ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCE

SCHOOL OF PUBLIC HEALTH

FACTORS INFLUENCING FAMILY SIZE PREFERENCES AMONG RESIDENTS OF ASSELA TOWN, OROMIA NATIONAL REGIONAL STATE

By

Bekele Dibaba (BSc)

A Thesis Submitted to the School of Graduate Studies, Addis Ababa University in Partial Fulfillment of the Requirement for the Degree of Masters of Public Health

June 6, 2013

Addis Ababa

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Acknowledgement

This thesis research would not have been possible without the financial support of Addis Ababa University.

My deepest thanks go to my advisor, Dr. Getnet Mitike for his beneficial assistance and critique starting from the development of the proposal up to the end of the thesis work.

I feel more than privileged to express my profound thanks to Getu Teshome for his interest, valuable advice and encouragement to make this thesis a success.

I would like to forward my heartfelt appreciation to Robel Yirgu for valuable comment especially in the statistical part of the thesis.

I would like to acknowledge Assela town administration for cooperation during the process of data collection.

At last but not least my thanks go to the study participants, who devoted their time to give valuable information.

ACRONYMS:

CI-Confidence Interval

SD-Standard Deviation

ETB-Ethiopian Birr

TFR- Total Fertility Rate

EDHS 2011 – Ethiopian Demographic and Health Survey 2011

ABBREVIATIONS:

Kdge – Knowledge

HH – Household

Vs- Verses

Gov- Government

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I. Summary

Background

Ethiopia, like most Countries in Sub-Saharan Africa, is experiencing rapid population growth. The rapid growth prevents national development effort and affects maternal and child health. Moreover, the desire to realize the issues pertaining to small family size and harmonize the rate of population growth with socio-economic development in order to reach a high level of welfare can be achieved, if factors which affect family size are well identified. Different factors influence family size at different levels in different Societies. This Study assessed factors affecting family size preferences in Assela town where data was not available in this regard.

Objective: To determine desired family size and identify factors influencing family size among residents of Assela town, Oromia National Regional State, Ethiopia.

Methodology: A Community Based Cross-sectional Study was conducted in Assela town, between March 25 and April 4, 2013. The town has 14 kebeles out of which 5 kebeles were selected randomly. Systematic random sampling was used to select the study subjects. Sample size required for this study was calculated based on two population proportion comparison formula and with 100% response rate a total of 214 couples were included in the study. The age of women ranged from 15 to 49 years and men above15 years. Data was collected after information was provided and informed consent was obtained. Similar questions were posed to the couples' simultaneously but in separate locations and at distance they couldn't hear each other. The quality of data was controlled at different levels. The desired family size was determined using mean score. Respondents were asked to determine which factors were influential on their desired family size. Multiple linear regressions were used to see relationship between influential factors and desired family size. Associations of variables were tested by using 95% confidence interval (C.I) and regression coefficient.

Results: Mean desired family size for the study population was 3.8.Mean desired family size for men and women were 4.1 and 3.5 respectively. The factors which had got higher magnitude and rank included household income, sex preference and psychological factors.

Conclusion: It is quite possible that increasing educational level and age at marriage might influence couples to desire lower family size. It is possible that child sex preference and psychological factors might influence couples to desire higher family size.

1. Introduction

1.1 Background

The continuing growth of the world population has become an urgent global problem. Most of this growth is occurring in developing countries where the decline in total fertility rate is slow. The slow decline of total fertility rate may be because population has not reached their desired family size(1, 2). Family size denotes the total number of children a woman has borne at a point in time(3). Family size depends on numerous factors, such as age, duration of marriage, literacy, preference of number of children, etc(4).

Researchers have neglected to investigate "population's desire" for a particular family size and policy makers have failed to design careful and targeted communication in this regard(5). Although the information pertaining to desired family size has been gathered in fertility related surveys in some developing countries like Pakistan, an assessment of these variables as the factors influencing the achieved family size remains problematic(6).

Without the knowledge of factors affecting family size, the desire to achieve small family size and harmonize the rate of population growth with socioeconomic development in order to reach a high level of welfare cannot be achieved(7).

Trends in family size preferences have important implications for trends in fertility. The high and nearly stable desired family size is an obstacle to further fertility decline. Pessimism has been expressed about the trend of family sizes and its tendency for a probable world population explosion which could plunge poor developing countries into further poverty(2).
In most Sub-Saharan countries in which fertility has declined, desired family size is lower and demand for contraception is relatively high. There is a strong inverse correlation between these variables: the lower the desired family size, the larger the demand for contraception, which is as expected because contraception is the main means by which women implement their preferences for smaller families(8).

1.2 Statement of the problem

With an estimated population of 77 million, Ethiopia is the second most populous country in Africa next to Nigeria(9). Fertility declined only slightly between 2000 and 2005, from 5.9 children per woman to 5.4, and then decreased further to 4.8 children in 2011 with total fertility rate of 5.5 and 2.6 in rural and urban respectively(10). A difference of over two children per woman as observed recently in Ethiopia between the urban and rural areas of a country is quite large and needs to be explained(11).

Mean size of household is 3.7 and 4.9 in urban and rural respectively in 2011. The average household size is 4.6 persons in 2011, which is slightly lower than the average of 5.0 persons per household reported in 2005(10).

Information on fertility preferences provides family planning programmers with an understanding of the potential demand for family planning in a given population(11).

Region specific studies based on reasonable samples are required to identify factors regulating lifetime and desired fertility in each of the regions (12). Different factors influence family size at different level in different society(13). This study assessed factors influencing desired family size in Assela town where data was not available in this regard.

The town is found in Oromia National Regional State. The TFR (Total fertility rate) of the region is 6.4 and 5.6 in 2000 and 2011respectively while the Country's TFR is 5.9 and 4.8 in 2000 and 2011 respectively(10). When we compare the decline in TFR of the region and the national level, the decline in TFR of the region is slower than the national level, that is the decline in TFR of the region is 0.8 but the decline in TFR of the Country is 1.1. The slower decline in TFR of the region may affect the national desire to realize the issues of pertaining to small family size. So factors influencing family size in the region needs investigation and identification.

1.3 Rationale of the study

Studies suggest that ideal and actual fertility have both decreased and display similar trends despite the fact that they are not at even levels(14). This is a good reason for studying ideals. Even if they might not adequately predict actual fertility levels, they may tell us something about directional trends. In most Sub-Saharan countries in which fertility has declined, desired family size is lower and demand for contraception is relatively high.

Fertility ideals have the potential to explain differences in childbearing in developing countries. Insight into fertility ideals furthers our understanding of the specificities of reproductive cultures in developing countries.

The findings of this study can be used as base line information for further study of factors influencing family size in Assela town and in Oromia national regional state. The results of this study can also provide family planning programmers with an understanding of the potential demand for family planning in Assela town.

1.4 Conceptual framework

Our study used 'fertility ideals' and 'fertility preferences' interchangeably as both concepts intend to capture individuals' personal perceptions on ideal family size. In order to measure these concepts empirically, question wordings specify that respondents should state their personal preferred number of children. Defined as such, 'fertility ideals' primarily reflect individual motivations, attitudes and beliefs. They express personal evaluations of formulated objectives (15).

Fertility ideals (or preferences or desires) are part of the reproductive decision-making process. They "represent what someone wishes for or wants" (16) and provide the motivational basis for behavioral intentions by defining preferred objectives(17). Sometimes, personal ideals are targeted by questions using 'desire' rather than 'ideal' in their phrasing. These two terms are frequently used interchangeably, although it has been suggested that a distinction can be drawn between them (18).

'Fertility ideals' can refer to personal desires as well as to reproductive goals perceived as being socially desirable. It thus has two distinctive meanings and invokes ambiguity when it is not specified. Depending on the exact phrasing of questions, respondents of fertility surveys can interpret them as referring to their own fertility preferences - or instead as capturing their

perception of society's ideals, i.e. reproductive goals that are positively valued by society. In the latter case, questions may use wordings such as "Generally speaking, what do you think is the ideal number of children for a family?" (19). Our study, however, explicitly focuses on respondents' personal preferences for their own family. Moreover, the concepts 'fertility ideals' and 'fertility preferences' are distinct from that of 'fertility intentions', which refers to the actual intention or decision to have a child (or an additional child) and the activities planned to reach this goal.

