# Proportion of Late Initiation of Antenatal Care Service and Its Associated Factors at Governmental Health Institutions, Bahir Dar, Ethiopia, Facility Based Cross-Sectional Study

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## Abstract

**Background:** Antenatal care is a care for pregnant women with the aim of preventing, detecting and treating health problems in both the fetus and mother. Late initiation of antenatal care attendance confines early detection and treatment of complications. The aim of this study was to determine the proportion of late initiation of antenatal care visit and associated factors among pregnant women.

**Methods:** Facility based cross sectional study was conducted from April 01st to May 30th, 2021 on 612 participants. The study participants were selected by systematic random sampling technique. Data was coded, entered and cleaned in Epi-data version 3.1 and exported to statistical package for social sciences version 23 software for analysis. Bivariate and multivariate analysis was done. Variables with P<0.25 in the bivariate analysis were included in to multivariate logistic regression model and statistical significance was declared at P<0.05.

**Results:** Proportion of late initiation of antenatal care visit was 42.3% [95% CI: 38.6%, 46.4%]. Respondents' educational status of secondary school [AOR=12.10, 95% CI: 2.50, 21.32], husbands' educational status of secondary school [AOR=4.27, 95% CI: 1.20, 13.78], current health problem [AOR=2.65, 95% CI: 1.40, 10.04] and awareness about danger signs of pregnancy [AOR=10.1; 95% CI: 5.6, 18.20] were significant factors.

**Conclusion:** Late initiation of antenatal care visit was most important public health issue. Women and their husbands' educational status, awareness on danger signs of pregnancy and health problem in current pregnancy were significant factors. Responsible bodies should create awareness of danger sign of pregnancy and improve women education by strengthening adult education in the community.

**Keywords:** Antenatal care; Gestational age; Late booking; Proportion

## Background

Antenatal Care (ANC) is a care provided for pregnant women with the aim of upholds the health of the unborn baby and the mother. Late initiation of ANC first visit inhibits timely detection and treatment of complications during pregnancy. World Health Organization (WHO) recommends that the first ANC visit should be within the first 12 weeks of pregnancy [1]. In contrast Studies conducted in different parts of Ethiopia showed very low coverage, and most of the women who started their ANC follow up lately [2-5].

In order to decrease child and maternal mortality, it is key to know the time of initiation ANC visit. Preferably for developing countries including Ethiopia, the first ANC visit recommends that before 16 weeks of gestation [6,7]. The traditional model of ANC was organized as many frequent visits and there was a risk approach. The focused antenatal care approach recognizes that every pregnant woman is at risk for complications and four ANC visits are recommended for most pregnant women [8].

Women presented for ANC early in their pregnancy period allow enough time for essential and sufficient intervention, prevention of complications and early identification of underlying conditions [9]. Maternal mortality reduction remains a priority agenda in the new Sustainable Development

Goals (SDGs 3). However, it remains the global challenge with 275,288 deaths due to pregnancy and related complications in 2015 [10]. The burden is high in developing countries, accounting for 99% of the global maternal deaths in 2015, with the Sub-Saharan Africa region including Ethiopia contributing 66% of the mortality [11,12].

Most of the causes of maternal deaths are avertable, noticeable, and treatable. Therefore, immediate action is needed to meet the objective of SDG 2030 for eliminating preventable causes of maternal death with a special attention to Sub-Saharan Africa [13,14]. Antenatal care is one of the key strategies for reducing maternal and neonatal morbidity and mortality. However, late initiation of ANC is very high (only 24% initiate early) in low-income countries compared with 81.9% in developed countries [15,16].

Early initiation of ANC also has a giant role in reducing bad perinatal outcomes like preterm birth, low birth weight and jaundice [17,18]. The aims of early ANC booking are identification of complications or risk factors for complications which enable early interventions to allay the effects of such complications on mothers and unborn babies [19]. Maternal morbidity and mortality related to late initiation of ANC care service in many developing countries including Ethiopia is still high. Late initiation of ANC service limits from awareness about danger sign of pregnancy, timely screening and timely initiation of prevention of mother to child transmission, stop un safe drugs usage and prevent teratogenic effect, preparing mother being mother hood and psychological support, get iron supplementation timely, know early gestational age, get nutritional advice timely, get timely tetanus toxoid vaccine, baseline investigation. Despite from this fact, majority of pregnant women in Ethiopia, are booking late to utilize ANC service even though the service is physically easy to get to and provided free of payments.

