DEPARTMENT OF COMMUNITY HEALTH
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DETERMINANTS OF ANTENATAL CARE UTILIZATION. A COMMUNITY-BASED STUDY IN ARSSI ZONE.

BY MENGISTE MESFIN, MD

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MENGISTE MESFIN, MD

Department of Community Health, Faculty of Medicine, Addis Ababa University

Approved by examining board

Chairman, Department graduate committee	
Advisor	
Examiner	
Examiner	
Examiner	

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LISTS OF ABBREVIATIONS

1. ANC - Antenatal Care
2. CI - Confidence Interval
3. RR - Relative Risk
4. UNICEF - United Nations Children Fund
5. U.S - United States of America
6. WHO - World Health Organisation.

ABSTRACT

A community based cross sectional study was carried out in Arsi zone to investigate factors that affect women's use of ANC and to see the utilization pattern of prenatal care.

1204 women in their 3rd trimester of pregnancy and 801 in the 3 months post delivery from 4 towns with access to ANC service were included as study subjects. A pretested questionnaire was administered to collect data on study variables.

The study found that about 52.2% of women had not attended antenatal clinics at all, and only 32.5% of women attenders had their first visit in the first trimester of pregnancy. About 45.2% of attenders had one or two prenatal visits while few (10.6%) had the recommended 5 visits. Reasons for attendance were found to be non-specific. The main reason for non-attendance at ANC clinic were related to lack of knowledge of the need for ANC, and lack of time.

Analysis showed that the chance of non-attendance was higher for those women in the older age group, widows and divorced women, and those with no formal schooling, low monthly income, high parity and many living children.

The probability of non-attendance was higher for those with unplanned pregnancy and those who had negative attitudes to the

current pregnancy. Family problems and lack of time were also found to influence their attendance at ANC clinic.

In this study, those who had perceived any illness as dangerous were more likely to be attenders of the service. Women who thought that they might develop dangerous health problems during pregnancy were also more likely to use the service.

Recommendations concerning the improvement of ANC service and use are proposed.

1. INTRODUCTION

It is estimated that at least 500,000 women die every year during pregnancy and child birth (1,2). Ninety-nine percent of these deaths are from the developing world. This figure does not take into account the huge maternity-associated morbidity. In addition, there is an even larger mortality and morbidity among newborns.

The maternal mortality rates are highest in Africa (> 600 per 100,000 live births), particularly in the Sub saharan countries where there is a high fertility rate (3). In general, an African woman's life-time risk of dying from pregnancy-related causes is greater than one in 20, whereas the corresponding risk for women in developed countries is only one in 2000 (3,4). The causes of maternal deaths are often multifactorial and involve complex interactions of medical, health service, reproductive and socio-economic factors. However, in the developing world over 80% of maternal deaths are attributed to haemorrhage, infection, eclampsia, obstructed labour and abortion(5).

Ethiopia is one of the least developed countries, with one of the highest maternal mortality rates. Community and hospital based studies found maternal mortality to range from 467-570 per 100,000 live births (6,7,8). However, other estimates of maternal mortality range as high as 2000 per 100,000 (9).

The risk of mortality in an Ethiopian women is exacerbated by the high fertility (7.5), early marriage (mean of 15.6 years) and close birth interval (mean of 25 months) (10). A recent study (8) found the lifetime risk of maternal mortality in Ethiopia to be one in twenty-three .

Maternal mortality as a global problem has received increased attention since the 1980s. Global strategies have been set by WHO member countries to reduce levels of maternal mortality and ill health significantly by the year 2000, particularly in the developing countries (11). The major elements of the common current initiatives by all countries are directed at readdressing the social inequalities confronting women, ensuring access to family planning, community based maternity care, and providing back up and support at first level of referral for those women who require skilled obstetrics care (5,11).

In Ethiopia, in addressing this high priority health problem in women, safe motherhood initiatives and health policies that are directed to the reduction of deaths in women are being implemented (12). Antenatal care (ANC), one component of maternity care, is postulated to reduce problems associated with pregnancy and delivery through early identification of morbidity and risks of mortality, so that preventive and curative actions can be taken (13). ANC is widely accepted and practised both in the developed and developing world.

Previous studies from developing countries have indicated that ANC can contribute to a reduction in maternal and infant mortalities (14). In many of these studies that focus on causal pathways in maternal mortality, lack of ANC has been identified as a risk in maternal mortality (15). Indeed, an Ethiopian study on maternal mortality found a higher mortality rate among those who had no prenatal visit during pregnancy compared with those who had at least one visit (6,7).

In addition to maternal health, neonatal and infant health has been shown to be significantly affected by women's health status and their use of ANC. UNICEF estimates that about 13% of Ethiopian children are born with low birth weight (16), and it has been estimated (17) that 63% of neonatal deaths are due to tetanus and 60% of infant deaths occur during the first month of life (deaths which could for the most part be prevented by maternal immunization, ANC and safe delivery services).

On the other hand, recent evidence from the developed countries has demonstrated that the fall in maternal mortality can be attributed to improvement in delivery care, and the role of ANC in reducing maternal mortality must be questioned (18).

Nevertheless, the current evidence (13,18) on the potential benefits of ANC in reducing maternal mortality suggests that the following interventions are effective:

- detection and treatment of anaemia
- detection, investigation and referral of hypertension
- detection and treatment of infections, especially STDS

- prediction of obstetric complications, most notably cephalo-pelvic disproportion, followed by arrangements for delivery in an appropriate facility.

In addition, ANC use has been shown to influence women's use of delivery services, which have been found to be effective in reducing maternal mortality in the developed world (13).

In addition to lack of sufficient maternity care services, low utilization of those services that are available to pregnant women in developing countries has been recognized as a problem (40). Recent studies indicate that fewer than one-third of women in developing countries receive ANC and only about 20% of births occur under the supervision of a trained attendant (19).

