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Assessment of the Public Health Implications of Poor Knowledge of Family Planning among Women of Childbearing Age in Jos North, Plateau State, Nigeria

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Abstract

Background: Family planning is identified as an essential component of Primary Health Care (PHC), as it plays a pivotal role in reducing maternal and newborn morbidity and mortality.

Objective: This study is therefore initiated to assess the implications of poor knowledge of family planning among women of childbearing age in Jos North LGA Plateau State.

Method: Data was collected qualitatively and quantitatively using survey questionnaire and in-depth interview (IDI) respectively. While seven (7) key informants were interviewed, 308 copies of questionnaire were administered but 293 were retrieved and analyzed.

Result: Finding of this study revealed that 96.3% of the respondents were knowledgeable of family planning and the socioeconomic implications of child spacing to the woman and the entire society. The study established that religious and cultural affiliation does not influence family planning in Jos North. From the finding, it was identified that the major obstacles militating against effective family planning uptake in Jos North is poor access to healthcare facilities and low level of awareness by women of childbearing age on the importance of child spacing. Notwithstanding, the study established that when women are knowledgeable of the social and economic benefit of family planning it will help in reducing the risk of unwanted pregnancy, abortion and maternal mortality rate.

Conclusion: Health professionals should create awareness among women of childbearing age, as this will improve family and economic well-being of the nation at large.

Keywords: Family, Family Planning, Childbearing, Child Spacing, Economic Wellbeing

Introduction

Since the 1978 Alma-Ata Declaration, family planning has been identified as an essential component of Primary Health Care (PHC) as it plays a pivotal role in reducing maternal and newborn morbidity and mortality [1]. Globally, family planning is also identified as one of the factors that contribute towards the achievement of the Sustainable Development Goals (SDGs) and the target of the Health-for-All Policy [2]. However, despite the potentials of family planning to the individual health and economic development of the society, poor uptake of family planning among women of childbearing age has been a problem in the developing nations including Nigeria. The World Health Organization report in 2019 stated that among the 1.9 billion women

of Reproductive Age Group (15-49 years) worldwide, 1.1 billion have a need for family planning in 2019, of these; 842 million are using contraceptive methods, and 270 millions have an unmet need for contraception [3]. Poor knowledge of the positive implication of family planning is identified as the major factor responsible for the poor uptake of family planning.

Family planning encompasses the services, policies, information, attitudes, practices, and commodities, including contraceptives, that give women, men, couples, and adolescents the ability to avoid unintended pregnancy and choose whether and/or when to have a child. Healthy spacing of pregnancies increases healthy outcomes for mother and baby she added. The knowledge of family planning does more than enable women and men to control their family size as is popularly held. It guarantees citizens' health and rights; improves families quality of life and by implication the larger society. The saying that a healthy nation is a wealthy nation will remain a truism for a very long time to come. According to the Federal Ministry of Health, family planning is one of the most cost-effective ways to prevent maternal, infant, and child mortality. In its blue print document it argued that it can reduce maternal mortality by reducing the number of unintended pregnancies, the number of abortions, and the proportion of births at high risk. It has been estimated that meeting women's need for modern contraceptives would prevent about one-quarter to one third of all maternal deaths, saving 140,000 to 150,000 lives per year [4].

According to the Federal Ministry of Health, family planning continues to offer a host of additional health, social, and economic benefits; it can help slow the spread of HIV, promote gender equality, reduce poverty, accelerate socioeconomic development, and protect the environment [5]. Control of human fertility has been the desire of most individuals and societies over the years. That is to say that the whole essence of fertility control or family planning is to put the population under control and enhances living condition. Large population are supposed to be advantage of countries as it were to families in those good old days but the reverse is the case for economic reasons as earlier stated. As United Nations Population Fund (UNFPA) puts it, access to safe, voluntary family planning is a human right and that family planning is central to gender equality and women's empowerment, also a key factor in reducing poverty [6]. Yet in developing regions, some 214 million women who want to avoid pregnancy are not using safe and effective family planning methods, for reasons ranging from lack of access to information or services, religious belief to lack of support from their partners or communities. This threatens their ability to build a better future for themselves, their families, and their communities.