In order to decrease neonatal and maternal mortality, it is fundamental to know the time of the first ANC visit of pregnant women and factors affecting it. Therefore, this study aimed to assess the proportion and factors associated with late initiation of ANC in Bahir Dar city.

# Methods and Materials

## Study area

This study was conducted in Bahir Dar city which is 594 km, far from Addis Ababa. The total population is about 500,000 based on 2016 Ethiopian population projection estimation. There are different governmental and non-governmental health institutions with in the city. Concerning the governmental health institutions, there are two specialized Hospitals, one primary hospital and ten health centers. Among these five government health institutions of the city two hospitals; Felege Hiwot compressive specialized hospital, Adisalem primary hospital and three health centers; Han health center, Bahir Dar health center and Shimbit health center were selected for this study from the total thirteen governmental health institutions by lottery method.

## Study design and period

Institutional based cross-sectional study was conducted from April 01st to May 30th, 2021.

## Source population

All pregnant women who attend ANC services at governmental health institutions in Bahir Dar city.

## Study population

All pregnant women who attend ANC service at the selected governmental institutions who were present during the study period in Bahir Dar city.

## Sample size determination

Sample size (n) was determined using single population proportion formula by considering 95% confidence interval, 5% margin of error and proportion of late initiation for ANC follow up 59.4% from study done in Debre Markos town [6] Zα/2= critical value for normal distribution at 95% confidence level, which is equal to 1.96 (Z value of alpha =0.05) or 5% level of significance (α=0.05) and a 5% margin of error (ω=0.05).

$$\text{Sample size (n)} = \frac{(Z\alpha/2)^2 \, p \, (1-p)}{d^2} \quad n = \frac{(1.96)^2 \, 0.594 \, (1-0.594)}{(0.05)^2} = 371$$

After 10% of none respondent rate and design effect for multistage (multiply the final sample size by 1.5), the final sample size is 612.

## Sampling procedure

Multistage sampling technique was used to reach the study participants. Lottery method was used to select two hospitals from three hospitals and three health centers from ten health centers. To select participants, a systematic random sampling technique was employed. The total sample size was proportionally allocated for the institutions based on their monthly average of ANC loads, by considering; N (sum of monthly average number pregnant women who came for first ANC visit form all selected health institutions =960), n (sample size =612), and K-interval (k=N/n=960/612=1.4 ≈ 2) the first client will be selected by lottery method. The data were collected for two months.

Nh = Nh*n/N

[nh= sample size allocate to each health institution, Nh= number of ANC clients in a health institution in two months (Adisalem hospital =480, Felege Hiwot referral hospital =420, Han health center =360, Bahir Dar health center =400, Shimbit health center =260, N= cumulated number of ANC clients in all selected institutions for two months (1920), n= total sample size (612), resulting in final sample size (Adisalem hospital =153, Felege Hiwot referral hospital =134, Han health center =115, Bahir Dar health center =128, Shimbit health center =82) (Figure 1).

## Eligibility criteria

**Inclusion criteria:** All pregnant women who attend ANC service for the first time (first visit), and present on the data collection period at the selected governmental health institution.

**Exclusion criteria:** Unable to respond due illness. Unable to remember their last normal menstrual period and haven't early ultrasound.

**Dependent variable:** Late initiation of antenatal care.

**Independent variable:** Sociodemographic characteristics: Age, educational status the respondents, marital status, religion, family income, educational status of the respondent husband's, occupation of respondents.

## Predisposing factors

ANC initiation timing, awareness of danger sign during pregnancy, previous ANC utilization, perceived availability of ANC

services, perceived distance, perceived cost of ANC service, perceived waiting time, wanted/unwanted of pregnancy, perceived partners, perceived attitude of the care provider.

