Original Article

Preconception Care: Knowledge, Attitude and Practice among Health Workers in Alimosho Local Government Area, Lagos State, Nigeria

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Abstract

Background: Preconception care is recognized as a critical component to identify risk factors that might affect future pregnancies and development. Health care workers' level of awareness, attitude knowledge could have an impact on the rate of maternal and infant mortality.
Objective: This study aimed to assess the level of knowledge, attitude and practice of preconception care among health care workers.
Methods: A descriptive cross-sectional survey design and a multi-stage sampling technique were utilized. Data was collected using a structured questionnaire from health care workers in health care facilities in Eti-Osa and Ikeja local government areas of Lagos State. Two hundred and six health care workers were enrolled, informed consent sought and data was analyzed using the Statistical Package for Social Science version 21.0 to generate descriptive (frequency tables, charts) and inferential statistics (correlation and regression).
Results: The mean±SD age of respondents was 32.5±1.613 years; 127 (61.7%) were single and more than half (58.3%) were females. Slightly more than half of the respondents (116;56.3%) were doctors and majority (88.3%) of the respondents knew what preconception care is. The level of knowledge was high (85.9%); 79.1% had a positive attitudinal disposition towards preconception care and 78.2% had a high level of practice. Practice had a significant relationship with attitude of health workers ($r = 0.144$; $p = 0.039$) and contributed to only 2.1% of the change in practice. The knowledge of health workers had a negative correlation with attitudinal disposition ($r = -0.139$; $p = 0.046$) but only contributed to 1.9% of the change in attitude.
Conclusion: Practice of health workers in respect to preconception care needs improvement. Further studies are recommended to explore other factors influencing practice of preconception care in Nigeria.

Keywords: Preconception care, Knowledge, Attitude, Practice, Health care workers.

Introduction

The health of a nation largely relies on the wellbeing of its women and children, and they can help to give a projection of future public health constraints for families, communities and the health care system (Olowokere, Komolafe, Owofadeju, 2015). Adequate planning for pregnancy and being at optimal health prior to pregnancy are vital to improving a woman's chance of having a healthy pregnancy and baby (Center for Disease Control 2006). One of the most important components of health care for women in reproductive age is preconception care which is the missing link in the continuum of maternal care aimed at improving pregnancy outcome, parturition and children's health (WHO, 2013a).

The World Health Organization (2013b) defined preconception care as "the provision of biomedical, behavioral and social health interventions to women and couples before conception occurs, aimed at improving their health status, and reducing behaviors and individual and environmental factors that could contribute to poor maternal and child health outcomes". Although preconception care aims primarily at improving maternal and child health, it also brings health benefits to the adolescents, women and men, irrespective of their plans to become parents. The main goal of preconception care is to provide health promotion, screening, and interventions for women of reproductive age to reduce risk factors that might affect future pregnancies. Preconception care is recognized as a critical component of health care for women of reproductive age.

Research Questions: The main aim of the study was to determine the level of knowledge, attitude towards and practice of preconception care among health care workers in Eti-Osa and Ikeja local government areas of Lagos State.

Hypothesis

The study therefore hypothesized that

(i) the health workers' practice of preconception care will have no statistically significant relationship with the attitudinal disposition towards preconception care;
(ii) the attitudinal disposition will not have a statistical relationship with the level of knowledge and
(iii) on preconception care will not be influenced by the level of knowledge on preconception care.

Background: Preconception care is part of a larger health-care model that results in healthier women, infants, and families. According to a review by WHO IN 2012, programs included in preconception care are Tobacco use prevention and cessation, Nutrition, Vaccine, Fertility and infertility, Female genital mutilation, HIV testing and counseling, Mental health, Substance use, Intimate partner and sexual violence, Premarital counseling, Genetic counseling, Maternal and child health, Adolescent-friendly services, and Occupational health (WHO, 2013b).

The causes of maternal and neonatal mortality are preventable if mothers are optimally healthy prior to conception (Johnson et al., 2006). Women die of preventable complications such as pre-eclampsia, infections which are pregnancy-related. Most of these complications are created during pregnancy, and some have existed prior to pregnancy, and worsened during pregnancy. The presence of risk factors such as maternal weight, alcohol use, HIV/AIDs, diabetes before conception can negatively affect the health of a mother and also her pregnancy outcome leading to various complications such as low birth weight therefore maternal health before pregnancy has been greatly recognized. Increasing access to quality preconception care can reduce the risk of maternal and infant mortality and pregnancy-related complications (Johnson et al., 2006).

