FACTORS AFFECTING ANTENATAL CARE ATTENDANCE AND PREFERENCE OF PLACE OF DELIVERY BY PREGNANT WOMEN IN GULELE DISTRICT,ADDIS ABABA

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MESGANAW FANTAHUN, MD

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A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PUBLIC HEALTH

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March, 1992

ADDIS ABABA UNIVERSITY
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ACKNOWLEDGEMENTS

I extend my great gratitude to Dr. George Olwit for his interest, valuable advice, guidance and consultations.

My heartily thanks goes to Ato Desta Shamebo for his guidance and consultations and all what I gained from him during our discussions.

I am also very grateful to Dr. Saba W.Michael for her interest,advice and for sharing me her knowledge and experience.

I am very much indebted to Dr. Joyce Pickering whose help and encouragement was always with me starting from the beginning to the end of this thesis work.

All staff members of the community health department have helped me at some time or another.My deepest appreciation goes to them. I thank Dr. Derege kebede for his valuable comments on the draft of the thesis.

This study was funded by the International Development Research Centre of Canada through the MacGill Ethiopia Community Health Project for which I am very grateful.

I got valuable advice and information from the Family Health Department,Ministry of health for which I am very grateful.

My thanks also go to the interviewers, coordinators and Gulele Awraja health team members.

W/t Yemserach Ashenafi typed part of the thesis and helped me with the use of the computer and I am very thankful for her assistance.

I am also grateful to my friend Ato Asnake Yeheyis and his family whose morale support was invaluable at times of difficulty.

Last but not least my deepest gratitude is extended to my wife W/o Lemlem Adam who had to tolerate my long months of absence when I was very much needed at home.

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LIST OF ABBREVIATIONS

1.	ANC	Antenatal Care
2.	CHW	Community Health Workers
3.	HI	Health Institutions
4.	HP	Health personnel
5.	LMP	Last Menustral Period
6.	MCH	Maternal And Child Health
7.	TBA	Traditional Birth Attendant
8.	UNICEF	United Nations Children's Fund
9.	WHO	World Health Organization

ABSTRACT

A community based cross sectional study was conducted in Gulele district, Addis Ababa to asses the utilization patterns of antenatal care services and the factors affecting antenatal care attendance and preference of place of delivery.

A total of 441 pregnant women in the third trimester from 24 out of the 27 kebeles of the district were included in the study to whom pretested questionnaire were administered.

The study showed that about 39 % of the third trimester pregnant women had not attended antenatal clinics at all. Only 26% of those attending antenatal care clinics had their first visit during the first trimester. The most important reason for not attending antenatal care clinics was being too busy (49.2%).

Out of a total of 15.8 points,the mean knowledge score on MCH for those attending antenatal care clinics was 10.9±2.1 whereas it was 7.42± 2.5 for those not attending antenatal care.

In multivariate analysis the risk of non-attendance was higher for those pregnant women whose income was low, (OR 1.77, 95% CI 1.44,2.76), whose husband's or partner's attitude was negative or unknown,(OR 2.63, 95% CI 1.9,3.64), who were first pregnant at the age of 10-18 years (OR 1.85, 95% CI 1.20 , 2.81) and lower for the nulliparae (OR 0.52 , 95% CI 0.33 , 0.82).

Three fourths of the respondents preferred to deliver in health institutions and one fourth preferred to deliver at home. The most frequent reason for preference of place of delivery (40.8%) was high quality of service.

In multivariate analysis the risk of preference to deliver at home was higher for those who were illiterate (OR 1.5, 95% CI 1.57, 2.00); for those whose husband's or partner's attitude towards antenatal care attendance is negative or unknown, (OR 1.82, 95% CI 1.34,2.49) and did not attend antenatal care clinics (OR 2.19, 95% CI 1.69,2.96). It was lower for the nulliparae (OR 0.52, 95% CI 0.3,0.9).

It is recommended to strengthen health education activities on early attendance of ANC,modern contraceptive methods and age at first pregnancy.Supportive and regular supervision of antenatal care clinics should be considered seriously. Support and training of community health workers should continue. Further studies should be carried out on factors associated with antenatal care attendance in diverse setups and well designed studies should address the influence of antenatal care on pregnancy outcome. In addition, proportion of pregnant women from the total population now used for all practical purposes should be reconsidered for Addis Ababa.

INTRODUCTION

Maternal and child health care begins with the immediate health problems of mothers and children and extends to health throughout life and to the health of the community (1).

The specific objectives of maternal and child health care can be summarized as reduction of maternal, perinatal, infant and childhood morbidity and mortality and the promotion of reproductive health and the healthy physical and psycho-social development of the child and adolescent within the family (2).

Globally each minute a woman dies as a result of pregnancy. An estimated 500,000 maternal deaths occur every year and over 99% of these deaths take place in developing countries (3). Unless vigorous measures are taken pregnancy related factors will kill 7.5 million women in the world between 1990 and the year 2000(4). Women in Africa have 1 in 20 life time risk of dying from pregnancy related causes whereas in developed countries the risk is only 1 in 2000.

The health status of Ethiopians reflects the under developed situation of the country. Nearly all the rural population and the majority of the urban population have no access to sanitary facilities.

Of the deaths 75-89% are communicable and or preventable(5). The extent of malnutrition is estimated at 60% of under fives being below 80% of expected weight for age,out of which 10% are severely malnourished(5).

In Ethiopia maternal mortality rate has been estimated to be between 500 - 1000 per 100 000 live births (5,6)*. This is one of the highest in the world. Infant mortality is 111 per 1000 live births (7).Mortality in the under five years of age children is 260 per 1000 live births (8). These figures are 10 - 20 times higher than for developed countries (6).

Antenatal care is considered one of the most effective health interventions for prevention of maternal morbidity and mortality particularly in places where the general health status of women is poor (9). It is important for the health of the mother and optimal development of the fetus as well as for preventing or minimizing the complications of pregnancy, labour and the post partum periods (9).

* Some statisticians give figures as high as 2000 maternal deaths per 100000 live births(5).

Many diseases and conditions associated with pregnancy endanger both fetal development and child health. Reductions in perinatal mortality have been found from improved quality of antenatal care (1).

However, specific measures and interventions rigidly repeated everywhere irrespective of their relevance to the real needs in local situations were found to be ineffective. An alternative approach is to consider those factors that enable the primary content of MCH care to be decided locally.

Therefore, WHO recommended that the following factors should be taken into account in establishing local content and strategy of antenatal care (1).

1 . Health related characteristics of women of child bearing age, education, type of work and customs related to marriage, child bearing and child rearing.

2. Health status: general standard of health of adolescent girls and women of child bearing age, particularly nutritional status level, prevalence of anaemia, type and magnitude of infectious diseases particularly those with harmful effects on pregnancy or its outcomes.

3. Biological factors: average age at first pregnancy, parity, spacing, total number of pregnancies.

4. Prevalence of disease conditions specific to pregnancy.

5. Factors determining implementation of appropriate intervention measures and adaptation of technical procedures.

6. An understanding of the problems by the community and its acceptance of intervention measures.
7. Availability of human and other resources.
8. Accessibility of the services to the pregnant women
9. Existence of supportive services such as the possibility of referral for high risk pregnancies.
10. Practicality and availability of programmes that are more likely to reduce health problems and promote well being.
11. Health related activities in other sectors affecting the health of pregnant women.

In Ethiopia antenatal care clinics are expected to provide the pregnant women with health education,advice and encouragement about their pregnancy. Assessment of the nutritional status of women, presence of anaemia, malaria, heart diseases,tuberculosis and diabetes mellitus is recommended. Routine laboratory investigations that should be undertaken by health institutions,especially health centers and hospitals, are blood for haemoglobin and urine for albumin. Depending on the resources available tests for syphilis and the rhesus factor should be performed (10).

Coverage of antenatal care is generally low in Ethiopia. It ranges from less than 10% in some rural areas to 60% in some urban areas (Ministry of health, 1990). In Addis Ababa Kwast B. et.al in 1985 reported that out of 9957 pregnancies antenatal care was received for 67.4% (11). Current antenatal care attendance for Addis Ababa with six rural districts included in addition to the 12 which existed in 1985 is reported to be 42%. (Ministry of health

1990-1991 unpublished). Although probably much better than the national average, antenatal care attendance is far from being optimal in the capital city where there are a number of health institutions providing the service.

A more important problem however is delayed start of antenatal care attendance. A review of the records of a referral hospital, in Gulele district, Addis Ababa by the author revealed that 50% of the pregnant women started attending antenatal care after six months of pregnancy.

In Ethiopia only 10-14% of the births are attended by trained birth attendants (12).

With respect to antenatal care attendance and deliveries by trained health workers two major questions arise in this country. The first one is what factors determine antenatal care attendance and deliveries by trained health workers and the second one the effect of antenatal care attendance on pregnancy outcome.

This study was therefore undertaken to assess the utilization patterns of antenatal care and delivery services by pregnant women in one of the districts of Addis Ababa (Gulele Awraja), their determinants and possible health benefits gained by those who attend antenatal care when compared with those who do not. The study however is not designed to give an answer to the question on the effect of antenatal care attendance on pregnancy outcome.

The anticipated applications of the results from this study are:

1. Increase awareness of health professionals, and all others concerned about the magnitude of the problem of non-attendance of antenatal care.
2. Increase the knowledge and positive attitude of the community in general and women in particular to enhance better utilization of MCH service.
3. Utilization for planning and evaluation of MCH services.

OBJECTIVES OF THE STUDY

1. To generate base line-data on antenatal care attendance and preference of place of delivery by pregnant women in Gulele district.
2. To assess the factors that affect antenatal care attendance and places of delivery in order to improve maternal and child health services in Gulele district.

Specific objectives

1. To estimate the level of antenatal care attendance by pregnant women in Gulele district.
   a) The number of eligibles attending
   b) The time when the first visit was made
2. To examine what factors influence women's attendance and non attendance of antenatal care in Gulele district.
3. To identify the reasons for preferences of places of antenatal care attendance by pregnant women in Gulele district.
4. To compare the knowledge of women attending antenatal care with those who do not with regards to maternal and child health in Gulele district.
5. To examine the services received by pregnant women in Gulele district at antenatal care clinics.
6. To identify the reasons for preference of place of delivery by pregnant women in Gulele district.

LITERATURE REVIEW

The Need For Antenatal Care As A Component Of MCH

Women and children comprise almost three fourths of the people of the developing world and they are the most vulnerable groups of populations in all parts of the world.

Maternal mortality in developing countries is a neglected tragedy: a tragedy in terms of magnitude of the problem, equity and social justice (13). As mothers their death has a major effect on the health and social life of their families. Moreover maternal mortality should be viewed as only the tip of an ice berg of maternal morbidity and acute or chronic suffering. It has been estimated that for every maternal death 16 women suffer from illnesses during pregnancy, child birth or within six weeks after delivery (13).

Over 90% of low birth weights infants (infants with birth weight of less than 2500 grams) in the world are born in developing countries (14).

These babies account for 30-40% of all infant deaths in the developing countries (13).

An infant born in a developing country is on the average more than five times likely to die during the first year of life as one born in a developed country.

In Ethiopia the general health status of women is precarious. Many are malnourished and often their physical environment is aggravated by unsatisfactory hygiene, lack of clean water, shortage of essential drugs and medical services. The maternal mortality rate is very alarming. Compared with Sweden for example, maternal mortality rate in Ethiopia is 250 times higher (6). Due to early marriage, although less common in big towns nowadays, the reproductive role of women starts at an early age when she is not physically ready for maternal experience. A survey covering 12 regions in Ethiopia showed that only 6% of the women remain single by the time they are 20 - 24 years (15). The mean age of marriage for females was found to be 16.9 years (15). During her fertile years an Ethiopian woman on the average bears 7.5 children (7).