## Operational definitions

**Antenatal care:** Is the care given to pregnant women to have safe pregnancy and healthy baby.

**Late initiation of ANC:** Starting ANC visit after 16 weeks of pregnancy duration.

**Availability of antenatal care service:** Getting the service during the whole working times without any restriction.

## Data collection tools and procedure

Structured questionnaire was adapted from different literatures addressing sociodemographic characteristics, obstetric information, and knowledge on ANC utilization, the availability and accessibility of ANC service and in addition checking the available records and observing the client during examination. Data was collected by two trained data collectors (BSc midwife) who work out of the selected heath facilities using structured pre-tested Amharic interviewer administered questionnaire. Data collection process was supervised by one BSc midwife. One day training was given for data collectors and supervisor before starting the data collection regarding the aim of study, data collection tool and procedures.

## Data quality assurance

In order to maintain the quality of the data, first questionnaire was designed and prepared in English carefully then it was translated in to local language (Amharic) by language experts and the Amharic version were re-translated back to English. The questionnaire was pretested for validity and reliability on 5% (31) of the sample size at Abay health center before the actual data collection period that is not included in the final result. Completeness of questionnaire and the overall quality of data collection was monitored by the supervisor and principal investigator on daily basis. After data entry multivariate analysis was used to control confounder variable.

## Data processing and analysis

After data collection, the data was entered, cleaned and coded in EPI Info version 7 and exported to SPSS version 23 for further analysis. Descriptive statistics was used to calculate frequencies, cross-tabulation, measure of central tendency, measure of dispersion and proportion of late ANC visit. In binary logistic regression both bivariate and multivariate analysis were carried out. Variables with $P<0.25$ in bivariate analysis were considered as candidate variables for multivariate analysis. In multivariate logistic regression, Statistical significance was considered at $P<0.05$.

## Results

### Sociodemographic characteristics

A total of 612 pregnant women were included in the study making 100% response rate. Majority of the respondents 540 (88.2%) were in the age group of 20 to 34 years and mean age of the respondent was 25.71 years (SD= ± 3.67). Concerning to educational status of respondents and their husbands almost half of them 298 (48.7%) and 320 (53.4%) had secondary education and college and above respectively (Table 1).

### Obstetric characteristics of respondents

From the total respondents 302 (49.3%) were primigravida.

**Table 1:** Sociodemographic characteristics of antenatal care attendant women in government health institutions in Bahir Dar city, 2021 (n=612).

| Variables | Frequency | Percentage (%) |
|---|---|---|
| **Respondent's age (year)** | | |
| <20 | 40 | 6.54 |
| 20-34 | 540 | 88.24 |
| 35-49 | 32 | 5.22 |
| **Religion** | | |
| Orthodox Christian | 471 | 77 |
| Muslim | 88 | 14.3 |
| Catholic | 4 | 0.7 |
| Protestant | 49 | 8 |
| **Educational status of the respondents** | | |
| No formal education | 20 | 3.3 |
| Primary (1-8) | 90 | 14.7 |
| Secondary (9-12) | 293 | 47.9 |
| Diploma and above | 209 | 34 |
| **Occupation of respondents** | | |
| House wife | 222 | 36.3 |
| Government employee | 170 | 27.8 |
| Private employee | 82 | 13.4 |
| Student | 38 | 6.2 |
| Daily laborer | 22 | 3.6 |
| Merchant | 78 | 12.7 |
| **Marital status** | | |
| Married | 600 | 98 |
| Unmarried | 12 | 2 |
| **Husbands' educational status** | **n=600** | |
| No formal education | 9 | 1.5 |
| Primary (1-8) | 55 | 9.2 |
| Secondary (9-12) | 216 | 36 |
| Diploma and above | 320 | 53.3 |
| **Family income** | | |
| <2022 birr | 20 | 3.3 |
| 2022-2822 birr | 46 | 7.5 |
| >2822 birr | 546 | 89.2 |
| **Occupation of husband** | | |
| Governmental employee | 216 | 36 |
| Private employee | 145 | 24 |
| Daily worker | 11 | 2 |
| Merchant | 228 | 38 |

From total 310 multiparous women 285 (91.9%) had ANC follow up for their preceding pregnancy. From all respondents 46 (7.5%) had history of at least one abortion. Majority of the women 558 (91.2%) reported that their current pregnancy was wanted (Table 2).