Women and men engage in risky behaviors that have an adverse effect on their reproductive life which can affect conception and pregnancy (Okereke, 2010; Cherie & Berhane, 2012). Risky behaviors such as smoking, drug use and poor diet lead to complications like low birth weight and preterm birth. Some women and couples are at risk of complications in pregnancy due to some chronic health conditions they have such as diabetes, hypertension, sickle cell anemia and STIs. These conditions affect pregnancy outcomes. To ensure a healthy mother and baby, these problems need to be addressed even before conception. Adolescents are also prone to these behaviors and a good number of them are found engaging in these behaviors. These risky behaviors phase out later in

adulthood and it negatively affects their reproductive health.

Most first prenatal visits do not occur until late 8-12 weeks into a woman's pregnancy. It has been found that the prenatal period does not give enough time to address many of the maternal health problems and risk factors that could adversely affect the mother and/or the baby (Weisman et al, 2008). Therefore, when most pregnant women have their first prenatal visit, it may already be too late to prevent some placental developmental problems or birth defects. Placental development starts early at implantation (seven days after conception). Poor placental development has been associated with preeclampsia and preterm birth and may play a role in fetal programming of chronic diseases later in life (Godfrey, 2002). Organogenesis also starts early in pregnancy therefore commencing folic acid supplementation (which is given during prenatal visits) after neural tube closure at six weeks (28 days after conception) has no demonstrated benefit for preventing a neural tube defect. These complications are seen as one of the major causes of maternal and infant mortality. The awareness and practice of preconception care by these women will be determined by the availability, accessibility and quality of this service in the health care system.

The Center for Disease Control (CDC) recommends risk assessment and counseling for all women of childbearing age as part of primary health care visits in order to improve pregnancy outcomes (CDC, 2016). Despite outcomes of interventions, the problem of poor obstetric outcome, poor maternal health, and poor infant health still persists in Nigeria and the world at large. There is a need to look into the gaps in the continuum of health care provided and preconception care is one of the gaps that need to be closed. Data on preconception care is inconclusive in Lagos State hence this study focused on assessing the level of knowledge, attitudinal disposition and practice of health workers in this region.

Methodology: The research employed a descriptive cross-sectional survey to provide answers to the objectives of the study. A sample of 384 was calculated using the Armitage & Berry (1994) statistical formula. A multistage sampling was employed in the selection of sample for the study. Firstly, cluster sampling was used, the primary health centers and hospitals in the local governments mentioned was used as a cluster for each level of health. Random sampling technique was then used to select from each cluster the health centers and hospitals that was used for the study through balloting. The hospitals and health centers were selected through balloting. Finally, convenience sampling was used to select the respondents from the selected hospitals and health centers for the data collection; this implies that health workers who were present at the time of the researcher's visit to the health centers and hospitals took part in this research. In total, 206 health care workers were recruited for the study.

A structured, self-administered questionnaire was used to collect data. A 68-itemed questionnaire with 4 sections was used to elicit information from the respondents. Section A elicited information on the demographic characteristics of the respondents, section B elicited information on the knowledge of the health workers on preconception care, section C elicited information on their attitude towards preconception care and section D elicited information on the practice of the health workers on preconception care. 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 Cronbach alpha correlation which was 0.709. The data collected was analyzed using the statistical software package for the social sciences (SPSS version 22.0). Ethical approval for the study was obtained from Babcock University Health Research & Ethics Committee (BUHREC). Informed consent was sought from all participants prior to instrument administration.

Results

The mean±SD age of the respondents in this study was 32.5±1.613 years. More health workers were within the age group 25 – 29 years compared to the others. The gender distribution showed that 58.3% of the respondents were females and 41.7 % were males while only 32.0% were married. Most (80.1%) of the respondents were Christians; 56.3% were medical doctors and only 17.5% had spent

over 5 years working at the present institution (Table 1).

Majority of the health workers correctly identified preconception care as the strategy that helps men and women prepare for pregnancy by improving their health prior to pregnancy while 11.70% stated that it is a care given to pregnant women during antenatal clinics to improve pregnancy outcomes (Figure 1). About half of the health workers (51%) reported that they had once received training on preconception care (Figure 2).

