Addis Ababa University
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Assessment of relationship between infant death And high risk fertility behavior among married women of Afar. Zone Four

BY

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1. Background and problem statement

Five hundred new born infants die every hour and 12, 000 babies a day. Many studies have shown that major infant mortality differentials exist in relation to at least three variables related to fertility: birth order, maternal age, and the length of the interval between successive births, which are considered as biological differentials. All the studies maintain that infant mortality increases with birth order, and that it is higher when the mother is at the upper or lower end of the childbearing span or when the interval between two successive births is very short. The proportion of births that occur under these adverse conditions is higher when fertility levels are high. Non biological differentials have to do with socioeconomic conditions, environment, and access to health service and culture (1, 2, 3, 4).

A Data from fertility survey of the world in 1980s provided a rich source of information on the importance of childbearing patterns on the survival of infant and children. A narrowly spaced birth raises the average chance of dying in infancy by about 60-70%, and the chance of dying before the age of five by about 50%. An infant born to a teenage mother is 24% more likely to die in the first month of life compared to an infant born to a mother 25-34 years of age (3, 4, 5, 6).

Some groups of women are especially susceptible to death or disability from pregnancy and pregnancy related illness. Adolescents under the age of 15 are five to seven times more likely to die in pregnancy and childbirth than women in the lowest risk age group i.e. 20-24. Women who have had five or more pregnancies, and over the age of 35 also face substantially higher risk than those aged 20-24. Women who become pregnant less than two

years after previous birth often suffer adverse consequences and their children are more likely to be ill and die than infants who are born more than two years apart (4, 7).

The United Nations International Conference on Population in 1984 urged all government to support FP as a health measure in maternal and child health programs as a way of reducing birth occurring too early or too late in mother's life, or increasing the interval between births and of diminishing higher birth order by giving special consideration to the need of those in the post-partum and/or breast feeding period. (6)

The Afar Region of Ethiopia is one of the most impoverished regions among the poorest counties of the world. The population is predominantly of one ethnic group and is largely migratory or semi migratory pastoralist society with low level of education and literacy. Ninety six percent of the rural male and 98% of the rural women are illiterates who can neither read nor write. Health status in the region is among the lowest in Ethiopia. Infant mortality rate of the region is 129/1000 which is the highest. Although it has shown progress, the immunization coverage is still the lowest next to Somali. Twenty two point four percent of the total population is female of reproductive age. 42% of mothers are below 18.5 body mass index. The average household size is 5.7 and TFR is 4.9 per woman. (8, 18)

The rationale of the study is that as the study population is predominantly of one ethnic group which has it's own norms,value,and culture towards human reproduction. Assessing the prevalence of high risk fertility and some of the cultural aspects related to fertility and infant mortality has a paramount importance. The other rationale of the study is that as infant mortality rate is the highest next to Gambela at national level, it is to see the relation ship of infant death and high risk fertility behaviour if at all there is one. This finding would serve as

an additive item of information in an argument for Family Planning as it is one of the low populated area with 15-20 percen /k^2

2. Literature Review

2.1 Factor Influencing Fertility

Study by Abdulahi Hassen, Assefa Hailmariam and Yacob Zewoldi on proximal determinant of fertility in Ethiopia 1994 revealed that duration of breast feeding and its impact on post partum amenorrhea were the most important fertility inhibiting factors and marriage pattern in rural as the most important fertility determinates(9).

Some studies have also shown that customs, beliefs, and traditions of a given population also determine high fertility patterns. Some of the factor responsible for the high fertility level included, universal and early marriage, low status of women, high infant and child mortality, and absence of modern contraceptives (9, 10, 11).

Higher parity and higher mortality move in the same direction. As long as child mortality remain high there is major psychological barrier to limit their fertility behavior through four possible mechanism that is: - Biological mechanism, replacement motivation, insurance motivation, social response (12, 13).

2.2 Demographic Characteristics and Infant Mortality

2.2.1 Fetal, prenatal, infant and child hood mortality in relation to birth order

The general pattern that emerges from various studies indicates that the risk of late fetal death (still birth) is relatively higher for first birth decrease for second and increase slightly for fourth births and increase much more sharply for later order births. Such pattern is frequently described as J-shaped curve where risks for first birth are very high the curve becomes U-shaped (3, 13).

The relationship between neonatal mortality rate and birth order shows a similar U-shaped or J-shaped curve. Both post neonatal and total IMR rates increase steadily with increased birth order as does the mortality rate for each childhood. According to a study by Kanikar and Murthey in 1984 typical U-shaped relationship were found between birth order and mortality during infancy, neonatal, post neonatal period (15).

National Family Health Survey in 1998 /1999 from 16 states of India and 18 demographic health survey data from sub-Sahara Africa, revealed that on average first birth had about 50% higher risk of dying than higher order of 4 (four). And higher maternal and infant mortality at extreme of birth order were exhibited. The neonatal mortality rate was lowest for birth order 3 (26.8%) compared to birth order 1 (34.3 %) and 6^{+} (47.9%). Similar, infant mortality rate was lowest with birth order 3 (42.5%) compared to 1 (48.1%) and 6+ (75.4%) (14).

Malawi demographic heath survey of 2000 showed the same U-Shaped pattern, with the 1st births and higher order births experiencing the highest mortality rates.

2.2.2 Maternal age at pregnancy and family health

Maternal age affects the risk of death of a child. Children born to mother under age 20 are more likely to die before their first birthday. Babies born to young mothers are more likely to be premature, have LBW, and suffer from complication of delivery (4).

Different studies suggest in unison that there is an age-band in fertility span of a woman during which the reproductive risks are at a minimum on either side of this relatively safe age band, the risk of pregnancy increases describing J-shaped, U-shaped or reversed J-shaped curves. Those patterns are particularly typical mortality (prenatal, late fetal, infant), prematurity and maternal mortality (13).

There is also indirect evidence that progressive decrease in utero-placental blood flow with age has a major role in jeopardizing fetal life. The three disorders whose frequency increases most with advancing maternal age have low utero-placental blood flow as common factors contributing to their genesis birth weight of full term infant with advancing age. (16)

Intrinsic biological risk of adolescent mothers is inversely proportional to a girl's age. The risk of dying for infant born to teen age mother were elevated by about 30% compared with infant born to mother aged between 20 and 34 years. Infants of adolescent mothers are smaller than those of adult mothers. Infants of adolescent mothers have increased incidence of prematurity and low birth weight, which is found to be the major determinant of child survival(4).

According to national family health survey 2 conducted in 1998-99 in India U-shaped relationship of infant mortality was exhibited with extremes of maternal age and l 5 : mortality was observed at maternal age of 20 - 29 years. Demographic health survey in Zambian in 1996 revealed U-shaped relationship pattern between childhood mortality and mother's age at birth (Less than age 20) and older (40-49) years old (14).

Malawian Demographic Health Survey in 2000 showed that, children born to young mothers who were under 20 years of age and older mothers (over 40 years) had higher mortality than children born to mothers 20-39 years of age. Children of mothers under 20 years of age were especially vulnerable, particularly in the 1st month of life. Neonatal mortality was 68 deaths per 1000 among children of teenage mothers, compared with 38 per 1000 among children of women age 20-39.

2.2.3 Birth Interval

The most potential variable explaining variation in under five mortality is the length of the interval between births. As the birth interval gets short, the risk of child death increases sharply (5). This pattern is most pronounced in neonatal period. A survey done in Malawi 2004, three fold difference in risk was observed between children with an interval less than 24 months (73 per 1000) and those with an interval of 4 years or more (26 per 1000).The Yemenian demographic maternal and child health survey in 1997 showed that infant mortality decreased from 124 death per 1000 births for birth interval less than two years to 36-55 deaths per 1000 live birth intervals of two years or more.

The Zambian Demographic Health Survey in 1999 showed that short birth intervals significantly reduced a child's chances of survival. Children born less than two years of the previous birth were twice more likely to die in infancy than those born after an interval of four years of more (165 compared to 77 per 1000). This relationship persisted in all age groups examined.

According to the National Family Health Survey -2 conducted in 1998-99 in India, birth interval was observed to be indirectly proportional to infant and child mortality rate. At a birth interval of less than 24 months, the Neonatal Mortality Rate was 71.7 and the Infant Mortality Rate was 109.5. However, when birth interval increased beyond 48 months NMR declined to 24.1 and IMR to 38.5 (1). On the other hand children born after birth interval of 24 months or less have about double the risk of dying compared with children born after intervals of between 24 and 35 months on average (14, 17).

3. Objective

3.1 General objective

- To Asses the relationship between infant mortality and high-risk fertility behaviors and cultural factors affecting infant death and fertility behaviors among married pastoral women of Afar (Zone 4).

3.2 Specific Objectives

- To determine the prevalence of high risk fertility
- To assess the relationship of birth order, maternal age and birth interval with infant death.
- Identify cultural factor affecting infant death and fertility behaviors.

4. Research Methodology

4.1 Study area

The study area is Zone four of Afar region which is one of the two zones with a very poor infrastructure in the region. The town of zone 4 is 480 km from Addis Ababa and 70 km from the main road to Mekele and to the east from kobo. Its land is arid by large. It is one of the malaria endemic and drought prone areas of the region where such episodes has repeatedly resulted heavy loss of livestock. It is an area with low population density but hard to reach. It has the total population of 122,155. The majority lives in cluster of 8-10 huts or 'Ari' in one place. A great assembly of the elders of the territory makes all-important decisions.

The major source of water for the area is a river and ponds. Road network and other means of transport are very poor. Dry weather road of poor condition are the only ones that interconnect different woredas. Services like postal, telephone, bank and electricity are not available. There is no single high school or hospital. The existing one health center and other health posts are under equipped and staffed.