### Awareness about antenatal care service utilization

From total respondent most of them (98.5%) had awareness about the benefits of ANC that had benefits for both the mother and the child. More than half (52.3%) of the respondents were knowledgeable

**Table 2:** Obstetric characteristics of antenatal care attendant women in governmental health institutions, Bahir Dar city, 2021.

| Variables | Number | % |
|---|---|---|
| **Gravidity** | **n=612** | |
| 1 | 302 | 49.3 |
| 2-3 | 263 | 43 |
| 4 and above | 47 | 7.7 |
| **Para** | | |
| Para 0 | 302 | 49.3 |
| Para 1 and 2 | 289 | 47.2 |
| Para 3 above | 21 | 3.4 |
| **Pregnancy wanted** | | |
| Yes | 558 | 91.2 |
| No | 54 | 8.8 |
| **Ever had abortion** | | |
| Yes | 46 | 7.5 |
| No | 566 | 92.5 |

**Table 3:** Knowledge about ANC services utilization among antenatal care attendant women in government health institutions, Bahir Dar city 2021.

| Variables | Number | % |
|---|---|---|
| **Benefit of ANC follow up n=612** | | |
| For maternal health | 5 | 0.8 |
| For child health | 4 | 0.7 |
| For both maternal and child | 603 | 98.5 |
| **Recommended gestational age to start ANC** | **N=612** | |
| Before 4 months | 320 | 52.3 |
| 4-6 month | 266 | 43.5 |
| 7-9 month | 7 | 1.1 |
| When there is the problem | 11 | 1.8 |
| I do not know | 8 | 1.3 |
| **Recommended frequency of visits n=612** | | |
| 2 times | 16 | 2 |
| 3 times | 102 | 16 |
| 4 times | 315 | 51.5 |
| >4times | 179 | 29.2 |
| **Perceived partner's concern n=600** | | |
| Yes | 549 | 91.5 |
| No | 51 | 8.5 |

about the recommended gestational age to start ANC visit (Table 3).

## Perception of respondents on health service utilization

From the total respondents, 603 (98.5%) knew that ANC service is available throughout the working hours. Most of the respondents, 486 (79.4%) reported that the health facility was found on an average distance. Majority of the participants, 601 (98.2%) reported that as to return back for next visit (Table 4).

## Awareness on danger signs of pregnancy and encountered health problems during pregnancy

Out of the total (612) respondents 330 (53.9%) knew one or more danger signs of pregnancy. From these 154 (46.7%) knew only

**Table 4:** Perception on the availability and accessibility of ANC service among antenatal care attendant women in government health institutions, Bahir Dar city, 2021.

| Variables | Number | % |
|---|---|---|
| **Perception on distance from health facility** | **n= 612** | |
| Very close | 67 | 10.9 |
| Average | 486 | 79.4 |
| Too far | 59 | 9.6 |
| **Would you return to this facility for ANCs** | | |
| Yes | 601 | 98.2 |
| No | 9 | 1.5 |
| Did not know to return | 2 | 0.3 |
| **Where do you planned to give birth** | | |
| Health facility | 610 | 99.7 |
| Do not decide place of birth | 2 | 0.3 |
| **Perception on transport cost to health facility from their home** | | |
| No problem | 190 | 31 |
| Moderate problem | 389 | 63.6 |
| Major problem | 33 | 5.4 |
| **Waiting time in the health facility** | | |
| <2 h (short) | 10 | 1.6 |
| 2-3h (fair) | 43 | 7 |
| > 4 h (long) | 559 | 91.3 |
| **How did you describe the money you paid n=21** | | |
| No problem | 4 | 19 |
| Moderate problem | 6 | 28.6 |
| Major problem | 11 | 52.4 |

one danger sign and 176 (53.3%) knew more than one danger signs. Among the total respondents 199 (32.5%) had encountered health problem in the current pregnancy and the most common health problems were persistent vomiting 154 (77.4%) (Table 5).

