Upplying dung /butter to umblicalwound.....6 Don't know.....98	
205	What are the sign and symptoms of MNT? ***(Multiple response** is possible.Thus, **probe** for any additional response but **don't read** responses)*	Lockjaw.....1 Stiff neck.....2 Inability to feed.....3 Convulsion.....4 Don't know.....98 Others /specify/_____	
206	Is there a way that maternal and neonatal tetanus can be prevented?	Yes .....1 No.....2 → I don't know.....98 →	**208** **208**
207	If yes, how? ***(Multiple response** is possible.Thus, **probe** for any additional response but **don't read** responses)*	TT immunization.....1 Clean cord cut.....2 Clean cord tie.....3 Clean hands of birth attendant.....4 Clean delivery surface.....5	

		Others/specify/_____	

Indicate your level of agreement for the following maternal and neonatal tetanus risk and severity related statement saying strongly disagree, disagree, neutral, agree, strongly agree or do not know(DK) .

		S.disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	S. agree (5)	DK (98)
208	WCBA are at high risk for maternal tetanus.						
209	WCBA like you are at high risk for maternal tetanus but not if they are up-to-dated with TT immunization.						
210	Newborns are at high risk for tetanus						
211	Newborns are at high risk for tetanus but not if born to women who are up-dated with TT immunization.						
212	MNT would interfere with regular activities or recreation						
213	MNT would prevent regular activities or recreation						
214	MNT would require medical treatment						
215	MNT would require medical treatment but not hospitalization						
216	MNT would require hospitalization but not a threat of death.						
217	MNT would require hospitalization and could kill.						

Part III. QUESTIONS ABOUT KNOWLEDGE AND PERCEPTION OF TT VACCINATION

301	Have you ever been heard about TT vaccination?	Yes .....1 No .....2 →	401
302	If yes to **Q301**, from where did you hear? *Multiple response is possible*	Public health facility.....1 Health extension worker.....2 Media(TV/Radio).....3 School.....4 Others/specify/_____	
303	Who should get priority to take TT vaccination? *Multiple response is possible*	Pregnant women.....1 WCBA (15-49 years).....2	

		Don't know.....98	
304	Is TT vaccination important for WCBA during pregnancy?	Yes .....1 No.....2 → 306 I don't know.....98 → 306	
305	If yes to **Q304**, what is its importance? ***(Multiple response** is possible.Thus, **probe** for any additional response but **don't read** responses)*	Protects the new born against tetanus.....1 protects the mother against tetanus.....2 I don't know,.....98	
306	Do you know the number of TT injections a pregnant woman requires for full protection against MNT at birth?	Yes.....1 No.....2 → 308	
307	If yes to **Q306**, at least how many are required?	Number of TT doses..... [__|__]	
308	What about the number of TT injections a child bearing woman required for life time protection?	Number of TT doses.....[__|__] I don't know,.....98	
309	What is the schedule for TT vaccine administration?	1st contact pregnancy;+1+6months;+1+1year.....1 Don't know.....98	
310	Is it important to complete all the regularly scheduled TT vaccine injections?	Yes .....1 No.....2 I don't know.....98	

Indicate your level of agreement for the following tetanus toxoid vaccine concerning statements saying strongl disagree,disagree,neutral,agree,strongly agree or don't know/DK/.

		S.disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	S.agree (5)	DK (98)
311	TT vaccine use is the most effective and least costly protective option against MNT.						
312	The reason TT vaccine is given regularly to WCBA during or before pregnancy is that it results in lifelong protection from MNT disease.						
313	TT injections **may** have no use at all in the prevention of MNT						
314	TT vaccine is safe and has no side effects except minimal						
315	TT injections have side effects which may kill the women						

316	TT injections have side effects which may harm the foetus and induce abortion.						
317	TT injections may be contaminated by disease like HIV						
318	TT injections would cause infertility						
319	TT injections would have contraception effect.						
320	TT vaccination is against my religious belief that prevents me from receiving it.						

Part IV) Reproductive history and health service utilization concerning questions

401	Have you ever given birth other than the recent one?	Yes .....1 No .....2 →	**403**
402	If yes how many including the recent one?	Number of births..... [__|__]	
403	At the time you became pregnant for last birth did you want to become pregnant then did you want to wait until later, or did you not want to have children at all?	Then……..1 Later.....2 Not at all 3	
404	Have you ever used modern contraceptive methods to delay or to prevent pregnancy?	Yes ..... 1 No 2	
405	Did you attend antenatal care during the index pregnancy?	Yes..... 1 No .....2 →	**409**
406	If yes to How many months pregnant were you when you first received antenatal care?(check card if present)	Number of months of pregnancy..... [__|__] I don't know.....98	
407	How many times did you receive antenatal care during the index pregnancy?	Number of times ANC received.....[__|__] Don't know.....98	
408	Where did you receive antenatal care for the index pregnancy?	Govt. health centre.....1 Govt. Clinic.....2 Govt. health post.....3 Other /specify/_____	
409	How many visits to health facility you had during the index pregnancy other than those for antenatal care?	Number of other visits..... [__|__] I don't know.....98	
410	During any of your visits to health facility during the index pregnancy, were you ever told by a health staff about TT vaccine?	Yes.....1 No.....2 Don't know.....98	

411	Were you visited at your home by health extension workers while you were pregnant for the index child?	Yes.....1 No .....2 Don't know.....98	 →**414** →**414**
412	If yes to **Q411**, how many times?	Number of times home visited..... [__|__] Don't know.....98	
413	Were you told about TT vaccination by the health extension worker during the index pregnancy?	Yes.....1 No .....2 Don't know.....98	
414	Were you given TT injection while you were pregnant for the index child?	Yes.....1 No 2	 →**Q420**
415	If yes to **Q414**, how many times did you get this TT injection including any TT injections received in SIA?	Number of TT doses received.....[__|__] Don't know.....98	
416	Were you given a TT card for TT injections received during the index pregnancy? If yes: May I see it please?	Yes, seen .....1 Yes, but not seen .....2 No , not given at all 3	 →**Q418** →**Q418**
417	Check card, compare with **Q415** and for all given TT doses recorded in the card write **'date'** of injections if recorded otherwise write **'44'** .	**Dose** | **TT_1** | **TT_2** | **TT_3** | **TT_4** | **TT_5** **Date/44** | | | | | |	
418	Where is/are the source/s for TT injection/s received during the index pregnancy?	**Source** | | | | | | 1=HC,2=Clinc,3=HP, 4=SCH, 5=OUT,6= SIA 98=DK)	
419	When did you take the last TT dose before delivery of the index pregnancy?	Two weeks before delivery.....1 Within the last two weeks of pregnancy... .....2 Don't know.....98	
420	If no to **Q414 or** less than two TT doses **to Q415**, what is your main reason for not receiving all the required TT doses?	No faith in immunization..... 1 Fear of side reactions.....2 Time of immunization inconvenient.....3 Mother too busy.....4 Others (specify).....5	
421	At any time before the index pregnancy, did you receive any tetanus injections?	Yes.....1 No.....2	 →**Q426**
422	If yes to **Q421**, how many times did you get including all TT injections received in outreaches and SIA?	Number of TT doses received.....[__|__] Don't know.....98	

423	Can you show me all TT cards for TT injections received before the index pregnancy?If yes ,check card and compare with **Q422** and for all received TT doses in the card write the **date** of injection if recorded, otherwise write **44**.	**Dose**	**TT_1**	**TT_2**	**TT_3**	**TT_4**	**TT_5**	If **dat** to las TT g to **426**
		date/44						
424	In what month and year did you receive the last tetanus injection before the index pregnancy?	Month [__|__] and Year [__/__/___/__] → **Q426** Don't know.....98						
425	How many years ago did you receive the last tetanus injection before the index pregnancy?	Years ago..... [__|__] Don't know.....98						
426	Where did you deliver the index child?	Home..... 1 Gov't Hospital/HC.....2 Others /specify/_____						
427	Who attended the delivery?	Health professional.....1 HEWs.....2 Trained traditional birth attendant.....3 Relative.....4 Other /specify/_____						
	Part V. Socio-economic characteristics of respondents							
501	What is the main source of drinking water for members of your household? *Circle ONLY ONE answer*	Piped water .....1 Tube well or borehole……2 Open well / spring ……...3 Covered well /spring……4 Surface water (River, pond).....5 Others.....						
502	What is the main construction material of the roof of the house? (observation) *Circle ONLY ONE answer*	Thatched……...1 Corrugated sheet.....2 Others (specify).....						
503	What is the main construction material of the walls of the house? (observation) *Circle ONLY ONE answer*	Stone with mud.....1 stone with lime/cement.....2 Cement blocks.....3 Others (specify).....						

504	What is the main construction material of the floor of the house? (observation) *Circle ONLY ONE answer*	Mud structure .....1 Concrete.....2 Others (specify).....	
505	What kind of toilet facility do members of your household usually use? *Circle ONLY ONE answer*	pit latrine with slab.....1 pit latrine without slab/ open pit.....2 Ventilated improved pit latrine..... 3 Flush or pour flush toilet.....4 No facility/bush/field.....5	
506	Does your household have: Electricity? A refrigerator? A television? A watch? A radio? A mobile telephone? A non-mobile telephone? A table? A chair? A bed? Animals?	Yes No Electricity.....1 2 Refrigerator.....1 2 Television.....1 2 Watch.....1 2 Radio.....1 2 Mobile telephone.....1 2 Non-mobile telephone.....1 2 Table.....1 2 Chair.....1 2 Bed .....1 2 Animals.....1 2	→ **508**
507	How many farmlands do this household own?	_____gibri	
		Cattle	
		Oxen or bulls	
		Cows	
		Horse/donkey/mules	
		Sheep	
		goats	

Annex 2. FGD guide line - English version

JIMMA UNIVERSITY

COLLEGE OF PUBLIC HEALTH & MEDICAL SCIENCE

DEPARTMENT OF BIOSTATICS AND EPIDEMIOLOGY

UTILIZATION OF TETANUS TOXOID VACCINATION AMONG WOMEN IN THE CHILD BEARING AGE, GULEMEKEDA WOREDA, TIGRAY, NORTHERN ETHIOPIA , 2011

FOCUSSED GROUP DISCUSSION GUIDE

Introduction

Good morning! Well come to our group discussion.

