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Prevalence and factors associated with late antenatal care visit among pregnant women in Lushoto, Tanzania

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Abstract
Background: Adequate utilization of antenatal health care services is associated with improved maternal and neonatal health outcomes. The World Health Organization recommends pregnant women to attend antenatal care services as early as in the first trimester. However, many women due to various reasons fail to meet the recommendations. The objective of this study was to determine the prevalence and factors associated with late antenatal booking among pregnant women in Lushoto district of north-eastern Tanzania.
Methods: This hospital based cross sectional study involved pregnant women and was conducted in August-September 2015. A standardized questionnaire was used to obtain participants demographic characteristics and obstetrics history. Data analysis was done using (SPSS) and relationship between outcome variables and exposure variable was done using Chi-square test. Multivariate logistic regression was used to measure the association.
Results: A total of 240 participants were involved in the study. Out of these, 169 (70.4%) participants booked late for antenatal care (ANC) services. Delayed booking was mainly associated with not being married (AOR=3.08; 95%CI 1.149-8.275; P value=0.025) and unemployment (AOR=4.28; 95% CI 2.11-8.679; *p*-value=0.000)
Conclusion: Late first antenatal clinic visit was high in Lushoto, and was highly associated with unmarried and unemployment status. Therefore, provision of continuous health education and community sensitization on the importance of timely seeking ANC services should be strengthened.

Keywords: pregnancy, antenatal, visit, delayed booking, factors, Tanzania

Introduction

Maternal mortality is a public health concern worldwide, and especially so in developing countries (Nisar & White,2003; Collin *et al.*, 2007; Say *et al.*, 2014). Antenatal care (ANC) services and delivery care are key strategies to reduce maternal death (Ebu & Gross, 2015). Generally, ANC service is intended to provide safe pregnancy and delivery, as well as health awareness on the benefits of antenatal care services (Uji *et al.,* 2017). Antenatal care provides the opportunity to monitor pregnancy, detect and treat anomalies of pregnancy and to deliver preventive health services such as immunization and HIV testing and counselling (Gross *et al.*, 2012; Kisuule *et al.*, 2013). For a pregnant woman to fully benefit these services, she must attend to the ANC timely and at the frequency as recommended by the World Health Organization (Gross *et al.*, 2012). In its new strategy of Focused Antenatal Care (FANC), WHO recommends a minimum of four visits in low risk pregnancies and suggests the first visit to be as early as possible preferably in the first trimester (8-12 weeks of pregnancy). During this visit pregnancy and expected date of delivery (EDD) are confirmed. The last visit is recommended to be at around 37 weeks or near expected date of birth to ensure appropriate advice and care are provided (MoH, 2002; WHO, 2006; Ornella *et al*., 2014).

Prevalence of ANC visit varies among regions. Globally, the prevalence of antenatal visit is 97%, and low in sub-Saharan Africa especially in Congo (Ebu & Gross, 2015). In Tanzania the prevalence of antenatal visit has gone up from 90% (TDHS, 2011) to 98%(TDHS-MIS, 2016). Despite this increase, only 24% of pregnant were reported to begin their ANC visit during the first trimester as recommended (TDHS-MIS, 2016). In Lushoto District, most women (94%) attend ANC, but only 16% follow the recommendation schedule (TDHS-MIS, 2016).

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In Tanzania, different strategies have been undertaken by the government to increase access to antenatal care services including provision of ANC services that are free of charge (Gross *et al*., 2012). However, most women still delay to make their ANC visits (Nyamtema *et al.,* 2003; Mrisho *et al.*, 2009). This study aimed to determine the prevalence and factors associated with late antenatal visit in Lushoto district in north-eastern Tanzania.

Material and Methods

Study design

This was a hospital based cross sectional study, involving pregnant women attending antenatal care clinic at a district hospital in Lushoto, north-eastern Tanzania. The district has an area of 3,500km^2 and a population of 492,441 (URT, 2013). Lushoto district hospital serves about 200 pregnant women in ANC clinic in a month. This study was conducted during August and September 2015.