Due to the divergent nature of intentions and preferences, they are empirically addressed in different ways. When respondents are asked about their fertility intentions, questions usually refer to an explicit short-term time framework, for example: "How many children do you intend to have in the next three years?" Respondents are guided towards considering and providing information about concrete planned behavior. 'Fertility ideals' rather refer to ideal numbers of offspring individuals would ultimately like to have at an unspecified point in their lifespan or to the number those who already completed childbearing would have liked to have. Thus, questions on fertility ideals usually address the desired number of children over the entire reproductive life.

The conceptual framework of this study that deals the factors influencing desired family size is shown in figure 1. We hypothesized that different factors influence family size at different level in different societies. The selected socio-economic, demographic and psychological factors in the model list the proximate determinant variables. These factors influence desired family size of couples.

This conceptual framework is constructed based on the literatures.

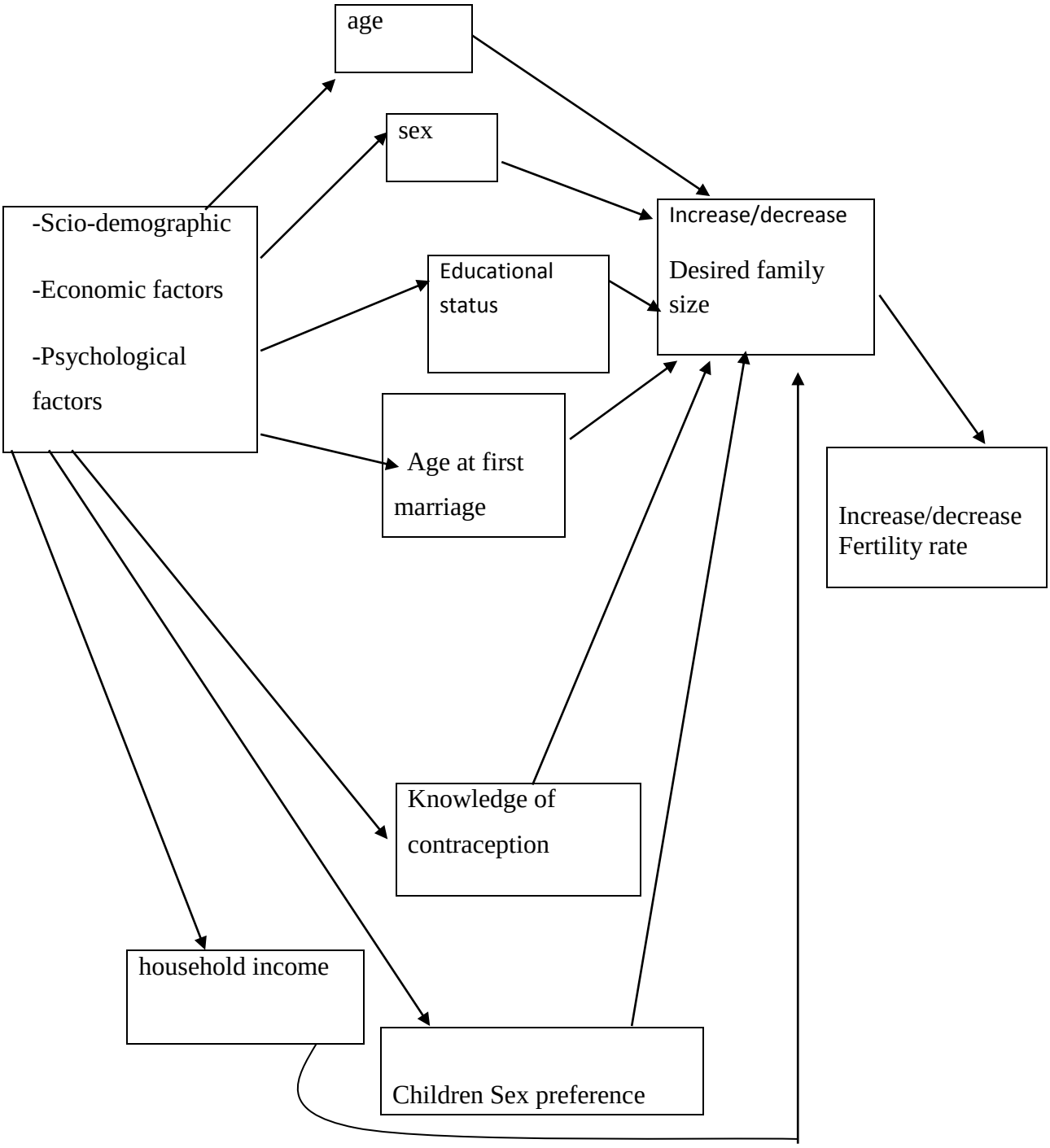


Figure 1 conceptual frame work of this study

2. Literature Review

2.1. Socio-Demographic and Cultural Factors:

Fertility behavior appears to be influenced by a strong desire to acquire a minimum number of at least two surviving sons. In the light of this finding, it appears that, despite the declining fertility level in Himachal Pradesh, further reductions in fertility may become increasingly more difficult to achieve unless there is a concomitant decline in the preference for male children(20).

Gender biasedness is very common in Pakistan. Reason for son preference is the financial support which male child can offer in the future. Girls are regarded as dependent member(20, 21). Women who stated that their ideal number of children or ideal number of sons are more than or equal to 2, tend to have more than two actual number of children as compared to those women who want less(22). Positive association between fertility and son preference was found in Ethiopian society(23). The reason of positive association between ideal number of boys and fertility is because it is believed that sons has capability to carry family name and also provides economic and social security in old age. Girls are regarded as a dependent member of family. Even if daughters earn, parents found it disgusting to accept financial support from them (24-26).

Fertility rates have historically been strongly correlated with high childhood mortality rates, low status and educational levels of women and inadequate availability and acceptance of contraceptives. Falling fertility rates and the demographic transition are generally associated with improved standards of living, such as increased per capita incomes, increased life expectancy, lowered infant mortality, increased adult literacy, and higher rates of female education and employment (27).

Association between higher fertility and early age at marriage was found(28). Increase in age at marriage solely could have ability to lessen the average number of live births from six to five. Age at marriage is a numeric variable which is inversely related to family size. Increase in age at marriage tends to have less than and equal to 2 children(29).

Education has been recognized as fundamental factor for the formation of fertility pattern in any society. Education generally results in improvement in the status of individuals in the society in the form of better health facilities, employment status, awareness etc(30, 31).

Education of women has more obvious impact on fertility as compared to husband's education(31). This fact had been evident in many relevant studies conducted in Pakistan(32). Women education also changes marriage pattern which affect fertility(33). Education also creates awareness about contraceptive methods and their use to limit number of births(34). Increase in education level tends the women to have less than and equal to 2 children. Illiterate, primary and secondary educated woman has increased risk of having more than two children as compared to women with higher education but effect is insignificant. Many studies had supported this fact (29, 31). Positive relationship between family size and education of women had been found in Nigeria. In spite of high literacy rate among Nigerian women, fertility transition has not yet started because education had not raised women's status in terms of household's decisions(35). Female education is frequently cited as inversely affecting fertility through a number of mechanisms. For example, it can increase age of marriage, child survival, and contraception use(31).

The choice of family sizes in Ghana has been influenced and supported by various Socio-Cultural factors and beliefs(36). A study done in Ghana on 150 families in 2005 found out that 9.6% of the 146 respondents would have changed their family sizes as a result of health, 42.5% due to education, 37.7% for income, and 4.1% due to cultural factors(37). Even with improved economic conditions, nations, regions, and societies will experience different demographic patterns due to varying cultural influences. The value placed upon large families, the assurance of security for the elderly, the ability of women to control reproduction, and the status and rights of women within families and within societies are significant cultural factors affecting family size(38). Fertility decisions at a given time depend to a large extent on current situations within the family. Each birth may therefore be influenced by a different set of motivational, cultural and family conditions(39-41). In many cultures men often have more power than women in decision making with regard to use of contraceptive and the number of children that the couple will have(42, 43).

A questionnaire based survey was conducted among 200 married women in Sindh, Pakistan during the period of September to December 2009 and when questioned about ideal family size 79 (39.5%) responded they want 4 children and 43 (21.5 %) wanted more than 4 children. Only 36 (18%) wanted 2. On asking reason for particular size of the family 84 (42%) women answered they like the size without any reason (8).

