AJ ACADEMIC JOURNALS
expand your knowledge

International Journal of Nursing and Midwifery

Full Length Research Paper

Determinants of antenatal care booking among pregnant women in selected hospitals in Embu county, Kenya

Joshua Omwenga Boraya[1*], Caroline Githae[2] and Titus Atandi[3]

[1]Department of Reproductive Health, School of Public Health, Kenyatta University, Nairobi, Kenya.
[2]Department of Community Health, School of Nursing, Chuka University, Chuka, Kenya.
[3]Department of Population Health, School of Public Health, Kenyatta University, Nairobi, Kenya.

In Embu County, pregnant mothers begin attending antenatal care (ANC) clinics late in third trimester. According to World Health Organization (WHO) guidelines, pregnant mothers should start their ANC in the first trimester before sixteen weeks of gestation. The study sought to determine factors associated with late booking of the visits. The specific objective were to find out how past pregnancy experience, accessibility of health facilities and awareness on ANC bookings influence ANC booking among pregnant women attending Maternal Child Health (MCH) clinic in Embu County. The results of the study were aimed at promoting ANC initiation within the first trimester of pregnancy. The recommended ANC model helps minimize complications that occur during pregnancy, during labor and during postpartum period through early screening, diagnosis and treatment of infections. A descriptive cross-sectional study design was used to collect data. Most of the clients were aware of the booking time and despite this none turned up for ANC clinic within the right gestational age. Accessibility of health facilities and past pregnancy experience was significantly associated with initiation of ANC booking.

Key words: Antenatal care clinics, maternal child health, pregnant mothers, antenatal care (ANC).

INTRODUCTION

Antenatal care (ANC) is one of the four pillars for safe motherhood. The main objectives of focused antenatal care include: promotion of health, prevention of diseases, early detection of diseases and their management and complication readiness and birth preparedness (Kondale et al, 2016).

Focused antenatal care has been recommended by the WHO, to help pregnant mothers get screened early for conditions that may affect the outcome of pregnancy. As a result of increased maternal deaths the WHO has come up with new guidelines on ANC visits whereby the pregnant women will have increased access to health care and these include first visit within 12 weeks, then at 20 weeks, 26, 30 34, 36, 38 and 40 weeks gestation. During these visits, the pregnant woman should be counseled on nutrition, malaria and HIV prevention, blood tests and tetanus toxoid (TT) vaccination, ultrasound services and provided with advice on how to deal

with minor disorders in pregnancy (WHO, 2017).

It is recommended that pregnant women should attend a minimum of 4 comprehensive antenatal clinics. First visit should be at less than 16 weeks, second visit at 16-28 weeks, third visit at 28-32 weeks, and fourth visit at 36-40 weeks (Njoroge, 2012). Despite the recommended gestation of a pregnant woman to attend antenatal care booking visit, a significant proportion of pregnant women in developing countries attend booking visit after the first trimester (first 3 months) (Ouendo, 2015).

Globally, 82.6% of pregnant women attend antenatal care booking visit during the second and third trimester of pregnancy. This late antenatal care booking attendance lead to approximately 515,000 deaths every year as a result of complications related to pregnancy and childbirth (Erin, 2014). This was supported by another survey done in Ethiopia, which revealed complications of pregnancy are the leading causes of pregnant women deaths, where by it was found that 385,000 women usually die due to complications that occur during pregnancy and childbirth (Tolera, 2015). Majority of the maternal deaths (99%) occur in developing countries while more than half deaths usually occur in sub Saharan Africa. These findings were similar to another survey done in sub Saharan Africa, which indicated that most women attend antenatal care booking visit after the first three months of pregnancy (Christopher, 2013).

Several examinations and tests are usually carried out during antenatal care booking visit and they include screening for HIV infection and this helps in detection and prevention of mother to child transmission, screening for syphilis is also done and treatment given to the affected, provision of iron and folic acid supplements (IFAS) which helps to reduce risk of congenital malformations such as neural tube defect (Tolera, 2015). Pregnant women from malaria endemic areas receive treated mosquito nets and intermittent preventive therapy (IPTs). TT immunization is also given during pregnancy which helps to prevent mother from tetanus and the protection is also passed to the baby (Ouendo, 2015). During antenatal care booking visit, the first health assessment is done which includes weight, height, body mass index (BMI) calculation, blood pressure, blood and urine are assessed (Ayneh, 2015). In Pakistan, it was revealed during a study on timing of antenatal care initiation that the time a pregnant mother initiated the antenatal care clinics determined the quality and range of services to be received (Agha and Tappis, 2016).