Infant mortality of the region is 129/1000live births. According to health indicator of 2003, maternal health coverage like ANC, attended delivery, postnatal service and FP of the region is 24, 2, 0.26, 7% respectively and access to safe water and excretal disposal is only to 9% of the population. Twenty two point four percent of the total population is female of reproductive age. The TFR is 4.9 and 42% of mothers are below 18.5 body mass index. The study area is one of the two zones in the region with poor heath infrastructure and services.

4.2 Study design

Cross-sectional study using both qualitative and quantitative method was carried out. The qualitative study used FGD and in depth interviewing to enrich or supplement the information that was generated through the quantitative data collections method.

4.3 Source Population – All women of reproductive age group who reside in zone four Afar region.

4.4 Study population-Married women of reproductive age (15-49Years of age), who had at least one live birth in the last Five years were the study population.

Exclusion Criteria- Primi gravid and those women who had never given live birth.

4.5. Sample Size

Sample size was calculated using the stat cal program of EPINFO computer statistical package, for the purpose of interval comparison the largest sample size was taken and the total sample size required were 1,320using single population proportion formula and tacking prevalence of multiple bio-demographic risk 50%, (20) design effect of 2 and assumption of 95% confidence level, 4% marginal error, 10% non response rate.

$$n = \frac{\left(z\frac{\alpha}{2}\right)^2 p(1-p)}{d^2}$$

4.6 Sampling Procedure

There are five woredas in the zone; all were included in the study except one woreda (Teru) where people were displaced due to earth quack attack that occurred in Afar 2-3 months prior to the study period. For each of those woredas included in the study, sample size was proportionally allocated based on each woreda's population size. From each woreda Kebeles to be included in the study were identified by simple random sampling method using list of all kebeles in each woreda as a sampling frame and more than 50% of the kebeles was included to ensure the representative ness.

For each selected kebeles sample size was allocated proportional to the kebles population based on the sample size allocated to the woreda. Each kebele or clusters of house hold in kebeles were the sampling unit of the study and the subject women of the study were interviewed from the cluster of households selected randomly until it reaches to the allocated sample size to that kebele. In each kebele bottle spin technique were used to select direction to start data collections.

As to the qualitative, in each woreda 1 FGD and 1 in depth interviews were conducted. In each group 6-8 member from community elders, Religious and clan leaders were participants. The participants were comparable in age and education. The participants were recruited using a convenient sampling technique by the principal investigator with woreda health office head of each woreda. For the in depth interview the key informants were TBAs and traditional healers. The same sampling method were used to select the key informant in each woreda

4.7. Data Collections Procedures

As the official language of the region is Amharic, Afarigna in written form is not widely used besided it was difficult to get easily enumerators who can read and write Afarigna which uses Latin letter easily. Therefore, the questionnaire was produced in English and carefully translated into Amharic and then, interviewers, who can speak both language interpreted each question of the Amharic carefully in to Afargna and finally intervewed and filled the formats for each eligible woman.

Ten enumerators and two supervisors who were residents of the area were recruited and training was given on techniques of interviews and data collection.

The data were collected using structured standardize questionnaire going house to house. The questionnaire was pre-tested prior to the actual data collection on 40 respondents that were not included in the main survey and some minor re adjustments were made.

One FGD and one in depth per woredas and a total of four session of FGD and 4 in depth interview were undertaken. The principal investigator and experienced supervisor moderated FGD. The setting arrangement was in circle and the group setting was made private and quite. Semi structured questionnaire with open ended questionnaire was used to initiate FGD. Note was taken by writing down points and recorded using tape recorder.

Data quality control

Enumerators and supervisors were diploma holder in health and agriculture and previously trained by pastoral community development project on pastoral rapid appraisal for 02 weeks and had been working as enumerators and almost all of them were conversant with the local language.

Three days additional training was given on techniques of interview and data collections. Demonstration of interview and role playing by interview was used as a step to train interviewer. The questionnaire was also pre tested prior to actual data collection.

Prominent events and cultural and religious events were utilized to facilitate recall. The principal investigator and supervisor have made a day to day on site supervision during the whole period of data collection. At the end of each day, the questionnaire were reviewed and checked for completeness, accuracy and consistency by supervisor and investigator.

Operational Definition

Infant death – A death of a child under one year of age

High risk fertility

The three parameters age, parity and birth spacing are called bio demographic factors. However, the bio demographic characteristic do not by themselves, pose a risk to the mother and/or her children. It is only when a woman with one or more high risk factors gives birth that they potentially become dangerous. Therefore, in this study this definition is applied to categorize women in assessing prevalence of high risk fertility.

Too young - When mother's age is less than 18 years old.

Too old - When the mother's age is greater than 34 years.

Maternal age – Age of eligible women at termination of last index child is taken when relationship with infant death is assessed. But, age at the time of survey is considered when assessing the prevalence of high risk fertility of the mother.

Too frequent birth - When birth interval is less than 24 month between the last index child and the previous live born or mother who gave birth less than 15 month at the time of survey and not using any method of contraceptive at the time of survey

Birth interval - The interval in months between the preceding birth and the index child was taken when its relationship with infant deaths is assessed, but duration in months after last birth of index child, when assessing prevalence of high risk fertility.

Too many - When birth order's is greater than three. According to demographical survey of Ethiopia 2000.

Birth order – The rank of an index live birth among other live births of eligible women.

A woman is labeled as having high-risk fertility if she is in one of the risks relating to: Age, Birth interval, and Birth order. A woman can also be categorized as having multiple risks if she has more than one-fertility risks.

Achieved fertility or parity – Number of children ever born alive to each eligible women.

Actual or survived children – Number of children born alive to each eligible woman who are still living at the time of the study.

Child loss – Number of children born alive to each eligible woman but died then after.

Index child - The last live birth to eligible woman.

Data Analysis Procedures

Data were entered and cleared using EPI – INFO version 6 and transferred to SPSS for window version 11 for analysis. Frequency distribution like graph, table percent and cross tab were applied to descriptive statistics while bivariate and multiple logistic regression were used to asses association.

For the qualitative data tape-recorded interviews were transcribed and relevant information were interpreted and summary of the key points were written after repeated reading and hearing the tap record. Illustrative quotes were written word for word using quotation mark.

Variable of the study – The variable for which data were collected.

Independent Variable

- **General Socio demographic**: - Religion, age of the mother education of eligible women and husband, occupation of eligible women and husband, social poison of husband.
- **Bio-demographic variable**: - Age of the mother at birth of index child, birth order, birth interval, age at first marriage, number of children ever born alive, number of children alive at present.
- **Family planning attitudes and behavior variable**: - Family planning knowledge, practice, attitude ideal family size, ideal age for a boy or girls to marry, polygamy.

- **Other variable like**: - Age of child, age at death, sex, and weight at birth, immunizations status of the child, duration of breast feeding, and TT2 antenatal care during pregnancy of index child, place of delivery and delivery attendants water source.

Dependent variable: - Infant death

Ethical consideration: - Ethical clearance from department of community health and written consent from regional health bureau to each woreda was obtained; verbal consent was also obtained from each woreda health office. During data collection following an explanation about the purpose of the survey verbal consent was obtained from all eligible women included in the study.

Result

A total of 1299 eligible women were included in the study. The response rate was 100%. The study subjects were predominately of one ethnic group. Among 1299 respondents, more than

96% of were Muslims, illiterate and full time housewives. Most of (70%) the respondents were between the age of 19-34.

The great majority (98%) of the mothers had never attended antenatal clinic at least once and never received TT2 during their pregnancy of index child. Ninety Seven point two percent of index children were delivered at home assisted by un trained traditional birth attendants and relatives.

One thousand three hundred seven index children were born alive from study women in the last 5 years prior to the study period and about 0.06% were twins. Among those alive birth 205(15.8%) died, among which 117(56.5) were under 1 years. Five hundred thirty four (41.1%) of the alive born babies were described by their mother as having below average birth weight. Among those surviving children 98.3% of them were breast-fed or on breast feeding 436(39.9%) and Ninety Three point two percent of the dead children were also breast-fed. The mean duration of breast feeding among breast-fed children were 18.1± 6 (Table 1).

The majority of the household in the study area received water from a river, pound unprotected well while 23.2% received from pipeline which includes hand pump. Among 39.2% of respondent who received services in the last 12 month on material and child health, the majority 463 (90%) were for sick baby. Among immunized index children it was only 4 children who had completed for age.

As to the husband of the study women Eight percent of husbands were illiterate and pastoralist by occupation (83.1%). And 10% of them were informal/formal leader while the rest were ordinary member of the community and 36.5% had at least another wife as reported by eligible women.

Women with at least one risk factor were competed with some of the potential determinants and the crude analysis of risk factors showed that mothers who were married at early age, illiterate, house wife, with history of child loss, not in polygamous marriage, who desired high numbers of children and never use any contraceptive method in the past were more likely to have had any form of bio demographic risks. But breast feeding status and social position of husbands were not found to be associated with the risk. Multivariate analyses, for those potential risk factors were also not found significant (Table3).

Table 1.Socio-demographic Characteristics of the study population of zone 4 Afar region Ethiopia January 2006

Characteristic	number	Percentage
Age of the eligible women		
15-18	25	1.9
19-34	904	69.6
35-49	370	28.8
Total birth by eligible women	**1299+8=1307**	
Index child sex		
male	785	60
female	541	40
Index child dead/ alive		
Alive	1,090	84.2
Dead	205	15.8
Child loss		
0	626	48.1
1	347	26.8
≥ 2	326	25.1
Attendants of delivery		
Relative	710	54.5
TBA	535	41.2
Health professional	54	4.1
Perceived weight of the baby by the mother report.		
Large	58	4.5
Larger than average	233	17.9
Average	474	36.5
Smaller than average	443	34.1
Very small	91	7
Prevalence of breast feeding among live index children.		
Breast fed	642	58.5
On breast feeding	436	39.7
Not breast fed	19	1.7
Eligible women in the last twelve months who uses MCH service		
Not used	790	60.8
Used	509	39.2
Water source		
River	582	44.9
Well & pond	517	39.8
pipeline	302	23.2
Education level of Husband		
Illiterate	1,043	80.3
Literate	256	19.7
Occupation of husband		
Pastoralist	1,079	83.1
Other	200	16.9
Social position of husband in the community.		
Ordinary member	1,164	89.6
Formal/ Informal leader	135	10.4
Co-wife reported by eligible women.		
No co-wife	825	63.5
At least one co-wife	374	36.5

Women were categorized according to single and multiple risks as shown in table 2. The largest categorize of women were at risk of high parity (67.3%), followed by close birth spacing (34.9%) and too old (28.8%).