About 13% of the children in Ethiopia are born with low birth weight (12). The average birth weight in Ethiopia is 10% lower than those born in most developed countries and the country has one of the highest infant mortality rates in the world (12).

Efficient and relatively cheap approaches are available to deal with the problems of mortality and morbidity.

Of these family planning, antenatal care, post natal care supervised delivery and an efficient referral to well equipped and staffed centers are the most important (6).

Antenatal care has several major functions. The following are some of them (9).

1. The promotion of health during pregnancy through advice and educational activities.
2. The screening, identification and referral if necessary of women with risk factors.
3. The monitoring of health through out pregnancy in order to detect and deal with problems if and when they occur.
4. The initiation of mothers' decision making on:
   a. where to deliver
   b. breastfeeding
   c. infant care arrangements
   d. family planning

The reason that antenatal care is so important a component of maternal and child health has been succinctly expressed by an obstetrician from Nigeria. "Today in developing countries as was 50 years ago in developed countries a large proportion of the population is illhoused, poorly nourished, in bad health and largely ignorant of what is good for them and their babies. Antenatal surveillance can provide the care needed to offset some of the harmful effects of a large scale poverty and under development" (9).

However, there are some common problems that can undermine the effectiveness of antenatal care if they are allowed to go unchecked. These problems include :

1. Shortage of staff at the necessary level with work left to aides who are not adequately trained for it.
2. Lack of supervision.

3. Lack of essential drugs and equipment at health institutions.
4. Under utilization by pregnant women of the existing. facilities.

Maternal Benefits Of Antenatal Care

In support of the view that antenatal care attendance improves the sufferings and maternal death rates many observations have been made (9). The majority of the deaths in child birth occur in unbooked cases ie. emergency admissions of women who have had no previous care.

In a study in North West Zaire of 3413 women who attended a rural hospital for delivery between 1981 and 1983 the risk of death was increased 15 fold for women who had not had antenatal care (16).

In Chile an attempt to evaluate antenatal care by assessing the quality of care in different areas using a set of carefully considered indicators found that high rates of maternal death correlated with low scores of quality care (17).

In the US among 987 pregnant women who had not had antenatal care and 1000 women who were registered for ANC and delivered between 1968 and 1969 Klien et.al found that maternal mortality rate was 93/ 100 000 live births for non-registered women whereas it was only 33.1/100000 live births for those registered for antenatal care (18).

Peoples and Siegel compared the influence of antenatal care in 5822 relatively disadvantaged women of a maternal infant care group

registered between January 1970 and July 1977. After controlling for marital status, maternal education, and reproductive risk, they found impacts differed across categories of maternal risk status and the greatest effect was observed among mothers at greatest risk of morbidity and mortality (19).

Some studies in Ethiopia have shown reduction in maternal mortality rates among women who attended antenatal care as compared to those who did not, although the design of the studies may not allow us to conclude that the reduction in the rates is due to antenatal care attendance (11,15,20).

A survey of maternal deaths by Kwast et.al in 1985 in Addis Ababa showed that maternal mortality rates for women who received antenatal care was 2.5 per 1000 live births as opposed to 10.58 per 1000 live births for those who had none (11).

A study on a six year review of maternal mortality in Black Lion Hospital in Addis Ababa revealed that 91.2% maternal deaths occurred in women who did not have antenatal care (20). Another study carried out in Addis Ababa in 1984 on maternal health showed that maternal mortality for women who had antenatal care was 2.4 per 1000 deliveries and 6.4 per 1000 deliveries for women who had not (15).

In many studies however it is not possible to conclude the improvement in maternal mortality rates are due to antenatal care attendance since other factors could also contribute to such an outcome. (11,15,17,20).

Infant Benefits Of Antenatal Care

Data upon all births and infant deaths in New York in 1968 using methods of multidimensional contingency tables and controlling for a wide variety of factors showed a significant association between lack of antenatal care and low birth weight (21).

Donalson et.al studied the impact of antenatal visits on birth weight in six countries at very different levels of development using data from an international collaborative maternity care project (22). Results indicated that around the world the number of visits was significantly related to birth weight. Further the authors claimed that there was no significant interaction with other variables.

In a study on the impact of antenatal care in different social groups in the US Raymond et al reported that women who failed to seek antenatal care were at increased risk of delivery of low birth weight infants even after social factors were considered (23). The strength of association as well as the population impact between antenatal care and birth weight varied by social group in this study. Antenatal care had the greatest observed impact for socially disadvantaged women.

A study on the use of antenatal care and pregnancy outcome in 4148 deliveries among members of a well established health maintenance organization and 19 116 births among the 1973 - 1974 birth cohort in the Portland, Oregon area reported that the

percent with low birth weight was 4.36 when mothers received level I care, 7.25 level II care and 11.27 level III care (24). In this study socio demographic variables were less important in predicting birth weight than medical obstetric factors. Compared to level II care, level I care increased the predicted birth weight by 80 grams and level III care reduced birth weight by 82 grams, implying a difference of over 160 grams between level I and level III care. The neonatal and infant mortality rates were 6.8 and 10 per 1000 live births when level I care was obtained;18.3 and 19.4 when level II care was obtained;and 22.1 and 31.2 per 1000 live births when level III care was obtained. The classification of care to levels I, II, III in this study used gestational age at which antenatal care began, number of visits and the gestational age of the newborn with level I having the most frequent and earliest contact with the health care system.

A case control study on types of antenatal care and other related factors associated with low birth weight in Southern Thailand in 1987 revealed that women who received no care and those who received care only from traditionally trained care providers had about twice the level of risk of delivering low birth weight babies as women who were attended by Western trained care providers.The authors claimed that even when major potential confounders such as maternal age or mother's level of education are controlled the relationship was still maintained (25).

Klein et.al in their study of the reasons for non-attendance of antenatal care in 1968 in the US found that perinatal mortality was 33.1 per 1000 births for non-registered women and 9.1 per 1000 births for women registered for antenatal care (18).

One recent study has estimated that 63% (26) of the neonatal deaths in Ethiopia are due to tetanus which could be averted by mothers immunization of tetanus toxoid and/or proper handling of deliveries by trained professionals. Other leading causes of infant and neonatal deaths were found to be low birth weight, complications of deliveries including birth trauma and vertical transmission of sexually transmitted diseases (12). Complications of deliveries can be taken care of by trained birth attendants and effective referral systems. Some sexually transmitted diseases like syphilis can be treated and their sequelae prevented if they are detected early.

Some authors' findings do not reveal significant associations of pregnancy outcome with antenatal care. Drillien noted that prematurity was not associated with antenatal care attendance (27). An outcome evaluation of the content and quality of antenatal care using an eight item index in 63 white and 56 black women who gave birth to low birth weight babies in the US revealed in the univariate analysis the mean values of the index were higher in controls than in cases and the difference was statistically significant only for blacks. The authors however discussed that the extreme homogeneity of care among patients in the setting exacerbated by the relatively small sample size seriously affected

their ability to find significant associations in multivariate analysis (28). Other investigators have found although increased birth weight and gestational age were associated with antenatal care attendance, after controlling for maternal risk status an appreciable variation in birth weight and gestational age specific neonatal mortality was not apparent across antenatal care groups (29).

Analyzing a retrospective case report of 2186 women in the city of Aberdeen in 1975, Hall claimed that routine antenatal care is not worthwhile (30). She asserted that the productivity of routine antenatal care in respect of prediction and detection of obstetric problems is extremely low and suggested that the number of visits could be reduced to five at 12 weeks, 22 weeks, 30 weeks, 36 weeks and term.

In his study on the outcome of pregnancy and antenatal care in rural Tanzania Moller reported that there was no causal association between antenatal care attendance and pregnancy outcome (31).

In order to improve the outcome of pregnancy Olds et.al suggest that nurse home visits to pregnant women is essential (32). They argue that although office-based care is an important ingredient in an over all strategy,it is not sufficient.

Factors Affecting Antenatal Care Attendance

A number of authors have considered barriers to the use of antenatal care services.

Poland et.al assessed 111 post partum women who received varying amount of antenatal care for demographic,medical and socio cultural factors by interview and review of the medical chart at Hutz hospital in Detroit. Six socio-cultural factors that were consistently related to amount of antenatal care were identified (33) : amount of insurance, attitude towards health professionals, delay in suspecting pregnancy, perception of the importance of antenatal care, delay in telling others about the pregnancy, and initial attitudes about the pregnancy which together predicted about one half of the variance for amount of prenatal care. Three issues of concern were raised by the authors however - the issue of causality on correlational design, the retrospective nature of data collection and the generalizability of the results.

Klein reported that 99% of the unbooked patients were indigent with less than 100 dollars weekly income and the age of non-registered patients was older and their family size larger (18). There were more non registered multigravidae (70.5%) compared to registered ones.

A study restricted to low socio-economic strata which excluded unmarried pregnant women and those with complication during pregnancy showed distance from the clinic may be an important determinant of low attendance. Distance however had a smaller effect than employment status of the husband, women's age and

In Jordan the use of antenatal services was significantly associated with level of education. Duration of marriage and increasing maternal age were associated with antenatal care use. Women of low parity ie 1-3 children and high parity ie seven and over were significantly less likely to use antenatal care than women of parity 4-6. Distance of place of residence from MCH services and time and cost involved in travelling to services were all highly significantly associated with non use(37).

A report on maternal deaths in Southern Tanzania (9) stated that women tended not to visit the antenatal clinics until fairly late in pregnancy because they are motivated to seek attention mainly by a visible swelling of the abdomen. For a woman to attend such a clinic simply because she had not had a period for several months was almost unknown.

A study of women's perception determining the use of MCH services in Bangladesh identified the following reasons for non use (38).

1. MCH centers are seen as places to which one goes only if one has problems.
2. Home is the best place for delivery.
3. Delivery at the MCH center is a matter of shame and the clinical environment is not congenial.
4. Healthy women and healthy babies should not be taken to health centers or doctors.
5. Long distance and lack of money for visiting the clinic.
6. Long waiting time for services.

7. Inadequate supply and inferior type of medical care.
8. Unconcerned attitude and rude behaviour of health workers.
9. Demand for money for services.
10. Unfavourable attitude of husbands or relatives to delivery at health centers.

Among 387 Chinese women ranging in age from 19 - 35 years in Taiwan who had no known history of chronic or systemic diseases, and who delivered babies within the six month period prior to data collection, 57% were said to have received adequate care (first visit during the first trimester and seven or more subsequent visits) (39). Characteristics associated with receiving adequate care were first time pregnancy, better education, small household, middle class family, high family income and savings, health insurance, health beliefs that were neither folk nor scientifically oriented, nonreligious affiliation, had a source of care during pregnancy, had prenatal care in hospital and had unmet wants for health care .

In a study in Jamaica in 1987 among 185 urban women cost of service and susceptibility to poor pregnancy outcome were the factors most predictive of late initiation of prenatal care (40).

A study to identify barriers to the use of prenatal care in Nigeria among 90 expectant mothers found that effective use of Western traditional obstetrical services was associated with small family units, white collar and civil service employment, high family income, high levels of education, public financial

assistance for health care, cost and individual positive attitude (41).

Critical analysis of the literature from 1966 - 1987 by Perez Wood on the barriers to the use of prenatal care (42) revealed three major trends of categories of factors.

1. Characteristics of prenatal care services
2. Characteristics of the pregnant women's social network
3. Characteristics of the pregnant women

Characteristics of prenatal care services include:-

1. Individual and psychological services available
2. Communication patterns
3. Affordable at a reasonable cost
4. Geographic accessibility
5. Education and information available
6. Care provided by nurse mid wives and nurses
7. Care provided by multidisciplinary team
8. Availability of published media

The pregnant women's social network include:

1. Availability of psychosocial support
2. Social norms support need for use
3. Familism supports use of service

Characteristics of Pregnant Women Include:

1. Psychological (Satisfied with current health services, feelings of self confidence, positive attitude about care, hopeful about the future etc.).

