Journal of Community Medicine and Primary Health Care. 27 (2) 83-92

JOURNAL OF
COMMUNITY HEALTH
& PRIMARY HEALTH CARE

Awareness, Knowledge and Uptake of Preconception Care among Women in Ife Central Local Government Area of Osun State, Nigeria

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KEYWORDS

Women
Preconception Care
Maternal and Child Morbidity
Pregnancy Outcome

ABSTRACT

Background: The well-being of women and children is one of the major determinants of the health of any nation and can help predict future public health challenges for families, communities, and the health care system. One of the ways to achieve this is the embracement of preconception care to increase the chances of healthy outcomes of pregnancy for both mother and child.

Objectives: This study aimed at addressing the following objectives: to determine the level of awareness and knowledge of preconception care, to describe the practice of preconception care among women and to identify factors responsible for not seeking preconception care.

Methods: A descriptive cross-sectional survey design was utilized, using a quantitative method of data collection which involved the use of a structured questionnaire. The Sample for the study were women recruited from 11 primary health care facilities in Ife central local government area.They were 375 women met in the clinics during the period of data collection who gave their consent. Descriptive statistics as well as Chi-square analysis was done to show statistical sigificance association at $P<0.05$.

Results: The findings from the study showed that the mean age of respondents was 31.1 ± 7.36 with the age range of 19-49. Most (63.5%; n=238) of the respondents were aware of preconception care and the main source of awareness was the antenatal clinic. However, two leading components of preconception care that respondents have utilized in the past were folic acid supplementation and taking healthy nutrients. Even though most of the respondents were knowledgeable about preconception care, the result showed that majority (65.9%, n=247) of the respondents have not sought the care before pregnancy while only 34.1% (n=128) have asked about it in the hospital. A significant association was found between respondents educational level and knowledge of preconception care ($X^2=24.76$, $df=3$, $p=0.001$. Lack of awareness and knowledge of benefits of preconception care were major factors identified.

Conclusion: The need for massive awareness and education on preconception care is highly important for people to utilize it more effectively.

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BACKGROUND

The health of women, newborn and children is an important indicator of the wellbeing of any nation. Women give birth to children, nurture, nourish and co-ordinate care for the family and around the family, hence it is important that women have optimal health in order to give birth to healthy baby. Even, every woman of reproductive age who is capable of becoming pregnant has been described as a candidate for preconception care regardless of whether she is planning to conceive or not.[1]

A review of published researches by Johnson *et al.*[2] has shown that the causes of maternal and neonatal mortality are preventable if mothers are optimally healthy prior to conception. Globally, complications of preterm birth are the single largest direct cause of neonatal deaths, responsible for 35% of the world's 3.1 million deaths in a year, and the second most common cause of under-5 deaths after pneumonia.

In almost all high- and middle-income countries of the world, preterm birth is the leading cause of child death.[3] Birthdefects; low birth weight births, preterm deliveries, and infant deaths continue to be higher than the goals outlined in Healthy People 2010, the nation's health agenda. The neural tube defects which are important cause of neonatal and infant morbidity and mortality in Nigeria is on the increase.[4, 5]. All these problems occur as a result of poor or lack of preconception care.[6]

Research has identified several important risks factors that impact negatively on pregnancy outcome. These risk factors need to be addressed prior to conception in order to optimize the chances for a healthy mother and baby. The importance of maternal health before pregnancy has increasingly been recognized[7]. According to Dean, Lassi, Imam and Bhutta,[8] a wide range of initiatives and interventions developed for women of reproductive age and couples of childbearing age, regardless of pregnancy status or desire, before pregnancy, to improve health outcomes for women, newborns and children is defined as Preconception care. The World Health Organization [9] on the other hand, defined preconception care as 'the provision of biomedical, behavioural and social health interventions to women and couples before conception occurs, aimed at improving their health status, and reducing behaviours and individual and environmental factors that could contribute to poor maternal and child health outcomes'.

