



Association of Early registration of Pregnancy with ANC visits during pregnancy and Birth weight

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ABSTRACT

Aim: To study the association of Early registration of pregnancy with ANC visits during pregnancy and birth weight
Study Design: Community based retrospective Observational study

Methodology: The pregnant women who registered at subcenter of a Primary Health Center (PHC) in year 2015 were included in the study. The PHC has 6 subcenters; randomly 17 pregnant women from each subcenter were included (N=102). The pregnant women who aborted or with incomplete information were excluded.

Results: The mean age of pregnant women was 27 years. Most of them were multipara (62.7%) and registered for ANC checkup after 12 weeks of gestation (55.8%). The association of Early registration of pregnancy with total ANC visits was statistically significant ($p < 0.05$); although the association with birth weight was not statistically significant ($p > 0.05$).

Conclusions: Early registration of pregnancy increases the total ANC visits, ensures better utilization of ANC services and improves maternal and foetal health.

KEYWORDS : Early registration, Antenatal care (ANC), PHC

Introduction

Complications during pregnancy and childbirth are the leading cause of death and disability among women of reproductive age in developing countries. There are an estimated 529,000 maternal deaths each year, of which 99% occur in developing countries (WHO 2005).¹

Preventing maternal deaths and promoting maternal and child health is a global priority. Improving maternal health is a global concern, highlighted as one of the Millennium Development Goals (MDG). As per the Millennium Development Goals (MDG), countries were committed to reducing maternal mortality by three-quarters between 1990 and 2015.²

In India, because of the sustained efforts, the maternal mortality ratio has fallen from approximately 400 deaths per 100,000 live births in 1993 to 178 in 2010-12. Inadequate access and under-utilization of modern healthcare services are major reasons for poor health in the developing countries.⁵

Antenatal care (ANC), a care given to pregnant women, is widely used for prevention, early diagnosis, and treatment of general medical- and pregnancy related complications.⁶ Antenatal care (ANC) is an important measure to prevent maternal morbidity and mortality. It has become a vital component in the safe motherhood program whose aim is to improve the outcome of pregnancy for both the mother and the fetus.^{7,8}

Early initiation of Antenatal care (ANC) aids early documentation of the woman's baseline physiological and laboratory parameters for subsequent comparison, early detection of anomalies with the progress of pregnancy, avoiding teratogens, provides opportunities for preventive health care's services such as immunization against neonatal tetanus, prophylaxis and treatment of diseases, diagnosis and treatment of medical disorders. The ideal gestational age for booking is within the first ten weeks of pregnancy.⁹ The first visit or registration of a pregnant woman for ANC should take place as soon as the pregnancy is suspected. Ideally, the first visit should take place in the first trimester, before or at the 12th week of pregnancy.¹⁰

In India, National Rural Health Mission (NRHM) was launched in April 2005, to improve the rural health care delivery system and health status of the people. Accredited Social Health Activists (ASHA) were introduced at the village level for motivating the beneficiaries to utilize the antenatal care services. National Rural Health Mission

(NRHM) recommends registration of pregnancy within 12 weeks of pregnancy.¹¹

The present study is aimed to find the timing of registration of pregnancy and also to study the association of Early registration of pregnancy with total ANC visits and birth weight

Material and methods

Study type and design: Community based retrospective Observational study

Study setting: The present study was carried out in October -November 2016 in Primary Health Center Khadavli in Thane District. This PHC is attached to the postgraduate section of the Department of Community Medicine, G. S. Medical College, Mumbai, MS (India) as a field practice area and is the Rural Health Training Center (RHTC). The Primary Health Center (PHC) has 6 subcenters; all the subcenters are included in the present study area.

Study population: The pregnant women registered at subcenters of PHC Khadavli in year 2015 as per the available records (R15 Register)

Study sample: A random sample of 16 pregnant women per subcenter who delivered in the year 2015 were included in the study (N=102).

Study tools: The information of the pregnant women is taken from R15 Registers available at the subcenter.

Inclusion criteria: The pregnant women registered at subcenters of PHC Khadavli in year 2015 as per the available records (R15 Register)

Exclusion criteria: The pregnant women who aborted in year 2015 or with incomplete information / documentation were excluded; and another random sample is taken from the same population.

Sample size: The total pregnant women enrolled for the present study is 102 (N=102).

Sampling technique: Convenient sampling technique

Study variables: The variables included in the present study were - Age of the pregnant woman, Gravida status, Weeks of gestation at the time of registration, Total ANC visits and Birth weight of the baby.

Data entry and analysis: The data is first tabulated and frequency and percentage for categorical variables were calculated, using Microsoft excel. The Chi-square test were used to compare between different qualitative variables. The p value of < 0.05 was considered as a level of statistical significance.