Regarding the risk factors which could affect preconception health status of young people, the health workers identifies binge drinking of alcohol (75.7%), smoking (908%) and domestic violence (64.1%). The responses to the components of preconception care by the health workers showed that majority of them are aware of the necessary services that should be offered to clients to help improve their pregnancy outcomes. Folic acid which has been reported to offer a strong protective factor for recurrent neural tube defects (NTDs) was stated to be a component of preconception care by 93.7% of the health workers. Also identified as components are genetic testing and counselling (88.8%), family planning (75.2%), iron supplementation, (89.3%) and healthy food choices (93.2%). The distribution of the health worker's knowledge on the necessary vaccines which are to be administered during preconception care showed the more of the respondents selected hepatitis (68%) and tetanus (79.6%). Some of the health workers (28.2%) did not think that men should undergo genetic screening as part of preconception care. The level of knowledge of the health workers was computed on a 35-point rating scale with a mean±SD of 21.53±3.40. The distribution of respondents in the grouped index showed that 29 (14.1%) health workers had a low level of knowledge while 85.9% had a high level of knowledge (Table 3).

The attitudinal disposition of the health workers was assessed using a 16-item scale. Majority of the respondents reported that offering preconception care to clients would have a positive effect on pregnancy outcome (90.8%) and they were willing to provide preconception care because they believed that it would help reduce the burden of maternal and infant mortality (91.3%). Quite a few (21.8%) of the health workers reported that they did not see a need for the administration of routine drugs like folic acid supplements during preconception. About a third of the sample of health workers (36.9%) reported that they were not in the best position to provide preconception care. The level of attitudinal disposition was measured on a 48-point rating scale with a mean±SD of 20.87±4.05. The grouped index indicated that 79.1% of the health workers had a positive attitude towards preconception care while 20.9% had a negative attitude (Table 3).

Only 58.7% of the health workers clearly reported to offer services which promote preconception care to their clients and 88% stated that they provide services to men also. About two-thirds of the health workers stated that they often take the chance to provide clients who show up at the facility with preconception care. The level of practice of the health workers on preconception care was measured on a 16-point rating scale with a mean±SD of 12.17±3.45.

The study hypothesized that the health workers' practice of preconception care would have no relationship with their attitudinal disposition. A Pearson correlation analysis showed that the practice of preconception care by the health workers had a statistically significant relationship with their attitudinal disposition ($r = 0.144$; $p = 0.039$). Further regression analysis showed that attitude contributed to only 2.1% of the variation observed in the health workers' practice of preconception care. Knowledge of the health workers on preconception care however had a weak relationship with their practice but this relationship was not statistically significant ($r = 0.083$; $p = 0.236$). The attitudinal disposition had statistically significant correlation with the level of knowledge ($r = 0.139$; $p = 0.046$). A logistic regression analysis was further carried out and this revealed that the knowledge on preconception only contributed to 1.9% of the change in attitudinal disposition. ($r^2 = 0.019$; $p < 0.001$)

Table 1: Demographic Characteristics of Respondents

Variables	Categories	Frequency	Percentage%
Age	20-24	48	23.3
	25-29	57	27.7
	30-34	45	21.8
	35-39	26	12.6
	40-44	16	7.8
	45-49	3	1.5
	50 and above	11	5.3
Mean±SD	32.5±1.613 years		
Sex	Male	86	41.7
	Female	120	58.3
Marital Status	Single	127	61.7
	Married	66	32.0
	Divorced	9	4.4
	Separated	4	1.9
Religion	Christianity	165	80.1
	Islam	40	19.4
	Traditional	1	0.5
Occupation	Doctor	116	56.3
	Nurse	52	25.2
	Midwife	18	8.7
	CHW	11	5.3
	Others	9	4.4
Work experience in the institution	Below 6 months	43	20.9
	6 months- 1 year	38	18.4
	1-2 years	47	22.8
	2-5 years	42	20.4
	5 years and above	36	17.5

CHW – Community Health Worker

Table 2: Distribution of Health Workers' Knowledge of Preconception Care

ITEMS	YES N (%)	NO N (%)
What are the preconception risk factors?		
Binge Drinking	156 (75.7%)	50 (24.3%)
Smoking	187 (90.8%)	19 (9.2%)