Women were also categorized according to multiple risk occurrence and the largest category of women were too many and too old (28.4%). followed by too many and too frequent (23.9%), and too old, too many and too frequent (6.4%). About 86.3% of women have at least one bio demographic risk while the rest 13.7% were with no risk.(Table 2)

Table 2- **Distribution of study subject by bio-demographic risk factors. Zone Four Afar Region Ethiopia January 2006.**

Risk Category	**Number**	Percent
Too young	21	**1.6**
Too old	374	**28.8**
Too frequent birth	453	**34.9**
Too many	874	**67.3**
Too many and Too frequency birth.	310	**23.9**
Too old and Too many children	369	**28.4**
Too old and Too many children & Too frequency	83	**6.4**
At least one risk	1121	**86.3**
Not at risk	178	**13.7**

* Multiple Responses are possible

Table 3 - Factor associated with at least one form of high risk fertility behavior. Zone 4 Afar Region Ethiopia January 2006

Factor	At least one risk factor				
	No = 178	Yes = 1,121	Crude OR	95% CI	
Ever used of any contraceptive(671)*					
Yes	19	28	1		
No	87	537	4.19	2.14	8.16
Age at first marriage					
19 and above	22	54	1		
15 - 18	105	671	2.60	1.47	4.59
10 - 14	51	396	10.76	4.98	23.38
Level of child loss(1186) **					
0	157	470	1		
1-3	20	539	8.97	5.43	14.97
Desired of child (941) ***					
1-3	20	15	1		
4-6	34	90	3.53	1.52	8.21
7 and above	81	701	3.08	1.91	5.37
Mother's education					
Literate	27	25	1		
Illiterate	151	1,096	7.84	4.28	14.38
Mother's occupation					
Currently working	15	29	1		
House wife	163	109.2	3.47	1.73	6.88
Polygamous marriage					
Yes	47	426	1		
No	130	695	1.7	1.17	2.46

* Mothers who have never heard at least one method of contraceptive were excluded from the analysis

** Mothers with child loss >=4 were excluded, as one of the value of he cell is 0

*** Mothers who responded that it is the will of God were not included in the analysis.

The relationship between high risk fertility and infant death were done by crude and multivariate analysis considering the most possible variable that can affect infant death. Death risk were significantly higher among infant born from mother with single risk fertility behavior, old age, (**adjusted OR 1.8 95% CI 1.2 2.8**) short birth interval, (**adjusted OR 1.6 95% CI 1.1 2.5**).(Table 4)

Young age of the mother, parity 4 and higher was not found significantly associated with infant death. (Tab 4) Family who used water for drinking from pipe line source which include hand pump were associated with lower risk of infant death. (**Adjusted OR 0.48 95%CI 0.3 0.75**) and babies described by the mother as having LBW were also significant of associated with higher risks. (**Adjusted OR 3.0 95%CI 2.0 4.7**).(Tab 4)

Variable like place of delivering, ANC, TT_2, infant sex, mother's educations, were found not significantly associated with infant death. (Table 4)

Table 4- Association of infant death with bio demographic risk factor and other risk factor zone four Afar Region January 2006

Factor	Infant Death		Crude OR	95% CI	Adjusted OR	95% CI
	NO	Yes				
Low birth weight						
Yes	458	76	2.9	2 , 4.4	**3**	**2.0 , 4.7**
No	724	41	1			
Place of delivery						
House	1149	113	0.8	0.3 , 2.3	0.5	0.1 , 2
Health institutes	33	4	1			
Water source						
Pipe line	266	36	0.6	0.4 , 0.9	**0.5**	**0.3 , 0.7**
Other source	916	81	1			
Antenatal care						
Yes	30	4	1			
No	1152	113	0.73	0.3 , 2.1	0.5	9.793E02 , 2.2
TT_2 received						
Yes	22	1	1			
No	1160	116	2.09	0.3 , 15.7	2.7	0.3 , 32.9
Sex of infant						
Male	714	63	1			
Female	468	54	1.3	0.9 , 1.9	1.4	0.9 , 2.1
Mother's education						
Illiterate	1131	116				
Literate	51	1	0.2	0.03 , 1.4	0.3	3.247E-02 , 2.26
Too young						
Yes	82	7	0.854	0.4 , 1.9	0.2	2.73E-02 , 1.6
No	1100	110	1			
Too many children						
Yes	944	97	1.2	0.7 , 2.0	1.5	0.7 , 3.0
No	238	20	1			
Too frequent *						
Yes	326	43	1.6	1.1 , 2.5	**1.6**	**1.06 , 2.5**
No	765	62	1			
Too old						
Yes	229	38	2.0	1.3 , 3.0	**1.8**	**1.2 , 2.9**
No	953	79	1			

* 203 Index children were first birth order

Cultural factor affecting infant mortality & fertility behavior

Fertility behavior

Afar is one of the few ethnic groups that practice prescriptive patrilateral cross cousin "AbSuma" marriage. A man marry daughter of a father sister's "Absuma" and has absolute right to marry his father sister's daughter.

Discussant said that almost all lineage members know the possible partner of a girl or a boy. According to the custom cousin can get married to each of the cousins.

Any individual does not have any right to choose a partner of his or her own preference. All discussant agreed that divorce between Absuma couple is resented and seen less likely to occur and if it does, at high cost. This stability seems to be ensured by kinship relations that exist and strong co-operation and solidarity between affine "Absuma".

Although the Afar prefers to marry among themselves, however there also inter- ethnic marriages. Such marriages are common in area where interactions between Afar and their neighbors are very intensive.

All discussant agreed that a girl has to marry as she starts to shows secondary sexual characteristics or below age of 16 because:

Firstly it is an insult to the family if she does not get married as early as possible.

Secondly, it is useful in safeguarding the girl from committing possible premarital sex, as the marriage practice is prescriptive and takes place patritaleraly between cousins. Further

more accidental or illegal loss of losing virginity or conception before marriage could bring conflict between clan and affects the honor of the family.

Thirdly, it is helpful make her start giving birth as early as possible.

Consistent result was also shown in quantitative study that the mean actual age at marriage was comparable with the ideal age for a girl to marry with the mean and standard deviation of 15.3±2.2 and14.7±1.8 respectively. (Table 5)

Table 5 The mean ideal and the actual age at marriage of the study population

Zone four Afar January 2006

Category	Mean	Standard Deviations
Actual age at marriage	15.3	2.2
Ideal age for a girl to marry	14.7	1.8
Ideal age for a boy to marry	17.6	2.6

Although, it is acceptable and encouraged for a boy to marry as early as possible, unlike the girl, it is not very strict and will not affect the honor of the family if a boy stays unmarried longer. It is also reaffirmed by the quantitative study that higher ideal age preferred for the boys than the girls.

Postpartum sexual abstinence is 42 days. For the first 42 days the new born infant and the mother is will stay together in separate rooms. Varity of nutritional food brought her.

Polygamy is a common practice in the area and a man is allowed to marry as many as four. In rare case even more, provided that he has good amount of live stock and many “Absumas”

Discussant also agreed that polygamy is common practice because:

Firstly, it is accepted by the religion. Secondly, it increases the chance of producing as many children as possible, as large family size is considered as strength to the family and clan. Thirdly, it strengthens mutual support in the family.

Eg. If the 1st wife or 2nd wife gets sick or pregnant the other will take care of the family, as they are usually living in the same compound.

Fourthly, it strengthens inter-clan relationship, as wife and husband are from different clan.

The effect of unregulated fertility on population growth and societal resource are not well recognized and not considered as problem. They still consider large population as strength and reproduction is therefore encouraged.

For those reasons:

- Mother who gives birth as many as possible has social respect and value and also considered as healthy.
- If a woman is infertile it is good reason for husband to marry on other wife or divorce her. There is a proves to this « **ማይዳላይቶት ዳሉተናም ኤደ አቤንዳሉህ ጊዲ**», having sexual intercourse with infertile women is like urinating on sand.
- A family will not restrain themselves from having as many children as possible because of economic reason, as a child is considered as an asset to the family and clan. There is a proverb to this «**ኦሞ ኤዲህ ደላ ኬደ ካሃታ**». "Child is born to a clan & clan is to protect and safe guard him." One discussant said that

"We have strong social ties and support each other but, we still are living in arid climate competing for scare resource with our neighbors and ourselves (clan) that need strength and considerable human resource. So if we are less in number we can't ever survive leave alone to compete".

Similar result also shown in quantitative study that the mean desire numbers of children was two times higher than the achieved fertility (Table 6).

Table 6 mean number of children desired, ever born and survived children zone four Afar region January 2006

Children desired/ born	Mean	Standard deviations
Desired number of children	10	6
Ever born	4.82	2.5
Child survived	3.92	2.1

-There is no any traditional method of contraceptive known in the area and it is something of a Taboo. Results in qualitative study have also shown that they had a negative attitude towards modern contraceptive. (Table7) In quantitative study women were asked whether they had heard of, and whether they had previously used or were currently using any of several contraceptive methods, almost 50% had never heard of any contraceptive method and 48% stated that they had heard but never used. It is only 3.6% of women who had used or were currently using.