2. **Social (previous satisfactory experience with high risk pregnancy or health care services, culture, higher social class higher level of education, being married, availability of formal and informal network, age 19 - 35 year.**
3. **Cognitive - higher level of cognitive development.**

Measurement Of Adequacy of Antenatal Care, Pregnancy Outcome And Limitations Of Previous Literature

The measurement of antenatal care attendance has been an issue of hot discussion in the past and has probably contributed to some of the differences in the results. Some authors considered at least one visit as being registered for antenatal care (18). Other authors considered a minimum of three visits for a pregnant woman to be labelled as registered (28). Still others considered the time at which the first visit was made and the number of visits for classifying adequacy of antenatal care attendance (34).

Some consistency in the definition of adequate antenatal care was noted (initiating care during the first trimester and continuing care during pregnancy for a minimum of seven visits) in the literature (42). Shwartz disagrees with such definition of adequacy of antenatal care attendance(43). He argues that a woman who starts care in the first trimester, for example, has a longer period of exposure to the risk of prematurity than does a woman who starts care in the third trimester . He proposes that

construction of a modified life table with gestational age specific data would solve such problems.

To assume more prenatal visits and an earlier initiation of such a care as the sole factors underlying variations in pregnancy outcome was further considered as an overly simplistic approach leading to potentially inappropriate conclusions about future intervention strategies . Therefore different types of indices of adequacy of antenatal care were proposed. One index - Institute of Medicine (IOM) considers patterns of prenatal utilization based on the source of prenatal care, the month prenatal care began (MPB), the number of prenatal care visits (PCV) and the gestational age of the newborn to depict variations from desired use of prenatal care in the light of prevailing medical practices (29). Other authors recommended and used a modified measure of the above index that used additional categories of no care, missing and intensive which were not considered in the IOM classification (29). In an attempt to define more clearly those aspects of the contents of antenatal care that influence outcome of pregnancy other investigators proposed an eight item index (28).

Author of the critical analysis of the literature 1966 - 1987 on barriers to the use of prenatal care comment that limitations in pervious literature include lack of conceptual clarity, inadequacy of instrumentation and methodological compromise including minimal testing of descriptively generated hypothesis in actual clinical trials (42).

He further asserts that around the world there was much descriptive data about the factors associated with access to and utilization of antenatal care services and few resources have been invested in funding and testing these findings in well designed longitudinal trials (42).

In summary most literature suggests that ANC attendance improves pregnancy outcome. Some authors did not report improvement of pregnancy outcome with antenatal care attendance which might be attributed to the content and strategies of the ANC system. In addition,randomized controlled trials could not be conducted for obviuos ethical reasons.

The factors associated with ANC attendance can be grouped as characteristics of the provider(affordability,accessibility,type of care etc.) and of the consumer (social, economic,psychological etc).

No consensus is reached about the measurement of adequacy of ANC attendance. Especially in developing countries literature on the subject is very scarce.

MATERIALS AND METHODS

This cross sectional study was conducted in Gulele district , Addis Ababa from October to December 1991. Gulele is one of the eighteen districts of Addis Ababa with an area of 23.5 square kilometers. The population of the district is 162482. There is one referral hospital with 225 beds and one health station running MCH services. In addition, a non governmental clinic is located in the district mainly rendering family planning and child health care services. Twenty seven community health agents and 15 traditional birth attendants were trained in the district. But only one third of them are now more or less functional the main reasons given for non functionality being lack of support and incentives.

The source population of the study was all pregnant women in the 27 Kebeles (Social - administrative units) in the third trimester. Pregnant women in the third trimester were selected for the study because review of records in health institutions suggested that the majority of pregnant women start visiting antenatal clinics after six months of pregnancy.

At first it was planned to include all pregnant women in the third trimester in twelve randomly selected Kebeles as the study population. However during the pretest it was discovered that it might be difficult to obtain the appropriate sample size required in less than 20 Kebeles. Therefore, it was decided to include all but the three most geographically remote Kebeles. Therefore, the study may not be representative of inaccessible areas in the district.

Sample Size Calculations

Sample size calculations were made with the following assumptions:

1. Pregnant women are of 5% the total population in Ethiopia and for Addis Ababa this estimate is lower (about 2.5%).
2. Women attending antenatal care in Gulele district are estimated to be about 60% of the pregnant women.
3. Pregnant women in the third trimester are approximately one third of all pregnant women. But fetal losses during the first and second trimester would decrease this proportion and therefore should be accounted for.
4. Total population in the Awraja (district) by extrapolation from 1988 census is about 162 482. Women who are pregnant in the district are 2.5% of 162 482 = 4063.

   Pregnant women in the third trimester are approximately 4063/3 = 1354.

Formula used to calculate the required sample size is (44)

$$n = \frac{(Z\frac{\alpha}{2} + Z\beta)^2 P(1-P)(r+1)}{(d^*)^2 r}$$

Where Alpha = the risk of rejecting the null hypothesis that is true = 0.05

Beta = the risk of failing to reject the null hypothesis that is false = 0.20 and the power of the study is therefore = 0.8

n = the number of exposed to a factor pregnant women who attend antenatal care.

r = the ratio of the number unexposed to a factor pregnant women to exposed to a factor pregnant women = 1.

d^* = the magnitude of the difference wished to be detected(.15)

$$p = \frac{p1 + rp0}{1+r}$$

where p= the weighted average of p1 and p0

p1= proportion of exposed to a factor pregnant women attending antenatal care=0.68

p0= proportion of unexposed to a factor pregnant women attending antenatal care = 0.5 therefore,p= 0.6

Then $n = \left(\frac{7.849)\ (0.6)\ (0.4)\ (2)}{(\ 0.15\ )} \right) = 167$

Number of unexposed to a factor pregnant women= 167

Total number of pregnant women required for the study

167+167= 334

Contingency for non response 15% (334)=66

Total sample size required 334+66= 400

Approximate number of pregnant women in the third trimester in each kebele $\frac{1354}{27} = 50$

In order to get about 400 pregnant women, 400/50 = 8 Kebeles will be required. But to account for fetal losses during the first and second trimester it was decided to take 12 randomly selected kebeles. The pretest made it doubtful that the required sample size will be obtained in ten randomly selected Kebeles and twenty four Kebeles were taken for the study.

For the purpose of the study questionnaire (Annex 1,2,3,4) were prepared on socio-demographic characteristics, economic status, antenatal care attendance, preference of place of delivery and women's knowledge on antenatal care family planning and baby care. The questionnaire were translated into Amaharic and then back translated to English by two people who have good knowledge of English and Amharic to ensure reliability.

Operational Definitions

1. Antenatal care attending woman - A pregnant woman in her third trimester at the time of the interview and had attended antenatal clinics at least once.
2. Antenatal care non-attending woman - A pregnant woman in her third trimester at the time of the interview and had not attended antenatal clinics at all.
3. A pregnant woman in the third trimester is a woman whose last menustral period was 6 months minus 14 days back or before at the time of registration for the study or a woman who claims to be 7, 8, 9 months pregnant.

4. Expenses for antenatal care include all costs incurred by pregnant women when they go to attend antenatal clinics (transportation, fees for registration, drugs etc.).
5. Economic status was measured interms of monthly family income as stated by the respondents.

Before the study started the aims of the research and its possible utility in health improvement were discussed with the district administration office and district health team members. Their contributions for running the study smoothly were mentioned and positive attitudes and promises to help whenever necessary were secured.

Twelve interviewers who completed grade 12 were hired with the following criteria.

1. Being female.
2. Known to be honest and diligent; willing to face difficulties that may arise during the process of the interview.
3. Know the district well, but may not necessarily be dwellers of the district.

Two supervisors (sanitarians) who are familiar with the population and social administration settings of the district were also hired. Their responsibilities were:

1. Coordinate the activities of interviewers.
2. Timely supply the necessary materials for the interviewers.
3. Check the questionnaire filled each day.

4. Recheck answers by conducting interviews in 5% of those interviewed.

Training of interviewers and coordinators: A two day training was conducted by the investigator for the interviewers and supervisors on the following points:

1. Aims of the survey
2. Procedures of the survey
3. Problems that may arise during the survey
4. Going through the questionnaire question by question
5. Calculation of the expected date of delivery and gestational age of pregnancy
6. Art of interviewing: Polite approach, stating questions clearly, not giving any leading opinion and recording without expressing ones opinions were emphasized.
7. Practising administering the questionnaire among interviewers and supervisors with feedbacks and comments given to each interviewer.

Letters for collaborations in the study stating that it is useful and acknowledged were issued to all Kebele offices and to Whom It May concern by the Awraja (District) administration office and given to interviewers and supervisors.

Pretest: 800 houses were selected in a kebele for pretest. 50 houses were allocated for each interviewer. Only 10 pregnant women in the third trimester were identified and the questionnaire were administered on the next day. One woman was not available either for the registration or the interview. It was claimed by

family members that she was eight months pregnant. Another woman could not be available for the interview after being registered. The questionnaire were thus administered for the remaining eight women. The results were then discussed by the interviewers, supervisors and the principal investigator. The pretest contributed much to the improvement of the study design.

Two Kebeles were assigned for each interviewer and the supervisors were responsible for 12 Kebeles each. But since the distribution of houses in Kebeles is not even, interviewers with fewer number of houses on some occasions were assigned to work with others who had many houses.

Survey Procedures

An initial house to house survey was conducted in each of the 24 Kebeles to find and register pregnant woman in the third trimester ie. 07 months of gestation or above(Annex 1). Questionnaire were then administered to the identified pregnant women at the next visit (Annex 2,3,4). If a subject was not available, appointment dates and hours were taken by discussion with family members or neighbours. A maximum of two more visits were paid if a pregnant woman was not found at home. In order to ensure maximum availability of the respondents at home, supervisors and interviewers worked on all days of the week including Saturdays and Sundays and rested on Thursdays. Working hours were 9:00am to 6:30pm with rest for lunch between 1:00 - 2:00pm.

Calculation of month of pregnancy was done using the last menustarl period(LMP). All pregnant women who would be 7 months of pregnant or above after 14 days were registered for the study. Clinical practice in the country has shown that many Ethiopian mothers do not exactly know their LMP. Most of them however tell more or less correctly what month of pregnancy they are. Since the purpose of the study has little to do with exact dates of gestational age, women who claimed to be 7 months pregnant were also included although they did not know their LMP. Therefore, it is possible that a small percentage of women in the second trimester were included in the study. This number is minimized by the fact that interviewers would go back for administering the questionnaire 10 - 14 days after registration. There is also a remote possibility of missing some women who are in the third trimester.

Pregnant women who were not permanent dwellers of the district were excluded from the study as this may not reflect the antenatal care attendance rate and the factors associated with antenatal care attendance and preference of place of delivery in the district or the city.

Ethical Considerations

Objectives of the study were explained to the identified pregnant women. They were assured that any information concerning them would never be passed to any individual or institution with out their agreement. Their names were not recorded. Women were

kindly requested to be included in the study but were told that it was their right to participate or not. All women who were not attending antenatal care were briefed about the advantages of it and were advised to go for antenatal check up. Advantages of deliveries by trained workers were discussed for all pregnant women who preferred to deliver at home after the interview was conducted.

Monitoring Of Data Collection

As the survey progressed the supervisors met with the interviewers, at least once a day to collect the filled questionnaire and discuss any problems that arose. Every morning the supervisors met with the principal investigator and reported the results of the previous day. Every week there was a meeting of the principal investigator with the supervisors and the interviewers where progress and any problems that arose during the survey were discussed. Visits were also made by the investigator and supervisors to all of the interviewers when they were conducting interviews to the pregnant women.

Cross checking of 5% of the responses by the supervisors revealed negligible inconsistencies.

Analytic Methods

An outcome variable of interest was antenatal care attendance or non attendance and the determinants were age, parity, educational status, occupational status, ethnicity, marital status, family income, husband's or partner's attitude towards antenatal

care attendance and the knowledge of women about antenatal care, family planning and baby care.