In Ethiopia, though there is renewed interest in reducing maternal, perinatal and neonatal mortality, the current coverage of maternity health services is too low to have measurable impact. In this country, 47% of the population has access to health services (20), but it has been found that only 16% of women attend ANC and 10-14% of births are attended by trained personnel at national level (20). Even in Addis Ababa, where virtually 100% of the population has access to modern health services, a recent community-based study showed that only 39% of women in their third trimester had never had a prenatal visit at the time of interview (21). The recent national family and fertility survey also reported that 52% of births to women in Addis Ababa, 36% in other urban areas of the country, and only 3% in rural areas were assisted by trained personnel (22). These studies clearly show

that maternal health services are being under-utilized.

In addition to the lack of access to maternity services in developing countries, there are other widely recognized barriers to use of health services. A recent review of ANC (23) classified the factors affecting the use of maternal health service as follows:

- Systemic factors [factors related to health service (system/provider)]: These include access, availability (schedules/waiting time), cost of service, continuity /integration of care, provider attitude/interaction etc.
- Personal characteristics [factors related to users of the service]: These include socio-demographic, social support and attitudinal factors, knowledge and experience with event or system, perceived severity/susceptibility (need for care), perceived quality of care.
- Geographic factors: Urban/rural distribution, access, transport.

Several studies have examined ANC use in relation to demographic, geographic and socio economic variables. A study in the U.S. found that relatively higher maternal and infant mortality was found among patients who failed to register for ANC (24). In this study, non-registered women were more likely to be older and multigravida, have a large family, lower educational attainment and family income than registered women. Among the several reasons for failure to obtain ANC given by those who did not register were lack of support (21%), lack of time (44%), transport problems (16%),

family responsibility (21%), and other reasons. A similar study in South Africa demonstrated that women who did not obtain ANC were more likely to be of lower socio-economic status, higher parity and farther away from health services than were ANC-attenders. Among the reasons given for non-attendance were distance, expense of service, lack of support and others (25).

Many other studies from developing countries have also demonstrated the importance of socio-demographic and geographic variables in the utilization of ANC. Adnan et al (26) reported distance from MCH services, and the time and cost involved in travelling to services to be all highly significantly associated not only with ANC use but also with the use of institutional delivery, postnatal and infant care services. The study also indicated ANC use was associated with the level of women's education.

Though distance from health service has been shown to affect ANC use, women will travel long distances if there is perceived need for maternal care. In Nigeria, utilization of health service has been shown to vary with the type of health care facility, socio-demographic factors and perception about sickness (27).

On the other hand, improved access to health care through manipulations of cost and distance, may not increase health care utilization. A study from Brazil (28) of an accessible population (15 minutes walking distance and free medication) showed that use of health services was related to whether or not someone else suggested the visit, confidence in service given, and waiting time.

In Benin (29), a survey conducted in a population with access to MCH services, documented that 30% of women had never used the service and that more than 50% of ANC users had only one or two visits with the peak use during the sixth and seventh months of pregnancy. Under-utilization of MCH services was attributed to poor quality of service, particularly long waiting time, lack of respect shown to patients, and poor communication skills of the personnel.

Women's knowledge regarding pregnancy and birth have been shown to influence their pregnancy behaviour and use of ANC services. In Finland, for example, it was found that women with poor knowledge were more likely than those with good knowledge to be unemployed, poorly educated, younger, living near or with their parents, and smokers. They were also less likely to feel the need for ANC guidance (30).

In developing countries most women lack knowledge on risks of pregnancy and child birth, which in turn influences the felt need for ANC. In Jamaica, for instance, while most women surveyed were able to name obstetric complications they had experienced themselves, fewer than 10% of them identified any other specific risk, danger or problem of pregnancy and birth. The study also found women who had experienced complications during previous pregnancies or births attached greater importance to the availability of medical back up than those who had uncomplicated births (31). Other studies from developing countries showed that not only does women's knowledge of risks affect their use of ANC,

but so does their knowledge of the severity of risks and their feeling of susceptibility to those risks. In India for instance, it has been demonstrated that lack of recognition of health problems was significant reason for not seeking out side health care, that accounted for half of maternal deaths (32). A household survey in Iraq showed the level of perceived sickness was the most important factor affecting utilization of health service (33). Saverborn et al, in Burkina Faso, found that severity of disease and perceived effectiveness of the treatment were the most important determinants of health seeking behaviour (34).

Though women's knowledge and experience about child bearing might influence their use of ANC, if the attitude of the health provider and his/her treatment of the patient are deemed poor, the patient will be less likely to return and use the services. Several studies in both developed and developing countries have documented that a long wait for short consultation time, lack of respect for the client, and poor communication have been found to be major factors in women's perception of quality of care (25,28,35,36).

On the other hand, despite expressed dissatisfaction with health care, pregnant Jamaican women use maternity services (31,34). A woman's attitude towards her pregnancy, and the presence of social support have been found to influence ANC use in developed countries. In the U.S., a comparative study found that women with few or no ANC visits had more negative attitudes about being pregnant and the importance of ANC than did those who had

adequate care. The group who had more visits, had more positive attitudes about their pregnancies and the usefulness of ANC, even though some complained about discourteous service, discontinuity of care and long waiting time (36).

Another recent study on influences of psychosocial factors on neonatal outcomes indicated that life event stress, anxiety and social support during pregnancy accounted for significant variation in birth weight and apgar scores. The study also documented that women with either low social support or anxiety, were younger, more often single, had lower levels of education and income, smoked more and had higher biochemical risks than women with adequate social supports and/or lower anxiety (37).

In developing countries, the presence of social support during pregnancy has been shown to provide psychological benefits and to influence ANC use. For example in Jamaica, pregnant adolescents identified the support of close friends as a prerequisite to the initiation of ANC (31).