Sample Size

Using the formula $n=z^2p\,(100-p)/e^2$, marginal error(e) of 4 %, z at 95 % confidence interval of 1.96, and prevalence of late antenatal clinic booking of 33 % (TDHS, 2011), the sample size was estimated to be 240 participants. Convenience method of sampling was used to enrol study participants. All pregnant women who met the inclusion criteria (a consented pregnant woman with more than 12 weeks of pregnancy) were included in the study. Non consented pregnant women with less than 12 weeks of pregnancy and those who seriously ill were excluded from the study.

Data collection

Data collection was done daily from Monday to Friday. A convenient method of sampling was used to obtain the study participants. Information about demographic characteristics, antenatal attendance and obstetrics history was obtained through a structured questionnaire and was validated from antenatal card.

Data analysis

Data from the questionnaire were entered into a computer using SPSS Version 20 followed by data cleaning and generation of frequency distribution tables. Descriptive analysis was done by using frequencies, percentages and means where appropriate. Association between explanatory variable and the outcome of interest was done using 2×2 tables. Multivariate logistic regression analyses were used to examine independent variables that influence the outcome variable. Odds Ratios with corresponding 95% confidence interval are presented and *p* value of less or equal 0.05 was considered statistically significant.

Ethical considerations

Ethical clearance for conducting the research was obtained from the Institutional Review Board of the Hubert Kairuki Memorial University. Permission to carry out the study was obtained from District and Hospital administration. Informed consent was obtained from each study participant before data collection.

Results

A total of 240 respondents were recruited into the study. Majority (N=215; 89.6%) of the participants were in the age category of 18-35 years; 155 (64.6%) had primary level of education; 200 (83.3%) had no employment, and more 203 (81.6%) (Table1).

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Table 1. Demographic characteristics of the respondents (n=240)

Variable	Response	Frequency	Percent
Age	13-17 Years	3	1.3
	18-35 Years	215	89.6
	36-45 Years	22	9.2
Education level	Never been to school	7	2.9
	Primary level	155	64.6
	Secondary level	48	20.0
	College	30	12.5
Occupation	Employed	40	16.7
	Unemployed	200	83.3
Gravidity	Prime gravida	93	38.5
	Second	58	24.2
	Multigravida	89	37
Parity	0	96	40
	1-3	130	54.2
	>4	14	5.8
Marital status	Married	203	81.6
	Not married	37	15.4

First antenatal care visit

Of the 240 study participants, 169 (70.4%) booked late. The reasons for late booking included: no illness experienced during pregnancy 39 (16.25%), 56 (23.3%)did not know if they were pregnant. Others did not need to book because of being busy 39 (16.25%) and the remaining 35 (14.58%) did not know when exactly they were supposed to book.

Table 2. Factors associated with late antenatal care visit (n=169)

Variable	Response	Late ANC Visit N(%)	Total N(%)	Chi-square	P value
Age (years)	13-17	2(66.7)	3(100)		
	18-35	146(67.9)	215(100)	7.2191	0.008
	36-45	21(95,5)	22(100)		
Education level	None	6(85.7)	7		
	Primary	119(76.8)	155	10.724	0.013
	Secondary/College	44(56.4)	78		
Occupation	Employed	17(42.5)	40	24.408	0.015
	Unemployed	152(76)	200		
Gravidity	Prime gravida	58(62.4)	93(100)		
	second	35(60.3)	58(100)	7.923	0.161
	Multigravida	76(85.4)	89(100)		
Parity	0	61(63.5)	96		
	1-3	94(72.3)	130	4.879	0.431
	>4	14(100)	14		
Marital Status	Married	137(67.5)	203	5.423	0.09
	Not married	32(86.5)	37		
Distance to facility	Long distance	47(90.4)	52(100)	13.023	0.000
	Short distance	122(64.9)	188(100)		

Various factors were significantly associated with late booking of antenatal visit. They included unmarried status (χ^2=5.423, p=0.009), unemployment (χ^2=24.408, *p=0.015*), low educational level (x^2 =10.729, *p*=0.013), long distance to the health facility (χ^2=13.023, *p*=0.000), age 18-35 years and 36-45 years (χ^2=7.291, *p*=0.008) (Table 3).

