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ORIGINAL ARTICLE

Determinants of Antenatal Booking Time in a South-Western Nigeria Setting

Déterminants de la prénatals Réservation Temps dans une Asie du Sud-Ouest du Nigéria Setting

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ABSTRACT

BACKGROUND: **Utilisation of antenatal services and early booking are important factors in the reduction of maternal mortality and morbidity and these are influenced negatively by social, cultural and religions factors.**

OBJECTIVE: **To determine factors that influence the booking time in South Western Nigeria with the intention of identifying areas needing educational intervention.**

METHODS: **A descriptive cross-sectional study of 327 antenatal patients done between January to March 2005. Using both structured and semi-structured questionnaires information were collected on the socio-demographic and complete medical history.**

RESULTS: **Two hundred and forty-six (90.4%) out of the 272 women who met the inclusion criteria were interviewed. The mean (SD) age of patients was 30.47(5.52) years, of which 60% of the mothers were educated beyond secondary school level and 44.3% of the patients booked late. Late booking was thrice as common in multiparae as in nulliparae. Variables that were significantly associated with time of booking included educational level of the husband (P=0.005), parity (P=0.012), previous miscarriage (P<0.001) and medical problem in the index pregnancy. Stepwise regression analysis showed the latter two factors as predictors of booking time. (β of – 0.566 and – 0.643, respectively). 57.3% of pregnant mothers felt that women should book by the first trimester but half of them actively booked late. Early detection of problems was the commonest reason for the choice of time of booking.**

CONCLUSION: **The socio-cultural and religious determinants of health-seeking behaviours need to be researched further and unless these are modified by interventional campaigns good education may not easily translate to optimum utilisation of antenatal services. WAJM 2007; 26(4): 293–297.**

Keywords: ***Antenatal care; health-seeking behaviours, utilization, Nigeria.***

RESUME

RAPPE: *L'utilisation des services de soins prénatals et réservation précoce sont des facteurs importants dans la réduction de la mortalité et de morbidité maternelles et ceux-ci sont influencés négativement par sociaux, culturels et religions facteurs.*

OBJECTIF: *Déterminer les facteurs qui influencent la réservation temps dans le Sud-Ouest du Nigéria dans le but d'identifier les domaines nécessitant une intervention éducative.*

MÉTHODES: *Une étude descriptive étude transversale de 327 patients prénatals effectués entre les mois de janvier à mars 2005. En utilisant à la fois structurés et semi-structurés, des questionnaires ont été recueillies des informations sur la situation socio-démographique et complet des antécédents médicaux.*

RÉSULTATS: *Deux cent quarante-six (90,4%) sur les 272 femmes qui répondaient aux critères d'inclusion ont été interrogés. La moyenne (écart type) d'âge des patients était 30,47 (5,52) ans, dont 60% des mères ont été éduqués au-delà du niveau secondaire et 44,3% des patients réservé tard. Réservation tardive est trois fois plus fréquente chez les multiparae comme dans nulliparae. Les variables qui ont été significativement associés au moment de la réservation compris le niveau d'éducation du mari (P = 0,005), la parité (P = 0.012), la fausse couche précédente (P <0,001) et le problème médical dans l'indice grossesse. Stepwise analyse de régression montre les deux derniers facteurs de - 0,566 - 0,643, respectivement).bcomme prédicteurs de la réservation. (57,3% des femmes enceintes ont estimé que les femmes devraient réserver par le premier trimestre, mais la moitié d'entre eux activement réservé tard. La détection précoce des problèmes les plus communs est la raison du choix du moment de la réservation.*

CONCLUSION: *Le contexte socio-culturel et religieux déterminants de la santé des comportements doivent être étudiés plus avant et que si ceux-ci sont modifiés par interventionnelle campagnes bonne éducation ne peut facilement traduire à l'utilisation optimale des services de soins prénatals.* ***WAJM 2007; 26(4): 293–297.***

Mots-clés: *soins prénatals, la santé des comportements, de l'utilisation, au Nigéria.*

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INTRODUCTION

Antenatal care is the totality of health services rendered to a pregnant woman with the aim of achieving good maternal and fetal outcome Ballantyne in 1902 started the first antenatal clinic in Britain to screen for pre-eclampsia and prevent preterm labour[1]. Around the same time across the Atlantic, Instructive Nursing Association in Boston started to make house-calls on all registered pregnant women to improve their health and no sooner the idea was embraced by the American Physician than routine antenatal care became an established practice.[2] Antenatal care is the hallmark of preventive medicine, as it has to do with normal physiologic event that may be complicated by pathologic processes detrimental to health of the mother, the fetus or the infant in 5-20% of cases.[3]