Regarding the various barriers to women's use of ANC in Ethiopia, there are few studies. Kwast et al in their study on maternal mortality found women who did not have prenatal care were often those of high risk, i.e. illiterate, had low level of awareness of problems of child bearing, had low income and were unmarried (38). The community based study carried out in Addis Ababa also showed the risk of non-attendance was high for pregnant women whose income was low, whose husband's attitude was negative or unknown, who were first pregnant at the age 10 to 18 years. The

study also indicated that preference for delivery at home was high for those who were illiterate, who did not attend ANC clinics, and whose husband's attitude towards ANC attendance was negative/unknown (21).

Studies from Ethiopia and other developing countries have shown that nonusers of ANC had more risk factors and were less receptive to proffered prenatal supervision than users (35,39,).

In Ethiopia, even though under utilization of the existing health services is a major problem, studies that address the barriers to use of these services are few. Mesganaw et al found the following reasons for ANC non-attendance:too busy (49.2%), absence of illness (21.5%), cost (12.7%), lack of awareness about ANC (9.4%) and other reasons (7.2%). In their study, socio-demographic factors such as income were not shown to affect ANC utilization (21).

As several studies from developed and developing countries indicate, health service barriers and women's perception of quality of ANC were other important factor affecting women's attendance during pregnancy. Studies that address these issues are scarce both in Ethiopia and from other developing countries.

The main aim of this research, therefore, was to investigate the barriers to use of ANC in Ethiopia. The objectives were, in general, to assess prenatal care utilization patterns, and more specifically, to identify reasons for use or non-use of ANC, and to identify barriers to use with a view to improving the accessibility of ANC services to the population.

2. MATERIALS AND METHODS.

This cross sectional community based study was conducted in 4 towns in Arsi zonal administration, Assella, Huruta, Etheya and Borijawe. The estimated population in the study area was about 150,000, with 90,000 being in Assella, and a total of 60,000 in the remaining 3 towns. The population of Assella obtains health service from 5 health stations, one health centre and one referral hospital, while the population of each of the other 3 towns have access to a health station only.

Before the actual study was conducted, inclusion criteria for the study population were set, as follows:

- All women in their 3rd trimester of pregnancy and those within 3 months of delivery;
- Permanent residents of the study area;
- Living within 5 km of a health facility.
- Women who had one or more visits to an ANC clinic prior to interview were considered as users of ANC, while women who had no visit were considered as non-users.

The aim of the research was explained to the zonal health administration offices and community leaders at each kebele.

The survey had 2 phases. The first phase, conducted from October 1 to November 30, 1993, was a census of the towns in order to identify those women who met the inclusion criteria, all of whom were included in the study. The census was carried out by health workers and community leaders trained by the principal investigator.

The second phase was the actual house to house interview in each kebele, carried out from December 1, 1993 to March 30, 1994. All Interviewers (n=12) were 12th grade complete. Supervisors (n=3) of the research were heads of MCH departments at the zonal offices and health centre. Three days training with interviewers and supervisors was carried out. A pretest of the questionnaire on 20 non-residents of the study area was carried out and the questionnaire modified. The questionnaire was translated into Amharic and then back to English to verify the translation. Information regarding the variables listed below was gathered using open and closed ended questions (Annex 1).

At the end of every interview day, each supervisor checked the completed questionnaires from his interviewers for missed information. Subjects who were not present at the time of first visit, were traced on subsequent visits so that the response rate was 100%.

The study variables that were included in this research are as follows:

Women's attendance/non-attendance at health facilities was taken to be the dependant variable, with the following factors being considered the determinant variables:

- Socio-demographic factors (age, education, monthly income, marital status, parity and number of children);
- Individual/psychosocial factors (attitude to current pregnancy, whether or not the pregnancy was planned, time available for prenatal care, family responsibilities);

- Knowledge of dangerous health problems related to pregnancy, perceived susceptibility to these problems, and current illness experience;
- Health service barriers (cost of health service, distance, transport cost, women's opinion about quality of ANC)

Ethical considerations: Before every interview, each respondent was informed about the objective of the study, and requested to participate. Only after respondents' agreement to participate was assured were the interviews administered. At the end of every interview , respondents were in the non-user group were advised to attend prenatal and delivery services.

Analytical methods: The raw data were entered and analyzed using EPI-INFO 5.1 (43). ANC users and non-users were compared in terms of the above mentioned variables. The degree of association with determinant factors was assessed by calculating risk ratios, confidence intervals, and p-values for trend.

3. RESULTS

In this study 1204 respondents in their third trimester of pregnancy and 801 women in their first 3 months post delivery were included. There were no missing respondents who fulfilled the inclusion criteria.

3.1 Socio-Demographic Characteristics of Study Subjects

The largest study group was in the age group 20-24 (31.8%). The majority ethnic groups among respondents were Oromo (36.3%) and Amara (37.7%). Eighty-seven percent of women were married. About 43% of respondents had no formal schooling. Regarding respondents' occupation, most were house wives (81.2%) followed by self-employed (8%) and government employees (6.9%). About 39% of women had monthly income less than 100 Birr, while 18.8% earned more than 300 Birr. The majority (63.2%) had parity of two and above, while nulliparae constituted 15% of the total respondents (Table 1).

Table-1 Characteristics of respondents in Arssi towns in 1993.