My name is ---------- and I am working in research team of Jimma University College of Public health &Medical Sciences Post Graduate School**.** We are here today to discuss about utilization of tetanus toxoid vaccination among women in the child bearing age who are mothers of 0-11month old children. There is no right or wrong answers. All comments, both positive and negative, are well come. We would like to have many points of view. We want this to be a group discussion, so you need not wait for me to call on you. In order not to miss any points of the discussion, we will be using a tape recorder. Please, speak one at a time so that the tape recorder can pick up everything. We would like to confirm to you that all your comments are confidential and used for research purpose only and no one else will have access to know your comments as your name is going to be neither written nor tape recorded to protect your confidentiality. However, still being participant of this discussion entirely depends on your willingness .Thus, considering the benefits of the ideas that might be generated from the discussion in immunization service improvement; we are requesting you to be participant of the discussion.

Are you willing to participate in the discussion? Yes_____No_____

If yes, thank you for your willingness.

	Focus Group Discussion guide for WCBA	
	QUESTIONS	**PROBES**
1	Do people in your community know maternal and neonatal tetanus? Let discuss.	What does maternal and neonatal tetanus mean? What are the causes and/or risk factors to MNT? Is there any relation between MNT and evil spirit? Who are the high risk groups? What are the sign and symptoms? What are the consequences? What measures should be taken to prevent it in advance?
2	Do people in your community utilize TT vaccination? Yes/no? And why?	Have you ever received TT? Yes/no? Is your husband in favour of TT vaccinations?
3	TT vaccination is very important for every WCBA during or before pregnancy. Do you agree/ disagree? And why?	If agree, what is the importance? How many doses of TT are required? What is the schedule for TT injections? If disagree, what are the reasons to disagree? Why do you think that the government is providing TT vaccines for all reproductive women free of charge?
4	Why do people in your community not using TT immunizations?	What favourable and unfavourable conditions present in your surrounding for receiving TT vaccination? What do you suggest for improving TT utilization

Annex 3.Indepth interview guide for EPI unit heads and HEWs-English version

JIMMA UNIVERSITY

COLLEGE OF PUBLIC HEALTH & MEDICAL SCIENCE DEPARTMENT OF BIOSTATICS AND EPIDEMIOLOGY

UTILIZATION OF TETANUS TOXOID VACCINATION AMONG WOMEN IN THE CHILD BEARING AGE, GULEMEKEDA WOREDA, TIGRAY REGION, NORTHERN ETHIOPIA, 2011

IN-DEPTH INTERVEIW GUIDE FOR EPI MANAGERS and HEWs

Good morning/good afternoon?

Hello! My name is ----------I am working in research team of Jimma University College of Public health &Medical Sciences Post Graduate School. This is a study to be conducted with the objective of determining utilization TT vaccination among WCBA and identifying the predictors. This is not an evaluation of this facility or of the people who give us this information. We are asking information for research purpose only from EPI unit heads of different health facilities and HEWs. No identifiers such as respondents' name will be used rather codes will be given instead .Thus, no one will know what you said and all the information you give me will be confidential.

I would like also to inform you that the responses that you provide to the questions are very essential, not only, for the successful accomplishment of the study but also for producing relevant information which will be helpful in improving the delivery EPI services.Though it entirely depends on your willingness,considering the benefits of the study you requested to participate .

Are you willing to participate? Yes ☐ No ☐

Questionnaire code number----------

Name of interviewer---------- Date of interview---------- Sign ----------

Name of the supervisor ---------- Date of interview---------- Sign ----------

Key informant in-depth interview guide for EPI heads of PHC units in the selected study zones

1) Residence Woreda Gulemekeda kebele _____Ketena/kushet_____
2) Sex EPI unit head: Female_____Male_____
3) Educational status_____
4) Responsibility _____
5) Type of PHC unit_____
6) Catchment population_____
7) Do you provide any service to prevent maternal and neonatal tetanus? Yes/no
8) If no, why?
9) If yes what type of services?
   A.TT vaccination
   B.Promoting clean delivery
   C. Health education

   Any other else?_____
10) If TT immunization is one of your services, how can you describe in terms of
   A. Availability?
   B. Accessibility?
   C. Staff?
11) Who are your targets for TT immunization?
   A.WCBA
   B.Pregnant women

   Others? _____
12) What strategies are you using to provide TT vaccination?
   A. Routine immunization programmes
   B. Outreach vaccination programmes

   Others? _____
13) If Outreach vaccination programme is one of the strategies you are utilizing, where are the outreach sites and at what frequency do you provide TT vaccination through this strategy?
14) Have all the planned outreach immunization sessions taken place in the previous year? 1.Yes 2.No
15) If no to **Q14**, why?
16) What is the schedule you are utilizing for TT immunization?

17) What is your annual plan and achievement pertaining TT?
18) What is the current status of TT vaccination? `
19) What problems are facing in providing TT vaccination to the targets?
    A. from the programme perspective
    B. from the recipients' perspective
20) What do you think the reasons of not being updated with TT vaccination in the community?
21) Did the persons providing the services have training related to EPI? 1. Yes 2.No
22) Do you involve other sectors in TT vaccination programme? 1. Yes 2. No
23) If yes to **Q22**, which sectors are involved and what roles do they play?
    A. kebele
    B.NGOs
    Others?
24) What do you suggest to improve TT immunization coverage?

Key informant in-depth interview guide for HEWs

1) Residence Woreda Gulemekeda kebele _____Ketena/kushet_____
2) Sex: Female_____ Male_____
3) Educational status_____
4) Do you provide any service to prevent maternal and neonatal tetanus? Yes/no
5) If no to Q4, why?
6) If yes to Q4, what type of services?
   A. TT vaccination
   B. Promoting clean delivery
   C. Health education others?_____
7) If TT vaccination is one of the services you provide, who are your targets for TT immunization?
   a. WCBA
   b. Pregnant women others?_____
8) If TT vaccination is one of the services you provide, what strategies do you use?
   a. Outreach vaccination programmes
   b. Home to home vaccination programmes
   c. Routine immunization programmes
   Others? _____
9) What is the schedule you are utilizing for TT immunization?

10) What is your annual plan pertaining TT? What about your achievement?
11) What is the current status of TT vaccination?
12) If you are also providing preventive health education, what topics related to MNT do you address?
13) What are the major challenges that you are facing in implementing TT vaccination?
    A. from the programme perspective
    B. from the recipients' perspective (mention any unfavourable knowledge, attitude, belief/misconception)
14) Have you ever been trained on EPI?1.Yes 2.No
15) What is being contributed by other sectors like kebele administration, schools, NGOs and what is expected from them?
16) What do you suggest to improve TT immunization coverage?

Annex 4. In-depth interview guide for religious leaders English version

JIMMA UNIVERSITY

COLLEGE OF PUBLIC HEALTH & MEDICAL SCIENCE

DEPARTMENT OF BIOSTATICS AND EPIDEMIOLOGY

UTILIZATION OF TETANUS TOXOID VACCINATION AMONG WOMEN IN THE CHILD BEARING AGE, GULEMEKEDA WOREDA, TIGRAY REGION, NORTHERN ETHIOPIA, 2011

IN-DEPTH INTERVEIW GUIDE FOR RELIGIOUS LEADERS

Greeting

Hello! My name is ----------I am working in research team of Jimma University College of Public health &Medical Sciences Post Graduate School. This is a study to be conducted with the objective of determining utilization TT vaccination among WCBA and identifying the predictors. This is not an evaluation of the religion or of the people who give us this information. We are asking information for research purpose only from leaders of each religion and all the information you give me will be confidential as codes are used instead of identifiers like names.Thus, no one will know what you said.

I would like also to inform you that the responses that you provide to the questions are very essential, not only, for the successful accomplishment of the study but also for producing relevant information which will be helpful in improving the delivery EPI services.Though it is your right to participate or refuse, considering the importance in achievement of the objectives of the study, you are requested to be participant.

Are you willing to participate? Yes ☐ No ☐

Questionnaire code number----------

Name of interviewer---------- Date of interview---------- Sign ----------

Name of the supervisor ---------- Date of interview---------- Sign ----------

Key informant in-depth interview guide for religious leaders

1) Residence: Woreda Gulemekeda kebele _____Ketena/kushet_____
2) Sex: Female_____ Male_____
3) Educational status_____
4) Religion_____
5) Religious role_____
6) Do you know TT vaccination that is given to all WCBA and to pregnant women?
   1. Yes 2. No
7) What is the position of your religion on the usefulness of TT in preventing MNT?
   A. useful
   B. not useful
8) If your answer to Q7 is not useful, why?
   A.MNT is due to the anger of God
   B.MNT is due to being possessed by evil sprit
   C. Repeated NM is a sign of a woman being possessed by evil spirit
   D.TT has a contraception effect which is against the will of God

   Others ?_____
9) If your answer to Q7 is useful, what role does your religion play in achieving TT immunization to a rate that can result in MNT elimination?
10) Women elsewhere mention that their religion prevents them from receiving TT injections is there any religious belief that can be related to such a case in your religion? 1. Yes 2.no
11) If yes to Q10, please would you mention these beliefs?
12) If no to Q10, what do you think the reason to mention such a religion related belief to be a barrier for accepting TT injections by non acceptors of TT vaccination?
13) What should be the role of religious leaders in improving TT immunization status of their religion followers?

