ORIGINAL ARTICLE

FACTORS AFFECTING ANTENATAL CARE UTILIZATION IN YEM SPECIAL WOREDA, SOUTHWESTERN ETHIOPIA

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ABSTRACT

BACKGROUND: ***worldwide, about half a million women die every year in connection with pregnancy and childbirth, 99% of which occurs in low and middle income countries. Antenatal care provides an opportunity to deliver different services which are important in improving maternal survival. The objective of this study was to assess antenatal care utilization and factors that affect it in Yem Special Woreda, South Western Ethiopia.***
METHODS: ***A cross-sectional survey was conducted in April 2008 among 651 women who have had a birth 12 months prior to the survey. A pre-tested structured questionnaire consisting of information on socio-demographics, health service related factors and personal barriers were used. Data were analyzed using SPSS for windows version 16.0. Frequency distributions, cross tabulations, crude and adjusted Odds ratios and confidence intervals were performed.***
RESULT: ***Data on antenatal care were collected from 627 mothers making a response rate of 96.3%. One hundred seventy nine (28.5%) women were reported to have received antenatal care at least once during their last pregnancy. Of these, 88 (49.2%) women made the first antenatal care visit during their second trimester, while 52(29.1%) had four or more antenatal care follow ups during their last pregnancy. In the logistic regression analyses, antenatal care users were found to be more likely to be educated (OR= 6.81, 95% CI; 3.76, 12.33), and live in less than 60 minutes walk from health facilities (OR= 6.73,95 CI; 4.30, 10.56). Moreover, illness experienced during past pregnancy (OR=2.57, 95%CI; 1.75, 3.78), husband's approval (OR=7.32, 95%CI; 4.69, 11.42) and planned last pregnancy (OR=2.38 95% CI; 1.52, 3.71) were among the factors associated with the utilization of antenatal care.***
CONCLUSION: ***This study demonstrated low antenatal care service utilization. Even from those who had antenatal care service, majority started the service lately and received incomplete service. The utilization of antenatal care was influenced by various socio-demographic, personal and health service related factors. Hence, there is a need to increase the availability and accessibility of antenatal care to all women particularly to rural women, and increase the community's awareness about antenatal care through IEC activities.***
KEYWORDS: ***Antenatal care, service utilization, Yem, Southwest Ethiopia***

INTRODUCTION

Globally, an estimated 211 million pregnancies and 136 million births occur every year (1). While they are natural and usual processes, pregnancy and childbirth put every woman at risk of complications. Most maternal, foetal and neonatal deaths occur during late pregnancy and the first month of the child's life. Complications of pregnancy and childbirth are the leading causes of disability and death among women in the reproductive age in developing countries. The World Health Organization (WHO) estimates that about 529,000 women die worldwide every year in connection with pregnancy and childbirth. Nearly all (99 %) maternal, newborn, and child deaths occur in low and middle income countries. Moreover, acute morbidity may affect over 50 million pregnancies/deliveries each year, and severe chronic and long-term disabilities like fistulas and prolapse affect an estimated 10 million women each year (1, 2).

Maternal health also affects the health of the Newborn infant. Low birth weight is a reflection of maternal ill health and nutritional status during pregnancy, which results in a significant neonatal morbidity. About 95% of all low birth weight deliveries occur in low-income countries (3). Maternal mortality is the highest by far in sub-Saharan Africa, where the lifetime risk of death from pregnancy-related conditions is 1 in 16, compared with 1 in 2800 in rich countries (1,5). In Ethiopia, the levels of maternal and infant mortality and morbidity are among the highest in the world. There are 673 maternal deaths for every 100,000 live births and the infant mortality rate was 77 per 1,000 live births (4).

The causes of maternal death are remarkably consistent among the developing world. Direct obstetric complications account for 80% and indirect causes like malaria, anaemia, and HIV/AIDS for the remaining 20% of maternal deaths(5). Obstetric complications are the leading cause of death for women of reproductive age in developing countries today, and constitute one of the worlds most urgent and intractable health problems (6).

Antenatal care is one of the most effective health interventions for preventing maternal morbidity and mortality particularly in places where the general health status of the women is poor. The antenatal period presents an important opportunity for identifying threats to the mother and unborn baby's health, as well as for counseling on nutrition, birth preparedness, delivery care and family planning options after the birth (1, 7, 8).