Variables	Number	(%)
Age		
<20	235	(11.7)
20-24	638	(31.8)
25-29	538	(26.8)
30+	594	(29.6)
Religion		
Orthodox	1340	(66.8)
Moslem	563	(28.1)
Catholic	23	(1.20)
Protestant	79	(3.90)
Marital status		
Married	1745	(87.0)
Widowed	41	(2.00)
Divorced	55	(2.70)
Separated	49	(2.40)
Single	115	(5.70)
Educational status		
0-grade	854	(42.6)
1-6 grade	475	(23.7)
7-12 grade	628	(31.3)
12+	48	(2.40)
Occupation		
House wife	1629	(81.2)
House maid	17	(0.84)
Govt. empl	139	(6.90)
Self empl	160	(8.00)
Student	60	(3.00)
Income		
<100 Birr*	773	(38.6)
101-300 Birr	85	(42.6)
301+Birr	377	(18.8)
Ethnic group		
Oromo	728	(36.3)
Amara	755	(37.7)
Tigre	239	(11.9)
Others**	283	(14.1)
Parity		
0	301	(15.0)
1	438	(21.8)
2	380	(19.0)
3-5	594	(29.6)
6+	292	(14.6)
Children alive		
0	329	(16.4)
1	471	(23.5)
2-3	629	(31.4)
4-5	333	(16.6)
6+	243	(12.1)
Total	2005	(100.0)

* 1Birr = 0.2 U.S Dollars.
** Gurage, Woliata.

3.2 Prenatal Care Utilization Pattern.

Of the total women (2005) included in the study, 958 (47.8%) had at least one prenatal visit, while 1047 (52.2%) had none. The attendance rate was relatively higher for Assella town (50%) when compared with the other small towns (45.2%) (Table 2).

Table- 2: ANC Attendance in the Study Area in 1993.

Name of study area	ANC attendance N(%)*	ANC-non attendance N(%)	Total N
Assella	552(49.9)	555(50.1)	1107
Others**	406(45.2)	492(54.8)	898
Total	958(47.8)	1047(52.2)	2005

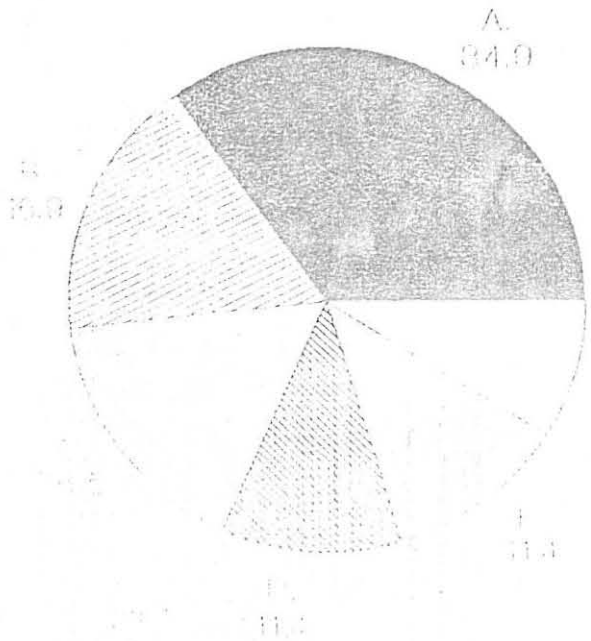
** includes Huruta, Eteya, Borujawe . * Row percentage

Trimester of pregnancy at which attendants have first contact with ANC was found to vary. Most of the attenders (40.4%) made their first prenatal visits in their second trimester, 27.1% in their third trimester of pregnancy and only 32.5% of women attended prenatal care in their first trimester of pregnancy.

Among the prenatal users 45.2% had only one or two prenatal contacts. Few of the attenders (10.6%) reported to have 5 or more prenatal visits at the time of interview .

Attendants gave different reasons why they attend ANC (Fig1). Among the several reasons given, "for medical checkup" (34.9%), "for curative service" (16.9%), and "to avoid problems during labour" (16.5%), constitute more than half of the reasons. Other reasons given were related to expectations of good outcome with ANC use (11.4%), or desire for specific information such as to know the position of the fetus (11.4%).

FIG 1. RESPONDENTS PRIMARY REASONS FOR ATTENDANCE



A. MEDICAL CHECK UP B. CURATIVE SERVICE
C. AVOID LABOR PROB. D. ANC IMPORTANT
E. DESIRE INFORMATION F. FEAR PROBLEMS

Non-attenders were asked the primary reason for not having had any prenatal visit during their pregnancy (Table 3) . The main reason for non-attendance was found to be that "no illness had occurred during this pregnancy" (36.1%). About 11% of women attributed non-attendance to lack of time, while the third commonest reason (10.1%) was bad experience with the health system. When the reasons related to lack of awareness or lack of understanding of the value of ANC are taken together, they constituted (46.2).

Table 3 Primary Reasons for Non Attendance

	Frequency	%
Lack of Awareness/Knowledge		
No illness during pregnancy	378	36.1
Too early to start	67	6.4
Never heard about ANC	39	3.7
Illness during pregnancy	34	3.2
Personal barriers		
Lack of time	116	11.1
Procrastination	70	6.7
Many children to care for	70	6.7
Fear of manipulation	56	5.4
Economic problem	42	4.0
Tension during pregnancy	39	3.7
Structural/Health Service		
"Bad experience" with service	106	10.1
Distance	28	2.7
Transport problem	2	0.2
TOTAL	1047	100.0