## Respondent's reasons for late initiation of ANC visit

The primary reasons for late attendance of ANC during their pregnancy were inadequate knowledge on the benefit of early attendance 154 (55.2 %) followed by being in a state of good health (14.7%), too busy to attend ANC clinic (12.2%), unplanned pregnancy (10.4%), long waiting time (7.2%) and ANC clinic too far from my home (0.4%) (Figure 1).

## Timing of ANC initiation

Among the total respondents, 259 (42.3%) started their first ANC follow up after fourth month of pregnancy (Figure 2).

## Factors associated with late initiation of ANC

**In bivariable logistic regression:** Educational status of mother, occupation of mother, educational status of husband, partner involvement, awareness about danger signs of pregnancy, health problem in current, pregnancy wantedness and comfort ability by the service was candidate variables (P<0.25) for multivariable logistic regression. In multivariable logistic regression analysis women's who had educational status of secondary school (AOR=12.10: 95% CI: 2.50-21.32), Husband's educational status of secondary school (AOR=4.27: 95% CI: 1.20-13.78), no pregnancy related health problems in current pregnancy (AOR=2.65 (1.40-10.04), no

**Table 5:** Perceived susceptibility and encountered health problems during the preceding and current pregnancy among ANC attendant women in government health institutions, Bahir Dar city, 2021.

| Variables | Yes | No |
|---|---|---|
| **Knowing danger sign during pregnancy (n=612)** | 330 (53.9%) | 282 (46.1%) |
| **How many danger signs do you know (n=330)** | | |
| one | 154 (46.7%) | |
| More than one | 176 (53.3%) | |
| **History of health problems during the preceding pregnancy (n=330)** | 79 (25.48%) | 231 (74.5%) |
| **Which health problem did you (n=79)** | | |
| **Encountered\*** | | |
| Persistent vomiting | 15 (15.3%) | |
| Persistent headache | 2 (2%) | |
| Face and upper extremity swelling and persistent headache | 9 (9.2%) | |
| Vaginal bleeding | 57 (58.2%) | |
| Face and upper extremity swelling | 6 (6.1%) | |
| Cessation of fetal movement | 3 (3.06%) | |
| Vaginal bleeding and Cessation of fetal movement | 6 (6.1%) | |
| **History of health problems during the current pregnancy (n=612)** | 199 (32.5%) | |
| **Which health problem did you Encountered n=199** | | |
| Persistent vomiting | 154 (77.4%) | |
| Persistent headache | 19 (9.54%) | |
| Face and upper extremity swelling | 6 (3%) | |
| Vaginal bleeding | 5 (2.5%) | |
| Cessation of fetal movement | 8 (4%) | |
| Persistent headache, face and upper extremity | 7 (3.5%) | |

*More than one response is possible

awareness on danger signs of pregnancy (AOR=10.1: 95% CI: 5.6-18.20) were significantly associated with late initiation of ANC first visit (P-value <0.05) (Table 6).

## Discussion

This study finding showed that the proportion of late ANC initiation was (42.3%) (95% CI: 38.6, 46.4). This result was consistent with other studies conducted in Addis Ababa Ethiopia 42% [20].

This study was lower than other studies conducted in Durban South Africa (51 %), South Western Nigeria (82.6%), Wellega (81.5%), Adigrat (70.6%), Mekelle (64%), Tselemt district (60.5%), Debremarkos (59.4%), Gondar (52.6%), Addis Zemen Primary Hospital (52.5%) [3,4,6,21-25]. This could be the classification of the outcomes like study in Addis Zemen Hospital classified mothers as late for booking ANC first visit, if they come after 12 weeks of gestation, while our study classified a mother as being late if they came after 16 weeks.

The other reason could be explained by the socio-cultural differences among the study populations and could be time differences between the studies because currently there is a better improvement in awareness about timing of ANC visit and there is also good access to the health facilities than the past times in Ethiopia. It may be also the difference in study settings that means in some study area they include rural areas.