On a study done in Nigeria on barriers to antenatal care attendance it was found out that infrastructure to access the health facilities was a problem, in the same report for those who accessed the facilities they were unable to afford the services. In other health facilities the services were unavailable (Fagbamigbe and Idemudia, 2015). In another study in Nigeria, it was revealed that past pregnancy experience, mothers' health status in the present pregnancy and ignorance on when to start the

antenatal care clinics contributed to late booking for antenatal care for pregnant mothers in selected hospitals (Nwaneri et al., 2018). Long waiting time and accessibility of the antenatal care services was cited as barriers to initiation of antenatal clinics among pregnant women in East London (Hatherall et al., 2016).

In Kenya, a study on men's perspectives on antenatal and delivery services, men were seen to facilitate utilization of antenatal care but that rarely translate to practice. Most of the men do not accompany their spouses to the clinics (Kwambai et al., 2013). In another study, pregnant women in Kenya were reported to initiate antenatal care clinics in the second and third trimesters compared to other countries which were under study (Bucher et al., 2015). Mothers feared to be reprimanded by health care providers, others cited mistimed conception, experience of previous pregnancy especially those who suffered complications motivated the pregnant mothers to initiate antenatal clinics early. Unmarried pregnant women hide their pregnancy and attended antenatal clinic later in pregnancy for fear of being known to be pregnant while the married and multipara women reported to initiate the antenatal clinics depending on previous pregnancy experience (Pell et al., 2013).

Long waiting times and staffs attitude were cited as barriers to attendance of antenatal clinics in the study on barriers and facilitators to antenatal and delivery care in Western Kenya. In the same study fear of knowing ones' HIV status early in pregnancy also deterred some women from attending antenatal clinics early (Mason et al., 2015). Ochako and Gichuhi (2016) found out that in Kenya, the wantedness and timing of the antenatal care clinics initiation depended on each other. The pregnant mothers who wanted the pregnancy were found to attend all the clinics as scheduled while those who had mistimed pregnancy or unwanted pregnancy were rarely seen to attend the clinics (Ochako and Gichuhi, 2016). Increase in age and the fact that the pregnant women are married increased utilization of antenatal care among these mothers in Malasyan setting (Yeoh et al., 2016).

MATERIALS AND METHODS

A cross sectional descriptive study was done in Embu County, targeting pregnant women attending antenatal care clinics. The study involved 110 respondents randomly sampled from Kianjokoma, Kibugu and Kirititri health facilities, in Embu County. During a preliminary survey done in the three hospitals in Embu County, Kenya, it was evident from ministry of health registers that majority of the mothers report to book for ANC visits in the third trimester. This predisposes them to late screening, diagnosis and treatment of preventable conditions which affect the pregnancy outcome. Reliability and content validity were established before actual data collection during pretesting. Research assistants were trained before administering the questionnaires to the mothers. Ethical clearance was sought from National Commission of Science, Technology and Innovation, Kenya and from Embu County Department of Health, Health Facility Administrators. Informed consent was obtained from the respondents before
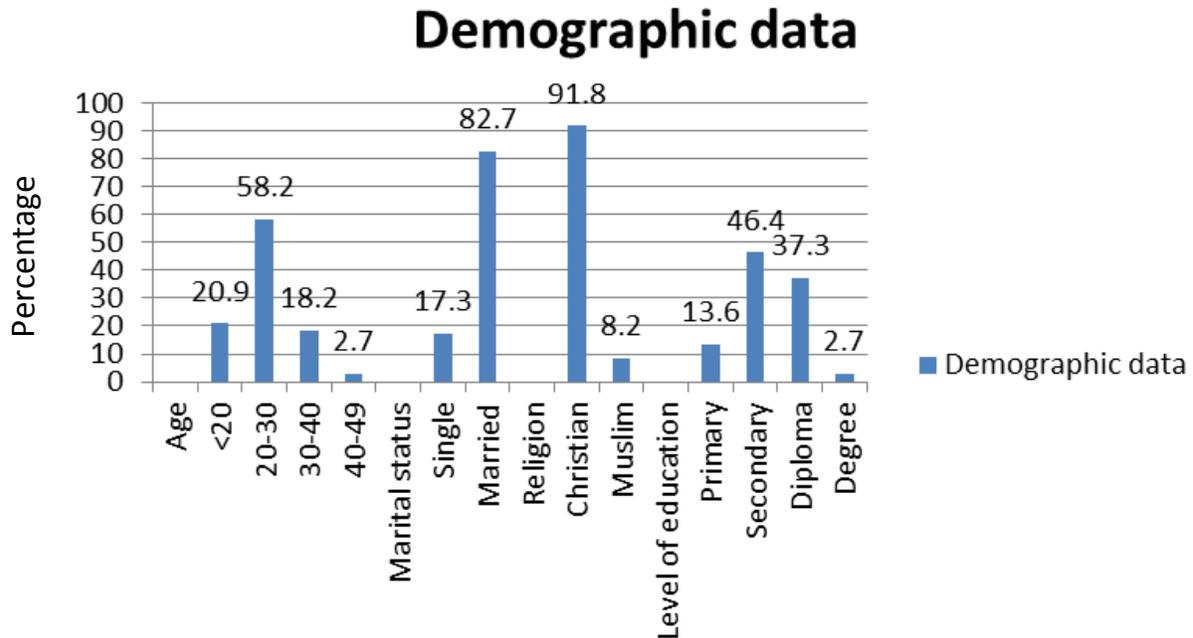
Demographic data