The analysis which was used data from DHS Surveys in four Sub-Saharan African countries: Guinea, Mali, Namibia and Zambia show that: In Guinea and Zambia, negative attitudes toward wife beating were associated with having a smaller ideal number of children. Greater household decision making was associated with a smaller ideal number of children only in Guinea. Additionally, household decision making and positive attitudes toward women's right to refuse sex were associated with elevated odds of having more children than desired in Namibia and Zambia(13).

A crossectional study done in Kenya in 2003 on a random sample of 330 household found age, preference for male children, use of free child labour(use as a proxy for income) to be significant in explaining variation in family size. Age was positively related to family size and was also statistically significant. The use of free child labour was also positively associated with family size implying that families that are rely on child labour tend to have more children(44).

In Ethiopia, having children is still a source of social prestige, security later in life and emotional satisfaction and happiness. Urban residents are balancing the adherence to social and cultural norms, while seeking to avoid the risks of large family size (11). Education, enhancing women's status, taste for an elevated life style, and economic hardships are mentioned as factors that contribute to the shift towards small family size preference by urban residents(11).

A comparative cross-sectional study which included 2424 women aged 25 years and above was undertaken in the Amhara region of North-west Ethiopia. This study revealed that women education, age at first marriage, place of residence, number of children who have died and women's knowledge on the safe period showed significant associations with fertility(45).

A study done in a Butajira Ethiopia, Demographic Surveillance Area included total of 5746 married women who were interviewed from October to December 2000. This study had revealed that women's desire for children did not significantly decline with increasing size of surviving children(46).

2.2 Economic Factors:

Income of household is one of the most important correlate of fertility. According to the classical Malthusian theory of fertility, higher income is associated with higher fertility(47). Nature of relationship between income and fertility is contradictory. In short run it is anticipated as a positive while in the long run it is negative(30).

Low income groups had more chances to have big family as compared to higher income group(33). Relationship between income and family size was found to be positive. But it was just income of women. So relationship might change after addition of total family income(22).

Household survey done in Ekpoma (Ekpoma is a growing University town situated in Esan West Local government Area of Edo State), Nigeria in 2007 on 700 randomly selected respondents found that, 4% believe economic consideration is the factor responsible for the size of the family(39).

A cross-sectional study done in Kenya in 2003, on a random sample of 330 shows that; use of free child labor was also positively associated with family size implying that families that are rely on child labor tend to have more children(44).

Economic status and women's paid employment in Southern Ethiopia was associated with contraceptive use, with the latter significantly increasing the likelihood of contraceptive use(48).

A comparative cross-sectional study which included 2424 women aged 25 years and above was undertaken in the Amhara region of North-west Ethiopia. This study revealed that household expenditure showed significant associations with fertility (45).

Generally a number of factors influenced desired family size. The factors included socio-demographic, economic psychological. These factors influenced family size at different level in different societies and different factors influenced family size at different level in different societies. Some of these factors increased desired family size and some of them decreased family size. This study was devised to identify factors influencing desired family size in Assela town, Oromia National Regional State.

3. Objective

3.1 General Objective:

To determine desired family size and identify important factors influencing family size preferences among residents of Assela town, Oromia National Regional State, Ethiopia.

3.2 Specific Objective:

To determine desired family size among couples residing in Assela town.

To identify factors that influence family size preferences among couples residing in Assela town.

4. Methodology:

4.1 Study Area and Period

The study was conducted in Assela town, which is located at 175 kilometers to the South- East of Addis Ababa. The town has 14 kebeles. The 2007 National Census reported a total population for the town was 67,269, of whom 33,826 were men and 33,443 were women. The majority of the inhabitants (67%) practiced Ethiopian Orthodox Christianity, while 22% of the populations were Muslim, and 8% of the populations were Protestants. Assela town has one public hospital, one health centre, five private clinics and four NGOs working on reproductive health. There is one private reproductive health clinic which gives family planning service. The hospital and the health centre have been also giving family planning service. The study was conducted from March 25 to April 4, 2013 in 5 kebeles of Assela town, Oromia National Regional State.

4.2 Study Design

A community based, cross-sectional analytic study was conducted to compare desired family size of couples who were influenced by the independent variables listed in this study and couples who were not influenced by the variables.

4.3 Source Population

All females age between 15-49 and all males' age above15 years that were married and residing in Assela town for at least 6 months before this survey, were the source population. The assumption here is females age 15 to 49 and males above 15 years are reproductive age groups.

4.4 Study Population

Assela town resident females of age between 15-49 and males of age above 15 years who were randomly selected from the five kebeles and who were completely interviewed the questionnaire.

Inclusion Criteria: Females whose ages were between 15- 49 years who had resided in Assela town for at least 6 months before this survey and living with her husband. Males whose ages were above 15 years, resided in Assela town for at least 6 months before this survey and living with their wives. In case of polygamy, men with his latest wives were included because a couple (one male and female) was drawn from a household and with the assumption that the latest wife will give more births. Most of the time latest wives are younger (rationalization).

Exclusion Criteria: mentally retarded, critically ill residents during data collection and those who can't speak.

4.5 Sample Size Calculation:

Sample size (n) required for this Study was calculated based on two population proportion comparison formulas as follows:

$$n = \frac{Z\alpha/2\sqrt{(1+\frac{1}{r})p(1-p)}}{(P1-P2)^2} + Z\beta^2\sqrt{P1(1-P1)+\frac{P2(1-P2)}{r}}$$

Where,

Z_β = coefficient at level of power=0.842

α = is the level of significance = 0.05

$Z\alpha/_2$ =coefficient at level of significance=1.96

n= the required sample size

r= ratio of residents who preferred their size of family due to their income to residents who did not prefer their size of family due their income=1:1

P_1= is the proportion of residents who preferred their size of family due to their income=0.4

P_2 = is the proportion of residents who did not prefer their size of family due to their income. By assuming 20% difference between p_1 and p_2 = 0.6

p = is the population proportion = $p_1+p_2/1+r$ = 0 .5

The sample size was calculated based on the assumption that household income is the major determinant factor for the preference of family size. From previous studies the proportion of residents who preferred their size of family due to their income was 0.4(11). So by assuming 20% difference of influencing factors, ratio of residents who preferred their size of family due to their income to residents who did not prefer their size of family due to their income to be 1:1 and 80% power, 107 couples for each group was needed. There for a total of 214 couples were required. Because husband and wife were assumed as a single study subject 428 residents were included in the study.

4.6 Sampling Procedures:

Assela town has 14 kebeles. Five kebeles was selected using lottery method. The sampling unit was household units. In each kebeles 43 households were allocated, this equal allocation to each kebele was by assumption that each kebele has similar number of households. The study unit was household with the assumption that each household would have married couples. The households were selected by systematic random sampling that is by dividing the total number of households in each selected kebele by the allocated sample size. Since it was difficult (beyond the logistics available for this study) to get the list of all household head in each of the five kebeles, systematic selection of the households was done as follows:

Information was obtained from each kebele office regarding the person who can able to find and obtain the households. A guide, who knows the selected Kebele very well, was recruited for each selected Kebele. The borders at entrance of the selected Kebeles were used as starting point for the random selection of the households. The number of intervals from one household to another household was already identified by dividing the total number of households in the Kebele to the allocated sample size.

Using the Guide, from the border which identified the kebeles the nearby houses relatively straight to each other were counted until the number of household in one interval were attained. Out of the households counted within the interval, one household was selected by lottery method. That identified household was used as the first household for the study. The subsequent households were identified by the interval calculated for each Kebele.

Schematic presentation of sampling procedure:

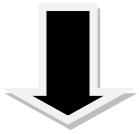
Out of 14 kebeles 5 kebeles were selected using lottery method

Equal numbers of households were allocated for each kebele (43)

Interval for selecting housing unit was obtained by dividing

The total number of housing units in each of the

Kebeles to the allocated sample sizes



Using systematic sampling 43 households were selected from each kebeles

A total of 214 households were selected from the town

A total of 214 couples (n=428 partners)

4.7 Variables of the Study

4.7.1 Dependent Variable:

Desired family size

4.7.1 Independent variables:

Age

Sex

Age at first marriage

Education

Religion

Knowledge of contraception

Mother's health

Psychological factors

Child sex preference

Household income

4.8. Data Collection Tool

Structured questionnaire for interview was developed in English and translated into Afaan Oromo language version for data collection. The questionnaire contains general information including Socio- demographic characteristics of the residents and their family as well as the question which assesses factors influencing family size preferences. The questionnaires used for collecting information from both men and women were similar.