Exercise	38 (18.4%)	168 (81.6%)
Domestic violence	132 (64.1%)	74 (35.9%)
Adequate nutrition	45 (21.8%)	161(78.2)
Which of the following are the components of preconception care?		
Folic acid supplementation	193(93.7%)	13 (6.3%)
Prayer and fasting	47 (22.8%)	159 (77.2%)
Maintaining healthy weight	189 (91.7)	17(8.3%)
Geriatrics	48 (23.3%)	158 (76.7%)
Immunization	178 (86.4%)	28 (13.6%)
Reduction of stress	179 (86.9%)	27 (13.1%)
Genetic counseling & screening	183 (88.8%)	23 (11.2%)
Family planning	155 (75.25%)	51 (24.8%)
Wound dressing	43 (20.9%)	163 (79.1%)
Healthy food choices	192 (93.2%)	14 (6.8%)
Physiotherapy	79 (38.3%)	127 (61.7%)
Iron supplementation	184 (89.3%)	22 (10.7%)
Cancer screening	128 (62.1%)	78 (37.9%)
Preconception care is about healthy living	179 (86.9%)	27 (13.1%)
Which vaccines should be taken to enhance preconception care?		
Hepatitis	140 (68%)	66 (32%)
Measles	55 (26.7%)	151 (73.3%)
BCG	45 (21.8%)	161 (78.2%)
Rubella	88 (42.7%)	118 (57.3%)
Polio	46 (22.3%)	160 (77.7%)
Varicella	51 (24.8%)	155 (75.2%)
Tetanus	164 (79.6%)	42 (20.4%)
Should men undergo genetic screening as part of preconception care?	148 (71.8%)	58 (28.2%)