Annex 5.Questionnaire Tigrigna-version

ጅማ ዩኒቨርሲቲ

ናይ ሕ/ሰብ ጥዕናን ሕክምና ሳይነስን ኮለጅ

ናይ ኢፒደምዮሎጅን ባዮስታቲስቲክስን ዲፓርትመንት

ናይ ወላዳት ወቕታዊ ፀረ መንጋጋ ቆልፍ ክታበት ሽፋንን ዕንቅፋታቱን ዝድህሰስ ፅንዓት ኣብ ገጠርን ከተማን ወረዳ ጉለመኻዳ፣ ትግረይ ክልል ፣ ሰሜን ኢትዮጵያ ፣2011

ብትግርኛ ዝተዳለወ ቃለ መሕትት

ዝኸበርክን ክብርቲ ነባሪት እዚ ከባቢ፡ከመይ ሓዲርክን /ውዒልክን?

ሽመይ ---------- ይበሃል።ጅማ ዩኒቨርሲቲ ናይ ድህረ ምረቃ ት/ቤት ኣብዘካይዶ ፅንዓት ኣባል እየ።ናይ እዙ ፅንዓት ዓላማ ሽፋን ፀረ መንጋጋ ቆልፍ ክታበትን ዕንቅፋታቱን ንምድህሳስ እዩ። ሕጂ ነዚ ፅንዓት ብዝተዳለወ ቃለ መሕትት መሰረት ብዛዕባ ፀረ መንጋጋ ቆልፍ ክታበት ብዝምልከት ካብ ብሳይነሳዊ መንገዲ ነዚ ፅንዓት ክካየደለን ዝተመረፃ ወላዳት ሓበሬታ እንዳኣከብኩ ይርከብ ንሰን እውን ኣካል እዚ ፅንዓት እየን። ቅድሜኡ ግን ዝህባኒ ዝኾነ ይኹን ሓበሬታ ብምስጢር ዝተሓዝ ምኽኑን ከምኡ እውን ስመን ስለዘይምዝገብ ካባይ ወፃእ ማነም ክፈልጦ ዘይኽእል ምኽኑን ከረጋግፀለን ይደሊ።ስለዚህ ብዘይካ ዝተወሰነ ናይ ጊዜ ምዉሳድ ምንም ዓይነት ጉድኣት የብሉን ። ናይእዚ ፅንዓት ተሳታፊ ምኽንን ዘይምኽንን ምሉእ ብምሉእ ኣብ ናተን ድልየት ዝተወሰነ እኳእንተኾነ ናተን ምስታፍ ኣብ ኣገልግሎት ምምሕያሽ ናይ ባዕሉ ኣስተዋፅኦ ክህልዎ ስለ ዝኽእል ንኽሳተፉ ይላቦ።

ንዝገብራለይ ትሕብብር ኣቐዲመ የመስግን!!!!

ዝኾነ ሕቶ ወይከዓ ሓሳብ እንተሃሊዩወን ይቐፅላ?

ፍቃደኛ ድየን? እወ ፍቃደኛ እየ ☐ ፍቃደኛ ኣይኮንኩን ☐

ናይ ተሓታቲ መፍለዪ ቁፅሪ ----------

ናይ ሓታቲ ሹም ---------- ዕለት---------- ፊርማ--------

ናይ ሱፐርቫይዘር ሹም ---------- ዕለት---------- ፊርማ----------

ክፋል ፡ ማሕበራዊ ጉዳይ ዝምልከት ሓፈሻዊ መረደእታ			ናብ ተ.ቁ ዝለልል
ተ.ቁ	ሕቶታት	መ ልሲ ዝሓዙ ምርጫታት	
101	እዚ ሕፃን መዓዝ እዩ ተወሊዱ?(**ዕደመ እዚ ቆልዓ ካብ ክታበት ካርድ መዝኒበም ትሕቲ ሓደ ዓመት ምኳኑ እንተረጋግፁ ጥራሕ ይቐፅሉ**)	_____ /_____/ _____ ዓም	
102	ኣድራሻ	ወረዳ <u>ጉለመካዳ</u> ቀበሌ _____ቀጠና/ቁሸት_____	
103	ኣብዙይ ብተኸታታሊ ንኽንደይ ዓመት ነቢረን?	በዝሒ ዓመት.....[__|__] ኩሉ ጊዜ.....50 → 105	
104	ናብዙይ ቅድሚ ምምፃእን ኣበይ ይነብራ ነይረን?	ገጠር.....1 ከተማ.....2	
105	ዕድመኣን ብምሉእ ዓመት ክንደይ እዩ?	ዕድመ ..... [__|__]	
106	ናይ ትምህርቲ ደረጃኣን ክንደይ ዩ?	ዘይተምሃረት .....1 ምንባብን ምጽሓፍን ጥራሕ .....2 1ይ ደረጃ(1-6).....3 መለስተኛ ካላኣይ ደረጃ (7-8).....4 ካላኣይ ደረጃ (9-12).....5 ካብ 12+ ንላዕሊ.....6	
107	ሃይመኖተን እንታይ ዩ?	ኦርቶዶክስ .....1 ካቶሊክ .....2 ሙ ስሊም.....3 ካብ ዝተጠቕሱ ወፃእ እንተኾኑ(ይገለፅ)_____	
108	ብሄረን እንታይ ዩ?	ትግራወይቲ .....1 ኢሮበተይቲ.....2 ካብ ዝተጠቕሱ ወፃእ እንተኾኑ(ይገለፅ)_____	
109	ስራሐን እንታይ ዩ?	ሓረስተይቲ.....1 መዓልታዊ ሰራሕተኛ .....2 ነጋዴ.....3 ናይ መንግስቲ ሰራሕተኛ.....4 ናይ ገዛ እመቤት.....5 → Q111 ምንም ስራሕ ዘይብላ.....6 → Q111 ካብ ዝተጠቕሱ ወፃእ እንተኾኑ(ይገለፅ)_____	
110	ንዝሰረሓኡ ስራሕ እንታይ ይኽፈለን?	ጥረ ቅርሺ .....1 ብጥረ ቅርሺን ብዓይነትን .....2 ብዓይነት ጥራሕ .....3 ምንም ኣይኽፈለንን..... 4	

111	ኩነታት መርዓአን እንታይ ዩ?	በዓልቲሐዳር.....1 ዘይተመርዐወት.....2 → 114 ዝተፋተሐት.....3 → 114 በዓል ገዛኣ ዝሞታ.....4 → 114 ካብ ዝተጠቐሱ ወፃእ እንተኾኑ(ይገለፅ)_____	
112	ናይ በዓል ገዛአን ናይ ትምህርቲ ደረጃ ክንደይ ዩ?	ዘይተምሃረ .....1 ምንባብን ምጽሓፍንጥራሕ .....2 1ይ ደረጃ(1-6).....3 መለስተኛ ካላኣይ ደረጃ (7-8).....4 ካላኣይ ደረጃ (9-12).....5 ካብ 12+ ንላዕሊ.....6	
113	ናይ በዓል ገዛአን ናይ ስራሕ ኩነታት እንታይ ዩ?	ሐረስታይ.....1 መዓልታዊ ሰራሕተኛ .....2 ነጋዴ.....3 ናይ መንግስቲ ሰራሕተኛ .....4 ስራሕ ዘይብሉ.....5 ካብ ዝተጠቐሱ ወፃእ እንተኾኑ(ይገለፅ)_____	
114	ናይ ገዛኹም ማእኸላይ ወርሒዊ እቶት ክንደይ ዩ?	.....(ቅርሺ)..... ብዓይነት	
115	ገዛኹም ኣብ ቀረባኹም ካብ ዝርከብ ትካል ጥዕና ክንደይ ኪሜ ይርሕቕ?	_____(ኪሜ)	
116	ሬድዮ ክንደናይ የዳመፃ?	በብመዓልቱ.....1 እንተነአሰ ሐደ ጊዜ ብሰሙን.....2 ብሰሙን እንተበዚሑ ሐደ ጊዜ .....3 በፍፁም አየዳምፅን.....4	
117	ቴሌቪጂን ክንደየናይ የዳመፃ?	በብመዓልቱ.....1 እንተነአሰ ሐደ ጊዜ ብሰሙን.....2 ብሰሙን እንተበዚሑ ሐደ ጊዜ .....3 በፍፁም አይዳምፅን.....4	

2ይ ክፋል ፡ ብዛዕባ ሕማም መንጋጋ ቆልፍ ግንዛበ ዝምልከቱ ሕቶታት

201	ስለ ሕመም መንጋጋ ቆልፍ ሰሚዐን ዶ ይፈልጣ ?	እወ.....1 ኣይፈልጥን .....2 → 301	
202	ንተ.ቁ 201 መልሰን እወ እንተኾይኑ፤ ካበይ ኢየን ሰሚዐን? *(ካብ ሓደ ንላዕሊ መልሲ ምምላሰ ይካኣል ዩ)*	ካብ ናይ መንግስቲ ትካላት ጥዕና.....1 ካብ ናይ ጥዕና ኤክስቴንሽን ሰራሕተኛ .....2 ካብ መራኸብቲ ሓፋሽ ሬድዮ/ቴሌቭሽን .....3 ካብ ት/ቤት.....4 ካብ ዝተጠቐሱ ወፃእ እንተኾኑ(ይገለፅ)_____	