Figure 1. Demographic characteristics of the pregnant mothers.

participation in the study and confidentiality of the data collected maintained.

RESULTS

The ages of the participants ranged from 19 to 49 years of age, with a majority of them (58.2%) in the age bracket of 20 to 30 years. Majority of the pregnant mothers were Christians and married (91.8 and 82.7%), respectively. On employment status, most mothers were either self-employed or house wives, with a majority having secondary level of education. The summary of the demographic characteristics of the pregnant mothers who participated in the study is as shown in Figure 1.

The age of the participants was not significantly associated with booking for antenatal care clinic (p ≥0.05). However, older pregnant mothers were reported to be free to initiate their antenatal clinics at any gestation while the young mothers tend to initiate their clinic at second or third trimester. Religion of the participant was also less likely to influence the timing for initiating antenatal care clinics. Majority of the participants initiated their clinics in the second and third trimester regardless of their employment status, house wives mostly initiated the clinics early compared to the employed mothers. However, this was not significantly associated with the timing to initiate antenatal clinics (p≥0.05, χ^2= 4.241).

Out of 15 mothers who had primary education, 13 of them initiated their antenatal clinics after six months of gestation. Only three mothers had a degree level of education and they booked their clinic late in the third

trimester. It was also revealed that 46.4% of the respondents had a secondary level of education and initiated their clinics in the second and third trimesters. During multiple regression, level of education had a positive association with employment status and been previously pregnant. When these two variables were adjusted and subjected to Chi-square analysis for time of initiating antenatal clinics, it was evident that the association was insignificant (p≥0.05).

Majority of the mothers were married with 17.3% of the participants being single. There was a positive association between being married and having been pregnant previously. As the age of the participant increased there was also a positive correlation with the marital status many being married as they age. Despite the positive correlation, marital status was not significantly associated with initiation of antenatal clinics (p≥0.05).

The study sought to establish the well-being of the pregnant mothers in the current pregnancy and it was found out that 16.4% of the mothers had been sick and sought medical intervention. On probing further it was established that these mothers were booked for antenatal clinics for the pregnancy after the medical intervention. Mothers, whose health was well, initiated the antenatal clinics late in pregnancy. Therefore, the health of the mothers during pregnancy was found to be positively correlated with initiation of antenatal clinics at 0.013; on analysis, the health of the mother was statistically significant (p≤0.05). Sick mothers were 5.737 times more likely to initiate their antenatal clinics than the mothers in good health.

Most of the participants (60%) had been pregnant previously, out of the 66 mothers who had been previously pregnant, only 8 initiated their antenatal clinics in the first trimester. Those who had never been pregnant initiated their clinics mostly in the third trimester; this was significantly associated with initiation of the antenatal clinic (p≤0.05). Being previously pregnant was positively correlated with the marital status, and level of education. Mothers with lower level of education were more likely to have been previously pregnant. When the variable for parity was adjusted, it was found out that those mothers who had been previously pregnant and had complications in the previous pregnancy initiated their antenatal clinics earlier compared to those who never had any complications in previous pregnancies. Complications in previous pregnancy was statistically found to determine the time to initiate the antenatal clinic in the current pregnancy (p≤0.001, χ^2=79.608, OR=51.225).