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Table 3: Multivariate logistic regression table on factors associated with late antenatal visit

Variable	Age	Late ANC Visit N (%)	Total N (%)	AOR	95%CI	P value
Age	13-17 Years	2(66.7)	3(100)	1		
	18-35 Years	146(67.9)	215(100)	1.14	0.04-2.175	0.141
	36-45 Years	21(95,5)	22(100)	2.29	0.101-3.38	0.26
Education	None	6(85.7)	7(100)	1		
	Primary level	119(76.8)	155(100)	0.551	0.064-4.728	0.372
	Secondary /College	44(56.4)	78(100)	0.096	0.010-0.910	0.587
Occupation	Employed	17(42.5)	40(100)	1		
	Unemployed	152(76)	200(100)	4.284	2.115-8.679	0.000
Marital status	Married	137(67.5)	203(100)	1		
	Not married	32(86.5)	37(100)	3.083	1.149-8.275	0.025
Distance to facility	Long distance	47(90.4)	52(100)	1		
	Short distance	122(64.9)	188(100)	1.197	1.075-1.518	0.51

After controlling for potential confounders, factors which were associated with late antenatal visits included unmarried marital status (AOR=3.08; 95%CI 1.149-8.275; P-value=0.025) and unemployment status (AOR=4.28; 95% CI 2.11-8.679; *p*=0.000).

Discussion

Timely and adequate antenatal care is a corner stone for preventing complications during pregnancy. The prevalence of late ANC booking among women in Lushoto district was high. Similar higher prevalence of late first ANC attendance has been reported in Zambia (Banda *et al*., 2012; Chewe *et al.*, 2016), Uganda (Kiwuwa & Mufubenga, 2008) and Nigeria (Uji *et al*., 2017). However, we observed a slightly lower prevalence than that reported by Adekanle & Isawumi (2008) in western Nigeria. The observed difference might be reflecting a relative good community sensitization on reproductive and child health in our setting.

Various factors were associated with this high prevalence of late ANC booking one of which being old maternal age. Women aged over 35 years were more likely to present themselves late for the first antenatal visit, this is possibly due to the facts that this group of women have other children and therefore they perceive themselves to be experienced in antenatal care and therefore they are reluctant to make a timely booking. In a study in Nigeria, about two thirds of the women book late it is due to ignorance or misconceptions of the purpose of, and right time to commence antenatal care (Ndidi & Oseremen, 2010).

The present study demonstrated that women with higher education levels were more likely to initiate ANC early compared to those without. Similar findings have been reported by Tariku *et al*. (2010) whereby women who were well informed about ANC were more likely to book for ANC within the recommended time. The other factor that was associated with late antenatal visit was unmarried marital status. This study shows that majority of respondents who were not married made their first visit late. The late booking therefore is likely to be attributed to the lack of financial support from partners which discourage women from seeking early ANC services. Despite the fact that antenatal services in Tanzania are provided for free, women still need financial capacity to support their daily living. These women may be busy with economic activities to cater for their families and therefore they fail to book timely for ANC. In a recent study in Zambia, age, marital status and parity were found to be the main factors associated with late ANC booking (Chewe *et al.*, 2016). In a study in Nigeria, ignorance and financial constraints were reported to be the underlying factors in late ANC booking (Gharoro & Igbafe, 2000).

The study showed that women who had never been to school were more likely to attend antenatal care visits late compared to woman with other levels of education. This can be explained by the fact that women with very low level of education might have inadequate knowledge on

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importance of early antenatal visit. Other factors like gravidity and parity were not significant associated with late first ANC visit. However, multigravidae were more likely to book ANC visits late compared to other levels of gravity. Multigravida women may have perceived themselves to have more experience about pregnant issues and therefore could not see the necessity of making an early and timely booking.

In conclusion, the prevalence of late first antenatal visit was found to be very high in Lushoto; mainly due to unmarried and unemployment status. Therefore, provision of continuous health education and community sensitization on the importance of timely seeking for ANC services should be strengthened.

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