Another outcome variable was preference of place of delivery (hospital,health center,health station and home) the determinants being the same variables considered for antenatal care attendance.

Data were entered on computer using the statistical package EPI INFO version 5 (45). Proportion of pregnant women attending antenatal care, attendance and non-attendance of antenatal care and preference of place of delivery by different factors were assessed by performing chi square tests and calculating P-values. Odds ratios and 95% confidence intervals were also calculated to find the degree of associations. Reasons for non-attendance of antenatal care, preference of place of antenatal care and delivery attendance were assessed by computing percentages.

To determine the knowledge of the respondents on maternal and child health,scores between 0 - 2 were given for each of the knowledge questions depending on the number of questions on a topic and the importance of the problem in the area.
A maximum of 15.8 scores could be obtained by each respondent. Scores for each knowledge question are shown in Annex 3 and 4. Mean knowledge scores for women attending antenatal care and not attending antenatal care were computed. A t-test on the difference in the means was then performed to find whether the difference is significant or not.

To assess health education activities, physical examinations and lab investigations at antenatal clinics as perceived by

pregnant women, percentages on the responses were computed.

Data were then converted to SAS statistical (46) package to determine the relative impact of variables on antenatal care attendance and preference of place of delivery when considered together using the multiple logistic regression analysis technique.

Age at first pregnancy and parity were alternatively excluded from the model as their interaction was found to diminish their association with antenatal attendance.

Antilog of the Beta coefficients were calculated to determine the Odds Ratios. 95% Confidence Intervals were then calculated using the formula:

$$CI = \ln(OR) +/- Z(SEB) \quad (47)$$

Where CI = confidence interval

OR = Odds Ratio

Z = 1.96

SEB = Standard error of the estimates

RESULTS

A total of 17496 houses were surveyed and 444 pregnant women in the third trimester were identified. Two women could not be available for interview on subsequent visits. One of them was said to have changed place of residence. A third pregnant woman died after being registered and before the interview could be conducted. Neighbours reported that she bled profusely per vagina and died before she could be taken to hospital. The questionnaire were therefore administered to 441 women. Remarkably the proportion of pregnant women in the district was much lower than expected. If we assume that about 20% of pregnant women are in the third trimester, a fairly conservative estimate, then we will have a total of about 2220 pregnant women in 24 kebeles. There are about 145428 people in the 24 kebeles. Therefore, the proportion of pregnant women in the 24 kebeles is about 1.5% of the total population.

General Characteristics Of The Respondents

General characteristics of the respondents are summarized in table 1.

Age: The majority of the respondents belonged to the age group 25-34(46.3%).

Education: Most respondents were illiterate (58.7%). 18.6% had completed literacy classes. 5% had completed primary and 13.4% secondary education. Only one woman had higher education beyond grade 12.

Ethnicity: Major ethnic groups were Amaharas(136), Tigries(125), Oromos (96) and Gurages (69).

Occupational status: Most pregnant women were housewives (81.2%) followed by civil servants (7.7%).Other occupational groups included factory workers (2.3%), students(1.6%) and others (7.2%).

Marital status: Nearly all the respondents (92.1%) were recorded as married. 5% were never married and 2.7% were divorced or separated. One woman was widowed.

Economic status: The median monthly family income was 186 birr. 1 US dollar is equal to 2.07 birr.

Parity: 17.6% of the respondents were nulliparous and the rest 82.4% had delivered once or more.

Age at first pregnancy: 231 (52.4%) women were first pregnant at the age of 12-18 years and 181 (41%) at the age of 19-25 years. The rest 29 women (6.6) % were first pregnant at the age of 26-38 years.

Table 1. General Characteristics Of Pregnant Women In The Third Trimester. Gulele District October-December 1991

Characteristics	Categories	Number	Percent
Age	15-24	130	29.4
	25-34	204	46.3
	35-49	107	24.3
	Total	441	100.0
Educational status	illiterate	259	58.7
	literate	164	37.2
	unknown	18	4.1
	Total	441	100.0
Ethnicity	Amhara	136	30.8
	Tigrie	124	28.1
	Oromo	96	21.8
	Gurage	69	15.7
	Others	16	3.6
	Total	441	100.0
Marital status	Married	406	92.1
	Others(divorced separated,widowed never married)	35	7.9
	Total	441	100.0
Family monthly income	0- 99 birr	168	38.1
	100-299 birr	194	44.0
	300 -1500 birr	73	16.6
	Unknown	6	1.3
	Total	441	100.0
Parity	0 births	78	17.6
	1-5 births	247	56.2
	6-13 births	116	26.2
	Total	441	100.0

Antenatal Care Attendance

Tables 2 and 3 show antenatal care attendance rates and the trimester at which antenatal care began. Thirty nine percent of the third trimester pregnant womren had not attended antenatal clinics and only 26% of the attenders started going for antenatal check up during the first trimester of pregnancy.

Table 2. Antenatal Care Attendance By Pregnant Women In Gulele District October-December 1991.

State of Antenatal Attendance	Number	Percent
Not attending	171	38.8
Attending	270	61.2
Total	441	100.0

Table 3. Starting Date Of Antenatal Care Attendance By Pregnant Women In Gulele District By Trimester October-December 1991.

Trimester	Number of Pregnant Women Who Started Attending Antenatal Care	Percent from Total Attenders
First	70	26
Second	158	57
Third	42	17
Total	270	100

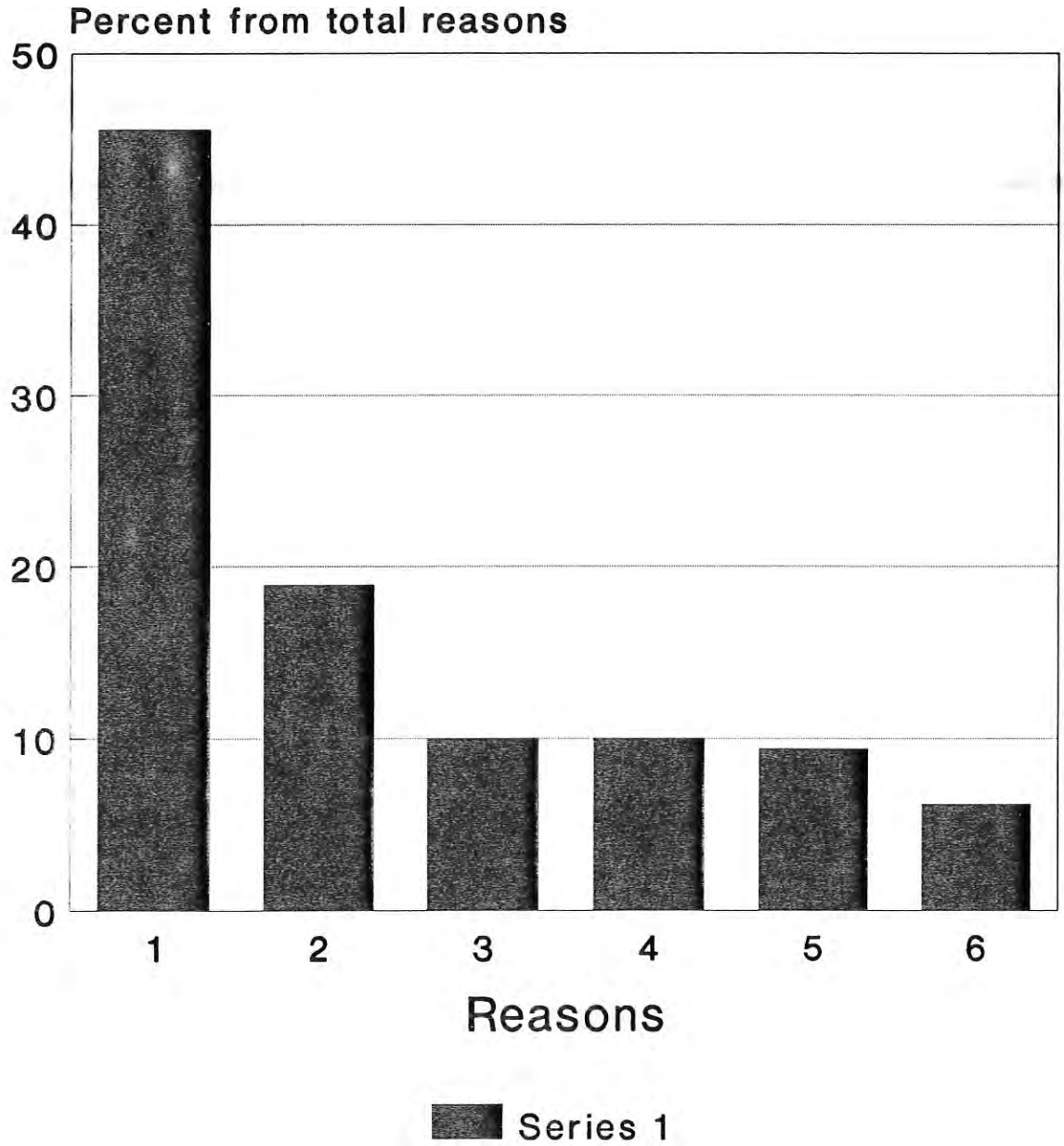
Preferred Place Of Attendance

Fifty two percent of the pregnant women attended antenatal care clinics in a health station which is administratively located in a neighbouring district but was fairly close to many respondents place of abode. Twenty four percent of the respondents attended antenatal care clinics in a central referral hospital in the district. One percent of the pregnant women said they attended in a health station in the district. Thirty percent of the respondents cited different health institutions outside of the district.

Reasons For Choice Of Place Of Antenatal Attendance

Different reasons were given for preference of place of antenatal care attendance. Sixty four percent of the women gave more than one reason. The most frequent reason was closeness of heath institution to which the pregnant woman lives (169 responses) followed by little or no expenses for antenatal care(70 responses).Convenient time of service and high quality care as reasons were given 37 times each. Good approach of health workers was mentioned as a reason 35 times. (Figure 1)