Cost implications on initiation of antenatal clinics was evaluated and it was found out that out of 21 mothers who reported the services to be affordable, only 3 had booked their clinic in the first trimester. Majority of the respondents (80.9%) reported that the services were not affordable. Affordability of the services was positively correlated with level of education and employment status. However, it was evident that those mothers who initiated their clinics late in pregnancy had been employed; therefore, the cost of the services was not a determinant of the time to book for the clinic, and this was insignificant (p≥0.05).

More than half of the mothers 68 (61.8%) were busy with their work schedule with only 14.5% being very busy and the rest had a flexible work schedule. Out of those who had a flexible work schedule only 2 out of 26 mothers who were found to have initiated their clinic in the first trimester. Those who had a busy schedule were 0.397 times more likely to initiate the antenatal clinics early than those who were flexible; therefore, flexibility of the work schedule was not significantly associated with initiation of antenatal clinics (p ≥0.982).

In an African set up, men's decision is perceived to influence the timing for the clinic attendance but was not the case in this study. Out of 85 pregnant mothers who were advised by their spouses to initiate their antenatal clinic in the second trimester, only 28 mothers initiated their clinics before the third trimester. When a Chi-square was computed, the spouse's decision on when to initiate the antenatal clinic was not significantly associated with the timing for antenatal booking (p≥0.05).

Majority of the respondents 97 (88.2%) were aware on the right time to initiate antenatal clinics but this did not translate to actual booking for the clinics. Out of 97 mothers who were aware of the right timing, only 36 mothers booked their antenatal clinics at the right time. There was a negative correlation between awareness and initiation of the antenatal clinics. On Chi-square analysis, awareness of the right time was insignificant (p≥0.05). A summary of the statistical significance values is shown in Table 1.

DISCUSSION

It is evident from the results that majority of the respondents initiated their antenatal clinics in the third trimester; this is in line with studies done by Bucher et al. (2015) and Linda (2015) which also found pregnant mothers to book for their antenatal clinics late in pregnancy

The results of this study reveal that age, marital status, religion and employment status were found to rarely influence the time for initiating the antenatal clinics. Level of education was also not significantly associated with timing for antenatal care clinic initiation. These results are in contrast with the findings in Ghana and Malawi, which revealed that increase in age was associated with increased utilization of antenatal care services and early booking (Yeoh et al., 2016; Pell et al., 2013). In this study, increase in age was associated with marital status; whereby increase in age was associated with married status but was not statistically significant to influence the time to initiate the clinics.

Employment status which was positively correlated with affordability of the antenatal care services was not also significantly influencing early initiation of antenatal clinics. In Nigeria, affordability of antenatal services was associated with timing for antenatal clinics, however in this study affordability was found not to determine the timing for initiation of antenatal clinics (Fagbamigbe and Idemudia, 2015).

The results in this study revealed that the health status of the mother in the current pregnancy, past poor obstetric experiences and having been pregnant previously were the main determinants of antenatal care clinics initiation. These results are consistent with Nwaneri et al. (2018) who found out that past experience, health or illness of the mother and ignorance were determinants of late booking for antenatal care clinics. However, in this research ignorance was not a determining factor for antenatal booking since majority of the pregnant mothers were aware of when to initiate antenatal care booking but booked for the clinics at the right time.

Conclusion

The current health status of the pregnant mother and past obstetric outcomes are the key determinants of the timing for initiation of antenatal care booking. However, multiparty was associated with late antenatal booking.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

Table 1. Factors determining antenatal care clinic initiation.

Variable	Frequency (N=110)	Percentage	P -value
Ever been sick in this pregnancy			
Yes	18	16.4	P=0.046,
No	92	83.6	Df=2,
			χ^2=6.147
Ever been pregnant previously			
Yes	66	60	P=0.029,
No	44	40	Df=2,
			χ^2=7.05
Had any complication in the previous pregnancy			
Yes	11	10	P=0.000,
No	99	90	Df=2,
			χ^2=79.6
Antenatal services are affordable			
Yes	21	19.1	P=0.336,
No	89	80.9	Df=2,
			χ^2=2.179
How is your work schedule			
Flexible	26	23.6	P=0.982,
Busy	68	61.8	Df=4,
Very busy	16	14.5	χ^2=0.407
When did your spouse advise you to book for the antenatal clinic			
0-3 months	19	17.3	P=0.105,
3-6 months	85	77.3	Df=4,
6-9 months	6	5.5	χ^2=7.663
When are pregnant mothers expected to initiate their antenatal clinics			
0-3 months	13	11.8	P=0.808,
3-6 moths	97	88.2	Df=2,
			χ^2=0.427
At which month did you initiate your antenatal clinic			
0-3 months	8	7.3	
3-6 months	34	30.9	-
6-9 months	68	61.8	

