

Timely Initiation of First Antenatal Care Visit of Pregnant Women Attending Antenatal Care Service

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Abstract

Background: Before delivery, the pregnant mother should get the recommended antenatal care for prevention, early diagnosis and management of complications both related to pregnancy and medical conditions of mother and fetus. But, in money developing countries the effectiveness of providing antenatal care is low due to late attendance of the antenatal care. Therefore, this study planned to assess the prevalence of maternal attendance to initiate early the antenatal care visit and factors that could affect it at selected health institution.

Objective: To assess the prevalence of timely initiation of first antenatal care visit and associated factors among pregnant women attending ante natal care visit at Wollaita Soddo town health institution.

Method and materials: In selected health institutions of Wollaita Soddo town cross sectional study was conducted among 255 pregnant mothers. Systematic Sampling was used. Data was collected using pre tested and interviewer administered structured questionnaire. Bivariate and multivariate logistic regression analysis was performed.

Result: Out of 255 study participant, 99(39%) pregnant mothers initiated the ANC visit early and 156(61%) pregnant mothers initiated ANC late. According to the Multivariate analysis result, pregnant mothers with the educational level of secondary school (AOR=6.25, 95% CI; 2.16, 18.06), who had knowledge on the importance of antenatal care (AOR=5.51, 95% CI, 1.28-23.67), early recognition of pregnancy (AOR=3.53, 95% CI; 1.22, 10.21) and those with no previous history of parity (AOR=2.5, 95% CI; 1.6-4.8) were significantly associated with timely initiation of first antenatal care visit.

Conclusion: According to this study, substantial proportion of pregnant women's was booked timely. The factors like the status women's education, the levels of women's knowledge on timely initiation of ANC, early recognition of pregnancy and those with parity zero were found to be associated with timely initiation of first antenatal care visit.

Keywords: Antenatal care; Timely initiation; Pregnant mother

Abbreviations AOR: Adjusted Odd Ratio; ANC: Antenatal Care; CI: Confidence Interval; COR: Crude Odd Ratio; EDHS: Ethiopia Demographic Health Survey; MMR: Maternal Mortality Ratio; MPH: Master of Public Health; SD: Standard Deviation; SNNPR: Southern Nation Nationalities and People; SPSS: Statistical Package for Social Sciences

Introduction

Despite positive and enjoyable time of motherhood, women's faced a lot of suffering, ill-health and death. According to 2013 estimation there were 289000 maternal deaths worldwide. Sub-Saharan Africa countries share more than half of these deaths, which is nearly 62% (179,000) of worldwide maternal death [1]. Ethiopia shares the highest level of maternal mortality and morbidity levels in the world. According to 2011 Ethiopia Demographic Health Survey (EDHS) report, the Maternal Mortality Ratio (MMR) in Ethiopia was 676 per

100,000 live births [2]. From the interventions used to reduce maternal mortality one is ANC (ante natal care) service. Data found from EDHS 2014 showed that only 41% of women with pregnancy receive ANC from skilled provider [3].

The EDHS conducted in 2011 showed that, the percentage of women attended ANC service for four or more times during live births of five years before the survey is 19% and 11% of pregnant women visit their first ANC service during recommended period of pregnancy (before four months of pregnancy). The median duration of pregnancy at the first visit was 5.2 months [4].

Not attending ANC service early has increased the risk of poor pregnancy outcomes, maternal and neonatal mortality. Late initiations of ANC service affect the intended benefits ANC service for pregnant women. Therefore, initiating ANC visit late impose difficulty on effective implementation of the routine ANC strategies that enhance maternal wellbeing and good prenatal outcomes [5,6].

The available evidences showed that, initiating first ANC visit late is associated with multi-parity, not attending formal education, low

socioeconomic level, age, status before marriage unwanted pregnancies and ethnicity. The quality of ANC services might have an effect on use of antenatal care, leading to infrequent or late first visits to antenatal care [5].