Fig.1 Reasons for attending ANC in a health institution.Gulele;Oct-Dec 1991

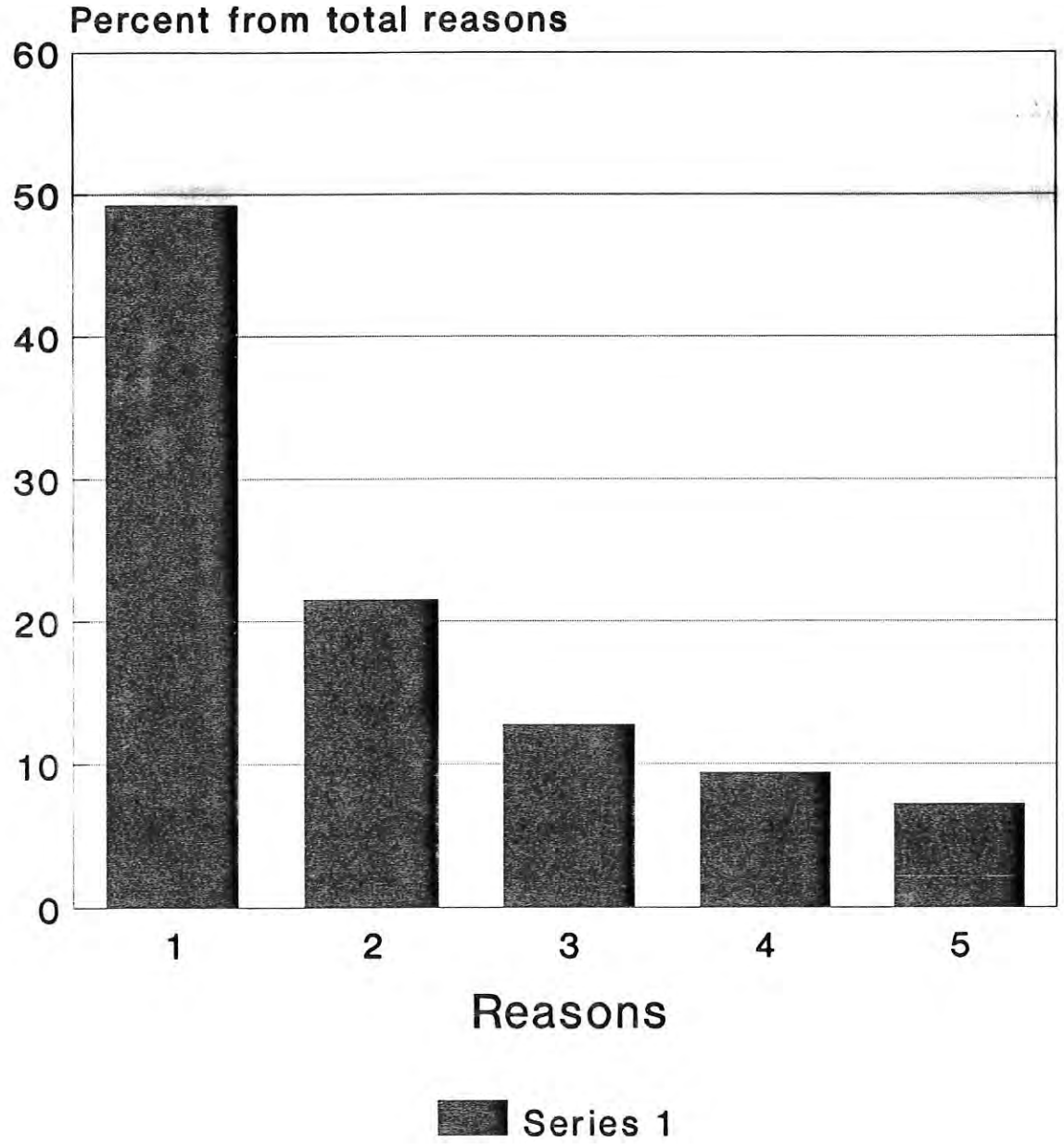


1Closeness to HI 2.Expenses 3.Convenient time 4.High quality 5.Good health personnel 6. Others

Reasons for Not Attending Antenatal Clinics

As shown in figure 2 being too busy to attend antenatal care clinics was the commonest reason for not attending antenatal clinics at least until the beginning of the last trimester(89 responses). Being in a state of good health was given for not attending antenatal clinics by 39 respondents and unafffordable expenses by 23 respondents. Seventeen respondents said they have little or no knowledge about the activities of antenatal clinics.

Reasons for not attending ANC Gulele; Oct-Dec 1991.



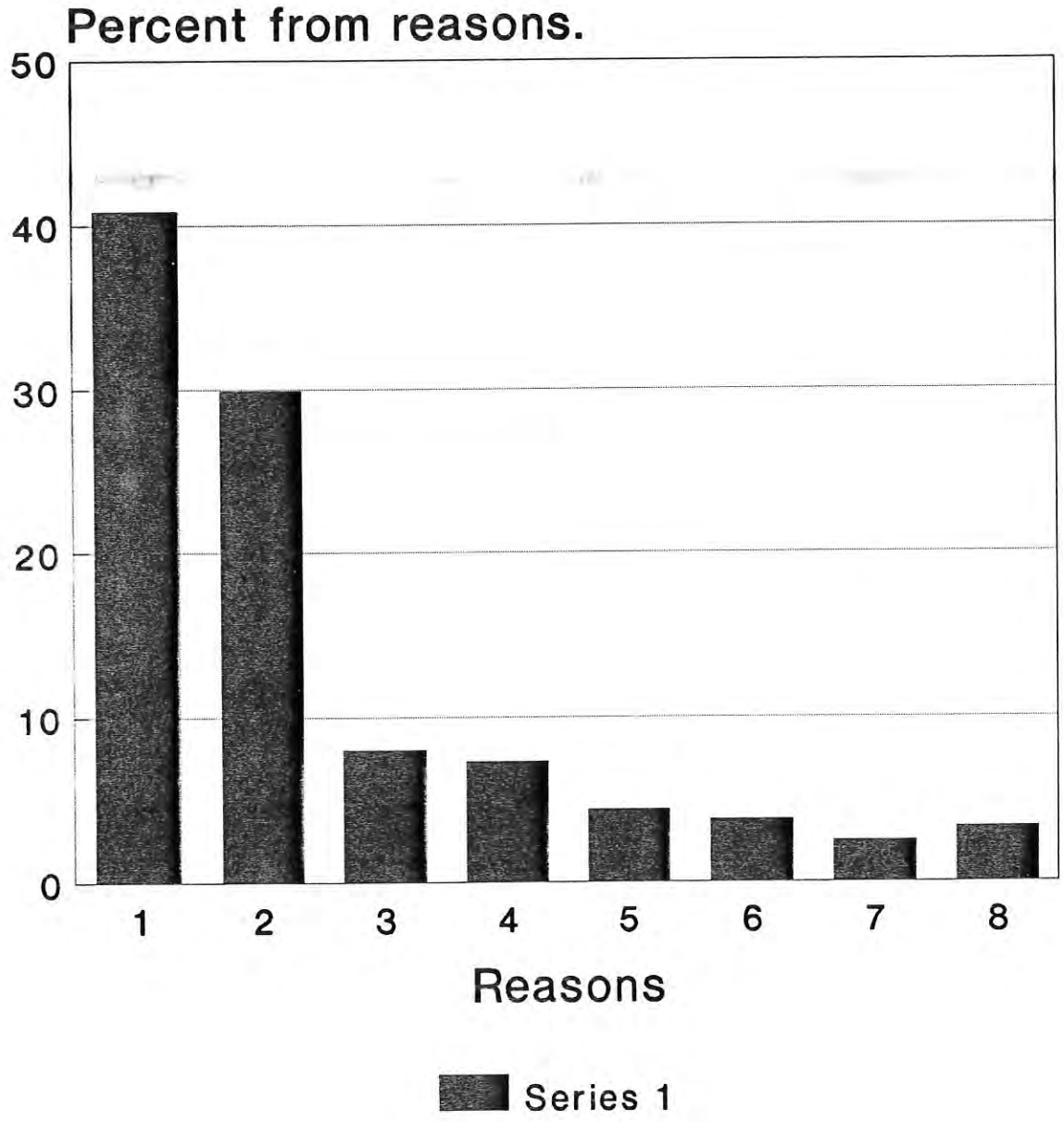
1.Too busy 2.A state of good health 3.expenses unaffoedable 4.No/little knowledge about ANC 5.Others.

Preferred Place Of Delivery

Most pregnant women (55.3%) preferred to deliver in a hospital. 18.1% said that they wanted to deliver in a health center or a health station. 24.3% of the women preferred to deliver at home and 2.3% could not state any preference for place of delivery at the time of the interview.

The most frequent reason given for preferring to deliver in a particular health institution was high quality of service (184 respondents). One hundred thirty five respondents said closeness to health institution was one reason for preferring to deliver in a particular place.Thirty six women wished to deliver at home where relatives are nearby. Thirty three women wanted to deliver at a particular health institution because health workers approach is best at the health institution (figure 3). Sixty seven percent of those pregnant women who preferred to deliver at home said that they wanted the deliveries to be conducted by traditional birth attendants. Many respondents could not distinguish between trained and untrained traditional birth attendants, therefore such distinctions could not be made in the analysis. Twenty five percent preferred the deliveries to be conducted by close relatives. The rest said they did not have any preference in mind at the time of the interview.

Fig 3.Reasons For prefernce of place of delivery. Gulele;Oct-Dec 1991



1.Quality 2.Closeness 3.Home relatives near 4.Good health personnel 5.Expenses 6.Trust TBA/relatives 7.Bad HP 8.Others

Responses Of Women On Questions About Health Education Physical Examinations And Laboratory Investigations At Antenatal Clinics

Health education: 136 (50.3%) pregnant women attending antenatal care clinics said that health education is given at every antenatal care session. 24.9% answered health education is sometimes given. The rest 24.8% claimed that health education is never given at the health institutions where they attend antenatal care.

Weight: 226(83.7%) pregnant women said that their weight was always taken when they went for antenatal care clinics. 35 women (13%) stated that their weight was sometimes taken and 6 women (2.2%) said their weight had never been measured. 3 women (1.1%) said they did not know if their weight was taken or not.

Blood pressure: 80% of the pregnant women said that their blood pressure was always measured. 14.4% answered it was sometimes measured and 3.7% did not know whether it was measured or not.

Blood: Blood examinations were said to have been performed for 85.6% of the pregnant women attending antenatal care and 39 women (14.4%) said it was not.

Urine: 74.1% of the pregnant women attending antenatal care clinics said that their urine was examined and the rest 25.9% said it was not.

Factors Associated With Antenatal Care Attendance

Antenatal care attendance was cross tabulated with age, age at first pregnancy, ethnicity, family income, educational status,marital status and husband's or partner's attitude. Chi square static showed that antenatal care attendance is significantly associated with these variables ($p<.05$) except marital and educational status. In the bivariate analysis odds ratios and 95% confidence intervals calculated to assess the strength of associations of antenatal care attendance with categories in each variable revealed the risk of non attendance was highest for age group 35-49, age at first pregnancy 12-18 and the grand multiparae.Among the ethnic groups the risk of non-attendance was highest for the Oromos. Positive husband's or partner's attitude was significantly associated with antenatal care attendance. The results are summarized in table 4.

When age at first pregnancy was excluded from the model ethnicity, income, parity,husband's or partner's attitude were significantly associated with antenatal care attendance in the multiple logistic regression(Table 4). Among the ethnic groups the risk of attendance was highest for the Tigries. There was no significant difference in antenatal attendance among other groups. When parity was excluded from the model age at first pregnancy was found to be significantly associated with antenatal care attendance (Table 5).

Table 4. Association Of Factors With Non Attendance Of Antenatal Care By Pregnant Women in Gulele District: October- December 1991

Characteristic	Antenatal Attendance No	Yes	p-value	Bivariate OR 95% CI	p-value	Multivariate @ OR 95% CI
Age						
15-24	39(32.8)	91(33.7)				
25-34	72(42.1)	132(48.9)		0.79(.48-1.29)		0.91(.59,1.39)
35-49	60(35.1)	47(17.4)	p<.001	0.34(.19-.59)	p>.05	0.88(.65,1.18)
Total	171	270				
Age at first pregnancy						
10-18 *	109(63.8)	123(45.5)				
19-25	57(33.3)	123(45.5)		1.89(1.24 2.91)		-
26-35	5(2.9)	24(8.9)		4.21(1.5-14.57)		
Total	171	270				
Ethnicity						
Amhara*	46(26.9)	90(33.3)				
Oromo	58(33.9)	38(14.1)		0.33(.19-.6)		0.68 (.44-1.08)
Tigrie	49(28.7)	76(27.8)		0.79(.46-1.36)		2.10(1.36-3.56)
Gurage	14(8.2)	54(20.4)		2.01(.96-4.23)	p<.005	0.99(.64-1.54)
Other	4(2.3)	12(4.41)				
Total	171	270	p<.00005			
Income						
0-99 *	83(48 5	85(31.5)				
100-2	69(40.4	125(46.3)		1.77(1.14-2.76)		1.62(1.17-2,24)
300-1500	17(9.9)	56(20.7)		3.22(1.66-6.29)		1.1(0.65-1.25)
Unknown	2(1.2)	4(1.5)				
Total	171	270	p<.005		p<.05	
Parity						
0 births *	15(8.8)	63(23.3)				
1-5 birth	95(53.8	155(57.4)		0.4(.21-.78)		0.52(.33 .82)
6-13 birth	64(37.4	52(19.3)		0.19(0.09 0.4)		1.002(.7 1.37)
Total	171	270	p<.00005		p<.005	
Husband/ partner att. Negative/ unknown*	45(26.3	19(7)				
Positive	126(73.7	251(93)		4.74(2.55 8.85		2.63(1.9 3.64)
Total	171	270	p<.000000		p<.000001	

@ Age at first pregnancy excluded from the model

*Referent category

Percentages given in brackets

OR = Odds ratio

CI = Confidence interval

Table 5. Association Of Factors With Non Attendance Of Antenatal Care By Pregnant Women In Gulele District: October-December 1991.