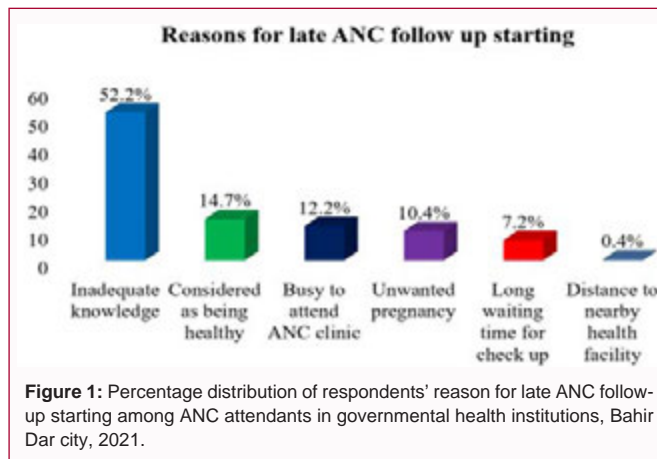In this study educational status of women were significantly



**Figure 1:** Percentage distribution of respondents' reason for late ANC follow-up starting among ANC attendants in governmental health institutions, Bahir Dar city, 2021.
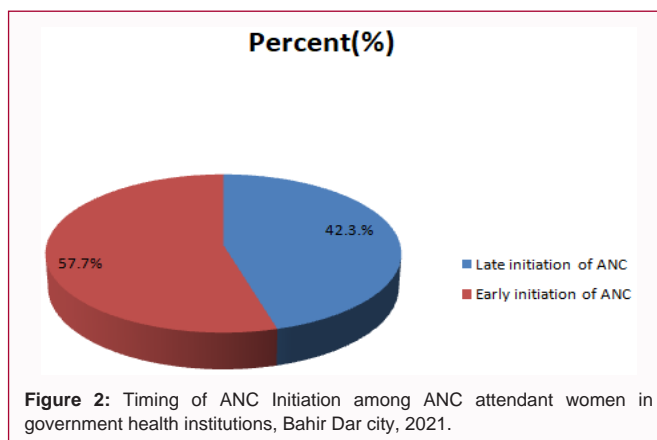


**Figure 2:** Timing of ANC Initiation among ANC attendant women in government health institutions, Bahir Dar city, 2021.

associated with late initiation of ANC; in which women with secondary school were more likely to had late initiation of ANC when compared with those who had college & above. This shows that the lower in educational status the higher chance of having late initiation of pregnancy. This is supported with the study done in Nigeria, Debremarkos, Gondar, tselemt, North West Ethiopia [6,21,23,25].

The possible reason for this may be those women who had lower educational status had lack of awareness of the importance of early initiation of ANC and their health seeking behavior may also lower than those women who having educational status of college and above. That means when their educational status becomes higher up their attitude and awareness to initiate ANC timely becomes better or there might be high chance of exposure for information in case of educated mothers [16,21].

In this study husband educational status were also significantly associated with timing of ANC initiation. Late initiation of ANC was more likely in women whose husband educational status of secondary school when compared with those women whose husbands' educational status of college and above. This is supported with the study done in Nigeria and Indonesia [25,26]. The possible reason for this may be the lower in educational status had low exposure to important health information, low awareness about the importance of early ANC initiation and the possible complication during pregnancy. Due to this they may not support and motivate their wife to start ANC service in the early gestation.

In this study awareness' about danger signs of pregnancy were significantly associated with timing of ANC initiation; those women

**Table 6:** Bivariate and multivariable logistic regression analysis of factors for late initiation of ANC service utilization among antenatal care attendant women in government health institutions, Bahir Dar City, 2021.