According to different studies, the maternal morbidity and mortality level in developing countries is very high and the root cause for maternal mortality and morbidity could be alleviated by timely initiation of ANC services, which have a direct relation with good perinatal outcomes [7-10].

As far as our knowledge, there is a limited research on the factors that affect early initiation of ANC visit in this particular study area. Therefore, this study conducted to assess the magnitude of early ANC visit and associated factors among pregnant women attending ANC service in selected health institutions of Wollaita Soddo town to provide information for better improvement of maternal and fetal health.

Methods

Study setting

This institutional based cross study was conducted in Wollaita Soddo town from May 22nd- June 6th, 2016. Based on the 2007 census Wollaita has a total population of 1,501,112, of whom 739,533 are men and 761,579 women. While 172,514 live in the town. Wollaitigna is spoken as a first language by 96.82% of the inhabitants. In Wollaita Soddo town there are one governmental referral and one private hospital, three health centers, seven health posts and thirty private clinics. In Wollaita Soddo ANC service is freely provided for all pregnant women.

Sample size and sampling procedure

In this study the sample size was calculated by using single population proportion formula based on the following assumption: Based on the finding from previous study, 35% of pregnant women start ANC before 16 weeks [11], 95% confidential interval, with margin of error 0.05 and considering 10% non-response rate. Computing with the reduction formula and adding 10% of non-response rate, total of 256 pregnant women were used as study unit during the study period at the selected health institution in Wollaita Soddo town.

Systematic sampling method with k^{th} interval (i.e. $k=N/n$), $k=600/256=2.34$ =every other interval, we selected number 1 of ANC visitors randomly and started data collection. After that pregnant women were recruited as a study unit with specified interval until the total sample size for this study obtained.

Data collection

After reviewing of the relevant literature, the data collection tools were developed, as appropriate to address the study objectives. By translating the English language version of the questionnaire to Amharic language the final version of questionnaire was developed, then the final Amharic language version of the questioner was re-translated to English language version with the first to check for any inconsistency or distortion in the meaning of words in the content of instrument. Five percent of total sample respondents were interviewed during the pre-test in another health institution. After this, the questionnaires were edited accordingly, and finally, the instrument had incorporated socio demographic characteristics, obstetric history,

health services utilization, and knowledge related to timely initiation first ANC visit. The questioner was consisting of open ended, partially closed and closed ended. The data were collected by three trained midwives using Amharic version questionnaire from May 22nd-June 6th, 2016.

Data analysis

The completeness and consistency of the data was checked, coded and double entered into Epi Data 3.1. The data were exported to SPSS version 20 statistical softwares for further analysis. Descriptive and summary statistics were carried out. Bivariate and multivariate logistic regression analyses were used to identify variables associated with early ANC visit. The statistical significance and strength of the association between independent variable and an outcome variable were measured by bivariate logistic regression model. From this, P-value less than 0.25 was transferred to multiple logistic regression model to adjust for confounder's effects, and those variables with $p\text{-value}<0.05$ were considered as significantly associated in the final model. The crude and adjusted odd ratios together with their corresponding 95% confidence intervals were computed and interpreted accordingly. Finally, the results of the analysis were presented using tables, figures and texts.

Ethical consideration

A letter of clearance was obtained from Arba Minch University, College of Medicine and Health Science. After the letter has found we have disseminated it to Wollaita zone health bureau, the study area health institution and other concerned bodies. A letter of approval was found from Wollaita zone health bureau. Data was collected after explaining the rights and responsibilities of giving information and the purpose of the study to respondents and ascertain their confidentiality by explaining that no data were disclosed as an individual rather disseminated at community and health institution level in general. Finally informed consent was obtained from respondents, telling that they have the right not to respond.