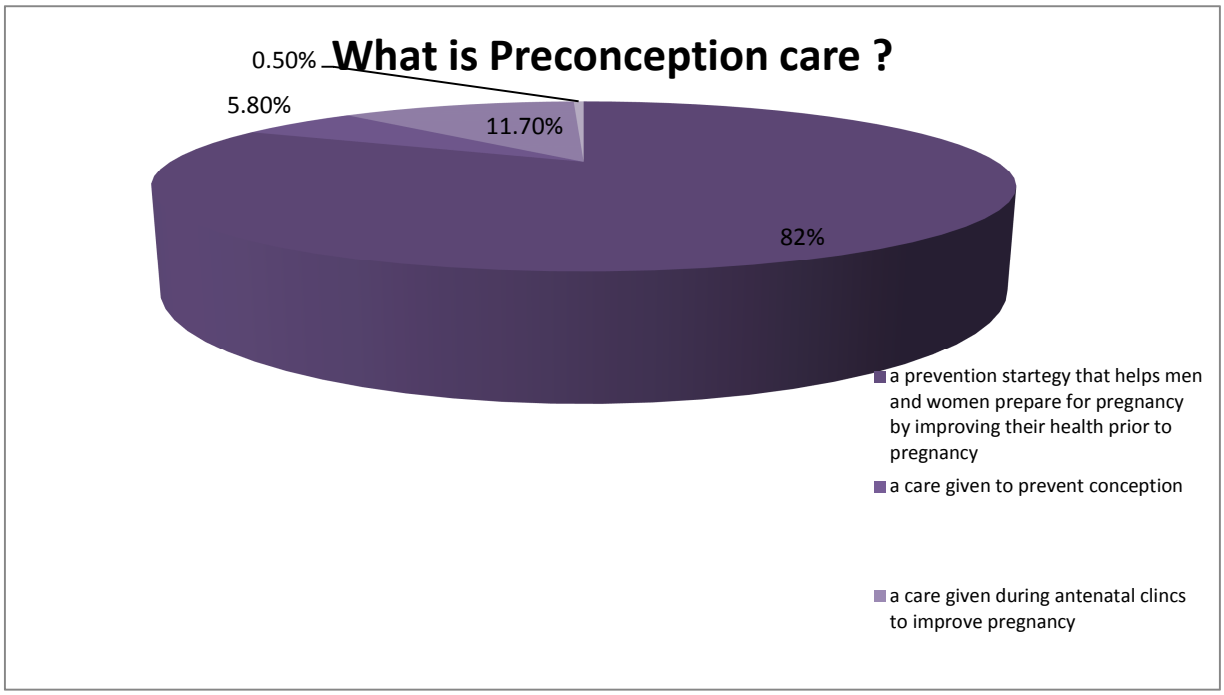

Figure 1: Distribution of Respondents' Knowledge of Preconception Care

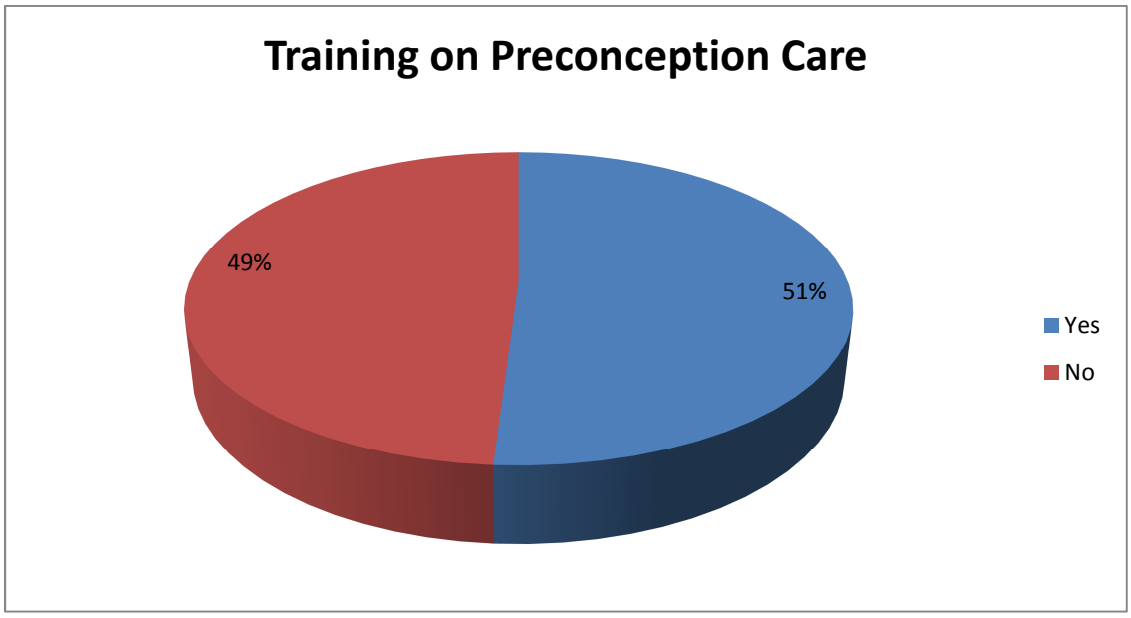

Figure 2: Distribution of Health Workers Who Had Received Training on Preconception Care.

Table 3: Summary of Health Workers' Knowledge, Attitude and Practice towards Preconception Care.

VARIABLES	Rating points	N (%)	Mean±SD
KNOWLEDGE			
Low (0 – 17.5)	35 points	29 (14.1)	21.53±3.40
High (17.6 – 35)		177 (85.9)	
ATTITUDE			
Negative (0 – 24)	48 points	43 (20.9)	20.87±4.05
Positive (25 – 48)		163 (79.1)	
PRACTICE			
Low (0 – 8)	16 points	41 (21.9)	12.17±3.45
High (9 – 16)		161 (78.2)	

Table 4: Correlation between Practice of Preconception Care with Attitude and Knowledge

Variables	N	Pearson (r)	Sig
Attitude/Practice	206	0.144	0.039
Knowledge/Practice	206	0.083	0.236
Knowledge/Attitude	206	0.139	0.046

[a] Calculated with Pearson Correlation Significant at p≥0.05

Table 5: Regression analysis between variables

Variables	N	R	R square	F	Sig
Attitude/Practice	206	0.144	0.021	4.332	0.000[a]
Knowledge/Attitude	206	0.139	0.019	4.024	0.000[a]

[a] Calculated with Linear Regression Significant at p≥0.05

Discussion

This study reveals that about half of the respondents were less than 30 years old and there were more female respondents than males. This is similar to the demographic characteristics of respondents in a study conducted by Adeoye et al. (2016) in Zaria. A report by WHO (2008) confirmed that there is a higher concentration of women in caring professions. The age distribution could have influenced the marital status of the personnel. Over half of the respondents were doctors and majority had not worked in the sector for up to 5 years. The results revealed a high level (85%) of knowledge on preconception care which

could be attributable to previous trainings the workers had attended. Studies by Olowokere, Komolafe & Owofadeju. (2015) and Adeoye et al. (2016) in Nigeria have similar results to our results. This however varies from the results of a study conducted by Ahmed, et al. (2015) in which the level of the workers' knowledge was very low.

