

Who's Recommendations on Maternal Health: Compliance of Pregnant and Postnatal Mothers in a Comprehensive Health Center, Ado-Ekiti, Nigeria

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ABSTRACT

Maternal health is the health of women during pregnancy, childbirth and the postpartum period. Every day, approximately 800 women die from preventable causes related to pregnancy and childbirth and 99% of all maternal deaths occur in developing countries. The aim of this study was to assess the compliance level of pregnant and postnatal mothers to the World Health Organization (WHO) recommendations on maternal health in a Comprehensive Health Center in Ado-Ekiti, Nigeria. A total of 190 participants were selected, using purposive sampling technique. A semi-structured adapted interviewer-administered questionnaire was used to assess health care seeking behavior of mothers. Data were analyzed and presented using descriptive (frequency, percentages and means) and inferential statistics (post-hoc Tukey HSD) for hypotheses testing. The results findings revealed that participants had poor health seeking behavior as only 27.4% visited the Health Centre more than three times, half of the participants delivered their babies at health facilities and 37.9% of the participants had postnatal visit of three times and above. Also, barriers affecting utilization of maternal health care services were identified in which majority mentioned financial constraints (71.6%) and poor road networks (63.2%). This study provides an objective data that revealed the gap between the participants' level of health care and WHO recommended level of health care. It also revealed the low level of maternal health care seeking behavior in the study area. Efforts should be made by healthcare professionals, especially nurses and midwives to create awareness and educate people on the importance of prompt seeking of appropriate maternal health care services.

Keywords: Maternal health, pregnant mothers, childbirth, postnatal mothers, health care seeking behavior.

INTRODUCTION

Despite the various available interventions for prevention of avoidable death or disability during pregnancy and childbirth, there is still a high burden of maternal mortality in a number of developing countries [1, 2]. Maternal and child health care services are among the most important interventions for reduction and prevention of maternal morbidity and mortality. Through provision and access to adequate maternal health services, millions of lives of women within their reproductive age can be saved [3]. According to Mohan et al. [4], it was estimated that in 2010 up to 254,700 women died from pregnancy and child birth related conditions, with close to 99% taking place in settings with low resources. In addition, it is reported that out of 7.6 million deaths in children less than five years of age, 44% of them occurs during neonatal period, with close to half of them occurring during the first 72 hours following delivery.

The high rate of maternal and child mortality may be attributed to poor health-seeking behaviours and non-compliance with the World Health Organisation (WHO) recommended level of maternal health care during antenatal, delivery and the postnatal periods [5]. There is great disparity between maternal mortality in developed and developing regions of the world. In developing regions of the world, it is reported that maternal mortality ratio is about 15 times higher than what exists in developed regions. In Saharan African countries, maternal mortality is indicated to be the highest in the world with an average of 500 maternal deaths for every 100,000 live births. This rate is said to account for more than half of the world's total maternal deaths [2, 6].

There is overwhelming evidence that adequate health care during antenatal, delivery and postnatal period could save the lives of women and their babies [7,8]. The World Health Organization (WHO) recommends four ANC visits, delivery in a health facility and three 4 postnatal care (PNC) visits for women to optimize the maternal health outcomes [6, 9, 10, 11]. It was reported by Chowdhury et al. [12], that an estimated 74% of maternal deaths could be avoided if women could have access to key maternal health services that can improve health outcomes for women and children.

Islam and Masud [11] stated that despite efforts that has been made to strengthen maternal health care services, maternal mortality is still high in many developing countries. It was revealed that on a daily basis, approximately 800 women die from preventable causes that are related to pregnancy and childbirth and 99% of all maternal deaths occur in developing countries. The large number of maternal mortalities, especially in developing countries was linked to low level of maternal health care seeking behavior [13]. Hence, this study assessed the pregnant and postnatal mother's compliance level to the WHO recommendations on maternal health, using a Comprehensive Health Center in Ado-Ekiti, as case study. It is envisaged that findings from this study can assist health care professionals in the provision of necessary health education in relation to the WHO recommended level of maternal health care during pregnancy and childbirth. Thereby increasing compliance and utilization of maternal health services by women which in turn could reduce the high rate of maternal and child and mortality especially in developing countries.