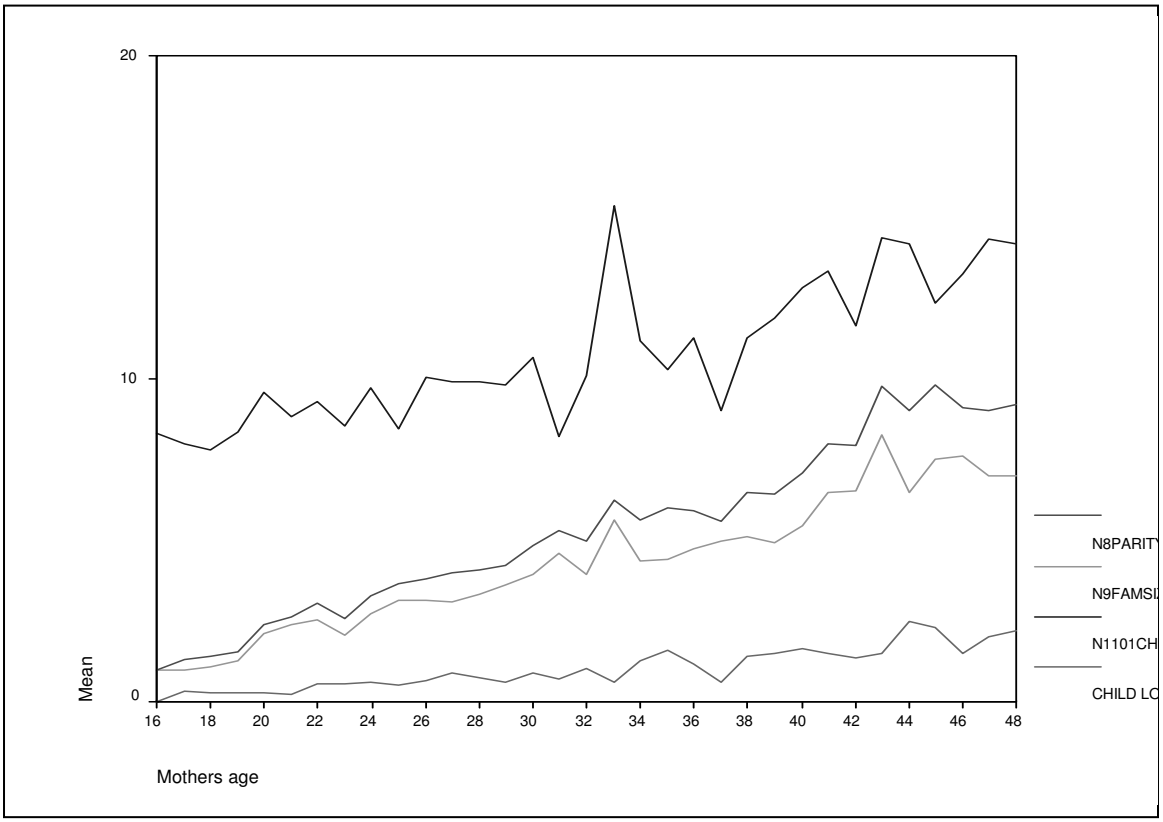
Those who had heard but never used were also asked specifically whether they would be willing to use contraceptive method, if they were told by physician that more pregnancies would harm either their own health or the health of the child. It is only 9.4% of women were willing to use it for health reason.

Table 7 Distribution of study population by family planning knowledge, attitude and practice zone four Afar region January 2006

Family planning status	Number of respondent	%
- Never heard at least one	628	48.4
- Heard but never used	624	48
- Ever used & currently using	47	3.6
- No intension to use in future for any reason (624)	533	85.4
- Intension to use for medical reason	59	9.5
- No answer to future intension (I don't know)	32	5.1

As shown above it is observed that no considerable difference in preference of large family size between the younger age of and older age. That means those below the mean age and above the mean while the mean age is 30 years old. It is also shown that, the study population was characterized by persistence of high fertility and exposed to high fertility pattern for abroad age range which is character of natural fertility population. (Figure 1) (20)

Figure1 **The relationship of age with desired number of children, parity, survived children and child loss. Zone four January 2006**



Key

Dark blue- mean desire number of children.

Red - mean number of ever born children.

Green- mean number of survived children.

Purple- mean child loss.

Birth Practice

Birth practices affect the out come of delivery. In the study area there is preference of customary mode of delivery. Therefore it is important to assess the birth practice that are related to culture and some cultural practice done right after birth.

Culturally younger women are not allowed to assist delivery. IT is only the old women who are TBA or relative. Those old women (relatives,or and TBAs) are still using traditional material while assisting delivery like "Meketa" a sharp object to cut the cord and special stone to make the cutting material more sharpen. They are not paid but informs items of goods. They also get social credit.

There is high preference of being assisted by TBA and old relative during labor. The basıs of this preference is the widely practiced FGM and the subsequent believe that modern health professional are not capable of handling delivery cases as efficient as the traditional practitioners. The traditional practitioner not only take charge of the delivery but also take ultimate decisions to refer serious to elders and religious leaders of the community for spiritual healing when necessary.

One of the key in format from TBA said.

"Sometimes we face series cases like prolonged labor bleeding, shoulder or breech presentation, fetal death etc. we do all our best:- For example.

When a leg or hand presents before head we try to replace it to it's normal position and when we face breach, we pucked with our thump the fetus's anus to protect the mucus from coming out as we know that the fetus will die soon if the mucus comes out.
When fetus die and same part of the fetus is in the canal we cut and, remove it pieces by pieces using sharp stick and safe the mother's life".

The community is accustomed to giving for bath new born infants immediately after birth even LBW and pre term new born infants and cover .with a new cloth. The new born baby right after birth before he suck his mother breast milk, would also be given goat milk mixed with butter or animal fat to clean his/her throat which they call it «**ኦንኦር**»**.** This is given only by an honored and brave man known in that local community. If a man with that characteristic is not around. The baby has to wait until the man comes before he sucks his mother's breast milk.

Uvulectomy and milk teeth extraction and other mal practice using unclean traditional material are still a common practice.

Discussion

The study was conducted in an almost homogeneous community in terms of ethnicity, culture & religion, having quit the same out look with regard to human reproduction and contraception. The educational status of women under the study could be considered low, as (96%) of the study women were illiterate and full time housewife.

The result of the study has shown that if women had three or fewer births, and confined their child bearing ages to 20-34, infant and maternal mortality could be reduced substantially (20). In addition to this, exposure to high risk birth was assessed and the result showed that; about 86.3% of the study population was exposed to at least one bio demographic risk factor. Hierarchically put, the majority of the women in high-risk category fell into high parity, (67.3%) close birth space, (34.9%) and old maternal age (28.8%).

Comparing this study with similar study done in Addis Ababa (high parity 70.6% close birth spacing 15.2% and old maternal age 56.6%), risk prevalence of closely space birth was found to be two times higher in the study population while old age risk was lesser by half. This difference can partly be explained by younger marriage age, higher preference of large family size, high prevalence of infant mortality and desires to replace the lost children and low contraceptive use in the study population. Further more, the high utilization of contraceptive and late age at marriage in the capital in contrast to that of the current study could further advances the reasoning (19).

High parity and old maternal age (28.4%), closely spaced birth and high parity (23.9%) are the larger combination of risks. Still closely space birth and higher parity in two times higher than the study done in A.A.

In this study high risk categories under young maternal age was 1.6%. This finding is against the common knowledge in that, where early marriage is common practice, the risk of younger maternal age is high. However, this may possibly be due to an exclusion of considerable number of young married women who could have been pregnant or had no live birth.

In a crude analysis of determinant factors of bio demographic risks: Education, ages at marriage, child loss, contraceptive use, family size preference, being in polygamy were found to be determinant factors consistent with other study (9). However, none of the variable were found to have independent effect in multivariable analysis. This could be due to confounding effect of the variables. That means those who are literate would have high exposure to modern contraceptive method, and are less likely to be influenced by the culture, lower desire for large family size, lower chance to child loss. Moreover, the homogeneity of the study population has also great effect.

Associated infant and maternal mortality due to high risk is well established and documented. In this study the relationships between bio demographic risk factor and infant death were assessed and result have shown that higher risk of death were observed to infant born with birth an interval of less than 24 months, infants born to older mothers over age 34, Whereas,

contrary to other studies ,infant born to a mother with parity of 4 and higher were found to have no association with infant death.

It is expect that the risk increase as parity increases. The possible explanations may be that age of the study population is predominantly younger age below 35 (71%) and lower parity with mean and standard deviation of 4.82± 2.5.

Despite what is naturally expected, the study didn't also reveal statically significant association between infant death and younger age of the mother which could be due to very small number of younger mothers compared. Meanwhile, Short birth interval was found to be strongly associated with infant mortality. The active component of short birth interval that may have relevance to neonatal mortality is basically biological in nature. In the study area family planning practice is almost non existent and this can affect women's birth during child bearing years by shortening the interval between pregnancies. High infant mortality also shortens the period of natural fertility associated with lactation.

A pregnancy in short interval adversely affects the mother's physiological and nutritional condition during pregnancy and lactation which is known to be important factor in prenatal death. Higher infant mortality, preference of larger family and, lower utilization of contraceptive method could be responsible for higher prevalence of short birth interval.

In this study however, birth weight was also found to be strongly associated with infant mortality. LBW is significantly affected by the health and nutritional status of the mother and

therefore the proportion of infants born with low birth weight is a reliable index of the health of the community (22).

The association between malaria infection and IUGR is strong. In developing countries, low pre-pregnancy maternal weight and height, low caloric intake and infections especially malaria, outweighs the effect risk factor of developed countries, such as cigarette smoking and primi parity (22). Therefore, the independent effect of low birth weight on infant death in study area may be explained by high prevalence of maternal malnutrition (42% of mother are below 18.5 BMI), and the high prevalence of malaria in the area.