Table 4 Socio-demographic variables by use/non-use of ANC

Variable	ANC-nonuser N(%)*	ANC-user N(%)	RR 95% CI	P-value***
		Age		
<20	120(51)	115(49)	1.00**	
20-24	254(40)	384(60)	0.78(0.7,0.9)	
25-29	271(50)	267(50)	0.99(0.8,1.2)	
30+	402(68)	192(32)	1.33(1.2,1.5)	<0.001
		Marital status		
Married	882(51)	863(49)	1.00**	
Widowed	30 (73)	11 (27)	1.45(1.2,1.8)	
Divorced	45 (82)	10 (18)	1.62(1.4,1.9)	
Separated	23 (47)	26 (53)	0.93(0.7,1.3)	
Single	67 (58)	48 (42)	1.15(0.9,1.4)	
		Education		
No schooling	627(73)	227(27)	1.00**	
Elementary	222(47)	253(53)	0.64(0.6,0.7)	
Secondary	184(29)	444(71)	0.40(0.4,0.5)	
Post Sec	14 (29)	34 (71)	0.40(0.3,0.6)	<0.001
		Occupation		
Housewife	852(52)	777(48)	1.00**	
House maid	13 (76)	4 (0.4)	1.5(1.12,1.9)	
Student	30 (50)	30 (50)	0.96(0.7,1.2)	
Government	56 (40)	83 (60)	0.77(0.6,0.9)	
Self	96 (60)	64 (40)	1.15(1.0,1.3)	
		Income		
<100 Birr	479(62)	294(38)	1.00**	
101-300	453(53)	402(47)	0.86(0.8,0.9)	
300+	115(31)	262(69)	0.49(0.4,0.6)	<0.001
		Parity		
0	142(47)	159(53)	1.00**	
1	195(45)	243(55)	0.90(0.8,1.1)	
2	179(47)	201(53)	1.00(0.9,1.2)	
3-5	335(56)	259(44)	1.2(1.04,0.6)	
6+	196(67)	96 (33)	1.40(1.2,1.6)	<0.001
		# of children		
0	158(48)	171(52)	1.00**	
1	205(44)	266(56)	0.90(0.8,1.1)	
2-3	324(52)	305(48)	1.10(0.9,1.2)	
4-5	191(57)	142(43)	1.20(1.1,1.4)	<0.001
Total	1047	958		

*Row percentage.
Reference category.*Mantel henzle chi-square test for trend.

3.3 Factors Affecting Prenatal Care Attendance

3.3.1 Socio-demographic factors

Crude analysis of socio-demographic factors showed an influence on ANC use. As seen in table 4 use of ANC was less likely in women older than 30 years of age, in widows and divorced women, and in those of higher parity, and lower levels of monthly income and education.

3.3.2 Personal/Psychosocial factors

As seen in Table 5, the probability of non-use was higher if the pregnancy was unplanned and if the woman was unhappy or ambivalent about it. In addition, those who perceived family care as a moderate or major problem were found to use ANC less, as were those who reported time to be a problem.

Table 5 Personal/Psychosocial Factors

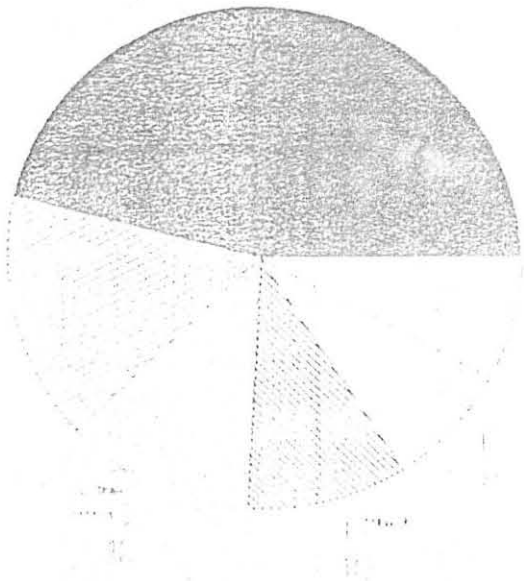
Variable	ANC-nonusers N (%)*	ANC-users N (%)	RR 95% CI
Plan pregnancy	(N=1047)	(N=958)	
Yes	624(47)	712(53)	1.00**
No	423(63)	246(37)	1.3(1.2,1.4)
Feel pregnancy			
Happy	638 (47)	714 (53)	1.00**
Ambivalent	113 (66)	57 (34)	1.4(1.3,1.6)
Unhappy	296 (61)	187 (39)	1.3(1.2,1.4)
Family care problem	(N=810)	(N=958)	
No	504 (42)	694 (58)	1.00**
Moderate	217 (49)	230 (51)	1.2(1.03,1.3)
Major	89 (72)	34 (28)	1.7(1.5,1.95)
Time problem			
No	503 (40)	759 (60)	1.00**
Moderate	203 (53)	182 (47)	1.3(1.2,1.5)
Major	104 (86)	17 (14)	2.2(1.9,2.4)
Total	810	958	

* Row percentage **Reference catagory

Unhappy/ambivalent respondents were asked why they had a negative attitude towards their current pregnancy (Fig 2). The

major reasons given were, economic problem (42%), unplanned pregnancy (16.1%), enough children (12.4%), need for birth spacing (9.5%) and other reasons (19.8%).

FIG 2. WOMEN'S REASONS FOR BEING UNHAPPY/AMBIVALENT RE: PREGNACY



A. ECONOMIC REASONS. B. ACCIDENTAL
C. ENOUGH CHILDREN D. SPACING NEED
E. FAMILY PROBLEMS F. OTHER REASONS

3.3.3 Knowledge, illness experience, and perception of susceptibility to problems of pregnancy

Both users and non-users were questioned about their knowledge of dangerous health problems related to pregnancy (Table 6). Women who expressed concern about any health problem (whether or not the health problem mentioned was indeed a risk to the mother) were more likely to be ANC users (Annex 2).

It is interesting to note that only 34.3% of all women mentioned any of the accepted danger signs of pregnancy (eg. vaginal bleeding, seizure etc.).

Women's illness during the current pregnancy on ANC was found not to be an important factor.

In addition, respondents who thought they might develop life-threatening health problems during pregnancy were more likely to use the service (RR 1.2).

Table 6 Respondents knowledge,illness, susceptibility to pregnancy related health problems.