REFERENCES

Agha S, Tappis H (2016). The timing of antenatal care initiation and the content of care in Sindh, Pakistan. MBC Pregnancy and childbirth 16(1):190.

Ayneh GG (2015). Predictors of early antenatal care booking in government health facilities of Hossana town, Hadiya zone. Journal of AIDS and clinical Research 6(11).

Bucher S, Marete I, Tenge C, Liechty E, Esamai F, Patel A (2015). A prospective observational description of frequency and timing of antenatal care attendance and coverage of selected interventions from sites in Argentina, Guatemala, India, Kenya, Pakistan and Zambia. Reproductive Health 12(2):S12.

Christopher AM (2013). Factors affecting antenatal care attendance: Results from qualitive studies in Ghana, Kenya and Malawi. Plos One 8(1):e53747.

Erin CP (2014). Factors affecting attendance at and timing of formal antenatal care: Results from a qualitative study in Madang, Papua New Guinea. Plos One 9(5):e93025.

Fagbamigbe A, Idemudia E (2015). Barriers to antenatal care use in Nigeria: Evidences from non-users and implications for maternal health programming. BMC Pregnancy and Childbirth 15(1):95.

Hatherall B, Morris J, Jamal F, Sweeney L, Wiggins M, Kaur I (2016). Timing of the initiation of antenatal care: An exploratory qualitative

study of women and service providers in East London. Midwifery 36:1-7.

Kwambai T, Delicour S, Desai M, Ameh C, Person B, Achieng F (2013). Perspectives of men on antenatal and delivery care services utilization in rural western Kenya. BMC Pregnancy and Childbirth 13(1):134.

Linda SD (2015). Barriers and facilitators ofto antenatal and delivery care in western Kenya. BMC Pregnancy and Childbirth 15(1):26.

Mason L, Delicour S, Kuile F, Ouma P, Philips-Howard P, Were F (2015). Barriers and facilitators to antenatal and delivery care in Western Kenya. BMC Pregnancy and Childbirth 15(1):26.

Kondale M, Tumebo T, Gultie T, Megersa T, Yirga H (2016). Timing of first antenatal care visit and associated factors among pregnant women attending anatal clinics in Halaba Kulito Governmental Health Institutions. Journal of Women's Health Care 5:308.

Njoroge GJ (2012). National Guidelines for Quality Obstetrics and Perinatal Care. Available online at: https://www.k4health.org/toolkits/kenya-health/national-guidelines-quality-obstetrics-and-perinatal-care

Nwaneri A, Ndubuishi I, Lewechi I, Ezike O, Nkiruka U (2018). Determinants of late booking for antenatal care among pregnant women in selected hospitals in South East Nigeria. International journal of Nursing and Midwifery 10(7):74-80.

Ochako R, Gichuhi W (2016). Pregnancy wantedness, frequency and timing of antenatal care visits among women of childbearing age in Kenya. Reproductive Health 13(1):51.

Ouendo SJ (2015). Determinants of low antenatal care services utilisation during the first trimester of pregnancy in souther Benin rural setting. Universal Journal of Public Health 3(5):220-228.

Pell C, Menaca A, Were F, Afrah N, Chatio S, Manda-Taylor L (2013). Factors affecting antenatal care attendance: Results from qualitative studies in Ghana, Kenya and Malawi. Plos One 8(1):e53747.

Tolera DW (2015). Time of antenatal care booking and associated factors among pregnant women attending ambo town health facilities, central Ethiopia. Journal of Gynecology and Obsterics 3(5):103-106.

World Health Organization (WHO) (2017). New guidelines on antenatal care for a positive pregnancy experience. Available online at: https://www.who.int/reproductivehealth/publications/maternal_perinatal_health/anc-positive-pregnancy-experience/en/.

Yeoh P, Hornetz K, Dahlui M (2016). Antenatal care utilization and content between low risk and high risk pregnant women. PloS One 11(3):e0152167.