The study population is predominantly of a unitary ethnic group, culture and the same life style with similar housing conditions and environment that making the study population homogenous. However the types of water source to the household was associated with mortality and those household who used water from pipe line source were found to have lower risk which is consistent with other studies.

Variable like place of delivery, ANC, TT_2, infant sex & mother education were found to be insignificantly associated with infant death. And homogeneity of this study population with respect to those variables may be the responsible for the insignificant relationship. Otherwise, those variables are known to relate with infant death (21).

Study have shown that determinant factor of high fertility in Ethiopia were early and universal marriage, infant and child mortality, low contraceptive knowledge, high economic value of children and low status of women.

Marriage is universal, prescriptive and takes place among very close relative. Marriages proved to be more stable in the locality. Women in the study area are under cultural pressure to be highly fertile and marry when young.

Births take place with wedlock. And so, practically unwanted pregnancy does not exist rather a child is considered as an asset to a family and a clan. There is no known traditional contraceptive method and also considerable of the respondent were unaware of the existence of modern contraceptive method for family planning. As shown in graph 1, the mean desire number of children is much higher than the achieved fertility across the age, which indicated that, based on the conventional method, Unmet need for contraceptive by there preference is low, despite their exposure to higher risk fertility. This may be linked to negatively influencing culture and lack of awareness of the characteristics associated with higher risk.

Age at first and last pregnancies, the spacing of pregnancies is largely culturally determined. They are linked to pressures on women's fertility behavior by senior generation, the local fertility "culture" and the extent to which the women her self is able to influence decision about her education and marriage.

As shown in graph 1, mean parity increases consistently as age increases showing that the study population is characterized as natural fertility population or exposed to high fertility pattern over a broad age range. Besides, it showed that the mean number of surviving children is far below achieved fertility across the age, and, the graph become wider after the age of 34 which may be due to interactive biological effect of higher parity and older age on child survival or higher child mortality.

Although fertility is expected to remain high in population that do not practice family planning, the total fertility rate of the area is found to be lower than the national level contrary to the context of the study area and this could be explained by high prevalence polygamy, still birth and abortion.

Although study has shown that the most important fertility inhibiting factor in rural area is duration of breast feeding and its important on post partum amenorrhea, breast feeding in the study area was not found to be associated with any form of risk. This could be due to common practice of breast feeding in the area.

Going further ,beyond the first week of child life, the importance of birth environment increases. AS also shown in different studies that the presence and of trained midwives or birth attendance and the use of sterile equipment to cut the umbilical cord and similar measure to lower sanitation were found to result in lower neonatal mortality (2).

The great number of the study population (97.2%) delivered their index child assisted by traditional birth attendant and relative at home. Although accessibility is not assisted, as it is

affirmed by qualitative study, preference to deliver at home by traditional birth attendance by traditional people is related to community's perception that delivery is better assisted by TBA at home than by health professional at health institution. This would imply that improving access and quality of maternity serves only will not improve the problem unless a community perception is changed. Beside the role that training of TBA and supply with delivery kit have in improving access and quality of maternity services as deliveries are commonly assisted by old women with low visual acuity and physical activity by traditional method & material in poor delivery environment.

Bathing right after birth, giving "ONOR" and delay breast feeding increases the risk of death especially to IUGR or pre term babies, as they are liable to Hypothermic Hypoglycemia, Infection.

Limitation

- As the study is cross sectional and at times operationally retrospective, the possibility of recall bias, misreport of event was likely.
- Internal comparison was used assess relation ship in which it is not possible to control the study subject.
- The effect of previous still birth or abortion on infant death was not included in the Study.
- Absence of literature to compare.
- As the study population is from one ethnic and culture and Generalizibility is not as such possible.

Strength

-It is conducted in a low population density community but hard to reach with large sample size.

-Qualitative design was used to complement the Qualitative study.

-Selection bias was minimized since it was community based study with probability sampling techniques to select sampling unit.

Conclusions

1. Adult illiteracy is high.
2. Women are under cultural presser to high fertility and low age at marriage.
3. There is very low knowledge and practice and also negative attitude to modern contraceptive method.
4. There is a social motive that encourages having as many children as possible, as child is considered as an asset to the clan.
5. Short birth interval and old maternal age are the higher categories of high-risk fertility.
6. Majority of the deliveries are conducted by women who may be TBA or just elder women from the family who have experience in traditional method and material and they take place at home.
7. Infant death was found to have associated with short birth interval, old age, and low birth weight and water source.
8. Child loss is high. Fifty percent of the study women had history of at least one child loss.

Recommendation

1. Early marriage, giving "**ONOR**" to a new born baby, large family size preference and negative attitude to words contraceptive method, appear to depend heavily on the culture

of the local community . Therefore, considering their cultural and social value, community sensitization and sustainable IEC on risk related to high fertility and early marriage.

2. Age at first marriage should be increased by convincing elders of the community and facilitate and empower them on how to make use of their influence so as the members of the community could make relevant informed decision.
3. Integrated maternal and child health service should be strengthening to improve maternal and child health care giving special emphases to ANC, family planning and immunization.
4. Accessibility for health and fair improved referral system should be maintained by means of pertinent empowerment of TBA and front line health worker and extension of the service.
5. Plan, organize and introduce nutritional intervention to pregnant women in the locality.
6. Encourage, advocate and promote educational accessibility to women and girls.
7. Put a joint effort to improve provision of pure water.
7. As part of the Endeavour to achieve millennium development goal set for the nation, sensitization and motivating responsible policy makers to give attention to the pastoral community and be involved in issue pertaining to health development of the locality.