Characteristics	Total N(%)	ANC-users N (%)	ANC-nonusers N (%)	RR 95% CI
	Knowledge of dangerous health problems?			
No	1046(52.2)	466(45.0)	580(55.0)	1.00*
Minor illness	175(8.70)	91(52.0)	84(48.0)	1.17(1.1,1.4)
Danger signs	688(34.3)	349(51.0)	339(49.0)	1.14(1.1,1.3)
Medical illness	96(4.80)	52(54.0)	44(46.0)	1.22(1.0,1.5)
	Illness experienced current/past pregnancy?			
NO	1159(57.8)	534(46.0)	625(54.0)	1.00*
YES	846(42.2)	424(50.1)	422(49.9)	1.09(0.99,1.2)
	Perceived susceptibility to dangerous health problems?			
NO	1383(69.0)	621(45.0)	762(55.0)	1.00*
YES	622(31.0)	337(54.0)	285(46.0)	1.2 (1.1, 1.3)
Total	2005(100.0)	958	1047	

*Reference category.

3.3.4 Health Service Factors

Health service cost was a major problem in only 7.5% of respondents. It was found to influence prenatal care attendance (Table 7). In addition, travel cost for ANC and distance from health facility were related to prenatal attendance.

Table-7 Health services factors by use/non-use of ANC

Variables	Total N(%)	ANC-non users N(%)	ANC-users N(%)	RR 95% CI
Health services cost				
Not problem	1278(72.3)	575(45.0)	703(55.0)	1.00*
Moderate problem	358(20.3)	152(42.0)	206(58.0)	0.94(0.82,1.1)
Major problem	132(7.50)	83(53.0)	49(37.0)	1.40(1.20,1.6)
Travel cost				
Not problem	1248(70.6)	571(46.0)	677(54.0)	1.00*
Moderate problem	418(23.6)	175(42.0)	243(58.0)	0.92(0.81,1.1)
Major problem	102(5.80)	64(63.0)	38(37.0)	1.37(1.20,1.6)
Distance of health facility				
Not problem	1140(64.4)	514(45.0)	626(55.0)	1.00*
Moderate problem	505(28.6)	221(44.0)	284(56.0)	0.97(0.86,1.1)
Major problem	123(7.00)	75(61.0)	48(39.0)	1.35(1.20,1.6)
Total	1768	810	958	

* Reference category

Perceived quality of care was an important factor in use of services (Table 8). Women who reported the quality was poor had higher chance of being non-attenders of ANC(RR 1.42). While lack of respect of health workers and lack of privacy showed no significant difference, the probability of non-attendance was higher in women who had no confidence on the services (RR 1.3). Long waiting time prior to the ANC visit was a problem for 16.6% of the study population . Those who felt this to be a problem were more likely to be non-users of the service (RR 1.3). Time given for consultation and satisfaction on curative services

provided to women were weakly related. Those who were not satisfied with consultation time were less likely to use prenatal care service as were those who expressed dissatisfaction with curative care.

Table 8 Respondents view of quality of care

Characteristics	ANC-nonusers N(%)	ANC-users N(%)	Total RR 95% CI
Quality of ANC			
Good	200(40)	299(60)	1.00*
Fair	464(46)	548(54)	1.14(1.1,1.3)
Poor	146(57)	111(43)	1.42(1.2,1.7)
Personnel respect			
Yes	706(45)	858(55)	1.00*
No	104(51)	100(49)	1.13(0.98,1.3)
Confidence on services			
Yes	662(44)	845(56)	1.00*
No	148(57)	113(43)	1.3(1.1,1.5)
Waiting time			
short	359(42)	486(57)	1.00*
Fair	286(45)	344(55)	1.13(0.9,1.4)
Long	165(56)	128(44)	1.3(1.2,1.5)
Lack of privacy			
Problem	369(44)	485(52)	1.00*
Not problem	441(48)	473(56)	1.1(0.8,1.02)
Consultation time			
Satisfactory	687(45)	845(55)	1.00*
Not satisfactory	123(52)	113(48)	1.16(0.98,1.2)
Curative service			
Satisfactory	583(44)	738(56)	1.00*
Not satisfactory	227(51)	220(49)	1.2(1.03,1.3)
Total	810 (100)	958 (100)	1768(100)

*Reference category.

4. DISCUSSION.

This population based survey, the first that has tried to look at several barriers to utilization of ANC services in an accessible population in the area, has revealed few surprises.

In this study the over all coverage for ANC was 47.8% for women in their third trimester of pregnancy and in the first 3 months post-partum. The figure is lower than that found in a previous study in Addis Ababa (21). This might due to the fact that women in Addis have the opportunity to use the health facilities concentrated in the area. ANC coverage in the 3 small towns was lower (45.2%) than Assella town (52.2%). The small towns had only health stations while the population in Asella town had access to a variety of health facilities. The higher use in Assella may be attributed to the fact that women are able to use higher level facilities than those available in the smaller towns. Utilization of ANC has been found in other studies to increase with increased access to a higher level of health facility (27).

ANC, an intervention aimed at reducing maternal, perinatal, and neonatal mortality, has to reach all pregnant women in order to have a measurable impact (18,47). Coverage in this area falls far short of this goal. In addition to the problem of low coverage, the pattern of use was inadequate. About two thirds of women made their first visit during their second or third trimester of pregnancy, and 90% of women had four or fewer contacts. Indeed, almost half had only one or 2 visits.

Taking the current recommended patterns of utilization for developing countries, pregnant women should initiate their care as early as possible (48) in order to have base line data on health status of the mother and the pregnancy . WHO recommends at least five visit for women in developing country (44). In this study it was found that the time of first visit for ANC, if it occurred at all, was late, and the number of visits was inadequate.

This study investigated women's reasons for attendance, and non-attendance. The main reasons given for attendance (eg. for curative care, to know the position of the fetus, for medical check-up) and for non-attendance (have not been ill, too early to start etc) suggest a lack of understanding of the nature and importance of ANC. That the main reasons for inappropriate use and non-use appear related to lack of knowledge/awareness suggests the need for interventions that may ameliorate this situation. Appropriate health education programs regarding ANC should be developed.