The fact that booking for antenatal care is an important determinant in reduction of maternal mortality and morbidity has been proven by experiences in both developed and developing countries.[4,5] Utilization of antenatal services is usually very slow to be accepted when introduced into any community and a vigorous promotion is often necessary. The adventurous and the enlightened minority are usually the first respondents while majority will make use of obstetric facilities only as the last resort when complications have set in.[6,7]

Many factors affect the health-seeking behaviour of women booking for antenatal care. The level of the education of either the husband or wife or both, geographic accessibility, economic affordability and unequal power relations that constrain their decision making ability are all important determinants of their health seeking behaviour.[6,7,8] Few studies,[9,10] have been reported in Nigeria, in investigating the gestational age at booking. This work was a further attempt to explore the factors that determine just the booking time among clients in a selected population of a large hospital, the Obafemi Awolowo University Teaching Hospital Complex (OAUTHC), Ile-Ife. OAUTHC Ile-Ife is one of the oldest tertiary health institutions in the south-west geopolitical zone of Nigeria. The hospital serves as a referral centre for the secondary and primary health services spread around the six contiguous (out of 36) states of Nigeria. When it comes to antenatal care there is no restriction as to the type of patient that can be booked hence it serves the primary, secondary and tertiary role. Ile-Ife is a leading educational centre in the Nigeria whose economy is largely driven by the activities of its many tertiary institutions.

The objective of this study was to determine the factors that influence booking for antenatal services so as to aid the design of an educational campaign for early antenatal visit in this environment. The emphasis on early booking was based on fact that it was expected to have a more positive impact on the foetus and the mother than late booking. Studies have shown that the incidence of low birth weight, neonatal deaths and infant mortality were 1.5–5 times higher in late booking compared to early booking.[1,12,13]

SUBJECTS MATERIALS AND METHODS

This was a descriptive cross-sectional study. The study population consisted of pregnant women who booked at the OAUTHC between January and March 2005. Ethical clearance was obtained for the research from the relevant committee of the hospital and vernal consent obtained from the participants. Inclusion criteria were certainty of gestational age as determined by previous ultrasound scanning or certainty of last menstrual period with the height of the uterine fundus compatible with the estimated gestational age.

The nature of the study was explained to consenting antenatal attendees who met the inclusion criteria. The questionnaire was administered by a trained facilitator. The instrument was a semi-structured questionnaire with three sections: The questionnaire was pilot-tested for clarity and validity among the pregnant women attending General Hospital within the same town, and reliability was assessed through test and re-test method at three-week interval with a correlation co-efficient of 0.87.

The first section was structured; it asked about socio-demographic characteristics of the patient. The second section, also structured, inquired about the present and past obstetric and gynaecological history and related medical problems of the patient. The third section consisted of open-ended questions to know about the pregnant woman's opinion about the time of booking and what informed the decision to book at a particular time in a particular place.

Facilitators were provided for those respondents who had problem in effective communication in English Language. For this study, the respondents were categorized into three groups according to the booking time. Early booking was when it was within the first trimester, late booking was when it was done after the second half of pregnancy (after 20 weeks)[14] and the period of time that fell between these two extremes was regarded as the intermediate period. Comparisons were made between those who booked early and those who booked late.

The data collected were fed into computer using SPSS (Statistical Program for Social Science) Version 11.0 for entry and analysis. Average values are expressed as mean (SD). Frequency of variables were determined, the tests of significance of differences were done at p-value ≤ 0.05, using t-Test for continuous variables and Chi-square for categorical and discrete variables. Stepwise regression analysis was performed to determine the significant variables effecting the time of booking.

RESULTS

There were 327 booked cases during the three-month period out of which 272 (83.1%) met the inclusion criteria but only 246 respondents gave the optimum cooperation necessary for adequate data collection. The final analysis was based on this population of 246 pregnant women.

The mean age of the patients was 30.47(5.52) years with a range of 16 to 42 years, the mode was 30 years. The mean gestational age at booking was 19.84(5.52) weeks. The respondents were predominantly Yoruba (85.4%) and Christians (82.9%) by faith while 205 (83.3%) were married and 41 (16.7%) were single. Most were in monogamous relationship. Majority of the mothers, 150 (60.97%) and their husbands 170 (69.1%)

had some form of post-secondary school education, 114 (46.3%) of the mothers were occupied with small scale business enterprises while majority of the about 48% of the husbands were civil servants.

Table 1 shows the social, obstetric and demographic characteristics of booked patients. The largest proportion, (44.3%) of the patient booked late; 62 (25.2%) were nulliparae while the rest were multiparae. Among this latter group, late booking was much more common than early booking regardless of the mode of previous delivery, 29 (11.7%) compared to 75 (30.5%). Variables that were significantly associated with the time of booking were education of the husbands (p = 0.005), history of previous miscarriage (p<0.001), chronic medical problems in the index pregnancy (p=0.044) and parity (p = 0.012).