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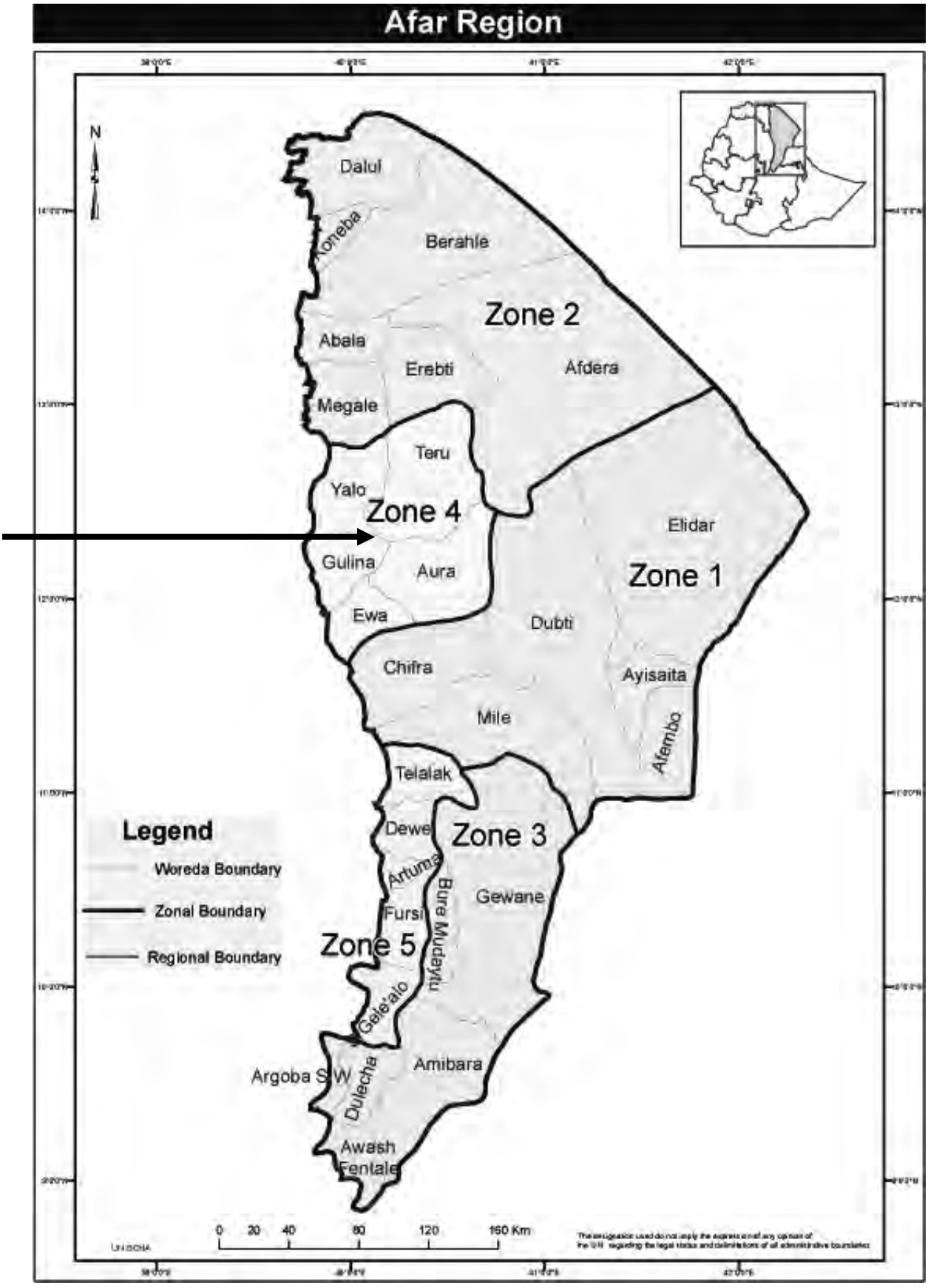
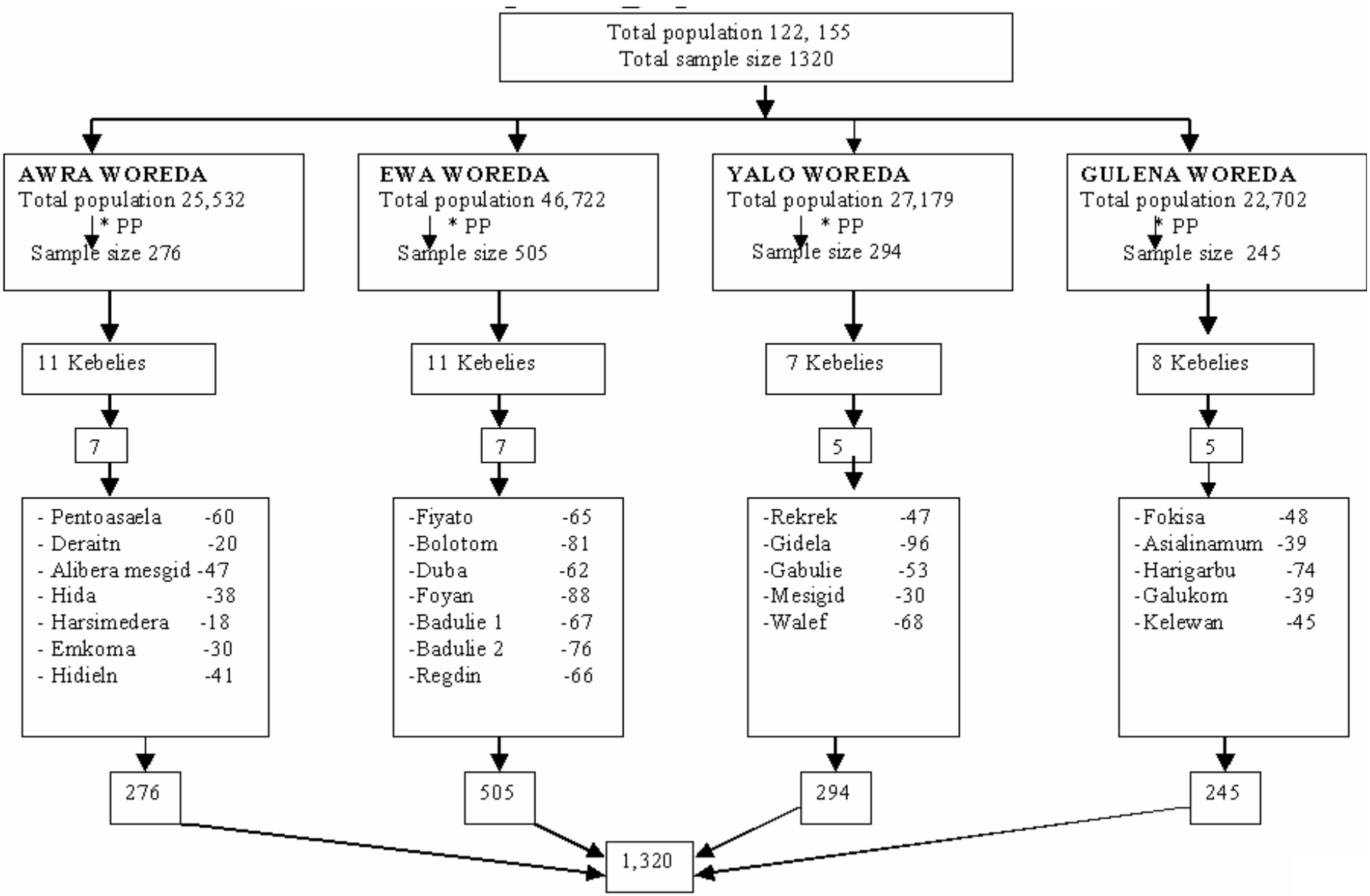
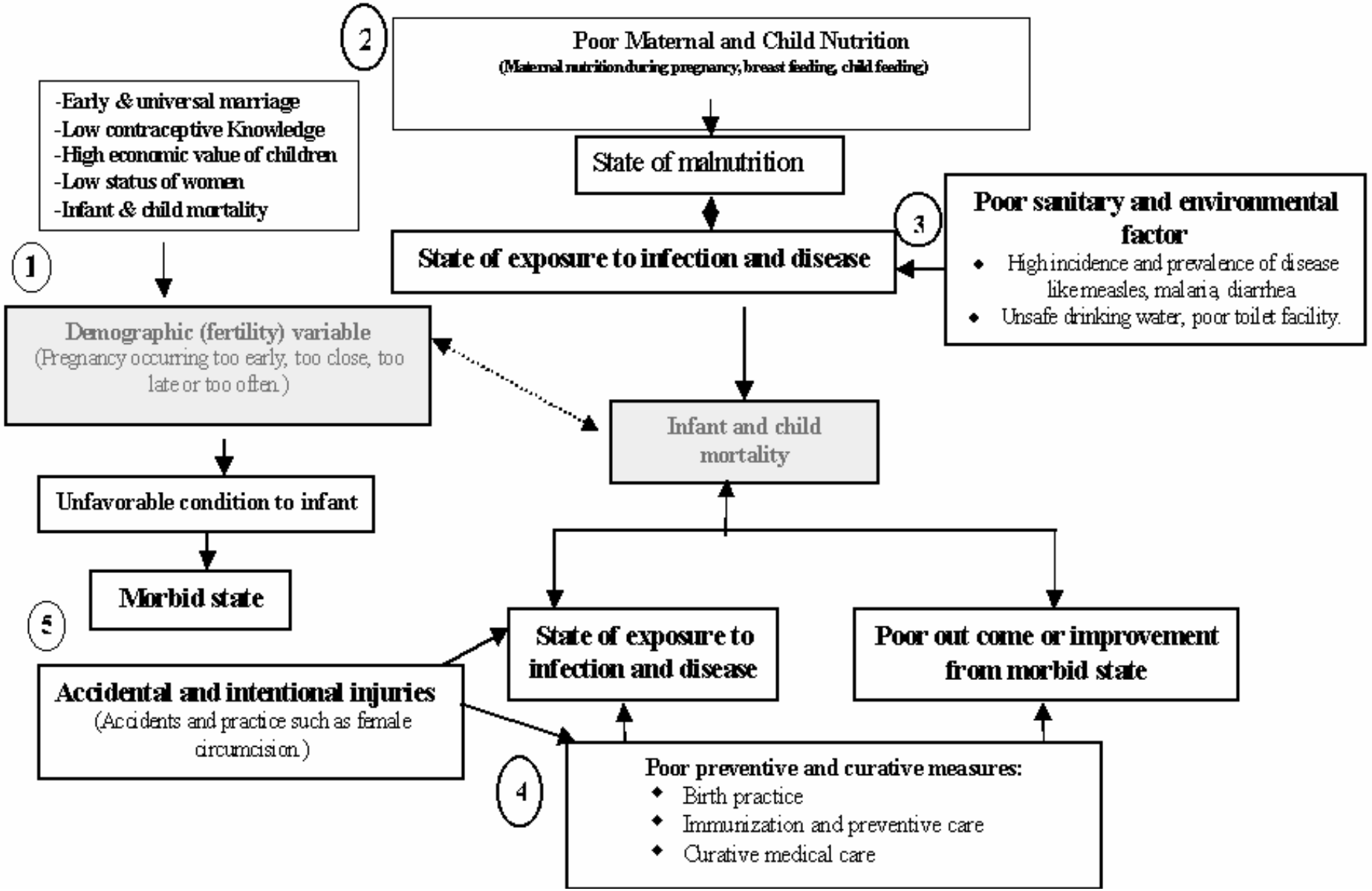
Annex 1 Map the Study Area



Annex 2 **Fig. 2 Schematic representation of sampling technic**



Annex 3 Consptual Frame Work



Annex - 3A

Questions for focus group discussion and in depth interview

- **Objective of the discussions.**

- To asses cultural factor effecting fertility and infant mortality

- **Target Audience:** For FGD Community elders, clan leaders, Religions leaders, community leaders.

For in depth interviews, traditional healer, and TBA,

Questions for FGD

Them 1 Warm up questions

1. We would like to hear about the role of women in the community?

Probe – is there anything else?

2. What roles increase women status?

Probe – would you explain further?

Them 2 Factor related to fertility.

1. How is marriage tacks place in this community?

Probe – is there anything else.

- would you give me an example?

2. Is population growth is a problem?

Probe – would you explain further?

3. Do you think that mother could be at higher risk due to her fertility behavior?

Probe – would you explain further?

- would you give me an example?

- has any one else had similar experience?

- is there anything else?

- I don't understand.

4. Is there any tradition contraceptive method used in the community?

Probe - would you give me an example?

- is there anything else?

5. Is large family size preferred? If yes why?

- would you explain further?

- is there anything else.

6. What would be the community response? If a women totally failed to give birth or the ideal number of children?

- Would you explain further?

- Would you give me an example?

- Has any one else had similar experience?

- Is there anything else?

- I don't understand.

Them three Factor related to mother & child care.

1. What are some of the care that is given to a new born baby?

Probe - Is there anything else?

- I don't understand?

2. Is there any diet restrictions to a pregnant women & new born babies < 1 year?

Probe - Is there anything else?

3. How long a child should at least breast feed?

Probe - Is there anything else?

4. At what age is child start weaning?

Probe - Is there anything else?

Questions for in depth interviews.

Target Audience: traditional healer, and TBA.

Questions for TBA.

- What are source of some of the problem encounter women of reproductive age during pregnancy, labor, pereparium.
- What measure do you take and what material do you use?
- Do you really consider birth weight for a new born baby to take action? What measure do you take?

Question For traditional healer

- What are some of the health problem encounter pregnant woman and children less than one year?
- What measure do you take? and what material do you use?