203	ወላዳትን ዝወልዳአም ዕሸላትን ዘጋጥሞም ሕማም መንጋጋ ቆልፍ መልዓሊኡ እንታይ ዩ ?*(ካብ ሓደ መልሲ ንላዕሊ ይካኣል ‘ዩ ሰለዚ ተወሳኺ ሕተት/ቲ ግን ምርጫ ንተሓታቲ ክንበብ የብሉን)*	ባክተርያ.....1 ሰይጣን/ጋኔን እንትለኽፎም .....2 ኣይፈልጥን.....98	
204	ወላዳት አብ እዋን ፅንሲ ወይከዓ ድሕሪ ሕርሲ ኣብ ዘለዉ ውሑዳት መዓልቲታት ንባዕልተን ወይከዓ ነቲ ንዝወልዳአም ዕሸላት ንመንጋጋ ቆልፍ ሕማም ከጋልፀ ዝኽእሉ ነገራት እንታይ እንታይ እዮም? *(ካብ ሓደ ንላዕሊ መልሲ ምምላሰ ይካኣል ‘ዩ ሰለዚ ተወሳኺ ሕተት/ቲ ግን ምርጫ ንተሓታቲ ክንበብ የብሉን)*	ኣዶ ፀረ መንጋጋ ቆልፍ ክታበት እንተዘይተኸቲባ.....1 ዕትብቲ ብዝመረተ ካራ/ላማ ምቑራፅ .....2 ዕትብቲ ብዘይንፁህ መቑፀሪ እንትቑፀር.....3 መዋለዲ ኢዱ/ኢዳ እንተዘይተሓፂቡ/ባ.....4 መዋለዲ ቦታ ንፁህ እንተዘይኮይኑ.....5 ናብ ቁስሊ ሕምብርቲ ከም ዒባን ልኻይን ዝበሉ ምግባር.....6 ኣይፈልጥን.....98	
205	ብመንጋጋ ቆልፍ ሕመም ዝተትሐዘት ኣዶ/ ዝተትሓዘ ዕሸል እንታይ ምልክታት የርኢ? *(ካብ ሓደ ንላዕሊ መልሲ ምምላሰ ይካኣል ‘ዩ ሰለዚ ተወሳኺ ሕተት/ቲ ግን ምርጫ ንተሓታቲ ክንበብ የብሉን)*	መንጋጋ ዘይምኽፋት.....1 ክሳድ ምግታር.....2 ምጥባው/ምምጋብ ምቁራፅ .....3 ምንቅጥቃጥ.....4 ኣይፈልጥን .....5 ካብ ዝተጠቐሱ ወፃእ እንተኾኑ(ይገለፅ)_____	
206	ወላዳትን ዕሸላትን ካብ ሕማም መንጋጋ ቆልፍ ክንከላኸለሉ እንኽእል መንገዲ ኣሎ ዶ?	እወ.....1 የለን.....2 → **208** ኣይፈልጥን.....98 → **208**	
207	**ንተ.ቁ 206** መልሰን እወ እንተኾይኑ፤ ወላዳትን ዕሸላትን ካብ ሕማም መንጋጋ ቆልፍ ብኸመይ ምክልኻል ይከኣል? *(ካብ ሓደ ንላዕሊ መልሲ ምምላሰ ይካኣል ‘ዩ ሰለዚ ተወሳኺ ሕተት/ቲ ግን ምርጫ ንተሓታቲ ክንበብ የብሉን)*	ብእዋን ፅንሲ ኣብ ቅልፅምእድ ብዝወሃብ ክታበት.....1 ዕትብቲ ብንፁሕ ነገር ብምቑራፅ.....2 ዕትብቲ ብንፁሕ መቑፀሪ ብምቑፃር.....3 ኣብ ንፁህ መዋለዲ ቦታ ብምውላድ .....4 መዋለዲመዋለዲት ኢዳኢዱ ብደንቢ ብምፅራይ.....5 ኣይፈልጣኦን.....98	

ነዞም ዝስዕቡ ብዘዕባ ንሕማም መንጋጋ ቆልፍ ተቃላዓይነትን ሓደጋኡን ዝምልከቱ ሕሳባት ብጣዕሚ ይስምዕማዕ ፣ይስምዕማዕ ፣ መንነኛ ፣ ኣይስምዕማዕን፣ብጣዕሚ ኣይስምማማዕን ወይከዓ ኣይፈልጥን እንዳበሉ ይመልሱ።

		ብጣዕሚ ኣይስምማማዕን (1)	ኣይ ስምዕማዕን (2)	መንነኛ (3)	ይስምዕማዕ (4)	ብጣዕሚ ይስምዕማዕ (5)	ኣይፈልጥን (98)
208	ወላዳት ምስ ሕርሲ ተሓሓዙ ንዝስዕብ ሕማም መንጋጋ ቆልፍ ብጣዕሚ ዝተቃለዓ እየን።						
209	ወላዳት ምስ ሕርሲ ተሓሓዙ ንዝስዕብ ሕማም መንጋጋ ቆልፍ ብጣዕሚ ዝተቃለዓ እኳእንተኾና ፀረመንጋጋ ቆልፍ ክታበት እንተወሲደን ግን ኣይኮናን።						

210	ዕሸላት ንመንጋጋ ቆልፍ ብጣዕሚ ዝተቓለዑ እዮም።						
211	ዕሸላት ንመንጋጋ ቆልፍ ብጣዕሚ ዝተቓለዑ እኳእንተኾኑ ካብ ፀረመንጋጋ ቆልፍ ክታበት ዝተወገአት ኣዶ ዝተወለዱ ግን ኣይኮኑን።						
212	ሕማም መንጋጋ ቆልፍ ዕለታዊ ምንቅስቃስ የተዓናቅፍ ‘ዩ።						
213	ሕማም መንጋጋ ቆልፍ ዕለታዊ ምንቅስቃስ ይዓግት ‘ዩ።						
214	መንጋጋ ቆልፍ ሕክምና የድልዮ እዩ ።						
215	መንጋጋ ቆልፍ ሕክምና የድልዬ እኳ እንተኾነ አብ ሆስፒታል ዘደቅስ ግን ኣይኮነን።						
216	መንጋጋ ቆልፍ አብ ሆስፒታል የድቅስ እዩ ግን ኣይቐትልን።						
217	መንጋጋ ቆልፍ አብ ሆስፒታል የደቅስ ከምኡውን ይቐትል ‘ዩ						

3ይ ክፋል፡ ብዛዕባ ናይ ፀረመንጋጋ ቆልፍ ክታበት ፍልጠትን ግንዛበን ዝምልከቱ ሕቶታት

301	ስለ ንደቂኣነስትዮ ኣብ ቅልፅም ኢደን ዝውግኣአ ፀረ መንጋጋ ቆልፍ ክታበት ሰሚዐን ዶ ይፈልጣ?	እወ.....1 ኣይ.....2 → 401	
302	**ንተ.ቁ 201** መልሰን እወ እንተኾይኑ፤ ካበይ ሰሚዐን? ***(ካብ ሓደ ንላዕሊ መልሲ ምምላስ ይካኣል ‘ዩ ሰለዚ ተወሳኺ ሕተት/ቲ)***	ካብ ትካል ጥዕና .....1 ካብ ናይ ጥዒና ኤክስቴንሽን ሰርሕተኛ .....2 ካብ ሬድዮ /ቴሌቭዥን .....3 ካብ ቤት ት/ቲ.....4 ካብ ዝተጠቐሱ ወፃእ እንተኾኑ (ይገለፅ)_____	
303	ንፀረ መንጋጋ ቆልፍ ክታበት ቅድምያ ዝወሃቦ ንመን ዩ? ***(ካብ ሓደ ንላዕሊ መልሲ ምምላስ ይካኣል ‘ዩ ሰለዚ ተወሳኺ ሕተት/ቲ ግን ምርጫ ንተሓታቲ ክንበብ የብሉን)***	ነፈሰ ፁራት.....1 ወላዳት.....2 ኣይፈልጥን 98	
304	ፀረ መንጋጋ ቆልፍ ክታበት ንነፍሰፁር ጠቓሚ ድዩ?	እወ .....1 ኣይኮነን. .....2 → 306 ኣይፈልጥን.....98 → 306	
305	**ንተ.ቁ 304** መልሰን እወ እንተኾይኑ ፤ጥቕሙ እንታይ እዩ? ***(ካብ ሓደ ንላዕሊ መልሲ ምምላስ ይካኣል ‘ዩ ሰለዚ ተወሳኺ ሕተት/ቲ ግን ምርጫ ንተሓታቲ ክንበብ የብሉን)***	ነቲ ዕሸል ካብ መንጋጋ ቆልፍ ይከላኸለሉ .....1 ነታ ኣዶ ካብ መንጋጋ ቆልፍ ይከላኸለላ .....2 ኣይፈልጥን.....98	
306	ሓንቲ ነፍሰፁር ንባዕላን እትወልዶ ዕሸልን ካብ ተጋላፅነት ሕማም መንጋጋ ቆልፍ ነፃ ንምኳን ክንደይ ጊዜ ፀረ መንጋጋ ቆልፍ ክታበት ክትውጋእ ከምዘለዋ ይፈልጣ ዶ?	እወ .....1 ኣይፈልጥን .....2 → 308	
307	**ንተ.ቁ306** መልሰን እወ እንተኾይኑ፤እንተነኣሰ ክንደይ ጊዜ?	..... [__|__]	
308	ሓንቲ ወላድ ሙሉእብምሉእ ክሳብ ምውላድ እተቋርፅ ንባዕላን እትወልዶም ዕሸላትን ካብ ሓደጋ ሕማም መንጋጋ ቆልፍ ነፃ ንምኳን ክንደይ ጊዜ ፀረ መንጋጋ ቆልፍ ክታበት ክትውጋእ ኣለዋ?	..... [__|__]	

309	አወሳስዳ ፀረ መንጋጋ ቆልፍ ክታበት ከመይ እዩ ?	ፅንስቲ ኣዶ ኣብ ዝተረኽበትሉ ኣጋጣሚ+1 +6 ወርሒ+ 1 +1 ዓመት.....1 ኣይፈልጥን.....98	
310	ፀረ መንጋጋ ቆልፍ ክታበት ብፕሮግራሙ መሰረት ምሉእ ብምሉእ ምውሳድ(ምኽታብ) ኣድላዩ ድዩ?	አወ .....1 አይኮነን. .....2 አይፈልጥን.....98	