4.9 Data Collection Methods

The data was collected by grade 12 complete five males and five females' .The data collectors were supervised by Bachelor of Science holders in health. The data collector and supervisors were trained for two days.

The training consisted of the objectives of the study, introduction of questionnaire format, procedure of interviewing the respondents and method of reporting to immediate supervisor. The communication between supervisor's, data collectors and investigator was thoroughly explained. Trained data collectors collected data on the variables from couple's over 9 days. When the couples couldn't be found after two visits, the data collectors chose the next household in either side of the visited one.

The data collectors were paired in such a way that a pair consisted of a male and a female. During the process of data collection, the male data collector interviewed the husband while the female data collector interviewed the wife at the same time, but in separate location at a distance that the couples couldn't hear each other. That was to avoid the probable influence of one partner on the other partner on the information to be gathered. It is hoped that female data collectors could best able to solicit open and honest replies from the female respondents on sensitive issues. A supervisor was responsible for collected data, checking for inconsistencies and omissions. Submission of filled formats to coordinator was made every day. Formats with problem were sent back to supervisors for re-interview.

4.10 Data Quality Control

A person who knows the selected Kebele very well was assigned as guide for the data collectors. For each pair of data collectors, one guide was assigned. Using the guides the data collectors were able to identify households systematically for the study.

An identification numbers were given for each of the five Kebeles and housing units. The identification numbers included kebele numbers and serial numbers. For each household, the serial numbers were from 01 to 43. And the kebele numbers were 1, 3,8,11 and 13. And the identification numbers were given by putting, first kebele number and then serial numbers given for households. For example, the first selected household in kebele 1 was identified by "101" and the next selected household from same Kebele would get "102" and the rest were identified in a similar way. Filled formats of the husband did have the same identification number with that of his wife which included the Kebele numbers, and the serial numbers given for the households.

Oromiffa version was used for collecting information after introduction to data collectors and supervisors and tested in the field just after training. Changing and restructuring items to communities' norms was then made, some questions were omitted depending on understanding of the community and some extra questions were added after training and field practice of the questionnaire.

The quality of data was controlled at different levels for completeness and consistency; first by data collectors at the end of each day, then by supervisors every day, then by the investigator, and finally during data entry. On the third day of data collection, the investigator and supervisors revisited 10 of the visited couples, two from each kebele and witnessed that the interview were undertaken as planned .The investigator undertook computer data entry, cleaning and edition.

4.11 Data Analysis and Management

The collected data was entered into computer for analysis by using statistical packages: Epi-info version 3.5.1. The data was exported to SPSS version 16 for analysis. Simple frequencies to see the overall distribution of the study subject with the variable understudy was done.

The outcome variable that is desired family size was measured using mean score. Respondents who had no children were asked how many children they would like to have if they could choose the number of children to have over their entire lifetime. Those who had living children were asked the number of children they would choose if they could start their childbearing again. And it was analyzed using mean score.

Independent variables included were household income, religion, education, mother's health, psychological factors, knowledge of contraception, child sex preference, age at marriage and other factors. Thus, respondents were asked to determine which factors influenced their preferences on the size of their family and were documented as either ''yes" or "no". The proportion of respondents who were answered "yes" for each factor was defined as magnitude of the factor on family size preferences. All respondents were asked to rank those identified factors according to the importance for their preferences. The most important one was placed as the first rank and the least important rank was last.

Multiple linear regressions were used to see relationship between influential factors and desired family size. Significance level and association of variables were tested by using 95% confidence interval (C.I) and regression coefficient. The findings were presented by text, figures and tables.

4.12 Operational Definitions

1. Residents - All male and female who resided in Assela town for at least 6 months before the Study.

2. Kebele - Is the smallest administrative unit under governmental administrative structure

3. Education – educational attainment categorized as illiterate (no education), primary, secondary and more than secondary.

4. Occupation - categorized as government employee, own business, farmer etc

5. Income – Residents income have income or no income, income in birr per month

6. Culture - practice, custom, and social behavior of a particular society but not including religion.

7. Psychological factors – related to factors like: some may die, without any reason, attitude towards wife beating, emotional satisfaction and happiness.

And these factors were recorded as psychological factors.

8. Couple: male and female who are in marital relationship

4.13 Ethical Considerations

Ethical Clearance was obtained from the Research and Ethics Committee of School of Public Health, College of Health Science, Addis Ababa University. A support letter was obtained from Assela Town Administration. Additionally an informed verbal consent was obtained from each respondent after providing sufficient information on the purpose of the study. To ensure the confidentiality of respondents their names were not written on the questionnaire. All interviews were made individually to keep privacy.

4.14 Dissemination of Results:

The result of the study will be submitted to the School of Public Health, Addis Ababa University and will be presented at conference or workshops.

5. Results

5.1 Over all description of study population

A total of 428 residents were included in the study. The mean age of the women was 30 years (SD=6.95). The mean age of men was 37 years (SD=12.92). The mean age difference was 6.44 which was statistically significant different ($p<0.001$). The median ages at first marriage were 19 and 22 for women age 15-49 and men age 15 or above years respectively. Men tend to marry older than women. The minimum age at first marriage for women was 15 years.

Most of the respondents were Orthodox 229 (54%) with the remaining being Muslims 102 (23.9%), Protestants 84 (19.7 %) and the rest are other religious groups. Majority of the population were Oromo 278(65.45) followed by Amhara 102(24.2%), Gurage25 (5.9%) and the rest are other ethnic groups. The distribution of education among men and women were different and 67(31.5%) of men 51(24.1 %) of women had completed primary school.

Most of the women140 (65.4 %) had no their own income. Almost all men 197(92.1 %) were employed, of which 140(68%) had monthly income of less than 1000 ETH Birr (table 1).

Table 1 Socio-demographic characteristics of couples residing in five kebeles of Assela town, Oromia region, South-East Ethiopia, March 25 to April 4, 2013.

Background Characteristics		Women		Men	
		No	%	No	%
Age group	15-19	9	4.2	2	1.0
	20-24	26	12.2	22	10.2
	25-29	77	36.0	50	23.4
	30-34	44	20.6	31	14.4
	35+	58	27.2	109	51.0
	Total	214	100.0	214	100.0
Ethnic	Amhara	56	26.2	47	22.0
	Oromo	138	64.4	140	65.4
	Gurage	14	6.6	11	5.2
	Other	6	2.8	13	6.2
	Total	214	100.0	214	100.0
Religion	Orthodox	128	59.8	102	47.6
	Muslim	33	15.4	69	32.2
	Protestant	47	22.0	37	17.2
	Catholic	4	1.8	6	2.8
	Total	214	100.0	214	100.0
Educational Status	No education	31	14.4	29	13.6
	Primary	57	26.6	53	24.8
	Secondary	111	51.8	97	45.4
	>secondary	14	6.6	33	15.4
	Total	214	100.0	214	100.0
Occupation	Gov. Employee	6	2.8	41	19.2
	Own business	22	10.2	55	25.8
	Private employee	36	16.8	102	47.6
	Unemployed	149	69.4	16	7.4
	Total	214	100.0	214	100.0
Monthly income	<1000	50	11.7	136	31.8
	1000-2000	21	4.9	35	8.2
	2000-3000	50	11.7	136	31.8
	Total	121	100.0	174	100.0

5.2 Description of desired family size by Socio-Demographic characteristics:

The mean desired family size for all study population was 3.8(SD=2.36). The mean desired family size for men and women were 4.1(SD=2.05) and 3.5(SD=2.60) respectively. The mean difference in the number of children desired by men and women was 0.6 which is significant difference (p=0.004). Men preferred larger family size than women. There are variations in the mean ideal number of children by background characteristics among all men and women. The older the respondents, the more children that they desired; women age 15-19 responded that the mean ideal family size is 2.5(SD=1.50) children, while women age 35+ said 4.6(SD=2.31).