METHODOLOGY

Study Setting

The study was conducted in a Comprehensive Health Centre, located in Ado-Ekiti, Ekiti State, southwest Nigeria. The Health Centre is a public health institution with the aim of reducing maternal and child mortality at grass root level. It comprised of various units: antenatal clinic, labor ward, post-natal ward, pharmacy and laboratories. The personnel employed at the Health Centre were nurses, midwives, community health extension workers, and health assistants. The services rendered at the Health Centre were antenatal and postnatal clinics, delivery, circumcision, family planning, treatment of childhood diseases (for under five children) and immunization.

Study Design And Target Population

A descriptive study design using quantitative approach was employed to assess pregnant and postnatal mother's compliance level to the WHO recommendations on maternal health. The target population for this study were women attending antenatal and postnatal clinics in the Comprehensive Health Center. According to the ward record of January 2019, 162 pregnant mothers visited antenatal clinic while 109 mothers came for postnatal clinic giving a total population of 271 mothers. The sample size for this study was calculated as described by Taro [14]. Adjustment for a 10% rate of non-responses and invalid responses yielded a final sample size of 190. The purposive sampling technique was used in this study and participants who met the inclusion criteria were invited to participate in the study. The inclusion criteria for this study were; women attending antenatal or postnatal clinics at the Health Centre who were willing to participate in the study.

Instrument For Data Collection

The research instrument for the study was a semi-structured, adapted, interviewer-administered questionnaire that was designed based on information adapted from two similar studies [3, 7], as well as from relevant literature search, necessary adjustments were then made to meet the objectives of the study.

The questionnaire consists of five sections; section A is the demographic profile of the participant's biographical data i.e. Age, financial status, marital status, educational status, occupation and income. Section B assessed health seeking behavior of mothers during pregnancy. Section C was designed to evaluate health seeking behavior of mothers during delivery. Section D assessed health seeking behavior of postnatal mothers and Section E identified barriers associated with maternal health care utilization. The questionnaire comprised of 45 questions that answer relevant questions relating to the study.

For measurement of concept, responses for all questions were graded. Each question was awarded 1 point, using a 4-point scale. If the information provided by the participant is not relevant, it will be

rated 1, if the information is somewhat relevant it will be rated 2, if it was quite relevant it will be 3 and if it is highly relevant it will be rated 4. Scores were taken, compared with other concepts, analyzed, and the results generated were discussed.

Validity And Reliability Of Instrument

This study ensured the use of face and content validity. To enhance content validity, a semi structured questionnaire was developed after a comprehensive literature review to appropriately measure important variables in the study; the questionnaire included a variety of questions on the assessment of the compliance level of pregnant and postnatal mothers to WHO recommendations. In addition, the questions were formulated in simple language for clarity and easy understanding and other experts in the field of nursing closely examined the items in the questionnaire to ensure that they can accurately measure the intended variables. A pre-test was conducted and necessary corrections were made before the final administration of the questionnaire.

To test for reliability, the test-retest method was used. Prior to the administration of the questionnaire, a pre-test was done a week before the actual data collection with five participants that had similar characteristics to the study population but were not included in the final data. The reliability coefficient was calculated to test for the internal consistencies of response and to determine if the instrument was reliable for the study. The score obtained was compared to obtain internal consistency reliability. For this study, the reliability coefficient was 0.9.

Data Collection And Analysis

Data were collected using interviewer-administered questionnaires, participants were met on antenatal and postnatal clinic days. Informed consent was obtained, each participant was also informed about the purpose of the study and guidelines for the completion of the questionnaire was explained.

Data collected was analyzed using descriptive and inferential statistics. Descriptive statistics was calculated as frequencies, percentages and means. While inferential statistics using posthoc Tukey HSD was used for hypotheses testing.

Ethical Considerations

Before the commencement of this study, approval to conduct the study was obtained from the Ethics Committee of Afe Babalola University and from the Clinic Manager of the Health Centre.

Prior to the administration of a questionnaire, participants were informed about the nature of the study and informed consent were obtained. The participants were also informed about the purpose and the procedure that was used to collect the data and were assured that there were no potential risk or cost involved. Privacy and anonymity were ensured as the names of the participants or any form of identity was not required in the questionnaire and information supplied by the participants could not be traced back to them on the compiled data.