Characteristics	Antenatal attendance		p_value	Multivariate analysis* OR 95% CI
	No	Yes		
Ethnicity				
Amhara @	46(29.6)	90(33.3)		
Oromo	58(33.3)	38(14.1)		0.68(.43-1.08)
Tigrie	49(28.7)	76(27.8)		2.10(1.75-4.38)
Gurage	14(8.2)	54(20.4)		1.04(0.67-1.16)
Others	4(2.3)	12(4.41)		
Total	171	270	p<.005	
Family income				
0-99 @	83(48.5)	85(31.5)		
100-29	69(40.4)	125(46.3)		1.50(1.13-2.5)
300-150	17(9.9)	56(20.7)		1.10(.66_ 1.27)
Total	171	270		
Age at first pregnancy				
10-18 @	109(63.8)	123(45.5)		
19-25	57(33.3)	123(45.5)		1.85(1.2-2.81)
26-38	5(24)	24(8.9)		1.08(.7-3.12)
Total	171	270	p<.05	
Husband/Partner attitude				
Negative/ unknown@	45(26.3)	19(7)		
Positive	126(73.7)	251(93)		2.6(1.89-3.61)
Total	171	270	p<.0001	

* parity excluded from the model
@ referent category
percentages given in brackets

OR odds ratio
CI confidence interval

Knowledge Of Pregnant Women About Maternal And Child Health

Out of a total of 15.8 points mean knowledge scores on maternal and child health for non antenatal care attenders was found to be 7.42 ± 2.5 whereas it was 10.9± 2.1 for those who attended antenatal care clinics. T-test on means showed the difference was highly significant ($p<0.0001$).

Factors Associated With Preference Of Place Of Delivery

Preferred place of delivery was cross tabulated with age, age at first pregnancy, parity,husband's or partner's attitude towards antenatal care attendance, educational status, marital status, and ethnicity.In the bivariate analysis Chi square test revealed that preferred place of delivery is significantly associated with educational status, parity, husband's or partner's attitude to antenatal attendance.Odds ratio and 95% confidence interval calculations show that the risk of preferring to deliver at home was highest for the multipara (births 1-5),for those who do not attend antenatal care and for the illiterate. Positive husband's or partner's attitude to antenatal attendance was significantly related to preference of delivery at health institutions.In the multiple logistic regression all variables which were significant in the bivariate analysis came out significant (Table 6).

Table 6. Factors Associated With Preference Of Place Of Delivery By Pregnant Women In Gulele District October-December 1991.

Characteristics	Preferred place of delivery			bivariate		Multivariate	
	Home	Health institution	Unspecified	p-value	OR 95%CI	p-value	OR 9 5%CI
Educational status							
Illiterate*	78(72.8)	178(54.9)	2(20)				
Literate	24(22.4)	133(41.1)	8(80)		2.43(1.42-4.18)		1.5(1.17-2.0)
Unspecified	5(4.6)	13(9.0)	0	p<.001		p<.05	
Total	107	324	10				
Parity							
0 birth *	8(7.5)	67(20.7)	3(30)				
1-5 births	59(55.2)	184(56.8)	4(40)		0.04(.01-.1)		0.52(0.3-0.9)
6-13 births	40(37.4)	73(22.5)	3(30)		0.22(.09-.5)		1.11(.78-1.63)
Total	107	324	10	p<.01		p<.05	
Husband/ partner's attitude							
Negative/ unknown*	27(25.2)	36(11.1)	1(10)				
positive	80(34.8)	288(88.9)	9(90)		2.71(1.5-4.9)		1.82(1.34-2.49)
Total	107	324	10	p<.005		p<.005	
Antenatal care attendance							
Not attending*	76(70)	91(28.2)	4(40)				
Attending	31(30)	233(71.8)	6(60)		6.25(3.76-10.44)		2.19(1.69-2.96)
Total	107	324	10	p<.001		p<.0001	

OR Odds ratio
CI Confidence interval
* referent category
Percentages given in brackets

Mean knowledge scores on maternal and child health care for those who want to deliver at home was 7.2 ± 2.1 whereas it was 9 ± 1.9 for those who wanted to deliver at health institutions T-test on means showed that the difference was significant ($p<.0001$).

DISCUSSION

This study, the first of its kind in the district,shows that about 39% of the pregnant women do not attend antenatal clinics until the beginning of the last trimester. Coverage of antenatal care is therefore low considering minimal physical inaccessibility in the district. Moreover, WHO aims at providing antenatal care for all pregnant women (1).

In this study the proportion of pregnant women from the total population was estimated to be 1.5 % . This could be due to an increase in contraceptive prevalence or increase in fetal losses due to abortion and the estimate that pregnant women are 5 % of the total population which is currently used for all practical purposes should be reconsidered for Addis Ababa.

The study shows that the majority of the women start attending antenatal care after the first trimester.

Ideally each pregnant woman should first be seen before the 10^{th} week of pregnancy (48). The advantages of this early visit are that a base line can be assessed and any abnormalities can be noted before they have a detrimental effect. Therefore, most pregnant women in the study population could have lost some of the benefits of attending antenatal care.

Husband's or partner's attitude ,ethnicity,income and parity were most significantly associated with antenatal care attendance in this study.

Age was found to be a factor associated with antenatal care attendance in the bivariate analysis. As in some studies (22,34)the risk of non-attendance was higher for older age groups. A study in South Africa on the other hand reported young age groups were associated with non-attendance (36). However one can hardly accept conclusions drawn by the authors about the different factors associated with antenatal care attendance with the small number of subjects included (77 booked and 30 unbooked) in the study. Kalizer reports that mothers of older age groups were less inclined to attend antenatal clinics especially if previous deliveries were smooth (34). This may well be true for our study population.

With younger age at first pregnancy antenatal care attendance rates were lower . Women who got pregnant at an early age have a chance of having many births. This may especially be true in this country where the contraceptive prevalence rate is low: 2% for the country (8). Therefore, our finding that age at first pregnancy becomes significantly associated with antenatal care attendance after parity is excluded from the regression analysis perhaps explains this fact.

Parity highly correlated with antenatal care attendance in the bivariate analysis and in multivariate analysis when age at first pregnancy was excluded from the model. Other studies also have shown that parity is significantly associated with antenatal care attendance(28).

Educational status was reported to correlate significantly with antenatal care attendance by many investigators (37,39,41) Our study population was homogenous with respect to educational status . This might have prevented us from finding significant association.

Ethnicity highly correlated with antenatal care attendance. We could not explain why the risk of attendance was highest for the Tigries in multivariate analysis. The significant relation did not disappear when possible confounders (age, age at first pregnancy, parity ,income husband's attitude)were taken out of the regression model individually. What factors were resposible for such an outcome should be assessed by other studies.

Being married was described as one of the factors associated with beginning and remaining in antenatal care in the literature (42). This study failed to find significant association of marital status with antenatal care attendance. Extreme homogeneity of the study population with regards to marital status (92% being married) may be the reason for not finding significant associations.

Family income is significantly associated with antenatal care attendance in the bivariate and multivariate analysis. This is similar to what has been reported by other studies(22,35,39,41). However the association was weaker than other significant variables. Some of the respondents might have difficulties in estimating their family income especially if they do not have fixed wages . It should also be admitted that family income is not the best indicator of economic status as family size, house ownership etc were not considered in the study.

Positive husband's or partner's attitude was most significantly related to antenatal care attendance. This was also reported to be true for modern contraceptive use (49). Involving husbands made a significant difference in the use of modern contraceptives in one study (50). Therefore, efforts to improve husband's or partner's attitude would probably increase utilization of health services by women.

Knowledge of antenatal care attending women about maternal and child health was significantly better than those not attending antenatal care. Better knowledge on maternal and child health might have increased antenatal care attendance although it may be possible that women attending antenatal care have gained more knowledge at the clinics.

The most frequent reason for not attending antenatal care clinics is being too busy. Since the risk of non-attendance is higher for the multiparae, it may be true that besides other work they would have to care for many children. On the other hand such

responses might indicate the poor awareness of the respondents about the advantages of antenatal care that it is given little emphasis. The same can be said about the second reason : that is being in a state of good health . The second and the third reasons for not attending antenatal care are similar to those reported from Bangladesh (38).

Unlike in other reports (34,37,42) distance from health institutions was not given as a reason for not attending antenatal clinics. This may be explained by the fact that travel distance is minimal in the capital city. Distance however probably has some place in antenatal care attendance as some of the respondents who said expenditure for antenatal care attendance is too costly could have considered travel cost. Secondly it is the most frequent response for choice of place of attendance.

Expenditure for antenatal care attendance although given as a reason in minority of the responses should be given due attention. Providing the services free in as many health institutions as possible is one alternative. In addition some of the respondents may not know that antenatal care is provided free in some clinics. Hence making the community aware that antenatal services are given freely may improve utilization of antenatal care clinics. The role of the community health workers (CHW) may have high importance.

Most women (75-85%) stated that some important physical and laboratory examinations were performed for them in places where they attend antenatal care. This may be considered a benefit when compared to the pregnant women who did not attend antenatal care.

However some points should be considered here. First to what extent the findings are acted upon should be assessed since examinations by themselves are not ends. Secondly there is no reason why weight and blood pressure taking can not be performed in health institutions in the city. One might argue that these examinations are done routinely but some of the pregnant women probably failed to understand that these examinations were performed. But these would mean that the system is not efficient enough to make the value of services known to its clients and hence the women have vague understanding of antenatal clinics which might include its advantages.

Even more serious is the problem of health education at antenatal care clinics. One fourth of the attendants answered health education was never given at antenatal clinics. Considering that one of the most important functions of antenatal clinics is to give education and advice to pregnant women such responses by the respondents should be worrying. Of course more reliable information would be obtained by assessing activities of health institutions and reviewing records on site. At this point supportive supervision and training of health workers carrying out maternal and child health activities on mothers education and communicating skills may be considered.

Antenatal care attendance of the pregnant women could not be verified by documents because of lack of such documents at home. Home based documents may help the pregnant women to involve family members in health discussions, get their concern and remember appointment dates. Other sectors may find it helpful to plan health related activities.

The issue of outcome of pregnancy with respect to antenatal care attendance should be addressed in this country in a well designed study since knowledge of the factors that affect women's attendance and non-attendance of antenatal care would have no value if antenatal care attendance is not proved to be really beneficial.

Unlike antenatal care attendance education was significantly associated with preference of place of delivery. Income and ethnicity had less impact for preference of place of delivery than antenatal attendance. There is an important difference between the two outcomes. The former is an attitude response while the latter is a practice one. It may be argued that education has more role in predicting preferences or attitude than practices or behaviours because the latter might depend on many other factors.Cultural factors probably have less place in preferences than actual practices. The same can be said about family income. It perhaps predicts more the women's activities than their wishes or attitudes.

An optimistic explanation of the relation between the choice of place of antenatal attendance and preference of place of delivery is that many women consider that effective antenatal follow up can be undertaken by most health institutions whereas delivery is safer where the quality of the services is high. A less optimistic explanation is the respondents are not aware of the advantages of antenatal care services.

Parity highly correlated with preference of place of delivery in the bivariate and multivariate analyses. An explanation may be previous experience of delivery might have a major role in determining preference of place of delivery.

Knowledge on maternal and child health significantly correlated with choice of place of attendance. Better awareness on maternal and child health may therefore change women's attitude about deliveries.