Result

Socio demographic characteristics

Majority of pregnant women 154(60.4) were age in between 21-34 years; the remaining 80(31.4%) and 21(8.2%) of them were in the category of both lower and upper age extremes respectively. The mean age of respondents was 28.2 years ($\pm 3.6\text{SD}$). The study participant were 223(87.4%) Wollaita, 16(6.2%) Gamo, 9(3.5%) Gurage, and 7(2.9%) are in others category in ethnicity. Respondents of protestant religion were found to be 161(63.1%), followed by orthodox 60(23.5%), catholic 21(8.2%) and muslim 13(5.2%). Majority 239(93.7%) of the respondents were married. The educational statuses of most respondents were secondary school 82(32%) (Table 1).

Characteristics		Number	Percentage (%)
Age	≤ 20 years	80	31.40
	21-34 years	154	60.40
	≥ 35 years	21	8.20
Ethnicity respondents	of Wollaita	223	87.40

	Gamo	16	6.20
	Gurage	9	3.50
	Others*	7	2.90
Religion respondents of	Protestant	161	63.10
	Orthodox	60	23.50
	Catholic	21	8.20
	Muslim	13	5.20
Marital status	Bachelor	14	5.50
	Married	239	93.7
	Others**	2	0.80
Educational level of respondent	No formal education	16	6.30
	Primary school (1-8)	58	22.70
	Secondary school (9-12)	100	39.20
	Diploma and above	81	31.80
Occupation of the respondent	house wife	163	64.80
	Employed	56	22
	Daily labor	19	7.50
	Other***	17	5.70
Husband's educational status	No formal education	5	2
	Primary school (1-8)	59	23.10
	Secondary school (9-12)	144	56.50
	Diploma and above	47	18.40
Family income	≤ 500 ETB	27	10.6
	501-1000 ETB	137	53.60
	>1000 ETB	91	35.70

Table 1: Socio-demographic characteristics of pregnant women attending ANC services at Wollaita Soddo town health institutions, Ethiopia, May 2016 [Others*=Hadiya, Amhara; others**=separated, widowed, divorced; other***=students, waiters].

Timing of first ANC visit

Pregnant women who attend their first ANC before or at 16 weeks of gestation were 99(39%), the remaining 156(61%) attend later (after 16 weeks of gestation). Both groups initiated the ANC visit from 3-32 weeks of gestation with mean timing of 17 weeks with standard deviation of 5.3 weeks.

Obstetric History

About 117(45.8%) of study subjects were parity zero, 18(7%) have had a history of abortion, among these 8(46%) were spontaneous, and about 10(54%) were induced abortion.

About 9(3.5%) had a history of at least one child death and 6(2.4%) have had history of at least one still birth. Almost 19(7.5%) have history of caesarean section delivery but the remaining 236(92.5%) have no any operational delivery.

Knowledge of ANC service utilization and timing of first ANC visit

A total of 244(96%) of respondents rated that utilization of ANC is very important for the health of the mother. 235(92%) of respondents rated that ANC visit is very important for the fetus. The others responded that, its importance is medium both for the mother and fetus. No one complained as the importance is less or no importance for the mother, fetus or both. Almost 219(85.8%) of the respondents reported that a woman needs to attend ANC services four or more times under normal circumstances, but the remaining 36(14.2%) thought three or less times.

Past history of ANC Service Utilization

Almost 112(43.9%), have a history of attending ANC service, 143(56%) have not. Out of 112, 69(61.6%) started with in the first four month of pregnancy. While, 43(38.4%) started after 16th weeks of gestation (Figure 1).