RESULTS

From the 190 participants, 38.9% are within the age range of 20-29 years, while 17.9% were 40 years and above. More than half (63.2%) of the them were Christians and more than half (53.2%) were Yorubas. The vast majority (70.0%) of participants were married. with 42.1% of them educated up to the secondary level while 35.3% were educated up to the tertiary level. The participants' occupation showed that 16.8% were unemployed while 51.1% of the participants earned between N10,000-N20,000 monthly (Table 1).

With respect to the health care seeking behaviors of the participants during pregnancy, the majority (79.5%) of the participants indicated that they attended antenatal care during their last pregnancies. A little above one quarter (26.8%) registered for antenatal care during their second trimester, while 20.5% registered during their third trimester. The majority (60.5%) of the participants received antenatal care from health facility while 17.9% reported that home was their source of antenatal care (Table 2).

Table 1: Socio demographic characteristics of participants (N= 190)

Variables	Attributes	Frequency	%
Age	15-19yrs	19	10.0

	20-29yrs	74	38.9
	30-39yrs	63	33.2
	40yrs and above	34	17.9
Religion	Christian	120	63.2
	Muslim	49	25.8
	Traditional	11	5.8
	Others	10	5.3
Ethnicity	Hausa	23	12.1
	Igbo	23	12.1
	Yoruba	101	53.2
	Others	43	22.6
Marital Status	Single	23	12.1
	Married	133	70.0
	Separated	12	6.3
	Divorced	6	3.2
	Widow	16	8.4
Educational Status	No education	6	3.2
	Primary	14	7.4
	Secondary	80	42.1
	Tertiary	67	35.3
	Postgraduate	23	12.1
Occupation	Unemployed	32	16.8
	Self employed	79	41.6
	House wife	33	17.4
	Civil servant	33	17.4
	Others	13	6.8
Monthly Income	N10,000-N20,000	96	51.1
	N21000-N40,000	52	27.7
	N41000-N60,000	27	14.4
	N61000-N80000	7	3.7
	81000 and above	6	3.2

Table 2: Health care seeking behavior of the participants during pregnancy (N= 190)

Variables	Attributes	Frequency	%
Antenatal care visit at the time of last pregnancy	Yes	151	79.5
	No	39	20.5
Month of registration	1st trimester	36	18.9
	2nd trimester	51	26.8
	3rd trimester	39	20.5
	Don't remember	64	33.7
Source of antenatal care	Health facility	115	60.5
	Pharmacy	19	10.0
	Home	34	17.9
	Others	22	11.6
Frequency of visit to health centre	Once	42	22.1
	Twice	55	28.9
	Thrice	41	21.6
	More than thrice	52	27.4
Antenatal check-ups done	Yes	162	85.3
	No	28	14.7
Conducted by	Doctor	55	28.9
	Nurse/Midwife	79	41.6
	Others	56	29.5

Maternal and fetal assessment done	Yes	156	82.1
	No	34	17.9
Nutrition and nutritional supplements such as Iron, Folic acid, calcium, vitamin and Zinc supplements	Yes	151	79.5
	No	39	20.5
Preventive measures including the use of antibiotics, vaccination and malaria prevention	Yes	129	67.9
	No	61	32.1
Health education	Yes	127	66.8
	No	63	33.2
Knowledge about pregnancy complication	Yes	106	55.8
	No	84	44.2

Table 3 shows the health care seeking behaviors of mothers during delivery. It was observed that 18.9% of participants delivered at home, 14.2% at traditional birth home, while 10.5% reported mission home as their place of delivery. It was also observed that 24.2% of the participants indicated traditional birth attendants as their health care provider (Table 3).

In the aspect of health care seeking behaviors of the participants during postnatal periods, the majority (75.3%) had postnatal visits after delivery. A total of 61.6% mentioned health care facilities as their source of postnatal care. Also, 37.9% of the participants attended only one postnatal care in a health centre while 27.4% indicated twice (Table 4).

In terms of barriers encountered by the participants in assessing and utilizing maternal health care services, that almost half (45.8%) of them reported that the Centre was far from their homes while 23.7% reported bad roads. A total of 35.3% of the participants indicated that the doctors were irresponsive, 33.7% reported non-availability of ambulance and 3.1% reported non-availability of female health provider (Table 5).