Women belonging to Protestant and catholic religious groups were found to have relatively lower mean desired family size when compared to those following Orthodox Christian and Muslim. The mean ideal number of children declined as levels of education of both women and men increased with the exception of greater than secondary level. For example, the mean ideal number of children among women who had completed primary school was 4.1(SD=1.18), compared with 5.8(SD=1.00) children among women with no education. The mean numbers of children desired by couples of different educational levels are significantly different ($p<0.001$) (table 2).

Table 2 Socio-demographic characteristics and mean desired family size of couples residing in five kebeles of Assela town, Oromia region, South- East Ethiopia, March 25 to April 4, 2013.

Background Characteristics		Women			Men		
		Mean desired Family size	SD	No (%)	Mean desired Family size	SD	No (%)
Age group	15-19	2.55	1.00	9(4.2)	1.50	0.70	2(1.0)
	20-24	2.92	1.26	26(12.2)	2.22	1.04	22(10.2)
	25-29	2.98	1.17	77(36.0)	2.74	1.24	50(23.4)
	30-34	3.81	1.91	44(20.6)	3.61	1.49	31(14.4)
	35+	4.63	2.31	58(27.2)	5.35	2.32	109(51.0)
	Total	3.74	1.87	214(100.0)	4.13	2.18	214(100.0)
Ethnic	Amhara	3.10	1.18	56(26.2)	3.95	2.16	47(22.0)
	Oromo	3.68	1.93	138(64.4)	3.45	2.21	140(65.4)
	Gurage	2.71	1.29	14(6.6)	4.25	1.80	11(5.2)
	Other	4.00	1.14	4(1.8)	5.09	1.00	11(5.2)
	Total	3.47	1.84	214(100.0)	4.13	2.04	214(100.0)
Religion	Orthodox	3.57	1.95	128(59.8)	4.68	2.31	102 (47.6)
	Muslim	3.84	1.74	33(15.4)	4.01	2.02	69(32.2)
	Protestant	2.93	1.64	47(22.00	3.02	1.95	37(17.2)
	Catholic	3.00	2.00	4(1.8)	3.00	1.67	6(2.8)
	Total	3.47	3.79	214(100.0)	4.13	2.04	214(100.0)
Educational Status	illiterate	5.80	1.16	31(14.4)	7.20	1.72	29(13.6)
	Primary	4.15	1.00	57(26.6)	4.75	1.74	53(24.8)
	Secondary	2.89	1.76	111(51.8)	3.19	1.50	97(45.4)
	>secondary	2.91	1.95	14(6.6)	2.82	2.09	33 (15.4)
	Total	3.47	1.87	214(100.0)	4.13	2.04	214(100.0)
Occupation	Gov. Employee	2.50	1.18	6(2.8)	4.68	2.22	41(19.2)
	Own business	3.90	1.00	22(10.2)	3.96	2.27	55(25.8)
	Private employee	3.02	1.87	36(16.8)	4.11	1.89	102(47.6)
	Unemployed	3.56	2.06	149(69.4)	3.43	2.14	16(7.4)
	Total	3.47	1.87	214(100.0)	4.13	2.18	214(100.0)
Monthly income	< 1000	3.28	1.95	50(11.7)	4.68	2.30	136(31.8)
	1000-2000	3.33	1.30	21(4.9)	3.37	1.77	35(8.2)
	2000-3000	3.33	2.30	50(11.7)	2.75	1.41	136(31.8)
	Total	3.47	1.88	121(100.0)	4.13	2.18	174(100.0)

SD = Standard deviation

5.3 Magnitudes and ranks of the factors influencing desired family size

Factors influencing desired family size which were identified included house hold income, sex preference, psychological , mothers health , education, religion , knowledge of contraception and age at marriage. The couples were asked to determine whether these factors were influenced their desired family size or not and to rank them. The response on magnitudes and ranks of the factors are shown below (figure 2).

Rank	Factors	Magnitudes of the Factors
1st	Household income	65.4%
2nd	Mothers health	25.5%
3rd	Psychological factors	22.9%
4th	Sex preference	17.8%
5th	Education	9.1%
6th	Religion	4%
7th	Kdge of contraception	6.3%
8th	Age at marriage	2.5%
9th	Other factors	2.1%

Figure 2 Ranks and proportions of factors that influenced desired family size of couples residing in five kebeles of Assela town, Oromia region, South-East Ethiopia, March 25 to April 4, 2013.

5.4 Association between selected socio-demographic variables and desired family size

Statistically adjusting for the effects of socio-demographic variables listed in the table 5 age at marriage was negatively associated with desired family size evidencing that as the age at marriage of the respondents increased the desired family size decreased ($p<0.001$).

Statistically adjusting for the effects of socio-demographic variables listed in the table 5 respondents who had no education desired higher family size than respondents who had more than secondary education($p<0.001$)

Statistically adjusting for the effects of socio-demographic variables listed in the table 5 respondents who had primary education desired higher family size than respondents who had more than secondary education($p<0.01$) (table 3).

Table 3 Results of multiple linear regressions showing the associations between selected Socio-demographic variables and desired family size of couples residing in five kebeles of Assela town, Oromia region, South-East Ethiopia, March 25 to April 4, 2013

Variables	Desired family size B (95% C.I)
Age	0.09(0.08, 0 .11) ***
Age at marriage	-0.13(-0.17, -0.86) ***
Educational level	
Dummy variable No education	2.04(1.33, 2.70) ***
Dummy variable Primary	0.95(0.35, 1.55) **
Dummy variable secondary	-0.15(-0.69, 0.39)
Greater than secondary®	
Monthly income	
Dummy variable <1000 ETH	-0.10(-0.31, 0.49)
Dummy variable 1000-2000ETH	0.23(-0.31, 0.76)
2000 to 3000 ETH®	
Religion	
Dummy variable Protestant	-0.59(-1.03, -0.15)
Dummy variable Muslim	-0.1(-0.44, 0.42)
Dummy variable Catholic	-0.50(-1.65, 0.66)
Orthodox®	
Ethnic group	
Dummy variable Amhara	0.29(-0.70, 0.11)
Dummy variable Gurage	-0.18(-0.91, 0.54)
Oromo®	

® = reference category

*P<0.05, **P<0.01, ***P<0.001, C.I = Confidence Interval, B = Coefficient of regression

5.5 Association between Influential factors and desired family size

The factors that influenced desired family size were entered into the linear regression model at once for analysis and the output showed an adjusted R-square of 0.58 which means 58% of the variation in the mean desired family size can be attributed to the nine factors listed below in the table 4. The remaining 42% of the variation in mean desired family size can be explained by other factors not identified by this study.

Statistically adjusting for the effects of other factors listed in the table 4, residents who are influenced by sex preference prefer, on average, more family size than residents who are not influenced by sex preference ($p<0.001$) (table 4).

Table 4 Results from multiple linear regression analysis showing the associations between factors that influenced desired family size among couples residing in Assela town, Oromia region, South-East Ethiopia, March 25 - April 4, 2013.

Factors	Desired family size B (95%CI)
sex preference	1.67(1.20, 2.14)***
Psychological factors	0.47(0.22,0.91)*
house hold income	-2.10(-2.41,-1.60)***
Age at marriage	-4.40(-6.27, -2.53)***
Mother's health	0.09(-0.31, 0.50)
education	0.05(-0.62, 0 .51)
Religion	1.63(-0.54, 2.72)
Kdge of contraception	-0.71(-1.45, 0.03)
Other factors	0.82(-0.27, 1.92)

*P<0.05, **P<0.01, ***P<0.001, C.I = Confidence Interval, B = Coefficient of regression

6. DISCUSSION

This community based study used information from both men and women to determine desired family size and identify important factors influencing family size preferences.

Desired family size

The mean desired family size for all study population was found to be 3.8 in this study. The mean desired family size for men and women were 4.1 and 3.5 respectively. Our finding for women is significantly lower than the finding for women in urban Ethiopia which was 3.7 and for women in Oromia which was 4.3 reported by Demographic and Health Survey of Ethiopia 2011(10). The difference could be explained by the existed evidence that is there are variations in mean desired size of family among studies done at different places or in different societies, or at different time and with different sample size or methodology. For example see the following studies: In Ethiopian Demographic and Health Survey which were done within 5-7 years interval the variations in mean preferred family size were; 4.1 children in 2000, 3.7 children in 2005 and 3.7 children in 2011 for women living in urban. Other study which used data from Ethiopian Demographic and Health Survey 2005 showed that the mean number of children desired by women of 15 to 49 years age group was 3.12(49). These differences could be due to differences in time the studies were done (Fertility preferences may vary with time) (7), differences in societies and methodology.