Husband's or partner's attitude towards antenatal care attendance was significantly associated with preference of place of delivery by the respondents.It is possible that husband's or partner's attitude has an important effect on women in many aspects of health activities.

Home delivery is still preferred by a number of pregnant women. Therefore, planning of trained assistance in deliveries at the community level is a matter of importance. This calls for continuing training and developing the activities of traditional birth attendants.

Limitations of the Study

This study has considered all pregnant women in the third trimester who have visited ANC clinics at least once. The benefit of just one visit is however doubtful. One visit might mean a visit to establish pregnancy or for some medical problem and no return for follow up.

The study has looked into several factors (social, economic, characteristics of antenatal clinics) that can be associated with antenatal care attendance and preference of place of delivery. The list however is not exhaustive and factors not considered here may have significant associations. In addition since the study is a cross sectional one the results should be interpreted with caution. Some factors (ethnicity, parity, age, age at first pregnancy) obviously preceded antenatal care attendance or preference of place of delivery whereas others (knowledge on maternal and child health) could either follow or precede the outcomes of interest.

Validity of the Study

All pregnant women in the third trimester from the twenty four kebeles were included in the study. Only three women (0.6%) were not available for the interview. Therefore,selection bias is minimal.

The interviewers were non-health workers and largely unaware of the desired answers. The pregnant women were made aware that only honest answers contribute for health improvements. Names of the pregnant women were not asked to avoid any suspicion from the side of the respondents. These could reduce some of the information

biases. In addition most events asked were unlikely to be forgotten.

Gulele district is similar in many aspects to other districts in the city (from health profiles of districts in Addis Ababa). Therefore, our findings could be representative of at least the accessible kebeles in the city since we have excluded three remote kebeles. The findings of the study, however may not be representative for the rural Ethiopian set up where socio demographic and other characteristics of pregnant women and the health services setting may be different. Therefore,it might need to be repeated in diverse areas as needed.

CONCLUSIONS AND RECOMMENDATIONS

This community based study in Gulele district shows early attendance of antenatal care, that is during the first trimester, is obtained only by a minority of pregnant women. Thirty nine percent of the third trimester pregnant women had not received antenatal care.Pregnant women were estimated to be about 1.5% of the total population.

The risk of non-attendance was highest for those pregnant women whose monthly income is low,are of high parity, whose husband's or partner's attitude for antenatal care attendance is negative or unknown and who were pregnant at an early age.

Low mean knowledge scores on maternal and child health correlated with less attendance of antenatal care clinics.

The most important reason for not attending antenatal clinics was being too busy. In addition to other work and responsibilities non attenders are of high parity and therefore may have to care for many children. Improvement in working conditions of women is one solution to be thought about by all concerned sectors.

On the other hand such responses might indicate the low level awareness of the respondents about the advantages of antenatal care visits that it is given little emphasis. The same can be said about the second most frequent reason, ie., being in a state of good health.

Improvement in family income calls for economic development and may not be amenable to change in the immediate future. Parity may not be changed immediately by interventions at present.However there are effective contraceptive methods which besides promoting antenatal care clinic utilization will have great role in all rounded well being of mothers and children.

Increasing awareness of mothers on maternal and child health may lead to better antenatal care attendance and is probably the most feasible intervention for antenatal care attendance.

One fourth of the respondents who attend antenatal care said health education is not given at antenatal clinics and physical and laboratory investigations either were not carried out or they do not know whether they were carried out or not.

75.7 %of the respondents prefer to deliver in health institutions and the majority of them in hospitals. Twenty four percent want to deliver at home.

Preference of place of place of delivery was significantly associated with educational status, parity, husband's or partner's attitude towards antenatal care attendance.

The difference between the factors determining antenatal care attendance and preference of place of delivery may be explained by the fact that the former is a behaviour or practice response while the latter is an attitude outcome.

Based on the findings of the study the following recommendations are made focusing on interventions that are feasible in the immediate future.

1. Health education activates should be strengthened
    a. Concerning the advantages of antenatal care with emphasis on early attendance.
    b. Concerning age at first pregnancy and modern contraceptive methods.
    c. Involving husbands in health education on antenatal care attendance as much as possible ; preparing materials to be read at home.
2. Supportive and regular supervision of antenatal care clinics should be considered seriously.
3. Support and training of community health workers should continue.
4. Further assessment of the proportion of pregnant women from the total population should be considered for health planning and other practical purposes.
5. Further studies should assess the efficiency of antenatal clinics
6. Further studies should be carried out on factors associated with antenatal care attendance in rural set up.
7. Well designed studies should address the influence of antenatal care attendance on pregnancy outcome.

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ANNEX 1

ANC Survey In Gulele Awraja

Registration Form

Interviewers Name _____

Signature_____

Date_____

We are conducting a study of mothers' antenatal care attendance during pregnancy and places of delivery. You are kindly requested to be included in the study which will have importance in improving mother and child health services. No information concerning you as an individual will be passed to another individual or institution without your agreement. If you agree to be included in the study I will start my questions by asking you general identification points and come back for further interview after some days. Only honest answers would contribute to improvement of health planning. The study has the approval of Addis Ababa university.

Keftegna _____ Kebele _____ House hold No. ____

House No. _____

LMP or Gestational age in months _____

Antenatal care attending _____

Antenatal care not attending _____

ANNEX 2

ANC Survey in Gulele Awraja

Form No. _____

Enumerators Name_____

Signature_____

Date_____

QUESTIONNAIRE ON SOCIO-DEMOGRAPHIC CHARACTERISTICS

It has been found necessary to understand the socio demographic and economic history as to their contribution to attending antenatal care during pregnancy and choice of places of delivery. Therefore I would like to ask you some questions in this respect.

Keftegna ____ Kebele ____ House No. _____

I. Socio demographic characteristics

1. ____ Present maternal age in years

2. ____ Age at first pregnancy

3. Mothers educational status

   1. ____ Illiterate
   2. ____ completed literacy class
   3. ____ Elementary
   4. ____ Secondary
   5. ____ Higher
   6. ____ Others specify _____

4. Ethnicity

   1. ____ Amhara
   2. ____ Oromo
   3. ____ Tigrie
   4. ____ Gurage
   5. ____ Others specify _____

5. Mothers occupation

   1. ____ House wife
   2. ____ Student
   3. ____ Maid servant
   4. ____ Factory worker
   5. ____ civil servant
   6. ____ Others specify _____

6. Marital status

   1. ____ Married
   2. ____ Divorced (separated)
   3. ____ Widowed
   4. ____ Never married

7. ____ Total family income in birr
8. ____ Number of pregnancies
9. ____ Number of deliveries
10. ____ Number of livebirths
11. ____ Number of abortions
12. ____ Number of stillbirths
13. ____ Number of infant deaths

ANNEX 3

Title : ANC Survey in Gulele Awraja

Form No. _____

Interviewers Name_____

Signature_____

Date_____

QUESTIONNAIRE ON ANTENATAL CARE VISITS

1. ____ Do you go to health institutions for antenatal check up? Answer yes or no
2. ____ If yes at what gestation age /month of pregnancy/ did your first go ?(___ ____ months)
3. If you go for antenatal check ups to which health institution do you go?
   1. ____ Gulele health station
   2. ____ Gefersa health station
   3. ____ St. Paul hospital
   4. ____ Others (specify)

4. Why do you go to that particular health institution?

1._____ Close to where I live.

2. ____Little or no expenses.

3.____ Behaviour of health workers is best there.

4.____ Convenient time of service.

5._____High quality of care.

6._____Others (specify) _____

5. ____ If you do not attend antenatal care why not?

1____ No or little knowledge about antenatal clinics.

2____ Being in a state of good health.

3_____ Too busy to attend antenatal clinics

4_____ Expenses for antenatal care clinics are un affordable

5_____ Others specify_____

6.* Should a healthy woman attend antenatal clinics ?

Yes score=1 No score=0

7.* At what gestation /month during pregnancy/ should a woman go for antenatal clinics ? _____ months

1-2 months or before the third missed periods score=1

Alternative answer score=0

* knowledge questions on MCH

8. Where do you want to deliver your baby ?

   1. ____ Hospital
   2. ____ Health centre
   3. ____ Health station
   4. ____ Home
   5. ____ Other specify

9. ____ Why do you want to deliver your baby in that particular place ?(if in a health institution)

   1. Close to where I live
   2. High quality of care
   3. Good approach of health workers
   4. Little expenses to deliver in this particular institution.
   5. Others specify _____

10. ____ If you want to deliver at home, why ?

   1. Expenses for delivery at health institutions unaffordable
   2. Dislike of the behaviour of health workers at health institutions
   3. Wish to deliver at home where relatives are nearby.
   4. More trust in TBAs or relatives than health workers at health institutions
   5. Others specify_____

11. ____ If you want to deliver at home, who would you like to conduct the delivery ?

    1. ____ A traditional birth attendant
    2. ____ A close relative
    3. ____ Others specify _____

12. What is your husband's or partner's attitude towards ANC attendance?

    1.Negative
    2.Positive
    3.Unknown

13. If you attend antenatal care, is health education given

    1. ____ Yes always
    2. ____ Yes sometimes
    3. ____ I don't know

14. Are you weighed each time you go for ANC

    1. ____ Yes always
    2. ____ Yes sometimes
    3. ____ Never
    4. ____ I don't know

15. Is blood pressure taken each time you go for ANC attendant

    1. ____ Yes always
    2. ____ Yes sometimes
    3. ____ Never
    4. ____ I don't know

16. If health education is given, it is given on what topics

1. ____ Antenatal care
2. ____ Family planning
3. ____ Baby care
4. ____ Others (specify)
5. ____ I don't remember on what topics

17. Was blood examination done in the antenatal care clinic?

1. ____ Yes
2. ____ No

18. Was urine analysis done at antenatal clinics

1. ____ Yes
2. ____ No
3. ____ I don't know

19. Was your height measured at the ANC clinics

1. ____ Yes
2. ____ No
3. ____ I don not know

ANNEX 4

QUESTIONNAIRE ON FAMILY PLANNING METHODS AND BABY CARE

1*. ____ What type of contraceptive methods do you know ?

knows pills score=1 does not know score=0

knows condom score=1 does not know score=0

knows IUD score=1 does not IUD score=0

2.* ____ What interval should be maintained between the first and second child if there are no socio economic problems in a family ?(in years)

2-4 years score=1 otherwise score=0

3.*____ At what age should a child start immunization? (in months)

0-1 month score=1 otherwise score=0

4.*____ What are the diseases prevented by immunization ?

knows tuberculosis score=0.3

knows poliomyelitis score=0.3

knows pertussis score=0.3

knows diphtheria score=0.3

knows tetanus score=0.3

knows measles score=0.3

* knowledge questions on MCH

5.* At what age should a child finish immunization ?
(in months)
9 months score=1 otherwise score =0

6.* ____ If a child has diarrhoea would you give him more food, less food or as usual ?
less food score= 0 as usual score=1 more food score =2

7.* ____ If a child has diarrhoea should a mother continue or stop breast feeding ?
stop breast feeding score=0 continue breast feeding score=1

8.* ____ What is ORS
(Medicine) given when a child has diarrhoea score=1 otherwise score=0

9.* What are the signs of dehydration ?
knows sunken eyeball score=0.25 does not know score=0
knows extreme thirst score=0.25 does not know score=0
knows refuse to eat and drink score=0.25 does not know score=0
knows absence of tears score=0.25 does not know score=0
Others(for consideration by the principal investigator.)