Table 2 shows the result of stepwise regression analysis of the variables in table 1 and it reveals that past obstetric

Table 1: The Socio-demographic and Obstetric Characteristics of Booked Patients

Variables	Booking stage, N(%)			χ^2	p-Value
	Early	Intermediate	Late		
Booking Status Total	45 (18.3)	92 (37.4)	109 (44.3)		
Educational Status of patients	–	–	7 (2.8)		
No formal education	4 (1.6)	4 (1.6)	6 (2.4)	4.000	0.261
Primary school only	14 (5.7)	22 (8.9)	39 (15.9)		
Secondary school only	25 (10.2)	68 (27.6)	57 (23.2)		
Post secondary education					
Husbands	–	–	4 (1.6)		
No formal education	5 (2.0)	6 (2.4)	–	12.916	0.005
Primary school only	13 (5.3)	17 (6.9)	31 (12.6)		
Secondary school only	25 (10.2)	71 (28.9)	74 (30.1)		
Post secondary education	–	–	–		
Marriage type:					
Monogamy	38 (15.5)	83 (33.7)	96 (39.0)		
Polygamy	7 (2.8)	9 (3.7)	13 (5.3)	0.371	0.542
Previous Deliveries:	11 (4.5)	34 (13.8)	17 (6.9)		
None	20 (8.1)	63 (25.6)	46 (18.7)		
Spontaneous vaginal delivery				6.732	0.081
Previous caesarean section	7 (2.8)	11 (4.5)	29 (11.8)		
Assisted vaginal delivery	2 (0.8)	6 (2.4)	–		
Previous miscarriage(s)	–	–	–		
None	29 (11.8)	79 (32.1)	101 (41.1)		
At least once	16 (6.5)	13 (5.3)	8 (3.3)	19.275	0.000
Previous major Gynaecological problem	18 (7.3)	12 (4.9)	8 (3.3)	0.86	0.507
Chronic medical problem in the index pregnancy	11 (4.5)	12 (4.9)	29 (11.8)	1.09	0.004
Previous induced abortion	2 (0.8)	6 (2.4)	*3 (1.2)	6.973	0.615
Previous early neonatal death	–	8 (3.3)	*4 (1.2)	5.540	0.063
Parity					
Nullipara	11 (4.5)	34 (13.8)	*17 (6.9)		
Para 1-4	34 (13.80	67 (27.2)	69 (28.1)	12.824	0.012
Para 5 & above	–	7 (2.8)	7 (2.8)		

Table 2: Regression Analysis of Predictors of Booking Time

Predictor variables	β	t	P - value	Partial Correlation	Model	df	R^2 Change	F change Change	Significant F Change
1. Past Obstetric & Gynaecological Complication	-0.643	-3.858	0.003	-0.775	1	1.11	0.320	5.183	0.044
2. Number of Miscarriages	-0.566	-2.277	0.044	-0.566	2	1.10	0.402	14.886	0.003

Table 3: Distribution of Mothers by their Perceived Appropriate Booking Time and Actual Booking Time

Perceived best time to book	Frequency of Time Mothers Booked, N(%)			
	Early	Intermediate	Late	Total
By 1st missed period	8(61.5)	2(15.4)	3(23.1)	13(5.3)
By 2nd missed period	11(47.8)	6(26.1)	6(26.1)	23(9.3)
By 3rd missed period	11(10.5)	43(41.0)	51(48.5)	105(42.7)
By 4th & 5th missed period	4(6.8)	32(54.2)	23(39.0)	59(24.0)
After the 5th missed period	–	5(12.8)	34(87.2)	39(15.9)
Any time in pregnancy	–	–	7(100)	7(2.5)
Total	**34 (13.8)**	**88 (35.8)**	**124 (50.4)**	**246 (100)**

Table 4: Comparison of the Three Major Reasons for the Choice of Booking Time, among Pregnant Women

Reason	Time of Booking, N(%)			
	All women	Early	Intermediate	Late
Early detection of problems	75(30.5)	14(31.1)	23(25.0)	41(37.6)
Baby would have developed well	38(15.5)	14(31.1)	19(2.7)	17(15.0)
For better care	31(12.5)	–	–	21(19.3)
Early confirmation of pregnancy	–	9(20)	–	–
For early monitoring	–	–	19(20.7)	–

Reasons that did not feature in the 3 major reasons in any of the categories (or columns) are not listed. All pregnant women (N= 246), Early (≤ 13wks, N=45), Intermediate (14-20wks) n=92, Late (after 20 wks) N= 109

complications and the number of miscarriages were the predictor variables of the time of booking, both of which show inverse correlationship with the time of booking.