A survey which aimed at fertility transition in Rwanda found that the ideal family sizes were 4.1 in 2005 and 2.5 in 2010 among all Rwandan women age 15 to 49(50). The mean desired family size that was found for women by our study is lower than the finding of the above survey done in Rwanda in 2010. However, the range of variations in mean desired family sizes since 2005 to 2011 is 2.5 to 4.5 among the studies listed above which were done in developing countries like Ethiopia, and our finding is within this range. Other similar findings include; a study which used DHS surveys done in the last 15 years (1998 to 2007) from 30 sub-Saharan African countries demonstrated that differences in desired family size among countries are large, with the following low-high ranges of desired family size (births per woman): from 2.3 in Swaziland to 8.6 in Chad(51).

In our study there are variations in the mean ideal number of children by age and sex among all study population. The mean desired family size for men was larger than women's and the older the respondents the more children that they desired.

Women age 15-19 responded that the ideal family size is 2.6 children, while women age 45 to 49 said it is 5.6. Similarly study which used data from Ethiopian Demographic and health Survey to assess the factors influencing women's intention to limit child bearing in Oromia in 2009 reported that mean desired family size was highest among women aged 40-49 years(52).

Older women may inflate their stated desired family size to be in accord with the number of children they already have, which may include unwanted births ("rationalization"). To minimize this potential error, the mean desired family size among women aged 20 to 29 are being in use as the indicator of fertility preferences. So let's compare the findings of mean desired family size for this age group with other studies. In our study the mean desired family size among women aged 20 to 29 was 2.95. However a study which used Ethiopian Demographic and Health Survey 2005 showed that mean desired family size among urban women aged 20 to 29 to be 3.37(49). The difference could be explained by the time the studies were done.

Factors influencing desired family size

Factors influencing desired family size which were identified included house hold income, sex preference, knowledge of contraception, education, age at marriage, religion, mothers health and psychological factors.

Consistent to our finding study done in Nigeria in 2010 revealed that income level, sex preference, religion, educational level and knowledge of contraceptive methods were significantly associated with family size preferences ($p<0.05$)(53).

Other studies with similar findings include: A study done in Pakistan in 2007 showed that sex preference, family income and age at marriage influenced family size(54). Similarly study in Bangladesh in 2011 showed that religion, education, age at marriage and son preference were related to family size(55). However, not all the factors found by the above studies are similar including our study. For example; in the above study done in Bangladesh in 2011 household income and knowledge of contraception was not found to be related to family size but these factors were found to be related to family size in our study and in the study done in Nigeria in 2010. This could be due to the fact that different factors influence family size in different societies(13).

Regarding the magnitudes of factors influencing desired family size, our study found that household income, mother's health, sex preference and psychological factors had got 65.4%, 25.5%, 17.8% and 22.9% respectively. However, household survey done in Ekpoma (Ekpoma is a growing University town situated in Esan West Local government Area of Edo State), Nigeria in 2007 found that about 94% of the study population insisted on the sex of the children as the main factor. Only 4% believe economic consideration was the factor responsible for the size of the family(35). The above differences in magnitude of the influential factors between our study and the above survey done in Nigeria could be explained by fact that different factors influence family size at different level in different societies (13). That is there are variations in magnitude of the factors influencing family size preference among studies done in different societies or at different time. For instance; see the following studies: A study done in Ghana in 2005 found out that 37.7% of the 146 respondents would have changed their family sizes for income(37). This finding is not only different from the magnitude of income in our study which was 65.4% but also it is different from the magnitude of income that was found by the above survey done in Nigeria.

The magnitude of sex preference and psychological factors in our study was 17.8% and 22.9% respectively. However a survey conducted among 200 women in Pakistan during the period of September to December 2009 showed, 19.5% preferred particular family sizes because their family requires sex composition and 42% of women answered they like the size without any reason(8). This finding is not only different from the finding of our study but also it is different from the findings of other studies listed above which could be due to the fact that the studies were done in different societies.

The directions of the effect of the factors influencing desired family size in our study were similar with most of the studies done in developing countries cited above. In our study sex preference and psychological factors forced the couples to have larger family size than other factors. Similarly in a study done in Pakistan in 2011 son preference and lack of consensus between husband and wife on number of children forced couples to have large family size or more than two children(7). In our study desired family size decreased as the age at marriage increased. Similarly study done in Bangladesh in 2011 showed that desired family size decreased as the age at marriage increased(55). In our study women with secondary or higher education have, on average, lower desired family size than women with no education (2.9 vs. 5.8 births per woman).

Similarly a survey which used DHS surveys done in the last 15 years (1998 to 2007) from 30 sub-Saharan African countries demonstrated that women with secondary or higher education have, on average, lower desired family size than women with no education (3.7 vs. 5.6 births per woman) (51).

7. Strength and limitations of the study

7.1 Strength

The quality of data was controlled at different levels, first by data collectors at the end of each day, then by supervisors every day, then by the investigator, and finally during data entry.

To obtain reliable data, the objectives of the study were explained thoroughly and the participants were allowed to think about the factor carefully on whether it influenced their desired family size.

The response rate was 100 %.

7.2 Limitation

Not supplemented by qualitative method that is qualitative method was not used, if it was used, it might identify other factors influencing desired family size which were not identified by this study.

8. Conclusion and recommendations

8.1 Conclusion:

The mean desired family size for the study population was 3.8.

The mean desired family size for men and women were 4.1and 3.5 respectively.

Factors influencing desired family size which had got higher magnitude and rank included household income, sex preference, mothers' health and psychological factors.

Respondents with no education desired higher family size than respondents who had more than secondary education.

Respondents with primary education desired higher family size than respondents who had more than secondary education

As age at marriage of study population increased mean desired family size decreased.

It is quite possible that increasing educational level and age at marriage might influence couples to desire lower family size.

It is possible that child sex preference and psychological factors might influence couples to desire higher family size.

8.2 Recommendation:

Local government should focus on increasing educational level of the community

Programs of family planning services should aim to reduce fertility rates by focusing not only on expanding contraceptive prevalence but also on creating awareness about factors influencing family size.

Qualitative methods should be used to identify other factors influencing desired family size.

9. References

1. Walle D. Fertility transition, conscious choice and numeracy. *Demography* 1992; 29(4): 487-502.
2. Fertility and Family planning Trends in Karachi. International Family Planning Perspective1999; 25(1):38-43.
3. Bhende AA and Kanitkar T. Principles of Population Studies. Bombay: Himalayan Publishing House; 1985.
4. Ojha A. Family welfare pro gramme in India under target setting and target free approaches. *Health Popul: Perspect* 1999; 22:68-75.
5. Pakistan Census Organization, Statistics Division Islamabad, Government of Pakistan [database on the Internet] 2012 [cited 21]. Available from: http://www.census.gov.pk/.
6. Syde M. Determinants of family size preferences in Pakistan. *The Pakistan Development Review*, 1999; 28(3):207-32.
7. Asifa K and Muhammad K. Factors affecting the Family Size in Pakistan. *Clog-log Regression Model Analysis*, 2011; 18(1684-8403):29-53.
8. Sikander R. Fertility preference among women of reproductive age in an underdeveloped country, 2012; 18(1):66-70.
9. The 2007 population and Housing Census of Ethiopia. Addis Ababa: Central Statistical Agency of Ethiopia 2008.
10. Ethiopian Demographic and Health Survey. Addis Ababa: ICE International; 2012 [cited 2012 7]; 81-90]. Available from: www.csa.gov.et/.../2011%20Ethiopia%20DHS%20Final%20Report%..
11. Daniel S. Attitude towards Family Size Preferences among Urban Ethiopians. Journal of Comparative Family Studies 2009; 40(1).
12. In-depth Analysis of the Ethiopian Demographic and Health Survey 2005 Addis Ababa 2002.
13. Deborah K and Ushma D. Women's Empowerment and Ideal Family Size. *International perspective on Sexual and Reproductive Health*2012; 38(2):78-89.
14. Goldstein J, W. Lutz and M.R. Testa. The emergence of sub-replacement family size ideals in Europe. *Population Research and Policy Review* 2003; 22:479-96.
15. Buhler C. Measuring preferred family size. Max Planck Institute for Demographic Research and Leibniz University. 2010.
16. Miller WB. Childbearing motivations, desires, and intentions: a theoretical framework. *Genetic, Social and Psychology Monographs*1994; 102(2):225-58.