ነዞም ዝስዕቡ ብዘዕባ ፀረ መንጋጋ ቆልፍ ክትባት ዝምልከቱ ሐሳባት ብጣዕሚ ይስምዕማዕ ፣ይስምዕማዕ ፣ መንንኛ ፣ ኣይስምዕማዕን፣ብጣዕሚ ኣይስምማማዕን ወይከዓ ኣይፈልጥን እንዳበሉ ይመልሱ።

		ብጣዕሚ ኣይስምማማዕን (1)	ኣይ ስምዕማዕን (2)	መንንኛ (3)	ይስምዕማዕ (4)	ብጣዕሚ ይስምዕማዕ (5)	ኣይፈልጥን (98)
311	ፀረ መንጋጋ ቆልፍ ክታበት ብጣዕሚ ዉፀኢታዊ ሜላ መከለኽሊ ‘ዩ።						
312	ፀረ መንጋጋ ቆልፍ ክታበት ብተኽታታልነት ንወላዳት ዝወሃብ ኣብ ክሊ ዕድመ ወላድነት ክሳብ ዘለዋ ንባዕልተን ኮነ ንዝወልዳኣም ዕሸላት ካብ ሓደጋ መንጋጋ ቆልፍ ስለዝከላኽል ‘ዩ።						
313	ፀረ መንጋጋ ቆልፍ ኣብ ምክልኻል ሕማም መንጋጋ ቆልፍ ምንም ጥቕሚ የብሉን።						
314	ፀረ መንጋጋ ቆልፍ ክታበት ምንም ዓይነት ጉድኣት ኣየስዕብን						
315	ፀረ መንጋጋ ቆልፍ ክታበት ነታ ኣዶ ክቕትላ ይኽእል ‘ዩ።						
316	ፀረ መንጋጋ ቆልፍ ክታበት ነቲ ፅንሲ ከውርዳ ይኽእል ‘ዩ።						
317	ፀረ መንጋጋ ቆልፍ ክታበት ምዉጋእ ኤች ኣይ ቪ ንዝመሳሰሉ ሕማማት ክቃልዕ ይኽእል ‘ዩ።						
318	ፀረ መንጋጋ ቆልፍ ክታበት ንመኻንነት ክቃልዕ ይኽእል ‘ዩ።						
319	ፀረ መንጋጋ ቆልፍ ክታበት ፅንሲ ይከላኽል ‘ዩ።						
320	ፀረ መንጋጋ ቆልፍ ክታበት ሃይማኖታዊ እምነት ይፃረር ‘ዩ።						

4 ፇ ክፋል: ናይ ጥዕና ኣገልግሎት ምጥቃምን ስነተዋልዶን ዝምልከቱ ሕቶታት

401	ካብዙ ሕፃን ወፃኢ ካለኦት ቆልዑ ወሊደን ዶ ወይስ ናይ መጀመርያኣን እዩ?	እወ ወሊደይ.....1 ኣይ ናይ መጀመርያይ እዩ.....2	→403
402	**ንተ.ቁ 401** መልሰን እወ ወሊደይ እንተኾይኑ፤ እዙይ ወሲኹ ክንደይ ወሊደን?	..... [__|__]	
403	ነዙይ ክፀንሳ ከለዋ ትልመን ሸዑ ንምፅናስ ፣ ፀኒሐን ደሓር ንምፅናስ ወይስ በፍፁም ንዘይምፅናስ ነይሩ ?	ሸዑ .....1 ፀኒሐ ደሓር .....2 በፍፁም.....3	
404	ሜላ መከላኽሊ ፅንሲ ተጠቒመን ዶ ይፈልጣ?	እወ.....1 ኣይ.....2	

405	ንዙ ህፃን ፅንስቲ ኣብ ዝነበራሉ ቅድመ ወሊድ ክትትል ፅንሲ ገይረን ዶ ይፈልጣ?	እወ.....1 ኣይ.....2 → 411	
406	ናይ መጀመርያ ቅድመ ወሊድ ክትትል ዝገበራሉ ጊዜ ናይ ክንደይ ወርሒ ጥንስቲ ነይረን?	.....[__|__]	
407	ክንደይ ጊዜ ቅድመ ወሊድ ክትትል ፅንሲ ገይረን?	.....[__|__]	
408	ኣበይ ቅድመ ወሊድ ክትትል ገይረን?	ኣብ ናይ መንግስቲ ጥዕና ጣብያ.....2 ኣብ ናይ መንግስቲ ክሊንክ .....3 ኣብ ናይ መንግስቲ ጥዕና ኬላ.....4 ካብ ዝተጠቐሱ ወፃእ እንተኾኑ (ይገለፅ)_____	
409	ነዙ ሕፃን ፅንስቲ ኣብ ዝነበራሉ ጊዜ ካብ ንቕድመ ወሊድ ክትትል ፅንሲ ወፃእ ክንደይ ጊዜ ናብ ትካል ጥዕና ተመላሊሰን?	ምንም.....1 ሓደጊዜ.....2 ክልተን ካብኡ ንላዕልን.....3	
410	ንቕድመ ወሊድ ክትትል ፅንሲ ኮነ ካብኡ ወፃእ ናብ ትካላት ጥዕና እንትመላለሳ ብሰብ ሞያ ጥዕና ብዛዕባ ክታበት ፀረ መንጋጋ ቆልፍ ተነጊሩወን ዶ ይፈልጥ?	እወ.....1 ኣይ.....2 ኣይዝክሮን.....98	
411	ፅንስቲ ኣብ ዝነበራሉ ሰዓት ናይ ጥዕና ኤክስተንሽን ሰራሕተኛታት ናብ ገዛእን መፂኦም ዶ ይፈልጡ?	እወ.....1 ኣይ.....2 → 414	
412	**ንቱ.ቁ 411** መልሰን እወ እንተኾይኑ ፤ክንደይ ጊዜ መፂኦም?	..... [__|__]	
413	ነዙ ሕፃን ፅንስቲ ኣብ ዝነበራሉ ጊዜ ናይ ጥዕና ኤክስተንሽን ሰራሕተኛታት ናብ ገዛእን ኣብ ዝመፀእሉ እዋን ብዛዕባ ፀረ መንጋጋ ቆልፍ ክታበት ነጊረምወን ዶ ይፈልጡ?	እወ.....1 ኣይ.....2 ኣይዝክሮን.....98	
414	ነዙ ሕፃን ፅንስቲ ኣብ ዝነበራሉ ጊዜ ፀረ መንጋጋ ቆልፍ ክታበት ተወጊኣን ዶ ይፈልጣ?	እወ.....1 ኣይ.....2 → 420	
415	**ንቱ.ቁ 414** መልሰን እወ እንተኾይኑ ፤ ካብ ትካል ጥዕና ወፃእ ዝተኸተባኡ ሓዊሱ ክንደይ ጊዜ?	..... [__|__]	
416	ነዙ ሕፃን ፅንስቲ ኣብ ዝነበራሉ ጊዜ ንዝተኸተባኡ ፀረ መንጋጋ ቆልፍ ክታበት ካርዲ ተዋሂብወን ዶ ነይሩ? መልሰን እወ እንተኾይኑ እስቲ የርእያኒ?	እወ፣ተራእዩ.....1 እወ፣ግን ኣይኣርኣያን.....2 → 418 ኣይ ፣ ካርዲ ኣይተውሃባን.....3 → 418	
417	ኣብቲ ካርድ ዘሎ መጠን ክታበት ምስ **ተቁ 415** ምስ ኣመሳኸርካ/ኪ እታ ኣዶ ዝተኸተበቶ ሕድሕድ ኣብ ካርዲ ዝተመዝገበ ክታበት ዝተወገኣትሉ **ዕለት** መዝግብ/ቢ ዕለቱ ኣብ ካርዲ ንዘይተመዝገበ ግን 44 ፀሓፍ/ፊ	**መጠን ክታበት** / **ዕለት/44** / TT_1 / TT_2 / TT_3 / TT_4 / TT_5	
418	ነዙ ሕፃን ፅንስቲ ኣብ ዝነበራሉ ጊዜ ዝተወገኣኡ ፀረ መንጋጋ ቆልፍ ክታበት ኣበይ ኢየን ተኸቲበናኡ?	ዝተኸተባሉ ቦታ 1=መጥጣ፣ 2=መክ፣3=ጥኬ፣ 4=ቤት ት/ቲ፣5=ኖክት፣6=ወክት፣ 98= ኣይፍለጥን	