In this study socio-demographic factors were found to be related to ANC attendance. It was found that women in the older age group (30+) who constituted more than one third of the study population, were less likely to use the service. The impact of age on ANC utilization was also found in other studies (21,24,41). In addition women in the older age group are more likely to have many children to care for. The presence of many children to be cared for during pregnancy was the primary reason for not having care in 6.7% of non-attenders.

While widowed/divorced women were found to be more likely to be non-attenders as compared with married women, the impact of union status during pregnancy on ANC utilization is hard to assess from this study, since the vast majority of the study subjects (87%) were married and sample size in the other categories is small. However, several studies on ANC in relation to psycho-social factors, indicated that women who were single were less likely to use ANC than those who were married (37). A highly significant difference between the two groups was found in relation to their level of education. In common with other studies (26,30), women who had no formal schooling were less likely to attend. Government employees were more likely than housewives to use the service (RR 0.77). This might be due to the fact that government employees more likely to have better education than house wives.

Also, as seen elsewhere (21,24), use was related to monthly income.

Analysis of parity and number of living children has shown an inverse relation to ANC utilization. Respondents whose parity was 3 or greater and had two or more living children were less likely to attend, compared those who had fewer. Moreover the majority of non-attenders (67.6%) were parity >2 and about 65% had 2 or more children. Elsewhere, women with high parity were found to attend ANC less, particularly when past pregnancies were uncomplicated (21,25,42,).

Psychosocial factors that include women's attitude towards their current pregnancy and whether or not the pregnancy was planned were found to affect ANC here and elsewhere (31,36,49). There was a higher probability of non-attendance among those whose pregnancy was unplanned. A previous study in Ethiopia(50) demonstrated that the use of ANC was significantly less among women with unwanted pregnancies.

Respondents' emotional response towards their current pregnancy was also found to be important in their use of ANC. Women who were unhappy/indifferent about their current pregnancy were less likely to use the service. The several reasons given for being unhappy/indifferent about the current pregnancy include economic problems, unplanned pregnancy, having had enough children and need for spacing. This is highly suggestive of lack of access to appropriate family planning opportunities. ANC might be an appropriate point of contact for promotion of family planning.

In this study and others (21,24,26) lack of time was among the main reasons for failure to attend ANC clinic. Womens' responsibility of care for their children and other members of the family, was found to be a major problem in attendance. This could be due to their lack of awareness about the benefits of ANC use, so that they might not give it priority. Secondly, it might be attributed to lack of support when they are away for ANC.

Respondents' knowledge of potential dangers of pregnancy were significantly different between the 2 groups. In this study most respondents could not identify any single risk, while a small number of them mentioned minor illness and medical illnesses such as heart disease, pulmonary diseases etc. as dangerous problems that could occur during pregnancy. Only about one third of the total group have mentioned any of the actual danger signs of pregnancy.

Womens' knowledge of any risk was found to be an important factor in their attendance at ANC clinic, and attenders were more likely to know of the dangers signs of pregnancy related health problems. On the other hand contact with health care, particularly respondents' current and past attendance in ANC, might have given them an opportunity to gain more knowledge on dangerous health problems.

The positive impact of better health knowledge on ANC use has been also shown in other studies (30,31). Increasing awareness of women regarding the potential hazards of child birth might improve their ANC use. Health education related to the potential danger signs of the major causes of mortality in women could have an important input in improving their utilization of care during pregnancy.

Health service barriers to ANC use have been well documented both in developing and developed countries (23,25,26,27). In this survey, health services cost associated with attendance was a problem to 7.5% of the study population, despite the fact that the

service is free of charge. In addition, a number of women complained that travel cost, and distance were problems. All three factors (cost, travel cost and distance) were a statistically significant influence on the use of ANC. Since this study was carried out in an accessible population (<5km), the relevance of these variables as barriers to utilization was expected to be minimal. That this was not the case is perhaps due to the time involved in seeking care (as mentioned above), or perhaps due to the fact that they did not know that services were free of charge. In any case, since it was found that these factors were a barrier in this population, their importance in less accessible populations is undoubtedly much greater.

The client's view of the quality of prenatal care has been demonstrated to be an important barrier to ANC, particularly in developed countries (51). Women who perceived the quality to be poor were more likely to be non-attenders. In addition, as discussed above, "bad experience" with health service was the main reason for non-attendance 10% of women, and was the third most common reason given.

Contrary to the finding of others (31,53), women's acceptance and treatment by health worker was not related to prenatal attendance. This might be attributed to their adaptation to hardships of life and social status in the community. Other studies also found that, despite dissatisfaction with health care, women continued to use service (31).

Lack of confidence in the service provided, though not a

problem to the majority of respondents, was significantly related to non-attendance. Lack of confidence might have resulted from previous experiences with health care services. Previous "bad experience" with health services was one of the main reasons for non-attendance. While this study did not look directly at sources of dissatisfaction with the health care system, it is well known that much of the dissatisfaction with health services in Ethiopia relates to the lack of drugs at health facilities. Indeed, satisfaction with curative services given during prenatal care was found to affect ANC use. Those who were dissatisfied with the provision of curative service were less likely to attend. Since many women attended ANC primarily for curative care, it follows that the general lack of drugs may have created a sense of dissatisfaction. This bears further investigation.

Long waiting time during prenatal visits was found to be related to non-attendance in this study. Several studies have also reported this fact(28,29,36). Women's consideration of time during visit might be an important point, as it may influence their return for continuous follow up.

Even though there is evidence of the influence of lack of privacy during visit with ANC use elsewhere, it was not found to be a factor here.