17. Perugini M. The role of desires and anticipated emotions in goal directed behaviours: broadening and deepening the theory of planned behaviour. *British Journal of Social Psychology*2001; 40:79-98.
18. Knodel J. Desired family size in Thailand: are the responses meaningful? *Demography*1973; 10(4):619-37.
19. Testa MR. Childbearing preferences and family issues in Europe. 2006; Available from: http://ec.europa.eu/public_opinion/archives/ebs/ebs_253_en.pdf.
20. Raina G , Jeratha J and Malhi P. Preferences for the Sex of Children and its Implications for Reproductive Behaviour in Urban Himachal, Pradish. *The Journal of Family Walfare*1999; 45(1).
21. Nag M. Sex preference in Bangladesh, India, and Pakistan and effects on Fertility. Newyork: *The population Council Research Division Working Paper*. Report No.: 27.
22. Ahmad T. Factors affecting children ever born in Slum areas of Rajshahi city corporation, Bangladish. *Middle East Journal of Nursing*2008; 2(4):5-10.
23. Regassa N. Socio-economic correlates of high fertility among low. *Journal of Human Ecology*2007; 21(3):203-13.
24. Sirgaldin I and Khan M. Son preference and the demand for additional. *Demography*1977; 14(4):481-95.
25. Ringhein K and Mahmood N. Factors affecting contraceptive use in Pakistan. *The Pakistan Development Review*1960;35(1):1-22.
26. Sultan M and Arnold F. Fertility, Pakistan Demographic and Health Survey: *National Institute of Population Studies Islamabad, Pakistan and Macro International*
27. Blaney H. Warning to Humanity," III world Scientists".1992.
28. Coale J. The Demographic transition, the population debate: dimensions. *Papers of World Population Conference*; *Bucharest*.
29. Litman J and Mode J. Implications of fertility patterns in the republic of Korea. Pennylvania University of Pennylvania; 1975
30. Hasan M and Sabiruzzaman S. Factors affecting fertility behaviour in Bangladesh. *Research Journal of Applied Sciences*2008; 3(1):70-6.
31. Cochrane H. Fertility and Education: What do we really know? Baltimore: *World Bank Staff occasional Papers*1979.
32. Hakim A Factors affecting fertility in Pakistan. *The Pakistan Development Review*1994; 33(4):685-709.

33. Sathar Z, Callam C and Kazi C. Women's status and fertility change Kenya. *Population and Development Review*1988; 14(3):415-23.
34. Oheneba Y. Determinants of current contraceptive use among Ghanaian *Journal of Biosocial Science*1992; 24(4):463-75.
35. Nwakeze N. The demand for children in Anambra State of Nigeria. *African Population Studies*2007; 22(2):175-201.
36. Ghana Population Policy: *Ghana Population Council, Daily Graphi*2002 20.
37. Jones. L. Family Size and its Socioeconomic Implications in the Sunyan of Brong Ahafo Region of Ghana2005.
38. Implications of Worldwide Population Growth for U.S. *National security council*, Washington.D.C; 1974.
39. Agatha N. The Status of Women, Sex Preference, Decision-Making and Fertility Control in Ekpoma Community, Nigeria. *J Soc Sci*, 2007; 15(1):43-9.
40. Philip K. Welfare Benefits and Family-Size Decisions of Never-Married Women: *Institute for Research on Poverty Paper* 1993.
41. An In-depth Study of Knowledge, Attitude and Practice, in *Egypt Demographic and Health Survey*2003.
42. Nibret. A. determinants of family planning practice in Ethiopia. Addis Ababa: Addis Ababa; 2010.
43. Orubuloye O. Women's role in reproductive health Decision Making and vulnerability to STD and HIV/AIDS in Ekiti, Nigeria. *Health Transition Review*1997; 7:329-36.
44. Tabitha K and Clem T. Family Size, Economics and Child Gender Preference. Nyeri: *A case Study in Nyeri District of Kenya Working Paper* 2003.
45. Getu G and Alemayehu W. Differentials of fertility in North and South Gondar zones, northwest Ethiopia. *BMC Public Health*2008; 397(8):1-12.
46. Wubegzier M and Alemayehu W. Determinants of low family planning use and high unmet need in Butajira District, South Central Ethiopia. Reproductive Health2009; 37(8):1-8.
47. Micevska M. Economic Disruption, Malthusian fertility and Economic Growth. 2001 [cited 2010 21]; Available from: http://www.demogr.mpg.de/Papers/works/001011_paper06.pdf. . .
48. Brehanu D. Household organization, women's autonomy and contraceptive behaviours in Southern Ethiopia. *Studies in Family Planning*1999; 30(4):302-14.

49. Fanaye T and Derek H. Urbanization and Fertility Rates in Ethiopia. Ethiopia Strategy Support Program II. [cited 2012 13]; Available from: http://essp.ifpri.info/
50. Charles F. The Recent Fertility Transition in Rwanda. [cited 2013 1]; Available from: <http://www.popcouncil.org/pdfs/PDRSupplements/Vol38_PopPublicPolicy/Westoff_pp169-178.pdf>.
51. Bongaarts J. Can Family Planning Programs Reduce High Desired Family Size in Sub-Saharan Africa? International persp. On sexual and reproductive health. International persp on sexual and reproductive health2011; 37(4).
52. Dibaba Y. Factors Influencing Women's Intention to Limit Child Bearing in Oromia Ethiopia. Ethiop J Health Dev2009; 23(1).
53. James G and Abanihe C. Adolescents' Reproductive Motivations and Family Size preferences in North-Western Nigeria. Asian Journal of Medical Sciences 2010; 5(2):218-26.
54. Sharif M SS, Mubeen C, Hussian S et.al, . Factors Affecting Family Size and Sex Preference: A Study of Urban Tehsil Fasialabad (Pakistan) Agri Soc Sci2007; 3(1).
55. Islam U. Determinants of desired family size and children ever born in Bangladesh. The Journal of Family Welfare 2011; 57(2).

10. Annex

I. Information Sheet:

I am ….....……an interviewer on behalf of Ato Bekele Dibaba, to conduct a Community Based Crossectional Survey on Factors Influencing Family Size among Residents of Assela Town from November 1 , 2012 to March 1 ,2012 G.C.

Purpose of the Survey: this Survey aims to assess Factors Influencing Family Size among Residents of Assela Town.

Benefits: the information we receive from your interview will be input for the stakeholders of Reproductive Health and Policy makers so that it will contribute to the achievement of pertaining to small family size and harmonize the rate of population growth with socioeconomic development in order to reach a high level of welfare.

Procedure: If you decide to take part in this Survey, we will be carrying out the following: you will be interviewed by ……. has Bsc in Public Health. The interview will be related to your background information and your perception on the factors influencing size of family. The interview will take approximately 20 minutes.

Risks and Discomforts: The details of the interview will be related to your family size preferences that you may feel uncomfortable talking on this topic.

Compensation: you will not be paid for your participation in this Survey.

Confidentiality: You will be interviewed in a private area where the interview can be conducted confidentially at the time of your convenience. Your names will not be written. Your information will be kept confidential and used only on this Survey.

Right to Refuse or withdraw: you have the right to either agree or disagree to take part in this Survey. You have the right to refuse from the interview at any time or you have the right to not answer the questions you don't want to answer. Whether or not you decide not to participate in this Survey, it will not affect any of your rights.

Whom to Contact: If you have any questions regarding the Survey, you may contact Ato-Bekele Dibaba, the investigator, Tel, mobile: 0910955032, Email: bekeledibaba@yahoo.com

II. Consent Form:

I have been invited to take part in the Survey on Factors Influencing Family Size among Residents of Assela Town. The foregoing information has been read to me. I have the opportunity to ask questions about it and any questions which I have asked have been answered to my satisfaction. I consent voluntarily to be a participant in this Survey that I have the right to withdraw from the interview at any time with out in any way affecting my rights.