419	ነዙ ሕፃን ፅንስቲ ኣብ ዝነበራሉ ጊዜ ካብ ዝተኸተባኡ ፀረ መንጋጋ ቆልፍ ክታበት እቲ ናይ መጨረሻ ክታበት ዝተወገኣሉ ጊዜ ቅድሚ ምውላደን መዓዝ ነይሩ?	ቐድሚ ክልተ ሰሙን.....1 ኣብ ውሽጢ ናይ መወዳእታ ክልተ ሰሙን .....2 ካሊእ(ይገለፅ).....	
420	**ንተ.ቁ 414** መልሰን **ኣይ** እንተኾይኑ ወይከዓ **ንተ.ቁ 415** መልሰን **ትሕቲ ክልተ** እንተኾይኑ ብፕሮግራሙ መሰረት ምሉእ ብምሉእ ዘይተኸተባሉ ዋና ምኽንያት እንታይ እዩ?	ኣድላይነቱ ዘይሞፍለጥ .....1 ክታበት ካብ ሓደ ጊዜ ንላዕሊ ከምዘድሊ ዘይምፍላጥ.....2 ሰዓቤኑ ብምፍራሕ.....3 ክታበት ዝወሃበሉ ቦታ ርሑቕ ሰለ ዝኾነ .....4 ካሊእ (ይግለፅ)_____	
421	ነዙ ህፃን ቅድሚ ምፅናሰን ፀረ መንጋጋ ቆልፍ ክታበት ተወኒኡን ዶ ይፈልጣ?	እወ.....1 ኣይ.....2 → **426**	
422	**ንተ.ቁ 421** መልሰን **እወ** እንተኾይኑ፤ካብ ትካል ጥዕና ወፃእ ዝተኸተባኡ ሓዊሱ ክንደይ ጊዜ?	.....**[__|__]**	
423	ነዙ ሕፃን ቅድሚ ምፅናሰን ንዝተኸተባኡ ፀረ መንጋጋ ቆልፍ ክታበት ዝተውሃበን ካርዲ ብምሉኡ ዶ ከርእያኒ ? እሺ እንተኾይኑ፤ ተሎ **ዕለት** ክታበት **እንተዘየሎ 44** ይመዝገብ	**መጠን ክትባት** / **ዕለት/44**: TT1 | TT2 | TT3 | TT4 | TT5	ናይመወዳእታ ክታበት**ዕለት** እንተሎ ናብ **426** ዝለል/ሊ
424	ነዙ ህፃን ቅድሚ ምፅናሰን ካብ ዝተኸተባኡ ፀመቆ ክታበት እቲ ናይ መጨረሻ ኣብ ኣየናይ ወርሕን ዓመትን ‘ዩ ነይሩ?	ወርሒ_____ዓ/ም_____	
425	ነዙ ህፃን ቅድሚ ምፅናሰን ካብ ዝተኸተባኡ ፀመቆ ክታበት እቲ ናይ መጨረሻ ቅድሚከንደይ ዓመት ‘ዩ ነይሩ?	ቅድሚ _____ዓመት	
426	እዙ ሕፃን ኣበይ እዩ ተወሊዱ?	ኣብ ገዛ.....1 ኣብ መንግስታዊ ጥዕና ጣብያ/ክሊኒክ.....2 ኣብ ጥዕና ኬላ .....3 ካሊእ(ይገለፅ).....	
427	ነዙ ሕፃን እንትወልዳ መን ኣዋሊዱወን?	ሰብ ሞያ ጥዕና..... 1 ናይ ጥዕና ኤክስቴንሽን ሠራሕተኛ .....2 ዝሰልጠነ ናይ ልምዲ መዋለዲ .....3 ዘመድ .....4 ካልእ (ይገለፅ).....	
		5ይ ክፍል፡ ማሕበረቁጠባዊ ዝምልከቱ ሕቶታት	
501	ናይ ገዛኹም ናሕሲ ካብ ምንታይ ተሰሪሑ? ***(ሓደ መልሲ ጥራሕ ይሃቡ)***	ቆርቆሮ.....1 ሐመድን ኣምን.....2 ካሊእ (ይገለፅ).....	

502	ግድግዳ ገዛኹም ካብ ምንታይ ተሰሪሑ? ***(ሓደ መልሲ ጥራሕ ይሃቡ)***	ካብ እምኒን ጭቃን .....1 ካብ እምኒን ሲሚንቶን .....2 ካብ ብሎኬት .....3 ካሊእ (ይግለፅ)_____	
503	ምድርበት ገዛኹም ካብ ምንታይ ተሰሪሑ? ***(ሓደ መልሲ ጥራሕ ይሃቡ)***	ካብ ጭቃ .....1 ካብ ሲሚንቶ.....2 ካሊእ (ይገለፅ)_____	
504	ዝስተይ ማይ ብኣብዝሓ ካበይ ትጥቅሙ? ***(ሓደ መልሲ ጥራሕ ይሃቡ)***	ካብ ቧንቧ .....1 ካብ ሽፋን ዘለዎ ጉድጓድ /ዓይኒ ማይ/.....2 ካብ ሽፋን ዘይብሉ ጉድጓድ /ዓይኒ ማይ/.....3 ካብ ወሐዚ ሩባ/ዕቁር .....4 ካሊእ(ይገለፅ)_____	
505	እትጥቀሙሉ ሽንትቤት ዓይነት እንታይ ዩ? ***(ሓደ መልሲ ጥራሕ ይሃቡ)***	ባህላዊ ሽንት ቤት ስላብ ዘለዎ.....1 ባህላዊ ሽንት ቤት ስላብ ዘይብሉ.....2 መተንፈሲ ዘለዎ ሽንት ቤት .....3 ብማይ ዝሰርሕ ሽንትቤት.....4 የብልናን 5	
506	ካብዚኣም ዝስዕቡ ኣይኖም ኣለዉኹም ?	እወ ኣይ	
	ናይ ኤሌትሪክ መብራህቲ (ልቺ)?	ናይ ኤሌትሪክ መብራህቲ (ልቺ).....1 2	
	ሰዓት?	ሰዓት.....1 2	
	ሞባይል?	ሞባይል.....1 2	
	ናይ ገዛ ስልኪ (መደበኛ)?	ናይ ገዛ ስልኪ (መደበኛ).....1 2	
	ሬድዮ?	ሬድዮ.....1 2	
	ቴሌቨጂን?	ቴሌቭዥን 1 2	
	ፍሪጅ?	ፍሪጅ.....1 2	
	ጠረጴዛ?	ጠረጴዛ.....1 2	
	ወንበር?	ወንበር.....1 2	
	ዓራት?	ዓራት.....1 2	
	ናይ ገዛ እንስሳታት?	ናይ ገዛ እንስሳታት.....1 2 → እወ508	
507	ክንደይ ግብሪ ተሓራሲ መሬት ኣለኩም ?	_____ (ግብሪ)	
508	ክንደይ እንስሳታት ኣለዋኹም?	ከፍቲ	
		ኣብዑር	
		ኣላሕም	
		ፈረስ/ኣድጊ/ በቅሊ	

		አባጊዕ			
		ኣጣል			

Annex 6. FGD guide line - Tigrigna version

ጅማ ዩኒቨርሲቲ

ናይ ሕ/ሰብ ጥዕናን ሕክምና ሳይነስን ኮለጅ

ናይ ኢፒደምዮሎጅን ባዮስታቲስቲክስን ዲፓርትመንት

ናይ ወላዳት ወቕታዊ ፀረ መንጋጋ ቆልፍ ክታበት ሽፋንን ዕንቅፋታቱን ዝድህስስ ፅንዓት ኣብ ገጠርን ከተማን ወረዳ ጉለመኻዳ ፣ትግረይ ክልል፣ ሰሜን ኢትዮጵያ፣ 2011

ምስ ወላዳት ንዝካየድ ናይ ጉጅለ ምይይጥ ዘገልግል መምረሒ

መእተዊ

ከመይ ሓዲረን /ውዒለን?እንኳዕ ደሓን መፃእኩን!

ሽመይ ---------- ይበሃል።ጅማ ዩኒቨርሲቲ ናይ ድህረ ምረቃ ት/ቤት ኣብዘካይዶ ፅንዓት ኣባል እየ።ናይ እዙ ፅንዓት ዋና ዓላማ ሽፋን ፀረ መንጋጋ ቆልፍ ክታበትን ዕንቅፋታቱን ንምድህሳስ እዩ። ስለዚህ ሎሚ መዓልቲ ኣብዙይ ዝተረኸብናሉ ዋና ምኽንያት ብዛዕባ ፀረመንጋጋ ቆልፍ ክታበት ንምምያጥ እዩ ። ስለዚህ ምይይጥ ስለዝኾነ ዝተፈላለዩ ሓሳባት ክንሸራሸሩ ስለዝድለ ኩላትና ብመራሒ እዚ ምይይጥ ዝለዓሉ መበገሲ ሓሳባት መሰረት ብምግባር ዝመስለና ሓሳብ ብምሃብ ክንሳተፍ ይግባእ ። ዝተልዓሉ ሓሳባት ከይተሸራረፉ ንምሓዝ ካብ ሽም ተሳተፍቲ ወፃእ ዘሎ ሓሳብ ብቴፕ ክቅዳሕን ክምዝገብን እኳ እንተኾነ ሽም ስለዘይምዝገብን ዘይቅዳሕን ካባና ወፃእ ማንም ከፈልጦ ኣይኽእልን። ስለዚህ ዝህባኒ ዝኾነ ይኹን ሓቤሬታ ብምስጢር ዝተሓዝ ምኻኑ ፈሊጠን ከምኡውን ተሳታፊ ምኻን ኣብ ኣገልግሎት ክታበት ምምሕያሽ ናይ ባዕሉ ኣስተዋፅኦ ክህልዎ ስለዝኽእል ናይእዚ ምይይጥ ተሳታፊ ምኻንን ዘይምኻንን ምሉእ ብምሉእ ኣብ ናተን ድልየት ዝተወሰነ እኳ እንተኾነ ንኽሳተፉ ብኣኽብሮት ንላቦ።

ፍቃደኛ ድየን/ዮም? እወ ☐

ኣይ ☐

ፍቃደኛ ስለዝኾና፣ኣዚና ነመስግን!