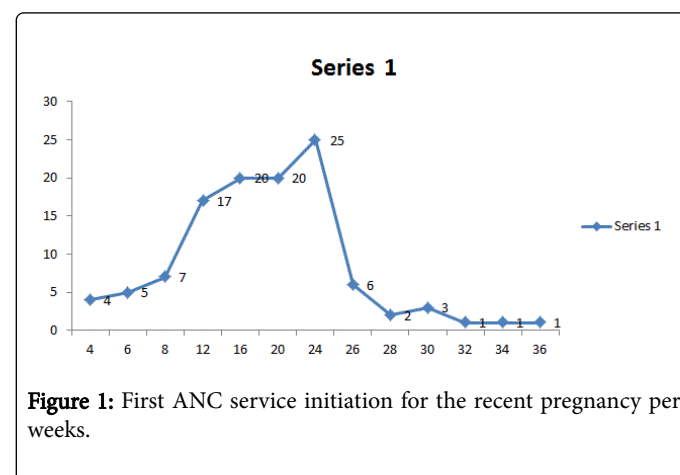


Figure 1: First ANC service initiation for the recent pregnancy per weeks.

Previous service utilization

The median waiting time of the previous ANC service utilization for the first visit was one and half hours and forty minutes for the repeat visit.

Majority of the respondents required no payment, except for laboratory and drug which are estimated to be 95(85%), and 86(77%) respectively. Out of 112 pregnant women who follow previous ANC visit, majority 108(96.4) did not complain missed investigation. Among 112 pregnant women with previous history of ANC service utilization, 110(98.2%) responded that they were satisfied with the staff approach. The level of satisfaction for payment fee for service, privacy, waiting time and laboratory service were 98.9%, 98.1%, 95%, and 97.6% respectively with different degree of satisfaction from highly satisfied to medium.

History of current pregnancy

Only 33(12.9%) has been informed when to start ANC (Table 2).

The mean time of pregnancy was 17 weeks ranging from 3 to 32 weeks. Over one in four 61(23.9%) of the respondents were informed by their husbands.

Characteristics		Frequency	Percentage (%)
Time(duration) of pregnancy in weeks	≤ 20 weeks	115	45.10
	21-34 weeks	130	50.90
	≥ 35 weeks	10	4
Timing of first ANC visit(weeks)	≤ 16 weeks	99	38.80
	>16 weeks	156	61.20
Someone who inform them about ANC use	Health extension workers	56	21.90
	Husband	61	23.90
	Mother	77	30.20
	Sister neighbour	24	9.40
	Neighbour	10	3.90
	Friends	15	5.90
	Others**	12	4.80

Table 2: The current pregnancy history and Timing of first ANC visit of gestation for pregnant women attending ANC service at selected health institutions in Wollaita Soddo town, Ethiopia, May 2016 [Others**=radio, television].

Sixty seven (26.2%) of women have identified their pregnancy when they missed period once while the others 106(41.6%) identify during missed menses for more than one times. Likewise, 82(32.1%) of the respondents are confirmed by urine test. Out of two hundred fifty five pregnant women, 116(45.5%) were planned pregnancy, out of this 88(75.8%) of the plan were in agreement of the husband.

Bivariate analysis of socio-demographic factors by timing of first ANC booking

The bivariate analysis showed that, age and educational status of the women are significantly associated with early initiation of first ANC service. The marital status, occupation and family income were not significantly associated with early initiation of first ANC (Table 3).

Variables		Booked timely Frequency	Booked Lately Frequency	Crude OR 95%CI
Age	<20 years	31(37.3%)	49(29%)	1.64(0.2- 30)
	20-34 years	47(56.6%)	103(63.3%)	1.19(1.11, 2.6)***
	≥ 35years	5(6%)	13(7.7%)	1
Marital status	single	5(0.02%)	9(0.04%)	1
	married	92(0.36%)	147(0.57%)	1.13(0.7,8.2)
	others	1(0.004%)	1(0.004%)	1.8(0.98,13)
occupation	House wife	52(20.4%)	111(43.5%)	1
	Employed	14(5.5%)	42(16.4%)	0.71(0.33-4.2)
	Daily labour	5(1.9%)	14(5.5%)	0.8(0.2, 3.6)
	Others	8((3.1%)	9(3.7%)	1.9(0.7-4.8)
Women educational level	No formal education	7(2.7%)	9(3.5%)	1
	Primary school (1-8)	17(6.6%)	41(16%)	2.49 (1.74, 8.4)***