Table 3 shows that 109 (42.7%) women, who constituted the largest proportion, were of the opinion that the best time to book was after the third missed period. Looking at it from another angle, a cumulative figure of 57.3% of all the pregnant women felt that mothers should book by the first trimester; 124 (50.4%) of them eventually booked late. It was among those who had the opinion that booking should be done by the first or second missed period that opinion seem to correlate with practices as 61.5% and 47.8% respectively booked early, and those who booked early among them were twice as more than those in the category of late booking.

Table 4 shows the comparison of the reasons for the choice of booking time between the pregnant women. Regardless of the time that the booking were done the commonest reason they all claimed was early detection of problem, 30.5% for all the respondents, 31.1% for those who booked early, and 37.6% even among those who booked late.

DISCUSSION

This study has showed that late booking for antenatal care is a common attitude of women living in South Western part of Nigeria. Even though this study was done in Ile-Ife, Nigeria, the town is a melting pot of various ethnic groups within the Yoruba tribe in South West of Nigeria by virtue of her education-driven industry or economy which attracts people from various places.. It was revealed that the important reasons why pregnant women would consider booking early were previous traumatic experience in form of previous miscarriage, chronic medical disorder in the index pregnancy or past obstetric/gynaecological complications. While 142 (57.3%) of the respondents were of the opinion that the best time to book should have been by the third missed period, 34 (13.8%) of them actually did so, which means that one out every four actually put in practice what they felt was right to do. Of the many reasons listed for choosing the time of booking, early detection of problems ranked the most important to them. Next in importance, 31.15% of those who booked early, 15.6% of those booked late and 20.7% of those falling between these two categories thought that the foetus should be allowed to grow big such that the big gravid uterus could be so obvious to people before they can book. This attitude, based on ignorance, is anchored on the perception that fetus does not require attention until it has grown to the size that everybody can see.

It is possible to comment that this study may not be a true reflection of the attitude of women to booking in South west Nigeria because the respondents were mainly literate people (91.6% with past-primary education) who are likely to have a more positive health-feeling behaviour, and also, that this was a tertiary. Institution-based study. However, it is undeniable that the findings have a serious implication for the general population where an average literacy rate is much less; the indices for positive health seeking behaviour as regards antenatal care may be worse in the general population.

The proportion of pregnant women who booked early varies from centre to centre in Africa depending on the culture and socio-economic environment. The educational level of the husbands, delayed referral by General Practitioners, relocation of either of the spouse, literacy level of the women in the population and geographical barriers have been reported by other studies.[5,16] The finding of 18.3% of the respondents booking in the first trimester is very similar to the observation of 18.8% by Lamina in Sagamu[7] but remarkably higher than the seven percent reported by Ekele in Sokoto,[6] both being towns in Southern and Northern Nigeria respectively. The mean gestational age at booking in this study was 19.8 weeks. This was close to 18 weeks reported in Igbo-Ora[17] but slightly less than 21.4 weeks reported by Lamina in Sagamu study[9] is South-Western Nigeria. Much later gestational age (28 weeks) had been found in Durban, South Africa.[8]

Clinicians practising in the developing world have need to take the fight against late booking and unbooking beyond the confines of their hospital in order to help women achieve safe motherhood and ultimately reduce maternal mortality. There is need for qualitative research into the determinants of opinions of women on when, where and how to seek antenatal care because this study has shown that opinion is a major factor in determining when to book. It is not surprising that two-thirds of the early bookers were those who felt it was best to book in the first trimester. The result of this study emphasizes the need to carry men along in any strategy designed to enhance utilization of health services as a husbands' education influence the tendency to early booking positively. Research has shown that intervention directed at men is a catalyst of positive change in health-seeking behaviours of women.[9] The public should be made to realize that a pregnancy is considered normal only in retrospect and the apparent absence of problems in the current or previous ones should not be a reason to keep away from early booking. This was highlighted in the study by the apparent enthusiasm of those who had miscarriage or chronic medical problem for booking early compared to those who have had normal pregnancy all along.

The dichotomy noticed between knowledge and the practice of the respondents and the paradox between the high literacy rate and the high rate of late booking portray two things: knowledge does not necessarily translate to good practice unless the cultural and religious determinants of behaviours are addressed. Also education for positive health-living or on reproductive health should not be taken for granted as it is not directly proportional to academic level of a person. Therefore, it is recommended that information on reproductive health that will translate to positive health-seeking behaviour be incorporated into the secondary school education in Nigeria.

In conclusion, many pregnant women in Ile-Ife area of South Western Nigeria do not report early for booking despite the encouragingly high level of literacy rate of the women and the appreciable level of knowledge on the appropriate time to book and the possible benefits. Their booking pattern still tended towards the trend observed in most parts of the developing world. Qualitative research would be necessary to delve into the fundamental factors that engender this behavioural pattern. Then, the attitude and practice can be improved by modifying the social, cultural, religious and economic factors which influence their opinion through the use of a public enlightenment campaign.

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