I have been briefly informed about the Survey and I clearly understood the Objectives. I here approve my consent with my signature to participate in the Survey.

Name of the participant……Signature…….Date…….

Name and Signature of the data collector who sought the consent……..

Date of interview…….

Name and Signature of the supervisor…….

Date…….

11. Questionnaire English Version

I. Part I: Questions on Socio-Demographic characteristics **(Q101-Q110)**

Ser.NO	Questions	Responses and codes	Skip to
Q101	Write the sex of the respondent? (the interviewer himself should write)	1. male 2.female	
Q102	How old are?(in completed years)	……..	
Q103	What is your religion?	No religion…0 Orthodox.....1 Catholic.....2 Protestant.....3 Moslem..... .4 Traditional.....5 Other(specify)…6	
Q104	To which ethnic group do you belong?	Amhara….1 Oromo…...2 Gurage...3 Tigre.....4 Other(specify).....5	
Q105	What is your educational status?	no education….1 Primary school…2 Secondary...3 More than secondary…4	
Q106	What is your occupation?	Unemployed…1. Student…2 Farmer…3 Own business…..4 Private employee...5 Gov. employee….6 other(specify)…..7	
Q107	Do you have your own income?	Yes……..1 No……..2	

Q108	If yes for Q107, how much is your monthly income?	Less than 1000 birr….1 1000 – 2000 birr……..2 2000 – 3000 birr…….3 3000 – 4000 birr…….4 Greater than 4000 birr….5	
Q109	If you are married, how old are you when you get married?	……..years	

Part II. Questions Related to Size of Family **(Q201-Q207)**

Q201	Have you heard about contraception?	1. pills.....yes( ) No( ) 2. injectables……yes( ) No( ) 3.implants……..……yes( ) No( ) 4.IUD……yes( ) No( ) 5. male condom…….……..yes( ) No( ) 6. female condom…….yes( ) No( ) 7.Rythm…….……..yes( ) No( ) 8. emergency contraception…..yes( ) No( ) 9. female sterilization……...yes( ) No( )	
Q202	Do you know how to use contraceptive?	1. pills……..yes( ) No( ) 2. female condom…….yes( ) No( ) 3.Rythm……..yes( ) No( )	

		4. emergency contraception...yes( ) No( ) 5. male condom……..yes( ) No( )	
Q203	What is your preferred size of family?	……	
Q204	Do you have children?	1. Yes 2. No	
Q205	If yes for Q204, what is your actual size of family (what is the size of your family currently)?	……	
Q206	What factors influenced you to prefer the size of family?	1. HH income…….…… yes ( ) NO( ) 2. Sex preference ……..….. yes( ) NO( ) 3.Psychological ……yes ( ) NO( ) 4. for mother health…..…… yes ( ) NO( ) 5. education……. yes ( ) NO( ) 6.religion ……... yes ( ) NO( ) 7. kdge of contraception……yes ( ) NO( ) 8.Age at marriage ……...yes ( ) NO( ) 9. Other factors (specify)..... yes ( ) NO( )	

Q207	Please rank the factors mentioned above on Q206 from the most important for your preference (1) to the least important (9).	1HH income …… 2. Sex preference…… 3. Psychological..…… 4. For mother health…… 5. Education…… 6. Religion…… 7. Kdge of contraception…… 8. Age at marriage…… 9. Other factors (specify)……..	

12. Data Collection Instrument, Oromo Language Version

UNIVERSITII FINFINNE, FAKALTII MEDICINII

DEPARTMENTII KOMUNITII HEALZII

Gaffilee wa'ee qusanaa maatii ilalee, addaan bafachuudhaaf Kan qophaa'ee.

FEDHII GAFILEE DEBISUU

SEENSA Maqaan koo _____ universitii finifinne irraa digrii Lamaataa eguumsa fayya ummataa irratti hojjeeta Kan jiruu yoo ta'u, qayyabanaa kana Wa'ee qusanaa matii illaalichisee qayyabachuu dhaan digrii isaa xumurachuu dhaaf isaa gargaara.Ani immoo isaafii gafolee kana gafadhee ragaa sirrii kennufidhaaf isaa wajjin hojjechaan jira.Kanaafuu ijii qayyabanna kanaa ummata naanno kanaatiif akkasumas ummata iddoo gara biraa jiraataniif qusaanna maatii illaalichisee sagantaa sirrii saganteefachuuf warra eggumsa fayyaa irraa hojjjetan ni gargaara.Kanaafu akka gafii fii deebii kana irratti hirmaattaniif fedhii kessan isin gafadha.Yeroo fetan ittis gafichaa hin debisu jechu galateefana.

Gaffii fii deebii kana irratti hirmachuuf fedhii kessanii?

____eyyee _____waawu

Maqaa fii mallatoo isa ragaa funaanu_____

Guyyaa gafii fii deebiin itti ta'e_____

Maqaa fii mallatoo supervayisarii_____Guyyaa_____ uni dandeesu.Garuu deebii hundaa yoo debiftan isiin.

1. GAFFILEE WA'EE SOSHOO DIMOGRAPHII **(Q101- Q110)**

Lak	Gafii	Debii	Dabari
Q101	Saala?/offii kesanii gutanii	Dhirra……. Dhalaa……	
Q102	Umurii?	…….	
Q103	Amantii?	hinqabuu……0 Orthodoxii.....1 Catholikii.....2 Protestantii.....3 Moslema.....4 wakefataa.....5 kanbiraa……6	
Q104	Saynii?	Amhara.....1 Oromo…...2 Gurage…...3 Tigre……...4 kanbiraa.....5	
Q105	Barnotaa?	Dubisu fi baresu hin bekuu…….1 kutaa 1-6…..2 kutaa 7….3 Sanni olii..…4	
Q106	Hojii kee malii?	Hin qabuu…1 barata……2 gabare……3 nagade……..4 gilasbi bira hojjeta….5 motuma…...6 kanbira…….7	
Q107	Galii ofii qabda?	…….,	
Q108	Yoo qabate meeqa?	1. <1000 2. 1000-2000 3. 2000-3000 4. 3000-4000 5. >4000	

Q109	Kan futee yoo tae, umurii meeqati futee?	…….	

2. Gafilee bayinaa matii **(Q201- Q208)**

Q201	Wan dhagessee jirita?	1. pillissii……..eyyee( ) Lakkii( ) 2. warrnisa…...eyyee( ) Lakkii( ) 3.dhokatu……eyyee( ) Lakkii( ) 4.garaa……eyyee( ) Lakkii( ) 5. kan dhira con..eyyee( ) Lakkii( ) 6. kan dubara…..eyyee( ) Lakkii( ) 7.peredi……..eyyee( ) Lakkii( ) 8. Dingatagna maka...eyyee( ) Lakkii( ) 9. operation dubara….eyyee( ) Lakkii( )	
Q202	Akkamiti akka fayadaman beta?	1. pills…….eeyye( ) Lakkii( ) 2. condomii…..eyye( ) Lakkii( ) 3. Rythmii……eyyee( ) Lakkii( ) 4.dingatagna mak….eyyee( ) Lakkii( ) 5. condomii…….eyyee( ) Lakkii( )	
Q203	Bayyinni mattii kee meqa tau wayya?	……..	
Q204	Ijolee qabda?	1. Eyyee… 2. Lakkii……	
Q205	Gafin Lak 205 eyyee yoo tae, meqaa?	……	

Q206	Bayina matii hammana (206) kan filatu han si godhe mali?	1. habitii eyye ( ) lakii( ) 2.saalafii eyee( ) lakii( ) 3. Dutii wan j. eyee ( ) lakii( ) 4. Fayya hadh. eyee ( ) lakii( ) 5. barnotaa eyee ( ) lakii( ) 6.amaniti eyee ( ) lakii ( ) 7.kontraception eyee ( ) lakii ( ) 8.umurii fudha eeyee ( ) lakii( ) 9.kanbiraa eyee ( ) lakii ( )	
Q207	Kan irasii Q207 taresii. Akuma gudina fayidatini.	1. Habitii …… 2. Saalafii ……. 3. Dutii wan j. ……. 4. Fayya hadh. ……. 5. Barnotaa …… 6. Amaniti …….. 7. Kontraception …… 8. Umurii fudha…… 9. Kan biraa ……	