	Secondary school (9-12)	32(12.5%)	49(19.5%)	2.09(1.3, 4.83)**
	Tertiary education (diploma & above)	29(11.4%)	71(27.8%)	1.31(0.57, 3)
Family income	≤ 500 ETB	30(11.7%)	61(23.9%)	1
	501-1000ETB	45(17.6%)	92(36.0%)	1.0(0.58-3.9)
	>1000 ETB	7(2.7%)	20(8.1%)	0.7(0.5-2.2)

Table 3: Bivariate analysis of socio-demographic factors by timing of first ANC booking in Wollaita Soddo town, SNNPR, May 2016 [NB: 1=reference category, *p-value <0.01, **p-value <0.05, ***p-value<0.25].

Bivariate analysis of obstetric history by timing of first antenatal care booking

early were significantly associated with early initiation of first ANC visit (Table 4).

Bivariate analysis showed that, knowledge on timely initiation of ANC visits, recognition of pregnancy, parity, advised to initiate ANC

Obstetric characteristics		Booked timely Frequency	Booked lately Frequency	COR 95% CI
Pregnancy initiation	Planned	66(25.8%)	131(51.3%)	1.03(0.53, 6.32)
	Unplanned	19(7.5%)	39(15.4%)	1
Knowledge on timely initiation	Yes	76(29.8%)	132(51.8%)	3.02(1.4, 9.13)**
	No	4(1.6%)	21(16.8%)	1
History of abortion	Yes	11(4.3%)	17(6.7%)	1.33(0.8, 9.72)
	No	74(29.0%)	153(60%)	1
Recognition of pregnancy	1-4 months	72(28.2%)	106(41.6%)	3.55(1.64, 7.69)*
	5 and above	9(3.5%)	47(26.7%)	1
Parity	Zero	61(23.9%)	56(21.9%)	3.60(1.642, 13.454)**
	One and above	32(12.5%)	106(41.7%)	1
Advised to initiate ANC early	Yes	54(64.3%)	90(52.9%)	1.6(1.2, 2.74)***
	No	30(35.7%)	80(47.1%)	1

Table 4: Bivariate analysis of obstetric history by timing of first Antenatal care booking in Wollaita Soddo town, SNNPR, May 2016 [NB: 1=reference category, *p-value <0.01, **p-value <0.05, ***p-value <0.25].

Multivariate analysis for factors associated with timing of first ANC booking

pregnancy were shown significant association with timing of first ANC booking after controlling for confounding factors (Table 5).

The multivariate analysis revealed that respondent's education, parity, knowledge on timely booking and early recognition of

Variables		Timing of women first ANC booking		Crude odd ratio (CI)	Adjusted odd ratio (CI)
		Booked timely No.	Booked lately No.		
Age	<20 years	31(37.3%)	49(29%)	1.64(0.2-30)	0.27(0.09, 1.63)
	20-34 years	47(56.6%)	103(63.3%)	1.19(1.11, 2.12)	1.16(0.45-2.99)
	≥ 35 years	5(6%)	13(7.7%)	1	1
	House wife	52(20.4%)	111(43.5%)	1	1