10.* At what month should a baby start supplementary food ?(In addition to breast milk.)
4-6 months score=1 otherwise score=0

* knowledge questions on MCH

የነፍሰ ጡሮች ጤና ክትትል በጉለሌ አውራጃ

ፍርም ቁጥር 02

የጠያቂው ስም

ፊርማ

ቀን

የነፍሰ ጡሮችን የጤና ክትትልና የሚወለዱበትን ቦታ በተመለከተ ጥናት እያካሄድን ነው:: በዚሁ ጥናት እንዲሳተፉ ይለመናሉ:: ይህም ለእናቶችና ሕፃናት የሚሰጠውን አገልግሎት ለማሻሻል ይረዳል:: ያለ እርሶ ስምምነት ምንም ዓይነት መረጃ ለሌላ ሰው ወይም ድርጅት የማይተላለፍ /የማይሰጥ/ መሆኑን አረጋግጣለሁ:: በዚህ ጥናት ለመሳተፍ ፈቃደኛ ከሆኑ ጥያቄዎችን ከአጠቃላይ ነጥቦች በመነሳት እጀምራለሁ:: ከጥቂት ቀናት በኋላ ስለሌላ ቃለ መጠይቅ እመለሳለሁ:: ትክክለኛውን መረጃ መስጠት ለጤና አገልግሎት መሻሻል እንደሚረዳ ለማሳሰብ እወዳለሁ::

ከፍተኛ ____ ቀበሌ ____ የቤተሰብ ቁጥር ____

የቤት ቁጥር ____

የእርግዝና ጊዜ በወራት ____

የነፍሰጡር ክትትል የሚያደርጉ ____

የነፍሰጡር ክትትል የማያደርጉ ____

የነፍሰጡሮች ጤና ክትትል ጥናት በጉለሌ ላዉራጃ

ፍርም ቁጥር 03

የጠያቂዉ ስም _____

ፈርማ _____

ቀን _____

1. _____ ዕድሜ በዓመት
2. _____ ዕድሜ በመጀመሪያ ለርግዝና
3. _____ የትምህርት ደረጃ
   1. _____ ያልተማረ
   2. _____ መሠረተ ትምህርት የወረዱ
   3. _____ አንደኛ ደረጃ ትምህርት ያጠናቀቁ
   4. _____ ሁለተኛ ደረጃ ትምህርት ያጠናቀቁ
   5. _____ ከፍተኛ ትምህርት
   6. _____ ሌላ ይገለፅ _____
4. ብሔረሰብ /ጉባ/
   1. _____ አማራ
   2. _____ ኦሮሞ
   3. _____ ትግሬ
   4. _____ ጉራጌ
   5. _____ ሌላ ይገለጽ _____
5. ሥራ
   1. _____ የቤት አመቤት
   2. _____ ተማሪ
   3. _____ የቤት ሠራተኛ
   4. _____ የፋብሪካ ሠራተኛ
   5. _____ የመንግሥት ሠራተኛ /አስተማሪ፤ ነርስ/ ወዘተ..

6. የጋብቻ ሁኔታ

1. _____ ያገባች
2. _____ የተፋታች
3. _____ በልዩ የምትኖር
4. _____ ያላገባች

7. _____ ወቅሳላ የቤተሰብ ገቢ በወር

8. _____ የአርገዝና ቁጥር

9. _____ የወሊዱ ቁጥር

10. _____ በሕይወት የተወለዱ

11. _____ የወርዷ ብዛት

12. _____ ምትው የተወለዱ ቁጥር

13. _____ ከአንዱ ዓመት በታች ያሉ ሕፃናት ምት ቁጥር

የነፍሰጡሮች ዉና ክትትል ጥና ት በገለሴ አዉራጃ

ፍርም ቁጥር

የጠያቂው ስም ____________________

ፊርማ ____________________

ቀን ____________________

1. የሚያዉቋቸዉን የወሊድ መቆጣጠሪያ ዘዴዎች ይግለፁ::
   1. _____ ክኒን
   2. _____ ኮንዶም /በወንድ ብልት የሚጠለቅ/
   3. _____ በማህፀን ዉስጥ የሚቀመጥ /ሉፕ/
   4. _____ ሌላ ይገለፅ _____

2.5 የመጀመሪያዉ ህፃን ከተወለደ በኋላ የሚቀጥለዉን ከስንት ዓመት በኋላ ቢወለድ ይመረጣል:: /በቤተሰብ ዉስጥ የማህበራዊ ሆነ የኢኮኖሚ ችግር ከሌለ/

____

3. _____ የሚጠባ ህፃን ተጨማሪ ምግብ መዉሰድ የሚገባዉ በስንተኛዉ ወሩ ነዉ?

4. _____ አንድ ህፃን ክትባት መጨረስ የሚገባዉ በስንተኛዉ ወር ነዉ?

5. _____ አንድ ህፃን ክትባት መጀመር የሚገባዉ በስንተኛዉ ወር ነዉ?

6. _____ በክትባት የምንከላከላቸዉ በሽታዎች
   1. _____ /የሳንባ/ ነቀርሳ
   2. _____ የልጅነት ልምሻ /ፖሊዮ/ ሽባ የሚያደርግ
   3. _____ ዘገ አገዳ /ጉሮሮ/
   4. _____ ኩፍኝ
   5. _____ ትክትክ /ደደቲ/

7. አንድ ህፃን ተቅማጥ ከያዘዉ የሚሰጠዉ የምግብ መጠን መቀነስ፣ አንደ ነበረ መሆን፣ ወይስ መጨመር አለበት?

   መቀነስ = 0   አንደዱሮዉ = 1   መጨመር = 2

8. አንድ ሕፃን ተቅማጥ ከያዘዉ ጡት ማጥባት መቋረጥ ወይም መቀጠል አለበት?

   መቋረጥ = 0   መቀጠል = 1

9. ሕይወት አድን ንጥረ መድኃኒት /ኦ.አር.ኤስ/ ምንድነዉ?

   ተቅማጥ ለያዘዉ የሚሰጥ = 1   ሌላ = 0

10. ተቅማጥ በሚይዝበት ጊዜ የሚታዩ የመጠዉለግ ምልክቶች ምን ምን ናቸዉ?
   1. _____ ዓይን መጉድ
   2. _____ ከፍተኛ የዉኃ ጥማት
   3. _____ ለመጠጣት ሆነ ለመብላት አለመፈለግ
   4. የሽንት አለመኖር

9. በዚህ የጤና ድርጅት ለመዉለድ ለምን ፈለጉ?

1. ____ ለቤቴ ቅርብ በለሆነ
2. ____ አገልግሎቱ ከሌሎች የተሻለ በለሆነ
3. ____ የጤና ባለሙያዎች [illegible] ተስማሚ በለሆነ
4. ____ ሌላ ይገለፅ ____

10. በቤት መዉለድ ለምን ፈለጉ?

1. ____ ወደጤና ድርጅቶች ለመጓጓዝ የትራንስፖርት /ገንዘብ/ ችግር
2. ____ የጤና ባለሙያዎች ለወሳዶች ያላቸው አቀራረብ ተስማሚ በላልሆነ
3. ____ ዘመዶች ባሉበት መዉለድ በለምፈልግ
4. ____ በአካባቢ ያሉ የልምድ አዋላጆች የተሻሉ በለሆኑ.
5. ____ ሌላ ይገለፅ ____

11. በቤት የሚወልዱ ከሆነ ማን እንዲያዋልድዎ ይፈልጋሉ?

1. ____ የሰለጠነች የልምድ አዋላጅ
2. ____ የቅርብ ዘመድ
3. ____ ያልሰለጠነች የልምድ አዋላጅ
4. ____ ሌላ ይገለፅ ____

12. ለጤና ምርመራ በሚሄዱበት ቦታ የጤና ትምህርት ይሰጣል ወይ?

1. ____ አዎን ሁልጊዜ
2. ____ አዎን አንዳንድ [illegible]
3. ____ አይሰጥም

13. ለነፍሰጡር ምርመራ በሚሄዱበት ጊዜ ክብደትዎ ይለካል ወይ?

1. ____ አዎን ሁልጊዜ
2. ____ አዎን አንዳንድ ጊዜ
3. ____ አይመዘንም /አይለካም/
4. ____ አላዉቅም

14. ለነፍሰጡር ምርመራ በሚሄዱበት ጊዜ የደም ግፊትዎ ይለካል ወይ?

1. ____ አዎን ሁልጊዜ
2. ____ አዎን አንዳንድ ጊዜ
3. ____ አይለካም
4. ____ አላዉቅም

15. የጤና ትምህርት የሚሰጥ ከሆነ የሚሰጥባቸዉ ርዕሶች

1. ____ የነፍሰጡር ም[illegible]
2. ____ [illegible] መዉለድ/
3. ____ [illegible]
4. ____ [illegible] /አላስታዉስም

የነፍሰ ጡሮች ጤና ክትትል ጥናት በጌለሌ ኣውራጃ

ፎርም ቁጥር 04

የጠያቂው ስም _____

ፈርማ _____

ቀን _____

1. _____ ለነፍሰጡር ምርመራ ክትትል ወደ ጤና ድርጅት ይሄዳሉ ወይ?
   የለም = 0 ኣዎን = 1
2. _____ የሚከታተሉ ከሆነ በመጀመሪያ የሄዱት በሰንተኛው ወር ነው?
3. _____ ለነፍሰጡር ጤና ክትትል የሚሄዱ ከሆነ በየትኛው ጤና ድርጅት ነው የሚከታተሉት፤
   1. በጌለሌ ክሊኒክ _____
   2. በጳውሎስ ሆስፒታል _____
   3. በገፈርሳ ክሊኒክ _____
   4. በሌላ ይገለጽ _____

4. ለነፍሰጡር ጤና ክትትል ወደዚህ ጤና ድርጅት የሚሄዱበት ምክንያት ፤
   1. _____ ለምናርበት ቦታ ቅርብ ስለሆነ
   2. _____ ክፍያ ስለሌለ
   3. _____ የጤና ባለሙያያችኛ ኣቀራረቡ ጥሩ ስለሆነ
   4. _____ ኣገልግሎቱ በኣጭር ጊዜ ስለሚሰጥ
   5. _____ የኣገልግሎቱ ደረጃ ከፍተኛ ስለሆነ
   6. _____ ሌላ ይገለፅ _____

5. ለነፍሰጡር ምርመራ የማይሄዱ ከሆነ ምክንያትዎን ይግለፁ::
   1. _____ ስለነፍሰጡር ምርመራ ስለማላጤቅ
   2. _____ ጤነኛ ስለሆነኩ
   3. _____ ሥራ ስለሚበዛብኝ
   4. _____ ምርመራዉ ወጪ ስለሚጠይቅ
   5. _____ ሌላ ይገለፅ _____

6. ኣንዲት ጤነኛ ሴት ለነፍሰ ወደ ጤና ድርጅት መሄዱ ይገዘታል ወይ?
   የለም = 0 ኣዎን = 1

7. ኣንዲት ነፍሰጡር ሴት ወደጤና ድርጅት መሄዱ የሚገባት በሰንተኛው ወር ነው?
   _____

8. መዉለዱ የሚፈልጉት የት ነው?
   1. _____ ሆስፒታል
   2. _____ ጤና ጣቢያ
   3. _____ ክሊኒክ
   4. _____ ቤት
   5. _____ ሌላ ይገለፅ

16. የደም ምርመራ በነፍሰጡር ምርመራ ውቅት ተደርጉ ታል ወይ?

1. _____ አዎን
2. _____ የለም

17. በነፍሰጡር ምርመራ ወቅት የሽንት ምርመራ ተደርጉ ታል ወይ?

1. _____ አዎን
2. _____ የለም

18. ቁመት ይ ተለክቷል ወይ?

1. _____ አዎን
2. _____ የለም
3. _____ ላላውቅም

19. የነፍሰጡር ምርመራን በሚመለከት የባለቤትይ አስተያየት

1. _____ አይደግፍም
2. _____ ይደግፋል
3. _____ አላውቅም

DECLERATION

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

Name MESGANAW FANTAHUN

Signature

Place ADDIS ABABA UNIVERSITY

Date of submission MARCH 31ST 1992

This thesis has been submitted for examination with our approval as University Advisors.

Dr. George Olwit