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Since the use of reproductive health services in general and antenatal care in particular is low, maternal and infant morbidity and mortality rates are very high in Ethiopia, The 2005 Ethiopian Demographic and Health Survey (EDHS) has shown that only 28% of women received antenatal care and only 6% of women were assisted by a health professional for their most recent birth (4). Few studies have addressed the reasons for underutilization of antenatal care services in Ethiopia. Existing studies showed that lack of awareness about ANC, inaccessibility of health services, lack of time due to women's work load, long waiting time, poor quality of ANC services and husband disapproval are among the major factors contributing for the low use of antenatal care services (9-13). The objective of this study was to describe the current utilization of antenatal care service and identify the factors that affect the use of ANC services in Yem Special Woreda.

METHODS AND MATERIALS

A community based cross-sectional study was conducted in April 2008 among women who have had a birth in the 12 months before the survey date in Yem special woreda, Southwest Ethiopia. Yem Special Woreda is located 297 kilometres from Addis Ababa in Southwest Ethiopia. According to CSA's population projection for the year 2008, the special Woreda has a total population of 96,714 (14). The Woreda has 3 towns and 30 rural kebeles. There is one Health Centre, clinics (private and public)and 21 Health Posts in the Woreda.

The Study Population were women who gave birth 12 month prior to the survey date and who resided in the Woreda for more than one year Sample size was calculated using EPI-Info version 6.04 with the following assumptions: Women who gave live birth 12 months prior to the study were considered as a single study subject. Based on the prevalence of ANC utilization from the previous study conducted in Southern Nations Nationalities Peoples Region (SNNPR) 26.1 % (12), we assumed that the proportion of women who use ANC is 26%. A degree of precision of 5%, an alpha level of 0.05, a design effect of 2 and a non-response rate of 10% were used to obtain a sample size of 651.

To identify the study units, the Woreda was first stratified into Urban and Rural areas, and one Kebele from the urban and eight Kebeles from the rural were selected using lottery method. Then lists of eligible women who live in the selected Kebeles were obtained from health extension workers to serve as a sampling frame. A probability sample proportional to the population size was used to determine the number of respondents that were selected and interviewed in each stratum. The respondents to be recruited in each Kebele were identified by using simple random sampling techniques.

An interviewer administered pre-tested questionnaire was used to collect the data. The questionnaire was first prepared in English and then translated in to Amharic. Nine female Health Extension Workers and two nurses were recruited, trained and assigned as data collectors and supervisors, respectively. Pre-test was carried out on 5% of the sample size selected from the near by Kebeles which were not included in the main study.

The outcome variable of the study was antenatal care utilization and explanatory variables included socio-demographic, health service related and personal factors which were explained in Anderson's model of Health care utilization as predisposing, enabling and need factors (18). Enabling factors refer to resources or characteristics that promote or inhibit the use of services such as availability of Services, distance, and service cost. Need factors refer to the individual's illness or impairment that necessitates health care utilization. Predisposing factors refer to those which shape attitudes toward service use such as education, religion, maternal age and related socio-demographic factors.

Data entry and analyses were done using SPSS for windows version 16.0. Variables were described using descriptive statistics and frequency tables. The association and significance between the explanatory and response variables were measured using binary logistic regression analyses. The relative contribution of each selected variable to the outcome of interest was assessed using multiple logistic regression analyses.

Ethical clearance was obtained from Jimma University, and official letter of support was also obtained from local authorities and the concerned government officials of Yem special Woreda. Informed verbal consent was obtained from each study subjects.

RESULTS

A total of 627 women who delivered in the 12 months before the date of survey were interviewed, with a response rate of 96.3%. The mean age of the respondents was 27.5 (SD ±6.07) years. Five hundred forty eight (87.4%) of the respondents were from rural areas, 598 (95.4%) Yem by ethnicity, 494 (78.8 %) Christians and 575 (91.7 %) married. Nearly half, 298(47.5%) have attended primary education while 266 (42.2%) were illiterates and the remaining 63 (10.0%) have attained a secondary and above level of education. Occupation wise, the overwhelming majority, 592(94.4%) were housewives (Table 1).