	Employed	14(5.5%)	42(16.4%)	0.71(0.33-4.2)	0.67(0.35-1.27)
	Daily labour	5(1.9%)	14(5.5%)	0.8(0.2, 3.6)	0.23,(0.096-2.4)
	Others	8(3.1%)	9(3.7%)	1.9(1.2-4.8)	1.14(0.65-1.99)
Women educational level	No formal education	7(2.7%)	9(3.5%)	1	1
	Primary school	17(6.6%)	41(16%)	2.49(1.74, 8.4)	1.61(0.97-2.67)
	Secondary school	32(12.5%)	49(19.5%)	2.09(1.3, 4.83)	6.25(2.16, 18.06)*
	Tertiary(diploma and above)	29(11.4%)	71(27.8%)	1.31(0.57, 3)	0.89(0.63-1.27)
Family income	≤ 500 ETB	30(11.7%)	61(23.9%)	1	1
	501-1000 ETB	45(17.6%)	92(36.0%)	1.0(0.58-3.9)	0.89(0.57-1.39)
	>1000 ETB	7(2.7%)	20(8.1%)	0.7(0.5-2.2)	0.050,(0.01-1.23)
Pregnancy initiation	Planned	66(25.8%)	131(51.3%)	1.03(1.46, 6.32)	1.15(0.73-1.82)
	Unplanned	19(7.5%)	39(15.4%)	1	1
Knowledge on timely initiation	Yes	76(29.8%)	132(51.8%)	3.02(1.9.13)	5.51(1.28, 23.67)**
	No	4(1.6%)	21(16.8%)	1	1
History of abortion	Yes	11(4.3%)	17(6.7%)	1.33(1.35,9.72)	1.06(0.61-1.84)
	No	74(29.0%)	153(60%)	1	1
Recognition of pregnancy	1-4 months	72(28.2%)	106(41.6%)	3.55(1.64, 7.69)	3.53(1.22, 10.21)**
	5 and above	9(3.5%)	47(26.7%)	1	1
Parity	Zero	61(23.9%)	56(21.9%)	3.60(1.642, 13.454)	2.5(1.6-4.8)*
	One and above	32(12.5%)	106(41.7%)	1	1
Advised to initiate ANC early	Yes	54(64.3%)	90(52.9%)	1.6(1.2, 2.74)	1.19(0.47,3.01)
	No	30(35.7%)	80(47.1%)	1	1

Table 5: Multivariate analysis of factors by timely initiation of First ANC booking in Wollaita Soddo town, SNNPR, May 2016 [NB: 1=reference category, * =p-value <0.01, ** =p-value <0.05, *** =p value<0.25].

Discussion

According to this study, substantial proportion of pregnant women's was booked timely. While 61% were booked lately. Initiation of first ANC ranges from third weeks to thirty two weeks of pregnancy.

The mean timing of first ANC visit of the study participant was 17 weeks with standard deviation of 5.3 weeks. This finding identifies the better proportion of early initiation of first ANC visit when compared with findings of EDHS 2014, which only 18% women booked timely [3]. The variation between these two finding could be due to EDHS covered more remote areas where health institution could be a major predictor of ANC utilization and that of study conducted in Debre Berhan, where among the 446 pregnant women participated, only 21% initiated ANC attendance within the first four months of pregnancy. This variation between these two finding could be due to the time variation of the studies [12].

This study also showed that the proportion of women who initiate ANC visit early was less than the finding from health centers of Addis Ababa, where 65.6% started the ANC visit within 16 weeks of gestation [6]. This discrepancy might be due to Addis Ababa is the capital of the

country and the community there might have better health awareness than other parts of the country.

This finding is slightly higher than the study conducted in North West Ethiopia, where 35% of pregnant mother initiate first ANC visit timely [11]. In another study conducted in Mekelle city the proportion of pregnant women initiate first ANC visit was around 32.7%, which is lower than this study [13]. Also, finding of this study is higher when compared study done in Copper belt (Zambia) on women who attended ANC shown(28%) of women booked before four month of pregnancy, which might be due to that the study conducted in Zambia included both urban and rural area, but this study conducted in health institution found in urban area [14].