The goal of preconception care is to improve maternal and child health outcomes. Specifically it aims at promoting the health of women of reproductive age before conception, ensures that both the man and woman (teenagers, single adult or married couple) are in an optimal state of health before pregnancy and are also provided with some options that may not be available once pregnancy is confirmed whether before first or subsequent pregnancy thereby improving pregnancy-related outcomes.[10]

The concept of Preconception care encompasses provision of preventive, promotive or curative health and social interventions before conception occurs. It also includes periconception care (interventions in the period extending from 3 months before to 3 months after conception occurs) and interconception (interventions between two pregnancies). Johnson[2] on the other hand summarized the components into three namely risk assessment, health promotion and intervention. The risk assessment identifies risks in women's medical, reproductive, family, and psychosocial history; nutritional and behavioral risks; and maternal exposures. Health promotion consists of counseling and education to support healthful behaviour about pregnancy and parenting. The interventions available include imparting knowledge, influencing attitudes, providing access to contraceptives and vaccines, and enhancing life options. Family planning, education, and social services needed to provide these interventions are considered part of preconception care.

Previous study had shown that nearly all couples have one risk factor that requires individual advice in the preconception phase[11]and scientific evidences abound on the beneficial role of preconception services in improving women's health before pregnancy resulting in better matemal and neonatal health outcomes - specifically, fewer pregnancy complications and a reduction in rates of birth defects, fetal loss, low birth weight and preterm delivery thus reducing maternal and neonatal morbidity and mortality rate. Despite these, the uptake of preconception services among women of reproductive age group is low in Africa and the

concept of actively preparing for pregnancy prior to conception continues to be a challenge for many people in most cultural settings in Nigeria.

For example, Ezegwui *et al.*[12] in a study conducted in South Eastern, Nigeria observed that women awareness and knowledge of preconception care is just fair and increases with educational status but does not translate to a positive behaviour towards preconception care as the study concluded that the practice of preconception care is almost non- existence. This was also in line with the findings of Rabiu[13] who found that none of the pregnant women studied used folic acid in preconception period and knowledge of spinal bifida is supported with a number of superstitious beliefs about its activity. The low uptake of preconception care in Nigeria may not be unconnected to the focus of the country on reduction of maternal and child mortality unlike what obtains in the developed world where focus has been on having healthy and quality babies.

This study was designed to determine the level of awareness and knowledge of preconception care, assess the practice of preconception care and determine factors that influence the uptake and utilization of preconception care among women.

METHODS

The study adopted a descriptive cross-sectional design to provide answer to the objectives of the study. A minimum sample of 349 was calculated using Negle's rule ($n=Z^2P(1-P)/d^2$) where the prevalence of preconception care was taken as 35% as obtained from a previous study [14]. However, 375 women agreed to participate in the study.

A multistage sampling was employed in the selection of sample for the study. Firstly, Ife central LGA was purposively selected out of the thirty LGAs in Osun State. Thereafter, four zones were selected by simple balloting from the ten zones in the LGA. Then all the eleven Primary Health Care (PHC) facilities in the four zones were recruited into the study. The PHCs were Sabo, Enuwa, Iremo, Eleyele, Akui, Moore, Abelewo,Ajebandele, Ilare, Gbalefefe and Igboya. Women that were met at the clinic during the period of data collection who gave their consent constituted the sample for the study.

A structured, self-administered questionnaire was used to collect data. The questionnaire consisted of three (3) questions to assess respondents' awareness of preconception care. Fourteen (14) questions items were used to assess knowledge and twelve (12) question items were used to assess the practice of preconception care. Also, five (5) question items were used to assess factors influencing the uptake of preconception care among the women. The questionnaire was translated to Yoruba to facilitate participants understand of the topic. The face and content validity and the reliability of the instrument were established prior to final administration of the questionnaire. The reliability of the instrument was measured using Chronbach alpha correlation which was 0.72.

Data was analyzed using descriptive statistics (frequency tables) and inferential statistics (Chi-square). Knowledge questions were analyzed by allotting 1 mark for correct option and zero for an incorrect response with a maximum score of 14 marks obtainable. A score between 0-6 was rated as poor while score between 7-14 were rated as good.

Ethical clearance was obtained from Obafemi Awolowo University Teaching Hospital Ethical Committee and approval for the study received from Ife Central Local Government Area. Informed consent was also taken from all the respondents. Data collected was analyzed using statistical package for social sciences (SPSS) version 17 and level of significance for test statistics was

taken at $p<0.05$.