Of the 627 studied women, 357(56.9%) reported that ANC check-up is essential to the health of both the mother and the child, while 41(6.5%) did not know the benefit of ANC. Two hundred eighty six (48.8 %) women reported that their sources of information about ANC service were health institutions and 126 (21.5%) said TBA. One hundred seventy nine (28.5%) received ANC at least once but the majority 448 (71.5%) reported that they did not attend ANC for their last pregnancy. Out of those who utilized ANC services, 88(49.2%) of them made their first visit in their second trimester of pregnancy and 52(29.1 %) had four or more visits during their last pregnancy. Ninety seven (54.0%), received antenatal care from the Health Post, while 72 (40.2%) and 8(4.5%) from health centre and clinics, respectively (Table 2).

Table 1. Socio-demographic characteristics of study participants, Yem Special Woreda, SNNPR, 2008 (n=627).

Variables	Frequency	Percent
Age of the mother in years		
15-24	212	33.8
25-34	301	48.0
35-49	114	18.2
Educational status		
Illiterate	266	42.4
Primary School	298	47.5
Secondary and above	63	10.0
Ethnicity		
Yem	598	95.4
Oromo	20	3.2
Others	9	1.4
Occupation		
Housewife	592	94.4
Others	35	5.6
Religion		
Christian	495	78.8
Muslim	133	21.2
Marital Status		
Married	575	91.7
Single	38	6.1
Others	14	2.2
Residence		
Urban	79	12.6
Rural	548	87.0

* Include- Amhara, Welaita & Dawuro
** Government employees, traders and farmers
*** Include widowed, divorced and separated

When asked their reasons to initiate ANC visit, 60 (33.5%) women said to confirm their pregnancy, 60 (33.5%) to start regular check-up, 51 (28.5%) due to health problems and 8 (4.5%) because of fear of health problems during their recent pregnancy (Fig 1).The major reasons for not attending ANC for women who did not utilize antenatal care were; no illness experienced during pregnancy for 104 (23.2%), lack of awareness about ANC for 99 (22.1%), far distance from health facility for 73 (16.3%) , being too busy 68 (15.2%) and husband disapproval for 21(4.7 %) (Fig 2).

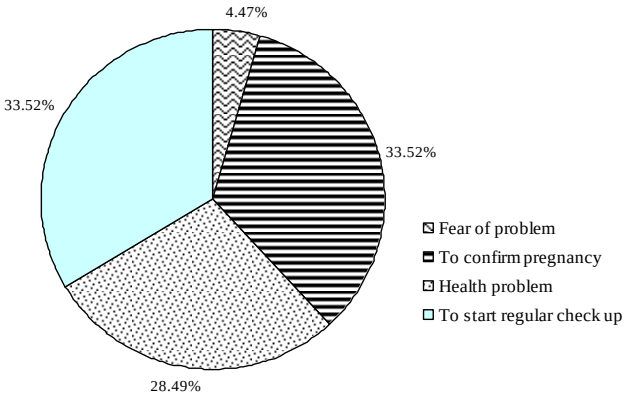

Figure 1. Reason that inititated to use antenatal care service, Yem Speical Woreda, 2008

Logistic regression model was used to identify factors that influence the utilization of ANC services. In the binary logistic regression analyses educational status, residence, knowledge about danger signs of pregnancy and age at first pregnancy were some of the predisposing factors that showed a statistically significant association with antenatal care utilization. Among the enabling factors, husband approval and distance showed a statistically significant association with antenatal care utilization. Besides, perceived susceptibility to pregnancy related illness in future pregnancies, planned pregnancy and illness experienced in past pregnancy were some of the need factors that showed a statistically significant association with antenatal care utilization.