Annex 3B

Verbal consent

My name is ---------- I am working with Ato Tesfu Alemu who is doing a research as partial fulfillment for the requirement of master in public health at Addis Ababa University, Department of community health. We are interviewing married woman who gave birth in the last five years to asses the prevalence of high risk fertility behavior and it's relation with infant mortality. I am going to ask you some questions that are very important for the program planner in maternal and child health to plan improved intervention. The information you give will be kept confidential. Unless you are willing to participate to this study, you are not obliged to participate. If you don't want to answer all of the questions, you do have the right to do so. However your willingness to answer all of the questions will be appreciated. The interview will not take more than 20 minute.

Would you like to participate in this study?

Yes---------- continue with the interview.

No----------thank the participant and go to the next house hold.

Thank you for your cooperation!

Annex 2c Questionnaire

District _____ Name of Interviewer _____

Village (Keble) _____ Date of Interview _____

Name and Signature of supervisor _____

Child/children born to eligible woman in the last five years				
index child and its elder	**Date of born**	**Age**	**Sex**	**Dead/alive**
1				
2				

I. Religion of household _____

II. Parity (Children every born to eligible women) _____

III. Family Size (# of living children) _____

IV. Age of eligible woman----------

A. socio demographic information of eligible women and husband

No.	Question	Answer	Code
1	Eligible woman age at first marriage	_____ years	--------
2.	What is the education of the eligible woman?	A. Illiterate B. Literate, no schooling. C. 1-6 grade D. 7-12 grade E. 12+	--------
3.	Occupation of eligible Woman?	A. Housewife B. Merchant C. Government employees D. Others specify, _____	--------
4.	What is the education of eligible woman's husband?	A. Illiterate B. Literate, no schooling C. 1-6 grade D. 7-12 grade E. 12+	--------
5.	Occupation of eligible woman's husband	A. pastoralist B. merchant C. government employer D. others specify----------	--------
6.	How many numbers of livestock do you have? (like camel, cattle, goat….) Record numbers of livestock.	A. Camel---------- B. Cattle---------- C. Goats and sheep ---------- D. Others specify	--------

7.	Social position of husband	A. Ordinary member B. Clan leader C. Religious leader D. Community leader E. Other	--------
8.	Does your husband has or has had another wife at the same time in addition to you?	A) yes (B)No	--------
9.	If yes, how many? Record the number	……..	--------
10.	What is the appropriate (idea) number of children for a family like yours?	(A)---------- Children. How many boys? _____ How many girls? _____ (B) It is God's will	--------
11.	What do you think is the best age for a boy to marry?	_____ age.	--------
12.	What do you think is the best age for a girl to marry?	_____ age.	--------
13.	Have you or your children of under 5 years old received service at the health facility at any time in the past 12 months?	(A) yes (B) No	--------
14.	If yes, which of the following services your house hold received?	(A) treatment of sick child (B) immunization	--------

		(C) family planning (D) Antenatal/post natal/delivery (E) others specify----------	
15.	What is your main source of drinking water?	A) River/stream B) Piped system C) Protected well/spring D) Unprotected well/spring	--------
16.	Where did you seek advice or Treatment	A) Gov. institution health center /post B) Traditional healer. C) Other,---------- (specify).	--------
B. Birth History of last live Birth. (index child			
17.	How many months had it been since your terminated your last pregnancy?	_____ Months old.	--------
18.	What is the rank of this live birth among your births?	_____ Order.	--------
19.	How old you were, when you terminated your last pregnancy?	---------- Years old	--------
20.	During your last pregnancy did you attend any health center for prenatal care?	A. Yes B. No	--------
21	Did you receive any vaccination during your last pregnancy (TT_2)?	A. Yes B. No	--------

22	Who attended you and where was this pregnancy terminated?	A. Health Institutions by health personnel B. Home by relative C. Home by TBA D. Home by health personnel E. other specify---------	--------
23	Was the baby male or female	A. male B. female	--------
24	When he/she was born, was he/she _____?	A. large B. larger than average C. average D. smaller than average E. very small	--------
25	Is she/he still living?	A. Yes B. No If no skip to question No. 31	--------
26	If yes, what is the age of this child now?	A) if age one year or older _____ (record in months)	--------
27	Did you breast feed him/her?	A. Yes B. No C. still on breast feeding	--------
28	If yes, for how many months?	_____ (record actual months)	--------
29	Did he/she receive any vaccination expect from national campaign rogram?	A. Yes B. No	--------

30	If yes, check the card and record the vaccination he received.	A. Complete for age B. Incomplete for age	--------
31	How old was the child when he died?	If age one year or older, _____ (record actual months) If child died before the age of one, _____(record actual months)	--------
32	Did he/she receive any vaccination expect from national campaign program?	A. Yes B. No	--------
33	If yes, check the card and record the vaccination he received.	1. Complete for age 2. Incomplete for age	--------
34	Did he/she breast feed?	A. Yes B. No	--------
35	Was he sick before he died?	A. Yes B. No	--------
36	Had he/she received any medical care?	A. Yes B. No	--------
C. About Family Planning			
37	Do you fill that your pregnancy comes sooner than you wanted.	A. Yes B. No C. No answer D. it is God's will	--------

38	Have you ever heard of any method that men or women used to avoid or delay pregnancy?	A. Yes B. No	--------
39	If yes, which method have you heard about or do you know	A. pill B. IUD C. injection D. condom E. natural method F. other	--------
40	Have you ever used any method to avoid or delay pregnancy?	1. Yes 2. No, skip to # 42	--------
41	If yes which method did you use or currently using?	(A) currently using ---------- (B)In the past ------(use the method stated in #39)	--------
42	If No, do you intend to use any method in the future?	A. Yes B. No, skip to #44 C. I don't know D. must consult husband	--------
43	If yes, is it to _____?	A. Space pregnancies B. To limit pregnancies	--------
44	If no, if a doctor told you that, the health of your children/ yours would suffer, if you become pregnant or become pregnant again (which ever applies) would you use family planning method?	A. Yes B. No C. Don't know	--------

THANK YOU

Annex 3C

<u>የሚስጥር አጠባቅ ስምምነት</u>

ስሜ ..... ይባላል፡፡ የመመረቂያ ፀሁፋቸው ለማቅረብ የምርምር ሥራቸው ከሚያከናውነት ከአቶ ተስፉ አለሙ ጋር አብሬ ነው የምሰራው ምርምሩ በዞኑ ለሚከናወነው የናቶትና ህፃናት ጤና ላይ ከፍተኛ አስተዋፅኦ ይኖረዋል፡፡ በዚሁ መሠረት ለዚሁ ጥናት ይረዳ ዘንድ አንዳንድ ጥያቄዎችን እንጠይቆታለን፡፡ የሚሰጡት መልስ ለሚስጥር የሚይዝ ይሆናል፡፡ በተጨማሪ ለመጠየቅ ብሎም የማይፈልጉትንም መልስ ላለመመለስ ሙሉ መብት አሉት፡፡ ይሁን እንጂ በዚህ ጥናት ላይ ያሉትን መጠይቆች በፍቃደኝነት ቢመልሱ ከፍተኛ ጥቅም ይኖረዋል፡፡ መጠይቁ ከ ሃያ ደቂቃ በላይ አይወስድም?

በጥናቱ ለመሳተፍ ፍቃደኛ ኖት?

አዎ ..... ቃለ መጠየቁን ይቀጥላሉ፡፡

አይደለሁም ..... አመስግነው ወደ ሚቀጥለው ቤት ይሂዱ

<u>በዞን አራት በእናቶችና ሕፃናት ላይ ለሚደረግ ጥናት የተዘጋጀ መጠይቅ</u>

ወረዳ _____ **መንደር**_____ **የጠያቂው ስም**_____

ቀን _____ **የተቆጣጣሪው ስምና ፊርማ**_____

ባለትዳር ነዎት? ሀ/ አዎ ለ/ አይደለሁም (እዚሁ ያበቃል)

ባለትዳር ከሆኑ በዚህ 5 አመት ውስጥ ልጅ ወልደዋል? ሀ) አዎ ለ) አልወለድኩም

(መልሱ አዎ ከሆነ የሚቀጥለውን ሰንጠረዥ ይሙሉ)

ተ.ቁ	የተጠኝው/ዋ ህፃንና የታላቅየው/ዋ ህፃን ስም	የተወለደበት/ች ጊዜ	እድሜ	ፆታ	በህይወት አለ /የለም
1					

2					

I) **የቤተሰቡ ሃይማኖት**_____

II) **በህይወት የወለደቻቸው ህፃናት ብዛት**_____

III) **በህይወት ያሉት ህፃናት ብዛት**_____

IV) **የወላጅ እናት እድሜ**_____

ክፍል አንድ አጠቃላይ መረጃ			
ተ.ቁ	**ጥያቄ**	**መልስ**	**ኮድ**
101	**ያገቡበት እድሜ**	_____**ዓመት**	.....
102	**የትምህርት ደረጃ**	1. **ማንበብና መፃፍ የማይችል** 2. **ያልተማረ ግን ማንበብ/መፃፍ የሚችል** 3. **ከ**1 **እስከ** 6 4. **ከ**7 **እስከ** 12 5. 12 +	.....
103	**የወላጅ እናት ሥራ**	1. **የቤት እመቤት** 2. **ነጋዴ** 3. **የመንግሥት ሠራተኛ** 4. **ሌላ ካለ ይገለጽ**_____	.....
104	**የወላጅ አባት የትምህርት ደረጃ**	1. **ማንበብና መፃፍ የማይችል** 2. **ያልተማረ ግን ማንበብ /መፃፍ የሚችል** 3. **ከ**1 **እስከ** 6 4.**ከ**7 **እስከ** 12 5. 12 +	.....
105	**የወላጅ አባት ሥራ**	**1. አርብቶ አደር** 2. **ነጋዴ** 3. **የመንግሥት ሠራተኛ**	--------