	ምስ ወላዳት ዝግበር ምይይጥ

	መበገሲ ሕቶታት	**ሰዓብቲ ሕቶታት**
1	ነበርቲ እዚ ከባቢ ኣብወላዳትን ዕሸላትን ዘጋጥም ሕማም መንጋጋ ቆልፍ ይፈልጡ ዶ?	እንታይ ማለት እዩ? መልዓሊኡ እንታይ እዩ?ነዚ ሕማም ዘቃልዑ ነገራትስ እንታይ እንታይ እዮም? እዚሕማም ምስ ሰይጣን ዘተሓሕዝ ነገር ኣለዎ? ኣየናይ ክፍሊ ሕሰብ እዩ ነዚ ሕማም ብጣዕሚ ዝተቃለዐ? እዚ ሕማም እንታይ እንታይ ምልክታት የርኢ? እዚ ሕማም ሳዓቤኑ እንታይ እዩ? እዚ ሕማም ብኽመይ ምክልኻል ይከኣል?
2	ነበርቲ እዚ ከባቢ ፀረመንጋጋ ቆልፍ ክታበት ይውገኣ ዶ? እወ/ኣይ? ንምንታይ?	እስቲ ንሰን ፀረመንጋጋ ቆልፍ ክታበት ተወጊእን ዶ ይፈልጣ ? እወ/ኣይ? በዓል ገዛእን ክታበት ይድግፉ ዶ?
3	ፀረመንጋጋቆልፍ ክታበት ንኹለን ወላዳት ኣብእዋን ፅንሲ ኮነ ቅድሚ ፅንሲ ኣድላዩ እዩ. በዚ ሓሳብ ይስምዕምዑ / ኣይስምዕምዑን? ንምንታይ?	እዚ ሓሳብ ዝድግፉ እንተኾይነን ጥቕሙ እንታይ እዩ? ክንደይ ጊዜ ፀረመንጋጋቆልፍ ክታበት ምውሳድ የድሊ? ኣወሳስዳኡ ኽ ከመይ አዩ? ነዚ ሓሳብ ዘይድግፉ እንተኾይነን ምኽንያተን እንታይ እዩ? ፀረመንጋጋ ቆልፍ ክታበት መንግስቲ ብነፃ ንደቂኣነስትዮ ዝህበሉ ምኽንያት እንታይ ይመስለን?
4	ኣብዚ ከባቢ ወላዳት ፀረመንጋጋ ቆልፍ ክታበት ዘይውገኣሉ ምኽንያት እንታይ ይመስለክን?	እንታይ ዘበራታትዑ/ዘተዓናቅፉ ነገራት ኣለዉ?

Annex 7.Indepth interview guide for EPI unit heads and HEWs-Tigrigna version

ጅማ ዩኒቨርሲቲ

ናይ ሕ/ሰብ ጥዕናን ሕክምና ሳይነስን ኮለጅ

ናይ ኢፒደምዮሎጅን ባዮስታቲስቲክስን ዲፓርትመንት

ናይ ወላዳት ወቕታዊ ፀረ መንጋጋ ቆልፍ ክታበት ሽፋንን ዕንቅፋታቱን ዝድህስስ ፅንዓት ኣብ ገጠርን ከተማን ወረዳ ጉለመኻዳ ፣ትግረይ ክልል ፣ሰሜን ኢትዮጵያ፣ 2011

ምስ መተሓባበርቲ ክታበትን ናይ ጥዕና ኤክስተንሽን ሰራሕተኛታትን ዝካየድ ሰፊሕ ቃለመሕትት ዘገልግል ብትግርኛ ዝተዳለወ መሕትት

ከመይ ሓዲርም/ረን /ውዒሎም/ለን?

ሽመይ ---------- ይበሃል።ጅማ ዩኒቨርሲቲ ናይ ድህረ ምረቃ ት/ቤት ኣብዘካይዶ ፅንዓት ኣባል እየ፡ናይ እዙ ፅንዓት ዋና ዓላማ ሽፋን ፀረ መንጋጋ ቆልፍ ክታበትን ዕንቅፋታቱን ንምድህሳስ እዩ። ስለዚህ ምስ ገምጋም ትካላት ጥዕናን ሰብሞያን ዘራኽብ ነገር የብሉን ። ሕጂ ነዚ ፅንዓት ብዝተዳለወ ቃለ መሕትት መሰረት ብዛዕባ ፀረ መንጋጋ ቆልፍ ክታበት ዝምልከት ካብ ብሳይነሳዊ መንገዲ ነዚ ፅንዓት ክካየደለን ዝተመረፃ ጣብያታት ዝርከባ ትካላት ጥዕና ዝርከቡ መተሓባበርቲ ክታበትን ናይ ጥዕና ኤክስተንሽን ሰራሕተኛታትን ሓቤሬታ እንዳኣከብኩ ይርከብ ናታትኩም ትካል ጥዕና እውን ኣካል እዚ ፅንዓት ክትከውን ተመሪፃ ኣላ ።ቅድሜኡ ግን ዝህባኒ/ኑ ዝኾነ ይኹን ሓቤሬታ ብምስጢር ዝተሓዝ ምኻኑን ከምኡ እውን ሽም ስለዘይምዝገብ ካባይ ወፃእ ማንም ክፈልጦ ዘይኽእል ምኻኑ ከረጋግፀለንሎም ሎም ይደሊ።ስለዚህ ብዘይካ ዝተወሰነ ናይ ጊዜ ምዉሳድ ምንም ዓይነት ሳዓቤን የብሉን ። ነገርግን ናይእዚ ፅንዓት ተሳታፊ ምኻንን ዘይምኻንን ምሉእ ብምሉእ ኣብ ናቶም/ተን ድልየት ዝተወሰነ እኳእንተኾነ ናተንቶም ምስታፍ ኣብ ኣገልግሎት ምምሕያሽ ናይ ባዕሉ ኣስተዋፅኦ ከህልዎ ስለዝኽእል ንኽሳተፉ/ፉ ይላቦ።

ፍቃደኛ ድየንሐድዮም?

እወ ፍቃደኛ እየ ☐ ፍቃደኛ ኣይኮንኩን ☐

ናይ ተሓታቲ መፍለዪ ቁፅሪ ----------

ናይ ሓታቲ ሹም ---------- ዕለት---------- ፊርማ--------

ናይ ሱፐርቫይዘር ሹም ---------- ዕለት---------- ፊርማ----------

ምስ መተሓባበርቲ ክታበት ንዝካየድ ሰፊሕ ቃለመሕትት ዘገልግል ብትግርኛ ዝተዳለወ መሕትት

1) ወረዳ ጉለማካዳ ቀበሌ _____ ቀጠና/ቁሸት_____
2) ዕታ መተሓባበሪ ክታበት: ላ____ ተ_____
3) ናይ ት/ቲ ደረጃ_____
4) ሓላፍነት _____
5) ዓይነት ትካል ጥዕና_____
6) በዝሒ ተገልጋላይ_____

7) ወላዳትን ዝውለዱ ዕሸላትን ካብ ሕማም መንጋጋ ቆልፍ ንምክልኻል እትህብዎ ኣገልግሎት ኣሎ ዶ? 1.እወ 2. ኣይ
8) **ንተቁ 7** መልሱ የለን እንተኾይኑ፤ ንምንታይ?
9) **ንተቁ 7** መልሱ እወ እንተኾይኑ፤እንታይ እንታይ?

A.ፀረ መንጋጋ ቆለፍ ክታበት

B.ወላዳት ኣብ ትካል ጥዕና ንክወልዳ ምብርትታዕ

C. ናይ ጥዕና ት/ቲ ብምሃብ

ካሊእ?_____

10) ፀረ መንጋጋ ቆለፍ ክታበት ካብ እትህብዎም ኣገልግሎታት ሓደ እንተኾይኑ ኣቕርቡቱ ብመነፅር ተበፃሕነትን በዝሒ ኪኢላታትን እንታይ ይመስል?
11) ፀረ መንጋጋ ቆልፍ ክታበት ነየናይ ክፍሊ ሕ/ሰብ ኢኹም ቅድምያ እትህቡ?

A.ወላዳት

B.ነፍሰ ፀራት

ካሊእ?_____

12) እንታይ እስትራተጂ ብምጥቃም ኢኹም ክታበት እትህቡ ዘለኹም?

A. ቋሚ መዓልታዊ ፕሮግራም

B. ኖቕጣታት ክታበት

ካሊእ? _____

13) ኖቕጣታት ክታበት እትጥቀምዎ እስትራተጂ እንተኾይኑ ኣበይን ክንደይ ጊዜን?
14) ኣብ ኖቕጣታት ክታበት ብምሃብ ዝተለምኩምዎ ወፍሪ ክታበት ብምሉኡ ዶ ተተግቢሩ?1.እወ 2.ኣይ
15) ንተቁ 14 መልሶም/መልሰን ኣይ እንተኾይኑ፣ንምንታይ?
16) ኣወሃህባኹምስ ከመይ እዩ?
17) ዓመታዊ ትልምኹም እንታይ ነይሩ? ካብ ዝተለምኩምዎ ክንደየናይ ሽተኡ ወቂዑ?
18) ናይ ፀረ መንጋጋ ቆልፍ ክታበት ሽፋንኩም እንታይ ይመስል?
19) ኣብ መዳይ ክታበት ፀረመንጋጋ ቆልፍ እንታይ ፀገማት የጋጥሞኹም?

A. ብመዳይ ፕሮግራም

B.ብመዳይ ተጠቀምቲ

20) ሓደ ሓደ ነበርቲ እዚ ከባቢ ፀረ መንጋጋ ቆልፍ ክታበት ዘይጥቀማሉ ምኽንያት እንታይ ይመስለንይመስሎም?
21) ክታበት ኣብ ምሃብ ዝርከቡ ሰብ ሞያ ስልጠና ተዋሂብዎም ዶ? 1.እወ 2.ኣይ

22) አብ መዳይ እዚ ፕሮግራም ካልኦት ኣጋራት ተሳትፉ ዶ? 1.እወ 2.ኣይ

23) **ንተ.ቁ 22** መልሱ እወ እንተኾይኑ ፤በዓል መን? እንታይ ግደ ይፃወቱ?