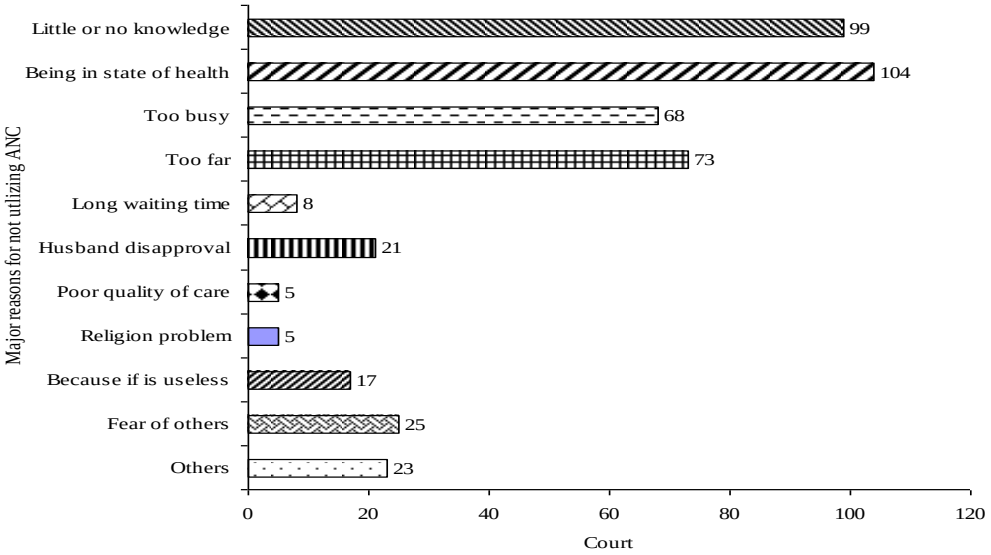

Figure 2. Major reasons mentioned for not attending antenatal care services among studied subjects, Yem Special Woreda, 2008

Table 2. Respondents' knowledge and utilization of ANC services in Yem Special Woreda, 2008.

Variables	Frequency	Percent
Benefits of ANC check up		
Maternal health	155	24.7
Child health	74	11.8
Both	357	56.9
Do not know	41	6.5
Sources of ANC information(n=586)		
Health institutions	286	48.8
Radio\TV	13	2.2
TBA	126	21.5
CHA	70	11.9
friends and relatives	42	7.2
don't remember	49	8.4
ANC use for recent pregnancy		
Yes	179	28.5
No	448	71.5
Timing of 1st ANC visit(n=179)		
1st trimester	23	12.8
2nd trimester	88	49.2
3rd trimester	68	38.0
Number of ANC visits(n=179)		
One	33	18.4
Two	38	21.2
Three	56	31.3
> Four visits and above	52	29.1
Source of ANC (n=179)		
Health centre	72	40.2
Health post	97	54.2
Clinic	8	4.5
Hospital	2	1.1

The above variables which showed a statistically significant association in the binary logistic regression model were entered into multiple logistic regression analyses models to assess their independent effect on the use of antenatal care services. Accordingly, educational status, distance, place of residence, age at first pregnancy, husband approval, planned pregnancy, perceived susceptibility to pregnancy related problems, and illness experienced in past pregnancies were found to be independent predictors of ANC utilization (table 3).

DISCUSSION

Improving maternal health care, particularly providing antenatal and delivery care, are important mechanisms identified to reduce maternal mortality and hence attain MDG goals on maternal health (8, 17). Antenatal care

allows for the management of pregnancy, detection and treatment of complications, and promotion of good health. However, women rarely perceive childbearing as problematic and therefore do not seek care. In this study, almost seven in ten women did not attend antenatal care during their recent pregnancy. Even among the users of ANC, only 12.5% of women made their first prenatal visit during first trimester of pregnancy and only 29.1 % of women had effective antenatal care services during their last pregnancy. The WHO recommends that a woman without complications have at least four focused visits to provide sufficient care (7,8).

Table 3. Selected determinants of antenatal care utilization, Yem Special Woreda, 2008**.**

Variables	ANC utilization		Crude OR	Adjusted OR
Residence	Yes (n=179)	No (n= 448)		
Urban	40	39	3.02(1.87,4.88)	2.11(1.01,4.44)
Rural	139	409	1	1
Distance travelled in minutes				
<=60	152	204	6.73(4.30,10.56)	8.80(4.85,15.96)
>60	27	244	1	1
Presence of Husband Approval				
Yes	151	190	7.32(4.69,11.42)	8.01(4.57,14.06)
No	28	258	1	1
Age at first pregnancy				
<=20	146	302	2.14(1.40,3.28)	2.94(1.66,5.20)
>20	33	146	1	1
Did you plan your last pregnancy				
Yes	150	307	2.38(1.52,3.71)	4.14(2.18,7.85)
No	29	141	1	1
Educational Status of women				
Illiterate	46	220	1	1
Primary	96	202	2.27(1.52,3.39)	1.34(0.78,2.31)*
Secondary +	37	26	6.81(3.76,12.32)	3.90(1.66,5.20)
Know danger signs of pregnancy				
Yes	124	216	2.42(1.68,3.50)	1.58(0.95,2.63)*
No	55	232	1	1
Exposure to Illness in past pregnancies				
Yes	66	83	2.57(1.75,3.78)	2.10(1.18,3,.71)
No	113	365	1	1
Perceived Susceptibility in future pregnancies				
Yes	137	204	3.9 (2.64,5.78)	4.82(2.74,8.45)
No	42	244	1	1