RESULTS

Demographic Characteristics of Respondents

The socio-demographic characteristics of respondents are presented in Table I. A total of 375 women participated in this study.The age of the respondents ranges from 19-49 years with the mean age of 31.1years$\pm$7.36. . Majority (29.9%; n=112) of the respondents was in the age range of 26-30 years and all the respondents were in their reproductive age. Large percentage (76.0%; n=285) of the respondents were married with at least a child.

Awareness of Preconception Care

Many (63.5%; n=238) of the respondents were aware of preconception care. The main source of awareness was the antenatal clinics which amount to 38.4% (n=144). However, 54.7% (n=205) claimed to be aware of folic acid supplementation and behavioral modification before pregnancy such as alcohol and smoking cessation before getting pregnant.

Knowledge of Preconception Care

The response of participants to the knowledge questions are as presented in Table II. Further analysis showed that most (65.3%; n=245) of the respondents had good knowledge of preconception care while 34.1% (n=128) of the respondents had poor knowledge. The study revealed that there was a significant association between the respondent's knowledge and educational level. (X^2=24.76, df=3, P=0.001). Also the study showed that there was no significant association between respondents age and knowledge of preconception care (X^2=10.16, d/f=6, P=0.118).

Practice of Preconception care

Table III shows respondents practice of preconception care. The study revealed that 65.9% (n=247) of the respondents had not sought for preconception care before. The major site for seeking preconception care was hospital (32.0%; n=120) with nurses being the main care providers.

The types of preconception care received by respondents is as shown in figure 1 and these included; folic acid supplementation four weeks before pregnancy (30.4%; n=114), Healthy food

Table I: Socio-demographic Variables

Variables	Frequency (n=375)	Percentage (%)
Age (years)	**M = 31.1; SD = 7.36**	
<20 years	9	2.4
20-25 years	82	22.0
26-30 years	112	29.9
31-35 years	79	21.1
36-35 years	48	12.8
41-45 years	32	8.5
> 45 years	13	3.5
Marital status		
Single	69	18.4
Married	285	76.0
Divorced	21	5.6
Ethnicity		
Yoruba	289	77.1
Igbo	70	18.7
Hausa	15	4.0
Others specify	1	0.3
Religion		
Christianity	270	72.0
Islamic	100	26.7
Traditionalist	5	1.3
Educational level		
None	9	2.4
Primary	23	6.1
Secondary	101	26.9
Tertiary	242	64.5
Occupational groups		
Unemployed	37	9.9
Bankers	11	2.9
Civil servants	65	17.3
Artisans	40	10.7
Health workers	23	6.1
Students	40	10.7
Teachers	38	10.1
Traders	121	32.3
Year of marriage		
0-5 Years	182	48.5
6-10 Years	73	19.5
11-15 Years	16	4.3
16-20 Years	7	1.9
21 years and above	7	1.9
Not Applicable	90	24.0
Number of children		
1-2	173	46.1
3-4	102	27.2
5-6	15	4.0
None	85	22.7

choices (32.5%; n=122) and maintaining healthy weight through adequate exercise (29.9%; 112). Others include Tobacco smoking cessation (27.2%; n=102), Alcohol cessation (29.9%; 109), Immunization (25.9%; n=97), reduction of stress (29.1%; n=109), and genetic counseling (25.3%; n=95). Also, 29.9% (n=112) treated sexually transmitted infections, 29.6% (n=111) avoided unprescribed medications, 26.7% (n=100) treated chronic diseases and 28.3% (n=106) claimed to avoid exposure to toxic chemicals.