A. ቀበሌ

B. ገበርቲ ሰናይ

C.ካሊእ (ይገለፅ)

24) ሽፋን ፀረመንጋጋ ቆልፍ ክታበት ንምዕባይ እንታይ ክግበር ኣለዎይብሉ/ላ?

ምስ ናይ ጥዕና ኤክስተንሽን ሰራሕተኛታትንዝካየድ ሰፊሕ ቃለመሕትት ዘገልግል ብትግርኛ ዝተዳለወ መሕትት

1) ወረዳ ጉለማካዳ ቀበሌ_____ ቀጠና/ቁሸት_____
2) ዖታ: ኣ____ ተ_____
3) ናይ ት/ቲ ደረጃ_____
4) ወላዳት ካብ መንጋጋ ቆልፍ ሕማም ንምከልኻል እትህብዎ ኣገልግሎት ኣሎ ዶ? እወ/ኣይ
5) **ንተቁ 4** መልሱ የለን እንተኾይኑ፤ ንምንታይ?
6) **ንተቁ 4** መልሱ እወ እንተኾይኑ፤ እንታይ እንታይ?

A.ፀረ መነጋጋ ቆልፍ ክታበት

B.ወላዳት ኣብ ጥዕና ተቃም ንክወልዳ ምብርትታዕ

C. ናይ ጥዕና ት/ቲ ብምሃብ

ካሊእ?_____

7) ፀረ መንጋጋ ቆለፍ ክታበት ነየናይ ክፍሊ ሕሰብ ኢኹም ቅድምያ እትህቡ?

A.ወላዳት

B.ነፍሰ ፀራት

ካሊእ?_____

8) እንታይ እስትራተጂ ብምጥቃም ኢኹም ፀረ መንጋጋ ቆለፍ ክታበት እትህቡ ዘለኹም?

A. ቋሚ መዓልታዊ ፕሮግራም

B. ኖቕጣታት ክታበት

C. በብገዛኡ

ካሊእ? _____

9) ኣወሃህባኹምስ ከመይ እዩ?
10) ዓመታዊ ትልምኹም እንታይ ነይሩ? ካብ ዝተለምኩምዎ ክንደየናይ ሸተኡ ወቒዑ?

11) ናይ ፀረ መንጋጋ ቆልፍ ክታበት ሽፋንኩም እንታይ ይመስል?
12) ኣብ መዳይ ክታበት ፀረመንጋጋ ቆልፍ እንታይ ፀገማት የተዓናቁፉኩም?

A. ብመዳይ ፕሮግራም

B.ብመዳይ ተጠቀምቲ

13) ፀረ መንጋጋ ቆልፍ ክታበት ብዝምልከት ስልጠና ተዋሂብወን/ተዋሂብዎም ዶ? 1.እወ 2.ኣይ

14) ኣብ መዳይ እዚ ፕሮግራም ካልኦት ኣጋራት ይሳተፉ ዶ? 1.እወ 2.ኣይ

15) ንተቁ 18 መልሱ እወ እንተኮይኑ በዓል መን? እንታይ ግደ ይፃወቱ?

16) ሽፋን ፀረመንጋጋ ቆልፍ ክታበት ንምዕባይ እንታይ ክግበር ኣለዎ ይብሉ/ላ?

Annex 8. In-depth interview guide for religious leaders Tigrigna version

ጅማ ዩኒቨርሲቲ ናይ ሕሰብ ጥዕናን ሕክምና ሳይነስን ኮለጅ

ምስ መራሕቲ ሃይማኖት ንዝካየድ ዓሚቅ ቃለመሕትት ዘገልግል ብትግርኛ ዝተዳለወ መሕትት

ናይ ወላዳት ወቅታዊ ፀረ መንጋጋ ቆልፍ ክታበት ሽፋንን ዕንቅፋታቱን ዝድህስስ ፅንዓት ኣብ ገጠርን ከተማን ወረዳ ጉለመካዳ ,ትግረይ ክልል ሰሜን ኢትዮጵያ 2011

ከመይ ሓዲሮም/ውሒሎም?

ሽመይ ---------- ይበሃል።ጅማ ዩኒቨርሲቲ ናይ ድህረ ምረቃ ት/ቤት ኣብዘካይዶ ፅንዓት ኣባል እየ፡ናይ እዙ ፅንዓት ዋና ዓላማ ሽፋን ፀረ መንጋጋ ቆልፍ ክታበትን ዕንቅፋታቱን ንምድህሳስ እዩ። ስለዚህ ምስ ገምጋም ሃይማኖትወይከዓ መራሕቲ ሃይማኖት ዘራክብ ነገር የብሉን ሕጂ ነዚ ፅንዓት ብዝተዳለወ ቃለ መሕትት መሰረት ብዛዕባ ፀረ መንጋጋ ቆልፍ ክታበት ዝምልከት ካብ ብሳይነሳዊ መንገዲ ነዚ ፅንዓት ክካየደለን ዝተመረፃ ጣብያታት ዝርከቡ መራሕቲ ሃይማኖት ሓቤሬታ እንዳኣከብኩ ይርከብ ናታትኩም ሃይማኖተ እውን ኣካል እዚ ፅንዓት እያ

ቅድሜኡ ግን ዝህቡኒ ዝኾነ ይኹን ሓቤሬታ ብምስጢር ዝተሓዝ ምኽኑን ከምኡ እውን ሽም ስለዘይምዝገብ ካባይ ወፃእ ማንም ከፈልጦ ዘይኽእል ምኽኑ ከረጋግፀሎም ይደሊ።ስለዚህ ብዘይካ ዝተወሰነ ናይ ጊዜ ምዉሳድ ምንም ዓይነት ሳዓቤን የብሉን ናይእዚ ፅንዓት ተሳታፊ ምኽንን ዘይምኽንን ከዓ ምሉእ ብምሉእ ኣብ ናቶም ድልየት ዝተወሰነ እዩ ነገርግን ናቶም ምስታፍ ኣብ ኣገልግሎት ምምሕያሽ ናይ ባዕሉ ኣስተዋፅኦ ክህልዎ ስለዝኽእል ንኽሳተፉ ይላቦ።

ፍቃደኛ ድዮን?

እወ ፍቃደኛ እየ ☐ ፍቃደኛ ኣይኮንኩን ☐

ናይ ተሓታቲ መፍለዪ ቁፅሪ ----------

ናይ ሓታቲ ሹም ---------- ዕለት---------- ፊርማ--------

ናይ ሱፐርቫይዘር ሹም ---------- ዕለት---------- ፊርማ----------

ምስ መራሕቲ ሃይማኖት ንዝካየድ ሰፊሕ ቃለመሕትት ዘገልግል ብትግርኛ ዝተዳለወ መሕትት

1) ኣድራሻ ፡ወረዳ ጉለማካዳ_____ቀበሌ_____ ቀጠና/ቁሸት_____

2) ፆታ: ኣ____ ተ_____

3) ናይ ትቲ ደረጃ_____

4) ሓላፍነት _____

5) ሃይማኖታዊ ሓላፍነት _____

6) ንወላዳት ከምኡአውን ንነፍሰፀራት ዝወሃብ ፀረመንጋጋ ቆልፍ ክታበት ዶ ይፈልጡ? 1. እወ 2. ኣይ

7) ብመዳይ እዚ ክታበት ዘለዎ ጥቅሚ ሃይማኖትኩም ዘለዎ ኣቋም እንታይ ይመስል?

A.ጠቃሚ እዩ

B. ኣይጠቅምን

8) ንተቁ 7 መልሶም ኣይጠቅምን እንተኾይኑ ፤ንምንታይ?

A.መንጋጋ ቆልፍ ሕማም ናይ ፈጣሪ ቁጣዐ እዩ

B. ሕማም መንጋጋ ቆልፍ ዓ ይኒ ሰብ ዘምፅኡ ጣጣ እዩ

C. ብሕማም መንጋጋ ቆልፍ ቆልዓ ዝሞታ ኣዶ ብጋኔን ዝተትሓዘት ምካና ዘርኢ ምልክት እዩ

D. ፀረመንጋጋ ቆልፍ ክታበት ወሊድ ይከላከል ስለዝኮነ ፀረ ቃለእግዚኣቢሄር እዩ

ካሊእ?_____

9) ንተቁ 7 መልሶም ጠቃሚ እዩ እንተኾይኑ ፤ሃይማኖቶም ክታበቱ ንከሳካዕ እንታይ ግደ ይፃወት ኣሎ?

10) ሓድሓደ ደቂ ኣነስዮ ሃይማኖተን ፀረመንጋጋ ቆልፍ ክታበት ንዘይምውሳደን ከም ምክንያትከገልፃ ይስማዕ ስለዚ ምስእዙይ ክተሓሓዝ ዝኽእል ሃይማኖታዊ እምነት ኣሎ ደዩ? 1. እወ 2. ኣይ

11) ንተቁ 10 መልሶም እወ እንተኾይኑ፤ እስቲ ይግለፁለይ?

12) ንተቁ 10 መልሶም ኣይ እንተኾይኑ፤ ሃይማኖት ከም ምክንያት ዝጠቕሳሉ ምኽንያት ምስ ምንታይ ዝተተሓሓዘ ክኸውን ይኽእል ኢሎም ይሓስቡ?

13) መራሕቲ ሃይማኖት ሽፋን ፀረመንጋጋ ቆለፍ ክታበት ንምዕባይ እንታይ ኣስተዋፅኦ ከገብሩ ይኽእሉ?

DECLARATION

Assurance of principal investigator

I,the undersigned declare that this thesis is my original work,has not been presented for a degree in this or other university and that all source of material used for the thesis have been fully acknowledged.

Name of the student:_____

Signature_____

Date._____

Name of institution_____

Date of submission_____

This thesis has been submitted with my approval as university advisor and internal examiner.

Name of first advisor _____

Signature _____

Date_____

Name of internal examiner _____

Signiture_____

Date_____