* Statistically significant at p<0.05

This study finding is consistent with EDHS 2005 which showed that women who received assisted antenatal care were only 28 % (4). Another community and family survey conducted in five densely populated zones of SNNPR also reported that 26.1% of the women received antenatal care for their recent pregnancy (12). Though health professionals recommend that the first antenatal visit should occur within the first three months of pregnancy, this study showed that majority of women do not start their first prenatal visit during first trimester. Similarly, the 2005 EDHS reported that only 6 % of women made their first antenatal care visit before the fourth month of pregnancy.

Among the women who had not utilized antenatal care in this study, the major reasons reported for not utilizing antenatal care were due to absence of illness during pregnancy, lack of awareness about ANC, distance from health facility being too far, being too busy, and husband disapproval. These reasons are consistent with the findings of other studies in Ethiopia (9-13).

This study has identified various factors that influence antenatal care utilization among the study population. Among the predisposing factors educational status, residence and age at first pregnancy were found to be independent determinants of antenatal care utilization. This study revealed that women with education level of secondary and above were four

times more likely to use antenatal care than illiterates(Adjusted OR: 3.90, 95%CI; 1.66, 5.20). Likewise, the 2005 EDHS reported that the use of antenatal care services was strongly related to mother's education. Other studies showed that education level was associated with total number of prenatal care visits (9,10,13). Education is an important instrument that modifies women's beliefs about disease causation and cure and thus influences both child-care practices and the use of modern health-care services (1,6,18).

This study showed that the utilization of ANC varies with place of residence which is consistent with 2005 EDHS findings that revealed a huge difference in the use of antenatal care services between rural and urban women. This difference might be due to the fact that urban women are more accessible to health services, and have information and education about ANC than their rural counterparts. Age at first pregnancy was also an independent predictor of antenatal care utilization Where women whose age less than or equal to twenty years at the time of first pregnancy were nearly three times more likely to use antenatal care services than whose age at first pregnancy was more than twenty years(AOR=2.94, 95%CI; 1.66, 5.20). The possible explanation might be young women with their first pregnancy and childbirth are more careful about their pregnancy and therefore require seeking institutional care than multigravida women, or older women, tend to trust traditional birth attendants due to previous experiences they had. Young women may also be likely to be educated than older women.

As part of enabling factors, distance and husband approval were found to be independent predictors of antenatal care service utilization where women who live within an hour walking distance from the health facility were about eight times more likely to visit prenatal care than above an hour distance by walking(AOR=8.80, 95%CI; 4.85, 15.96). Consequently, in this study more than half (54%) of the users received the antenatal care services from Health Posts, which are within easy reach. Other studies have also reported that distance or time required to reach the nearest health unit is an important barrier to antenatal care utilization (10,13, 15). Women whose husband approves of prenatal care were more likely to have used prenatal care than women whose husband did not approve of ANC consistent with the findings of a study done in Yirgalem and Jimma (10, 11).

This study also showed that women whose recent pregnancy was wanted were more likely to use ANC than those women who had unplanned pregnancy (AOR=4.14, 95%CI; 2.18, 7.85)This is inline with the Yirgalem and Jimma studies which revealed that women who wanted their pregnancies were more likely to have used prenatal care than women who did not want their pregnancies (10,11,17). Illness experienced in past pregnancies and perceived susceptibility to illnesses in future pregnancy were also among the factors assocated with antenatal care utilization in this study. It is consistent with a study conducted in India, which showed that women with complications during pregnancy were more likely to seek institutional care (16). This shows that women's tendency to seek antenatal care is influenced by pregnancy related morbidity.

In conclusion, the study demonstrated that the overall and effective utilization of antenatal care was low in Yem Special Woreda. The study also showed that there is a large differences in the utilization of ANC services with place of residence, educational status, distance from health facility, and husband approval. Moreover, the use of ANC also varied with women's exposure to previous pregnancy related illness, unwanted pregnancy and their perceived susceptibility to pregnancy related illness in their future pregnancies.

Hence, there is a need to increase the availability and accessibility of antenatal care services to the needy, particularly to those rural women. Awareness about ANC through BCC/IEC activities should be emphasized targeting both women and men.

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