Majority of the respondents correctly selected the definition of preconception care and about half reported to have received training on preconception care. This shows that the health workers knew that preconception care includes risk assessment, health promotion and interventions to promote health of mother and child. There was a larger proportion of doctors in the sample population compared to other professions this could explain their high level of knowledge preconception care, its components and Out of the four vaccines that should be given during preconception period, Hepatitis (68%) and Tetanus (79.9%) vaccines were highly indicated by the respondents compared to the other options asked. These vaccines may have been picked by most of the respondents over the others because this could be the vaccines they know about and are readily available in their hospitals and health centers. Infections from this virus before or during pregnancy can lead to preterm birth especially with rubella virus which can cause devastating consequences such as congenital rubella syndrome or miscarriage (Goldenberg et al., 2000). However, the gap in the knowledge of vaccines to be given could be because preconception care is a new initiative and has not been fully integrated into the system.

In addition, most of the respondents also knew about the effects of not seeking preconception care, the preconception risk factors and the components of preconception care although there are little gaps on the effects of domestic violence on preconception period. The gap shows that though the health care workers knew the risks involved in not seeking preconception care especially for females, they still need comprehensive trainings. About half of the respondents (49%) reported not to have had any training on preconception care and this could affect the quality of care delivered to their patients. Results from a study conducted by Bayrami, et al (2013) reported that 90% of the physicians had not spoken to their patients about domestic violence, occupational stress or weight adjustments. While receiving preconception care can result in men's positive biologic and genetic contributions to pregnancy conception, some of the respondents did not think that men should undergo genetic screening which could help to prevent and manage known genetic disorders that can affect the fetus. The results of the study showed that level of knowledge had a negative but statistically significant correlation with the practice of preconception care. The findings of the study are in variance with surveys conducted in Egypt (Fadia, Azza Refaat & Emam, 2012) and Ethiopia (Kassa, Human & Gemeda, 2018) which recorded poor knowledge among health workers

Generally, the health care workers' attitude towards preconception care was positive and is similar to reports of a study conducted in Sudan by Ahmed et al, (2015) Almost all respondents believed that preconception care has a positive effect on pregnancy outcome the services not for only women. Male involvement in such practices is also beneficial to future pregnancy and reproductive outcomes. Results indicated that there is still a pressing concern for intending partners to be aware of their genotypes and seek professional counselling in an attempt to reduce the risk of sickle cell diseases and other hereditary disorders. The practice of preconception care in this population was considerably high and they did not perceive time to be a barrier to provision of preconception care. Majority were willing to provide preconception care services outside their working hours. There was a general belief that they were the most suitable persons to provide preconception care. The attitudinal disposition had a significant relationship with the practice of preconception among the respondents. This indicates that the better the attitudinal disposition, the higher the practice levels will be. The workers believed that further adequate and comprehensive training will improve their knowledge and provide them with appropriate skills to deliver effective and quality services.

The study observed a high level of knowledge, practice and positive attitudinal disposition towards preconception care. Further training as indicated by the respondents, will improve their knowledge on this care which will in turn improve the quality of care that will be provided to intended

clients. The positive attitude will translate to better service provision and a reduction in the burden of maternal and reproductive health issues. There is a need for awareness on preconception care especially among adolescents. Such services should be provided in school settings to target this age group because this is the period when they start to explore and engage in risky behaviors that could cause irreversible side effects at conception. This will improve pregnancy outcome, maternal and child health and reduce the incidence of infant and maternal mortality.

This present study is a cross-sectional survey and we acknowledge some limitations which could be associated with the study through the possibility of recall bias and social desirability. The findings of this study may be suitable for the planning of larger studies and be applicable to other regions in the country. Essential training on preconception care should be offered to health care providers to reinforce their level of knowledge. These trainings will have positive impact on the practice and be beneficial to their clients.

Acknowledgement: The authors would like to appreciate the efforts and time of the health workers who willingly participated in this study. Also, we are grateful to the research assistants who ensured that the study was successfully conducted.

Study sites:

Ikeja Local Government Area

2, Obafemi Awolowo Way, Ikeja Area Office, Ikeja, Lagos State, Nigeria.

P.M.B. 100271, Ikeja, Lagos State.

Eti-Osa Local Government Area

Km 15, Km 15, Lekki Epe Expressway, Igbo Efon, Eti-Osa, Lagos State, Nigeria.

P.M.B. 101233, Ibeju, Lagos State.

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