Table II: Respondents' Knowledge of concept of Preconception Care N=375

	Yes	Don't know	No
Knowledge on preconception care			
Preconception care is a care received by woman before pregnancy to improve pregnancy outcome	281(74.9%)	86 (22.9%)	8(2.1%)
Preconception care is a care given immediately after delivery	111(29.6%)	117(31.2 %)	147(39.2%)
Preconception care is a prevention strategy that helps men and women to prepare for pregnancy by improving their health prior to conception	249(66.4%)	115(30.7%)	11(2.9%)
Preconception care is about healthy living	243(64.8%)	113(30.1%)	19(5.1%)
It involves encouraging women to engage in healthy lifestyles before they become pregnant	254(67.7%)	108(28.8%)	12(3.2%)
It prevents unintended pregnancies and promotes optimal birth spacing	212(56.5%)	131 (34.9%)	31(8.3%)
Unintended pregnancy is associated with increased maternal morbidity and poor pregnancy outcomes	180(48 .0%)	164(43.7%)	31(8.3%)
Preconception care include risk assessment, health promotion and interventions to promot e health of mother and child	220(58.7%)	139(37.1%)	16(4.3%)
Effects of not seeking Preconception Care could be:			
Low birth weight.	211(56.3%)	128 (34.1%)	36 (9.6%)
Births defects such as spinal bifida and anencephaly	211(56.3%)	128 (34.1%)	36 (9.6%)
Preterm labour and birth.	191(50.9%)	151 (40.3%)	33 (3.3%)
Infertility or difficult conception	214(57.1%)	126(33.6%)	35 (9.3%)
Developmental delays.	193(51.5%)	140(37.3%)	42 (11.2%)
Fetal alcohol syndrome	151(40.3%)	178 (47.5%)	46 (12.3%)

Table III: Practice of Preconception Care

Practice and Providers	Frequency(n=375)	Percentage(%)
Have you sought for preconception care before?		
Yes	128	34.1
No	247	65.9
If yes, where did you receive the care?		
Chemist shop	2	0.5
Home	5	1.3
Hospital	120	32.0
School	1	0.3
Not Applicable	247	65.9
Who provided the care?		
Doctor	58	15.5
Nurses	60	16.0
Pharmacists	6	1.6
Friends	2	0.5
Counselor	2	0.5
Not Applicable	247	65.9

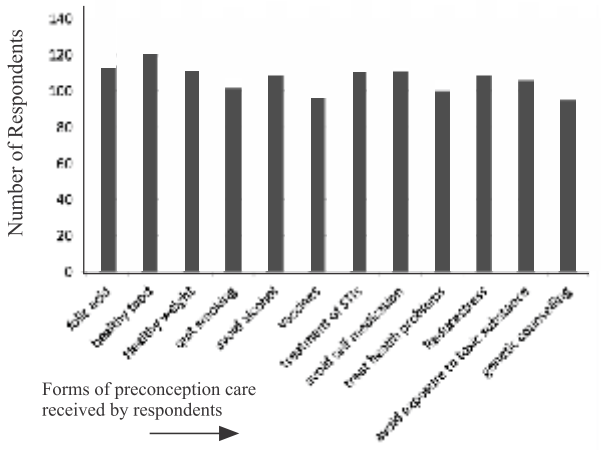

Fig. 1: Forms of Preconception Care as Received by Respondents

Factors responsible for not seeking Preconception Care

Three key factors identified by majority of the respondents to be contributing to poor seeking behaviour about preconception care included lack of awareness (76.5%; n=287), lack of knowledge on the importance and benefits of preconception care (73.6%; n=276)) and lack of access to the service (61.3%; n=230) in this order. However, about fifty two percent (51.7%; n=194) of the respondents claimed that people do not seek preconception care due to the cost implications while 47.5% (n=178) of the respondents declared that health workers do not talk about preconception care during regular health visit.

DISCUSSION

This study revealed high awareness level of respondents regarding preconception care. This finding corroborated the result of the study conducted in Australia by Wilton and Foureur[15] as against the studies conducted by Ezegwui, Dim, & Ikeme[12] and Rabiu.[13] in Nigeria which revealed a low level of awareness among the respondents. The main source of awareness of preconception care in this study was the health care providers and this was in line with a survey carried out in Ontario in 2009 where 78.4% of family physicians claimed to deliver preconception care at least weekly [16].