Respondents' satisfaction with time given for consultation was weakly related to ANC utilization. Studies from the developed world have documented the relative importance of short consultation time for long waiting time in contributing to clients'

dissatisfaction.

4.1 Validity of the study

Bias was minimized in this study as far as possible. Selection bias was not a problem since all eligible women in the population were included in the study. No-one refused to participate. Regular supervision and checking of missed information in every questionnaire has been carried.

The results of the study, while important in the locale of study, are likely relevant to the country as a whole.

4.2 Limitations of the study

In this study, selected variables that determine prenatal care utilization have been studied, and their importance was determined by comparing attenders and non-attenders at a specific point in time. Thus both the dependent and independent variables were determined at the same time. For instance, knowledge of pregnancy related diseases may have been acquired before or during antenatal care.

Some socio-demographic factors, particularly age and parity, might have been confounded by the respondents age of marriage.

The possibility of confounding regarding knowledge of respondents by past prenatal care was considered. However, an approximately equal distribution of past ANC users was found in the two groups.

5. CONCLUSIONS AND RECOMMENDATIONS

The barriers to attendance at ANC have been found in this study to be similar to those found elsewhere . Almost all appear to be amenable to improvement through relatively few interventions. The most important of these would appear to be improved health education, since this would go a long way to increasing women's understanding of the process of pregnancy, the knowledge of the danger signs of pregnancy, and of the importance of ANC, and reducing fear.

A second major focus of intervention should be increasing the quality of health services delivered. This would involve improving the quality of curative care, as well as reducing waiting time.

Also, it was apparent that a significant number of women were unhappy about their pregnancy. Family planning services need to be strengthened in the area.

Socio-demographic factors, many of which appear to affect the use of ANC, particularly education and income, should be addressed in the long term.

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Annex-1. Questionnaire form for community Based Study on Determinants of ANC Utilization:-

Date of Interview------
Interviewer Name----

I. Respondents Identification

1. Address
   - Town _____
   - Higher _____
   - Kebele _____
   - House number _____
2. ANC attendance:
   - A. Have you attended ANC ?
     1.Yes , If yes(Ask the following questions).

   1.a. Trimester of pregnancy at which ANC started,
     - i. Firest
     - ii. Second
     - iii. Third

   2.a. The number of visits_____
     2. No , If no (Ask the following questions).

   2.a. Have ever been to ANC ?
     - i. Yes ,if yes (ask all questions).
     - ii. No,if no (ask only the following sections:II, III(1,2,3),V,

II. Socio - demographic characteristics of respondent

1. Age _____
2. Religion _____
3. Marital status _____
4. Educational status _____
5. Occupation _____
6. Monthly income in Birr _____
7. Reproductive history
   - Parity _____
   - Number of children alive _____

III. Data on personal/psychosocial health service factors

1. Did you plan your current pregnancy
   1. yes
   2. No
2. What was your feeling when you discover your pregnancy?
   1. Happy
   2. Ambivalent
   3. Unhappy
3. If unhappy or ambivalent,why ? _____
4. How do you see the following factors, creating problem in your attendance?
   a. Your family care responsibility
      1. Not problem
      2. Moderate problem
      3. Major problem

b. Lack of time for ANC
    1. Not problem
    2. Moderate problem
    3. Major problem
c. Cost incurred for ANC
    1. Not problem
    2. Moderate problem
    3. Major problem
d. Your expenses to reach the health facility(transport cost)
    1. Not problem
    2. Moderate problem
    3. Major problem
e. Distance of health service from your residence.
    1. Not problem
    2. Moderate problem
    3. Major problem

IV. Respondents knowledge, illness experienced and perceived scuseptibility to pregnancy related health problems.

1. Do you know dangeruos health problems realated to pregnancy ?
   1.Yes. If yes mention them_____
   2.No.
2.Have you experianced a health problem during the current or past pregnancy ?
   1. Yes
   2. No
3. Have you thought of developing dangerous health problems that occur during pregnancy ?
   1. Yes
   2. No

V. Questions on respondents view quality of prenatal care

1. What is (was) your feeling about the quality of prenatal care given?
    1. Good
    2. Satisfactory (Fair)
    3. Poor
2. Do (did) health workers respectful?
    1. yes
    2. No
3. Do you have confidence on the service provided at ANC clinic?
    1. Yes
    2. No
4. The time you spent in waiting, to get the ANC at health facility
    1. It is short
    2. It is fair
    3. It is long
5. Do you think that lack of privacy problem at ANC clinic?

1. Yes
2. No

6. The time a health worker spent with you ?
   1. Satisfactory
   2. Not satisfactory
7. What do you think about the curative services you get at ANC clinic
   1. Satisfactory
   2. Not satisfactory

VI. Questions on main reasons for use/non-use of ANC
   1. What is (was) your primary reason for attendance at ANC Clinic? _____
   2. What is (was) your primary reasons for not going to ANC clinic? _____

Annex-2. Respondents Knowledge on dangerous health problems of pregnancy were categorized based on the following schema.

A. Minor illness
   - nausea Vomiting
   - segni of anaemia
   - musculoskeletal complaints
   - anxiety signs
   - dyspepsia
   - leg swelling

B. Danger signs
   - Headache
   - Vaginal bleeding
   - Hypertension
   - Labour problems
   - Seizure disorder
   - Abnormal fatal positions
   - AIDS
   - Taking medication

C. Medical Problems
   - Genitourinary infections/ others
   - Lung infections (pulmonary infections)
   - CVD.
   - Infections

D. Any combinations of diseases in category B with A or C were included in category B combination of responses those in C with A were included to group C.

DECLARATION

I, the undersigned, declare that 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 Mengiste. M...

Signature _____

Place Addis Ababa

Date of submission 24/5/94

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

Dr. James Farrow

_____ _____

Advisor