| Variables | Response | Late initiation of ANC 1st | | COR (95%CI) | AOR (95%CI) | P-Value |
|---|---|---|---|---|---|---|
| | | Yes | No | | | |
| Health problem during current pregnancy | No | 221 | 202 | 4.35 (2.904, 6.509) | 2.65 (1.40, 10.04)* | 0.0001 |
| | YES | 38 | 151 | 1 | 1 | |
| Educational status of mother | College & above | 5 | 204 | 0.02 (0.01, 0.08) | 8.8 (3.20, 13.7)* | 0.0001 |
| | Grade 9-12 | 163 | 135 | 0.003 (0.001, 0.010) | 2.8 (1.2, 9.1)* | 0.0001 |
| | Grade 1-8 | 82 | 8 | 6.83 (0.02, 0.14) | 8.5 (2.7, 12.74) | 0.087 |
| | No formal education | 9 | 6 | 1 | 1 | |
| | | | | | | |
| Educational status of Husband | College & above | 35 | 285 | 0.11 (0.03, 0.08) | 7.3 (3.56, 14.13)* | 0.0001 |
| | Grade 9-12 | 155 | 54 | 2.51 (0.005, 0.033) | 7.1 (2.1, 12.40)* | 0.0001 |
| | Grade 1-8 | 50 | 5 | 8.75 (0.043, 0.16) | 2.63 (0.012, 0.051) | 0.823 |
| | No formal education | 8 | 7 | 1 | | |
| Comfortable by service | No | 5 | 6 | 1.14 (0.805, 1.59.67) | 0.032 (0.01, 0.70) | 0.641 |
| | Yes | 254 | 347 | 1 | 1 | 1 |
| Awareness of danger sign | No | 227 | 80 | 24.21 (15.50, 37.82) | 10.1 (5.6, 18.20)* | 0.0001 |
| | Yes | 32 | 273 | 1 | 1 | |
| Partner involvement | No | 45 | 18 | 0.26 (0.144, 0.453) | 1.449 (0.583, 3.59) | 0.425 |
| | Yes | 214 | 335 | 1 | 1 | |
| Wantedness of pregnancy | No | 36 | 18 | 3.00 (1.66, 5.42) | 0.48 (0.17, 1.35) | 0.164 |
| | Yes | 223 | 335 | 1 | 1 | |
| Occupation of respondent | House wife | 143 | 79 | 0.90 (0.59, 1.72) | 0.63 (0.272, 1.452) | 0.277 |
| | Government employee | 7 | 166 | 0.02 (0.005, 0.04) | 2.85 (0.663, 12.28) | 0.159 |
| | Private employee | 16 | 63 | 0.17 (0.09, 0.33) | 1.024 (0.373, 2.81) | 0.963 |
| | Student | 25 | 13 | 0.96 (0.48, 2.410) | 0.58 (0.157, 2.18) | 0.423 |
| | Daily worker | 16 | 6 | 1.33 (0.80, 11.07) | 1.01 (0.29, 6.38) | 0.706 |
| | Merchant | 52 | 26 | 1 | 1 | |

*Statistically significant at P<0.05

who had no awareness about danger signs of pregnancy were more likely to have late initiation of ANC compared with women having awareness about danger signs of pregnancy. The possible reasons may be those women who did not knows about danger signs of pregnancy will not anticipate possible complications during pregnancy; which leads to have late initiation of ANC and they are not alarmed to go to health facility. Due to this; they missed early detection and timely management of health problem.

Health problem during current pregnancy were significantly associated with late initiation of ANC; women who had no health problem during the current pregnancy were more likely to had late initiation of ANC when compared with women who had health problem in the current pregnancy. This finding is supported with the study done in Nigeria [25]. The possible reason for this may be when health problem occurs during current pregnancy, they will go to health facility to diagnose timely, to have treatment and to confirm the wellbeing of pregnancy. In addition to this most mother think that; if there is no feeling of health problem during pregnancy they considered as they are healthy and they may not seek early initiation of ANC and miss early baseline investigation, vaccination, iron supplementation, and counseling about pregnancy and pregnancy related issues.

## Limitations of the Study

Recall bias to remember their last normal menstrual period. We tried to minimize the bias by using early ultrasound if they have.

## Conclusion

The proportion of late ANC initiation among pregnant mother who attended ANC in governmental health institutions in Bahir Dar city was 42.3%. Educational status of respondent, husbands' educational status, awareness on danger signs of pregnancy and health problem in the current pregnancy were significantly associated with late initiation of ANC first visit. The regional health bureau has to carefully consider health promotion activities within the city about awareness creation of danger sign of pregnancy and the recommended initiation time of ANC. Ministry of education should improve women education by strengthening adult education in the community.

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