Generally, there was a significant relationship ($p= 0.05$) between health seeking behaviour and educational qualification of the mothers or marital status of the mothers. However, no significant relationship ($p= 0.05$) was observed between health seeking behaviour and economic status of the mothers.

Table 3: Health care seeking behaviors of the participants during delivery (N= 190)

Variables	Attributes	Frequency	%
Number of pregnancy (Gravidity)	Primigravida	51	26.8
	2-3	81	42.6
	4-5	30	15.8
	6 and above	28	14.7
Number of children	1-2	67	35.3
	3-4	73	38.4
	5-6	27	14.2
	Above 6	23	12.1
Place of delivery	Health facility	100	52.6
	Home	36	18.9
	Traditional birth home	27	14.2
	Mission home	20	10.5
	Others	7	3.7
Health care provider	Doctor	45	23.7
	Nurse/Midwife	79	41.6
	Traditional birth attendant	46	24.2
	Others	20	10.5
Knowledge of Expected date of Delivery (EDD)	Yes	103	54.2
	No	48	25.3
	Not sure	39	20.5
Obstetric complication during child birth	Yes	83	43.9
	No	106	56.1

Table 4: Health care seeking behaviors of the participants during the postnatal period

Variables	Attributes	Frequency (n=190)	Percentage (%)
Postnatal visit after delivery	Yes	143	75.3
	No	47	24.7
Source of postnatal care	Health facility	117	61.6
	Pharmacy	21	11.1
	Home	38	20.0
	Others	14	7.4
Frequency to visit to health centre	1 time	66	34.7
	2 times	52	27.4
	3 and above	72	37.9
Postnatal care provider	Doctor	58	30.5
	Nurse/Midwife	93	48.9
	Others	39	20.5
Postnatal care for mother	Yes	130	68.4
	No	60	31.6
Types of services during postnatal care for mother	Assessment of mother	60	39.7
	Counselling on infection prevention	37	24.5
	Iron and folic acid supplement	87	57.6
	Prophylactic antibiotics	69	45.7
	Psychological support	10	6.6
	Home visit for postnatal care	11	7.3
	Mobilisation, rest and exercise	28	18.5
Postnatal care for child	Yes	162	85.3
	No	28	14.7
Type of postnatal service for child	Assessment of the baby	92	52.3
	Exclusive breast feeding	83	47.2
	Cord care	40	22.7
	Vaccination of babies	115	65.3

Table 5: Barriers encountered by the participants in assessing and utilizing maternal health care services

Variables	Attributes	Frequency	%
Distance and physical assess	Far from home	87	45.8
	Bad roads	45	23.7
	Not seeking health care	58	30.5
Quality of care	Doctors not responsive	67	35.3
	Non-availability of ambulance	64	33.7
	Non-availability of female health provider	59	31.1
Knowledge and perception	Husbands restriction	52	27.4
	Hesitation	72	37.9
	Ignorance	66	34.7
Economic cost	Cost of transportation	57	30.0
	cost of drugs	45	23.7
	Income level	88	46.3
Social structure	Long queue	78	41.1
	Non-availability of person at home	70	36.8
	Heavy workload	42	22.1

Desire for the pregnancy	Intended	103	54.2
	Unplanned	52	27.4
	Non-response	35	18.4
Does your spouse/partner influence your decision to seek medical care	Yes	119	62.6
	No	71	37.4
Does your mother in law influence your health care seeking behaviour	Yes	102	53.7
	No	88	46.3
Does religion influence your health care seeking behaviour	Yes	113	59.5
	No	77	40.5
Does your culture influence your health workers affect your decision on receiving care and attending antenatal clinics	Yes	112	58.9
	No	78	41.1
Does the attitude of health workers affect your decision on receiving care and attending antenatal clinics	Yes	115	60.5
	No	75	39.5
Has financial constraints influenced your health care seeking behaviour	Yes	136	71.6
	No	54	28.4
Has poor road networks influenced your accessibility to the health facility	Yes	120	63.2
	No	70	36.8

DISCUSSION

This study revealed poor health seeking behavior among the participants during pregnancy, as very few percent (18.9%) of them registered for antenatal during their 1st trimester as 15 recommended by WHO. This observation was at variance with the findings of similar investigators [12]. Ethnicity and religion are indicated as factors that could influence beliefs with respect to utilization of health care services in pregnancy and childbirth [3].