Results

Table 1

Age of the pregnant woman		
< 20 years	3	2.9 %
20 to 25 years	24	23.5 %
25 to 30 years	41	40.2 %
30 to 35 years	28	27.5 %
> 35 years	6	5.9 %
Gravida Status		
Primi	38	37.3 %
Multi	64	62.7 %
Weeks of gestation at the time of Registration of ANC		
< 12 weeks	45	44.1 %
> 12 weeks	57	55.9 %
Total ANC visits		
1	2	2.0 %
2	30	29.4 %
3	63	61.8 %
4	7	6.9 %
Birth weight		
< 2.5 Kg	19	18.6 %
> 2.5 Kg	83	81.4 %

Most of the women belonged to the age group 25-30 years (40.2%), women less than 20 years were 2.9% of the total study sample (Table 1). Multigravida Women were common in the present study (62.7%). Women who registered after 12 weeks at the time of registration of Antenatal care (ANC) were 57 out of the total 102 women (55.9%). Women with 3 or more Antenatal care (ANC) visits were 68.7% of the total sample. Out of the 102 newborns, 83 (81.4%) weighed more than 2.5 Kg.

Table 2

Weeks of gestation at the time of ANC Registration	Total ANC visits		Total
	Less than 3	3 or more	
< 12 weeks	6	39	45
> 12 weeks	26	31	57
Total	32	70	102

(Chi square test, X² = 12.17, DF = 2, p < 0.05)

The association of Weeks of gestation at the time of Antenatal care (ANC) registration with the Total Antenatal care (ANC) visit was found to be statistically significant (p < 0.05).

Table 3

Weeks of gestation at the time of ANC Registration	Birth weight		Total
	< 2.5 kg	> 2.5 Kg	
< 12 weeks	11	34	45
> 12 weeks	8	49	57
Total	19	83	102

(Chi square test, X² = 1.79, DF = 2, p > 0.05)

The association of Weeks of gestation at the time of Antenatal care (ANC) registration with birth weight was statistically not significant (p > 0.05).

(Chi square test, X² = 1.79, DF = 2, p > 0.05)

The association of Weeks of gestation at the time of Antenatal care (ANC) registration with birth weight was statistically not significant (p > 0.05).

Discussion

Antenatal care (ANC) services affects maternal and foetal outcome positively and are important aspect of maternal and child health services provided in the country. Many studies^{12,13} have highlighted the importance of Early registration of Pregnancy. Early registration to antenatal care (ANC) is imperative for the timely diagnosis and treatment of pregnancy related morbidities.¹² Antenatal care is more beneficial in preventing adverse pregnancy outcomes when received early in pregnancy and continued until delivery.^{14,15,16} In addition, ANC during pregnancy appears to have a positive impact on the utilization of postnatal healthcare services.¹⁷

The age of pregnant women at the time of Antenatal care (ANC) registration in the present study belong to the age group 25-30 years. During this age group, fertility may be maximum and hence more study subjects belong to this age group. Age of pregnant women may be an important factor for registration of Antenatal care services. The majority of women in their thirties attend ANC early and more frequently than teenagers and older women^{18,19} However, some of the studies suggested that women's age was not a significant predictor of utilization of ANC.^{20,21}

In the present study, most of the women were multipara (62.7%) and had 3 or more Antenatal care (ANC) visits (68.7%). Parity may be associated with use of Antenatal services, as shown by several studies. Higher parity was generally a barrier to adequate use of ANC²², but high parity women tended to use the service more often than primiparous women in Ethiopia²³. Similarly, women's first ANC visit was earlier in higher parity women in India.²⁴ A qualitative study also showed that women below 35 years preferred frequent clinic visits to be reassured that the baby was growing well and to learn its position, whereas older women who did not experience any problems, were not concerned about having frequent visits¹⁹.

World Health Organization (WHO) recommends four Antenatal care (ANC) visits during pregnancy. The four visits model has been recommended by WHO as it has been shown to be associated with desirable or good foeto-maternal outcome even in a low income setting when the guidelines of ANC are respected.²⁵ In the present study, the association between Early registration of Antenatal care (ANC) and Total ANC visits was statistically significant (p < 0.05)

In the present study, 44% pregnant women registered for the Antenatal care (ANC) services at less than 12 weeks of gestation. A study in Addis Ababa showed that even though 40.0% of mothers booked in the first trimester, the timing ranges from the first to the ninth month of gestation.²⁶

In developed countries such as the UK and the USA, the first ANC visit is recommended within the first 12 weeks of pregnancy.^{27,28} Early registration makes it possible to have a good idea of the pre-pregnancy state of the women by noting certain baseline measurements, such as body mass index, blood pressure and urine testing.^{29,30} Early registration of Antenatal care (ANC) have an impact of foetal growth and wellbeing. In the present study, the association between Early registration of Antenatal care (ANC) and birth weight was statistically not significant (p < 0.05)

Overall, quality antenatal, intranatal, and postnatal care is the single most important determinant of infants' as well as mothers' morbidity and mortality.³¹

Conclusion

Early registration of pregnancy increases the total ANC visits made by pregnant women during pregnancy, ensures better utilization of ANC services and improves maternal and foetal health. Using community participation as a tool, all efforts should be made to ensure Early registration of pregnancy.

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