		4. ሌላ ካለ ይገለጽ_____	
106	የቤተሰቡ ሃብት	1. የግመል ብዛት ---------- 2. የቀንድ ከብት ብዛት ---------- 3. ፍየልና በግ ብዛት ---------- 4. የወር ገቢ ብር ---------- 5. ሌላ ካለ ይገለጽ----------	.....
107	ወላጅ አባት በህብረተሰቡ ውስጥ ያለው ስፍራ	1. ተራ አባል 2. የጎሳ መሪ 3. የሃይማኖት መሪ 4. የህብረተሰቡ አስተዳዳሪ 5. ሌላ ካለ ይገለጽ_____	---------
108	ባለቤትዎ ከእርሰዎ ውጪ ሌላ ሚስት ጉሯቸው ያውቃል /አላቸው?	1. አዎ 2. የለም /ወደ ተራ ቁጥር 110 ይለፉ /	.....
109	ካላቸዉስ ስንት ይሆናሉ?	1. 1 2. 2 3. 3 4. 4	.....
110	እንደርሶ ላለ ቤተሰብ በቂ ነው ብለው የሚያምኑት /የሚያስቡት የልጆች ብዛት ምን ያህል ነው ?	1. ልጆች ብዛት.....ወንድ.....ሴት..... 2. የእግዚአብሔር /የአላህ ፍቃድ ነው	.....
111	የወንድ ልጅ ትክክለኛ ሚስት የማግቢያ እድሜ ስንት ነው ብለው ያስባሉ ?	..... ዕድሜ ላይ	.....
112	የሴት ልጅስ ?	..... ዕድሜ ላይ	.....
113	ባለፉት አንድ ዓመት ውስጥ አቅራቢያዎ ባለ ጤና ድርጅት ውስጥ የህክምና አገልግሎት	1. አዎ 2. አላውቅም (ወደ ተራ ቁጥር 115 ይለፉ)	.....

	አግኝተው ያውቃሉ ?		
114	ካገኙስ ከሚከተሉት ውስጥ የትኞቹን አገልግሎት አግኝተዋል? (የተጠቀሱት በሙሉ ይከበቡ)	1. የህፃናት ህክምና 2. ክትባት 3. የቤተሰብ ምጣኔ 4. ቅድመ /ድህረ ወሊድ ምርመራ 5. ሌላ ካለ ይገለጽ----------	.....
115	በአካባቢዎ ውሃ የሚያገኙት ከምንድነው?	1. ከወንዝ 2.ከኩሬ 3. ከቧንቧ 4. ከተከለለ ምንጭ ወይም ጉድጓድ 5. ካልተከለለ ምንጭ ወይም ጉድጓድ	--------
116	ብዙ ጊዜ የህክምና አገልግሎት የምታገኙት ከየት ነው ?	1. ከመንግስት ጤና ድርጅቶች 2. ከግል ጤና ድርጅቶች 3. ከባህል ህክምና አዋቂዎች 4. ሌላ ካለ ይገለጽ----------	.....
ክፍል ሁለት የተጠኝው ልጅ የውልደት ታሪክ			
201	የመጨረሻ ልጅ ከወለዱ ጀምሮ ምን ያህል ወራት ሆኖት?	..... ወር	.....
202	በህይወት ከወለዷቸው ህፃናት መሃከል ይህኛው ስንተኛው ህፃን ነው/ ነበር?	.....	.....
203	ህፃኑን ሲወልዱ እድሜዎ ስንት ነበር ?	..... ዓመት	.....
204	ህፃኑን ከመውለድዎ በፊት ቅድመ ወሊድ ክትትል አድርገው ነበር ?	1. አዎ **2. አላደረኩም**	.....
205	ነብሰጡር እያሉ ለነብሰጡሮች የሚሰጠዉን	1. አዎ	.....

	ክትባት ተከትበው ያውቃሉ ? (TT2)	2. አላውቅም	
206	ህፃኑን የትና በማን ነው የተገላገሉት?	1. ጤና ድርጅት ውስጥ በጤና ባለሙያ 2. ቤት ውስጥ በቤተሰብ 3. ቤት ውስጥ በልምድ አዋላጅ 4. ቤት ውስጥ በጤና ባለሙያ 5. ሌላ ካለ ይጥቀሱ ----------	.....
207	የህፃኑ ፆታ	1. ወንድ 2. ሴት	
208	የህፃኑ/ኗ ልጅ ክብደት ሲወለድ/ስትወለድ እንዴት ነበር ?	1. ትልቅ 2. ተለቅ ያለ 3. መካከለኛ 4. አነስ ያለ 5. በጣም ትንሽ	.....
209	ህፃኑ/ኗ በህይወት አለ/ች?	1. አዎ 2. የለም/ችም(ወደ ቁጥር 215 ይለፉ)	--------
210	ህፃኑ/ኗ በህይወት ካለ/ች እድሜው/ዋ በወራት ስንት ይሆናል ?	.....ወራት	.....
211	ህፃኑ/ኗ ጡት ጠብቷል/ላች?	1. አዎ 2. አልጠባም/ችም (ወደ ቁጥር 213 ይለፉ) 3. እየጠባ/ች ነው	.....
212	ከጠባ/ች ለስንት ወር ያህል ጠብቷል/ች?	..... ወር	.....
213	ህፃኑ/ኗ በዘመቻ ከሚሰጠው ክትባት ሌላ ክትባት ተከትቦ/ባ ያውቃል/ ታውቃለች?	1. አዎ 2. አያውቅም/ አታውቅም(ወደ ተራቁጥር 215 ይለፉ)	
214	ከተከተበ/ች የክትባት ካርዱን ወስደው ያረጋግጡ	1. ከእድሜው/ዋ ጋር ተገቢ የሆነዉን ክትባት አግኝታለች /ቷል	

		2. ከእድሜው/ዋ ጋር ተገቢ የልሆነዉን ክትባት አግታለች/ቷል 3. ካርዱ አልተገኘም	.....
215	ህፃኑ/ኗ ሲሞት/ስትሞት እድሜው/ዋ ስንት ነበር?	.....ወር	.....
216	ህፃኑ/ኗ ከመሞቱ/ቷ በፊት ጡት ጠብቶ/ታ ያውቃል /ታውቃለች?	1. አዎ 2. አያውቅም /አታውቅም	.....
217	ህፃኑ/ኗ ከመሞቱ/ቷ በፊት ክትባት ተከትቦ/ባ ነበር ?	1. አዎ 2. አልተከተበም/ችም	.....
218	ከተከተበች/በ የክትባት ካርዱን ወስደው ያረጋግጡ ?	1. ከእድሜዋ/ው ጋር ተገቢ የሆነዉን ክትባት አግኝታለች /ቷል 2. ከእድሜዋ/ው ጋር ተገቢ ያልሆነዉን ክትባት አግታለች/ቷል 3. ካርዱ አልተገኘም	.....
219	ጡትስ ጠብቶ/ታ ነበር ?	1. አዎ 2. አልጠባም/ችም	.....
220	ከመሞቱ/ቷ በፊት ታሞ/ማ ነበር?	1. አዎ (ወደ ተራ ቁጥር 221 ይለፉ) 2. አልታመመም/ችም	.....
221	ከታመመ/ች በጤና ባለሙያ ህክምና አግኝቶ/ታ ነበር ?	1. አዎ 2. አለገኘችም	.....
ክፍል ሦስት ስለ ቤተሰብ ምጣኔ			
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Acronyms

ANC Antenatal Care

FP Family Planning

FGD Focus group discussion

IEC Information Education and Communication

IMR Infant Mortality Rate

IUD Intra uterine Device

LBW Low Birth Weight

NMR Neonatal Mortality Rate

PPR Population Proportion Ration

SPSS Staticall Package for Social Science

SRS Simple Random Sampling

TFR Total Fertility Rate

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Abstract

Background: - Pregnancy occurring too early too close to often or too late in life is associated with high risk related to health both to mother and child.

It is also noted that infant mortality differential exists with regard to at least three variables related to fertility: length of interval between successive birth, birth order, and maternal age.

All the studies note that infant mortality increases with birth order, and that it is higher when the mother is at the upper or lower end of the childbearing span or when the interval between two successive births is very short.

A major improvement in the health of women and children can be achieved by ensuring that pregnancies are planned to occur at the right time in the life of women. Therefore, women can bear their children under optimal conditions of number, age and spacing.

Objective:-The objectives of the study is therefore to asses the prevalence of high- risk fertility and its relationship with infant death and some cultural factor affecting fertility and infant death.

Method: - The study is a comparative study which is cross sectional using both quantitative and qualitative method.

Result: -A total of 1299 eligible women were included in the study. Among 1299 respondents more than 96% were illiterate and full time house wives. Early marriage is a common practice with mean age and standard deviation of 15 ± 2.2. As a child's value is high, large family sizes were highly preferred by the study women.

There is no known traditional contraceptive method used in the community and more than half of the respondents were unaware of the existence of modern family planning methods.

Sixty seven percent of the study women were at risk of high parity followed by close birth spacing (34.9%) and too old (28.87%). High risk of infant death were associated with short birth interval (adjusted OR 1.6 95% CI 1.1 2.5), old age (adjusted OR 1.8 95% CI 1.14 2.8) and with low birth weight adjusted (OR 3.0 95% CI 2.0 – 4.7).

Conclusion and Recommendation: - This study has shows that women in the study area are illiterate, socially burdened to produce as many children as possible and highly exposed to other high risk fertility behavior and higher child loss. Although, the study population is young, bio demographic risk like higher parity, frequent birth, old age has been prevailed. Infant mortality risk was found to be highly associated with low birth weight, frequent birth, and old age.

Thus, Community sensitization and sustainable IEC related to high risk fertility and early marriage; improved Integrated maternal and child health service giving special emphasis to pregnant woman and family planning is recommended. Extension of the services to the community through TBA and front line health worker; and Encouragement of women's and girl's education and improvement of provision of pure water are strongly recommended.