In this study, almost all the respondents who had sought for preconception care before heard about it during antenatal clinic when they had already been pregnant. By this time, it may be too late to prevent some placental development problems or birth defects. This is because organogenesis begins early in pregnancy; therefore, initiating folic acid supplementation after neural tube closure at six weeks (28 days after conception) has no demonstrated benefit for preventing a neural tube defect [17]. Also placenta development begins even earlier, at implantation (seven days after conception). Poor placental development has been linked to preeclampsia and preterm birth [18] and may play a role in fetal programming of chronic diseases later in life[19]. It is therefore important that health care providers start by asking female client at every visit about their reproductive life plan [20]. Questions such as intention to have children or additional children if the woman is already a mother and her timeline for having children should be asked [21] and if the client plans to have a child within a year or two, she and her partner should be counseled to return for a full

assessment [22]. Better still,
establishing a unit for preconception care where couple can receive adequate information before conception as obtainable in the developed countries will be necessary in the developing countries and if this is done, there is need for awareness raising in the communities for people to be aware of such services. In addition to this, there may be a need for the country to develop national guidelines with a view to provide clarity on what preconception care mean to the country, its components and why it is important. This will help in ensuring uniformity of services related to preconception care across the nation and the quality assurance of this care.

Also, the findings of the study revealed that many of the respondents demonstrated good knowledge of preconception care. This was in close relation with the study conducted by Coonrod, Bruce, Theresa, Malcolm, David, and Keith [23]among low-income Mexican American where the average knowledge score on preconception care was 76% but not in support of the study done in Nigeria by Ezegwui *et al.* [12] which reported fair knowledge of preconception care. This study established an association between knowledge of preconception care and educational level of the study participants. Women with higher level of education had good knowledge of preconception care. This was in congruence with the study by Ezegwui *et al.*[12] that knowledge of preconception care increases with educational level. Thus, one of the MDG goals that focused on girls' child education need to be promoted because education has a way of connecting people to information that may be of benefit to their health in later years.

This study revealed that only few of the respondents reported to have taken folic acid supplement daily prior to conception. The finding supported a study carried out by Wilton and Foureur.[15]among primigravida women in Australia where similar proportion of women reported to have taken a vitamin containing folic acid daily. Also, the low number of women who received counseling to prepare for pregnancy was in line with the submission of Brentlinger*et al.*[24] and a study carried out among Oklahoma women [25] in which few women were found to receive counseling prior to pregnancy. Similarly, looking at the forms of preconception care explored in this study, less than thirty-five percent of the participants claimed to have utilized any of the components. This shows a low utilization across all the components explored.

The major barriers to uptake of preconception care established by this study were lack of awareness, lack of knowledge on the importance and benefits of preconception care and lack of access to the service. However, almost half of the respondents claimed that health workers not talking about preconception care during regular health visit is a barrier to the uptake of the service. This was in support of previous submission by Best Start Resource Centre[26] that 58% of women surveyed in their study claimed their health providers did not bring up the topic of preconception health. This has implication for nursing and medical practice. Nurses and medical practitioners who are the key players in promoting maternal and child health should intensify efforts in encouraging women to receive this care, and to constantly emphasize the importance and benefits of preconception care during routine hospital visits. This will reduce the burden of care resulting from having unhealthy babies with congenital abnormalities and other associated problems which could have been prevented. Furthermore, the country need to re-strategise in enlarging its horizon by focusing on improving the quality of babies born to women in addition to its focus on reducing

maternal and child mortality. Nurses could also act as advocate of women by sourcing for funding to support community awareness and education on the importance of preconception care.

LIMITATIONS

This study may be limited by its scope in term of the aspects of preconception care explored. Caution should be taken in generalizing the findings of the study.

RECOMMENDATIONS

- Preconception care should be made available to all women and their partners as an integral part of primary health care.
- Health care providers especially nurses need to intensify their efforts in encouraging women to seek preconception care, and to constantly emphasize the importance and benefits of this care during routine hospital visits.
- There is need to create more awareness on preconception care in all the three levels of health care, that is primary, secondary and tertiary levels and through mass media.
- Government should make preconception health services accessible and affordable to women of childbearing age.
- There is need for policymaker in health ministries in Nigeria as well as relevant stakeholders to advocate for incorporation of preventive medical clinics comprising risk assessment, risk prevention or modification for couples in general in the existing health care delivery system.

CONCLUSION

The health status of mother and child is an important indicator of the wellbeing of the society. There is an inseparable link between mothers and their children in relation to health matters. The health status of mother prior conception significantly impacts the health of her unborn child and future generations. A global strategy to reduce maternal and neonatal morbidity and mortality currently plaguing many nations of the world is to ensure women have optimal health prior conception so as to promote their health and that of unborn babies and prevent adverse pregnancy outcome through preconception care.

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