Also, the proportion of pregnant women in this study was higher than the study conducted in Kembata Temba zone (Ethiopia), in which the proportion of pregnant women made their first ANC visit was 31.4% [15]. This could be due to the socio-demographic variation between the study areas. In contrast this, this study finding was lower than the study in Addis Abeba, where 71.8% of respondents initiate timely [16], this also might be explained by the fact that the two areas

are different in socio-demographic characteristics. This study finding was consistent with a study conducted in Dilla town, where 35.4% started first ANC visit with in 16 week of gestation [17], even if slight difference exist between the findings, both study areas are found nearly the same socio-demographic characteristics as the result indicated.

In this study, one of the important factor that associated with timely initiation of first ANC visit was women's educational level, where women with secondary and higher education were 6.25 times more likely to initiate than those with primary and who didn't have formal education, and this finding was similar with a study conducted in Addis Ababa [6], women education showed to affect timing of first ANC visit on a study conducted in Kembata Tembaro zone [15]. This study result was in line with the study findings from Arba Minch town (South Ethiopia). Educational level of women was significantly associated with early initiation of first ANC visit, this finding also consistent with the study from Dilla town, where level of education determines timely initiation of ANC [17].

This study found that different factors affect early initiation of first ANC visit, among the factors that affect timely initiation one was recognition of pregnancy early by different mechanism like missed menses, urine test, based on this finding pregnant women recognized early were 3.53 times more likely initiate than who do not. This finding is in line with the study from North West Ethiopia [11].

This study also identified other factor that affect timely initiation of first ANC visit, which was knowledge, in which pregnant women who had knowledge on timely initiation of first ANC visit 5.51 times more likely to start than who didn't have knowledge and this finding was consistent with the study conducted in Debre Berhan health institution [12], similarly the study conducted in Addis Abeba revealed that while 65.6% pregnant mother initiate first ANC visit timely knowledge on the importance of timely initiation was important predictor timely initiation of first ANC [6], another study conducted in Lesotho showed that lack of knowledge leads to delay entry to ANC visit [9], this finding also strengthened by the study conducted in Mekele city [18]; furthermore studies conducted in Addis Abeba and Dilla town stressed on knowledge as important predictor of timely initiation of first ANC visit [16,17]. From this finding and other literature one can explain that knowledge has positive effect towards early initiation of ANC visit.

Based on this study pregnant woman with no parity before were 2.5 times more likely to initiate timely than those with one and above birth experience, this finding was consistent with a study conducted in Kembata Tembaro zone [15], this study finding also supported by study conducted in Uganda and Pakistan revealed that, pregnant women who have no history of parity were more likely to initiate ANC visit timely than their counter parts [19,20], this study finding was also in line with studies conducted in Malawi and Dilla, in which as parity increase there is likely hood of initiating first ANC visit lately [17,20].

Conclusion and Recommendations

Conclusion

More than half of the mothers did not practice timely booking of first ANC though the services are physically accessible and are being provided free of cost. The substantial proportion of respondents were booked ANC timely, the factor that significantly affect the early booking of the ANC visit in this study were those with secondary education, who have knowledge, those with on their first pregnancy

experience and who were recognized their pregnancy were significantly affect timely initiation of first ANC visit.

Recommendations

Based on the findings of this study the following recommendations were made:

- Future ANC activities of Soddo town health office should be focusing on improving women's knowledge on timing Antenatal care.
- There should be adequate and clear dissemination of information on timely booking of ANC by health extension workers.
- All concerned stakeholders should give attention on the provision education for women's.
- The zone health office should emphasis ever more on knowledge, means of communication about early testing and recognition of pregnancy of women on timing of ANC service when programs are planned, implemented and evaluated.
- The study that consider many factors with large sample size should be conducted on early ANC service and factors that improve timely initiation of first ANC visit.

Competing Interest

The authors declare that they have no competing interest.

Authors' Contributions

SH, EM and MD conceived and designed the study, developed data collection instruments and supervised data collection. SH and MD participated in the testing and finalization of the data collection instruments and coordinated study progress. SH and EM performed the statistical analysis, SH wrote all versions of the manuscript. All authors read and approved the final manuscript.

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