This study revealed a significant relationship between the educational status of the mothers to health seeking behaviour. Education is said to affect the extent of maternal mortality in various ways. A lack number education could result in pregnant women and mothers not realizing the dangers of prolonged labour, hence such women may remain in their homes during prolonged labour, without seeking medical care [15]. In addition, adequate education is indicated to increase a woman's self-image, social status and decision-making ability, which may be vital in the reduction of maternal death [16]. With education, an individual's understanding of the physiology of reproduction is enhanced thus less possibility of being disposed to pregnancy risks and complications [15]. Also, because of the possibility of less awareness, uneducated women are less likely to seek the conventional health services. It is reported that areas with low female literacy rates are generally areas where the fewest births are attended by trained health care workers [16, 17].

There was poor health seeking behavior during pregnancy among the participants. Only 18.9% of the participants registered for antenatal during their 1st trimester as recommended by WHO while only 27.4% of them had more than three antenatal visits as recommended also by WHO. A similar poor health seeking behaviour has been reported by earlier workers in similar studies [8]. It is indicated that more than 80% of maternal deaths can be prevented if pregnant women had access to essential maternal care like antenatal care, institutional delivery and postnatal care [19]. Where health care services can be accessed, pregnancy-related death is reduced and the likelihood of healthier children being given birth to is increased [20].

The consistent use or patronage of maternal health care services is vital intervention in reducing maternal morbidity and mortality [3]. The non-utilization of maternal health services has been attributed to a number of factors. Some of these factors include educational status, age, occupation, marital status and extent of knowledge. Other factors include autonomy, birth disorder, religion and household-related factors (such as headship, income, size of household) and factors that are associated with a woman's perception on quality of maternal health care services [21]. It is reported [22] that physical accessibility is one of the vital variables in health service utilization. This is because physical proximity to health care services could play a pivotal role in service utilization. In this study, financial

status, distance of health care service location from place of residence and attitude of health care workers were some of the reasons attributed to the non-utilization of the Health Care Centres by the participants.

The present study revealed some of the participants indicating they patronized traditional birth attendants during their pregnancy. It is reported [7, 23] that ease of accessibility, cheaper cost and convenience are some of the reasons while women may prefer traditional birth attendants to conventional health care centres. It is expected that during prenatal and postpartum period, women are provided with professional and adequate intensive care, which may be lacking in traditional health care settings [16]. Besides, some major changes that may occur during postnatal period, which could determine the well-being of mothers and newborns, may be lacking in settings where traditional birth attendants operate [24].

CONCLUSION AND RECOMMENDATIONS

In conclusion, the study has highlighted significant results in pregnant and postnatal mother's compliance level to WHO recommendations on maternal health in the study area. The study 17 revealed that there is poor health seeking behavior during pregnancy, which appreciated during delivery as majority of the women resorted to delivering at medical health facilities under the supervision of a certified medical doctor/Nurse/Midwife. Health seeking behaviors of mothers during postnatal period also shows a positive response as majority of the women visited qualified health care providers during postnatal visits. The major postnatal service for the children reported was vaccination. The study shows that most of the mothers encountered several barriers in assessing and utilizing maternal health care services. The major barriers were finance and poor road networks constraining their health care seeking behavior.

There should be pre-conception counseling by health care professionals for reproductive age women so as to educate them on the WHO recommendations. Also, health care professionals especially nurses and midwives should educate Faith-based groups, Traditional birth attendants and Community Development Officers about the WHO recommendation of ANC and PNC visits. Likewise, they should liaise with them on how best to improve the service rendered to pre-conception women.

In order to address the distance as a barrier to assessing and utilization of maternal health care, efforts should be made to provide regular transportation along the routes where there are hospitals. This is feasible by the State Government to provide bus and various means of transportation at reduced cost. In order to deal with the long queue and waiting time identified by respondents, more qualified health workers should be employed by the State Government to reduce the work load and waiting time in during ANC and PNC.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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