Understanding the Problem

In 1999, the Centers for Disease Control and Prevention (CDC) identified family planning as one of ten great public health achievements in the United States during the 20th century [7]. Family planning is documented to prevent mother-child transmission of human immunodeficiency virus (HIV), contribute to birth spacing, lower infant mortality risk, and reduce the number of abortions, especially unsafe ones. It is also shown especially to lower maternal mortality and maternal morbidity associated with the increasing figures of unintended pregnancy. The benefits of family planning have become increasingly recognized worldwide, including improved health, economic, and social outcomes for women and families, as well as public health, economic, and environmental benefits at the population-level. At the individual-level, the health benefits for women and infants include the prevention of pregnancy elated health risks and deaths in women, reductions in infant mortality and the rate of unsafe abortions, the prevention of the transmission of HIV/AIDS from mother-to-child (PMTCT), and prevention of sexual transmission of HIV and sexually transmitted infections (STI) between partners. Family planning also has significant economic benefits for families and for society as a whole [8-10]. By slowing the growth of a population, women have more earning potential and families are able to devote more resources to each child, resulting in reductions of poverty [10]. Despite the known benefits of family planning, globally more than 120 million women aged 15 to 49 who are married or in a union have an unmet need for family planning [11, 12].

The Nigerian Demographic Health Survey (NDHS) 2013 shows that up to 16% of women still have unmet need for family planning, with the North Central zone having the highest percentage (23%) of women with unmet need for family planning in the country. This signifies that a huge gap still exists in access and uptake of family planning in the North central zone of Nigeria [13]. Evidence from the recent Nigeria demographic and health survey indicates that only about 15 percent of sexually active Nigerian women currently practice effective contraception. However, the figure varies from region to region being higher in the southern part of the country with a prevalence of modern contraceptive use of 12.5% among married women compare to a prevalence rate of 5.3% among married women in the Northern part of the country. The same pattern follows for fertility rate where the northern part of the country has a higher fertility rate of 6.6% compare to 4.5% in the south and a higher maternal mortality rate of 1,287 per 100,000 live birth in the north compare to 225 per 100,000 live birth in the south [14].

The Maternal Mortality ratio remains one of the highest in the world at 576 per 100,000 live births. And on the average, 116 women die every day in Nigeria from complications of pregnancy, labour or childbirth [15]. In line with this, the Federal Government of Nigeria after the 2012 London Summit on family Planning developed a Blue Print. Government stated that proper implementation of the Blueprint would definitely result in the achievement of the contraceptive prevalence rate (CPR) of 36 percent by 2018 as against the present CPR of 15 percent, aversion of infant death by 400,000 and 700,000 child deaths and 1.6 million unintended pregnancies will also be averted. This is an achievable task but requires the concerted effort of not only the three tiers of government but also that of the communities, civil society organizations, and the organized private sector as they rightly said. Our population is growing at an alarming rate of 3.3 % per annum FGN. Is this a suggestion that family planning information is not available or adequately available to the citizens? Alternatively, that the people are not aware of the idea, its benefits and possible side effects. Alternatively, is it that the citizens are not putting the information to use or adequate use. Could it also be that the means of conveying the information is not a popular one? 2018 achievement target for attainment of the contraceptive prevalence rate (CPR) of 36 is just few

months away can we be said to be faring well in that regard? Sustained campaigns and crusades to convey the message/information to the populace and see the same accepted and put to use is a must as ignorant in itself has been said to be a disease. The family planning information should not be limited to women antenatal clinics alone because this will definitely exclude men from the campaign, and naturally would yield little or no result. The awareness drive should be for both couples as they are the ones to jointly take the decision of accepting the need for family planning and what method(s) to adopt from available options. Several methods exist over the years both traditional and modern. Traditional method includes mostly unorthodox means, while modern methods of contraception include pill, injection, implants, female sterilization, male sterilization, female condom, male condom, intrauterine device, diaphragm, foam/jelly, and emergency contraception, creating awareness, having access and utilization of the information and methods would help in mitigating complications in pregnancy, maternal/mortality death under spaced child births, poverty, illiteracy and population explosion in plateau State. It is the intent of this study therefore, to find out the extent of accessibility, source(s), and methods of family planning to Nigerians in plateau State.

Materials and Method

Study population

The study population comprises women of reproductive age 16 to 49 in Jos north LGA, of plateau state. The study was carried out in Primary Health Clinic Tudun Wada, and Ministry of Health Epidemiological Investigation Unit Jos North L.G.A with an estimated population of 20, 712people, and women of reproductive age of 10, 000 in approximately 7, 000 households. There are health facilities in the ward, one Primary Health Centre, and two private health clinics.

Sample Size and Sampling Technique

Sample size of 200 women was used for the study, which was selected using systematic sampling technique. The researcher randomly pick the subject from the population. This is intended to give equal chance of the target population to be selected for the sample.

For an estimated population of greater than 10,000 using fisher's method of sample size determination.

$$n = \frac{22\ P8}{d2}$$

Where;

n = desire sample size when population is greater than 1,000.

Z= the standard normal deviation usually set at 1.96 which P=the proportion in the target population estimated to have a particular characteristics.

P value are for the purpose of this study is 0.58.

Note: Previous studies on prevalence not available so 0.5 is used.

q = 1.0 – p

d = degree of accuracy usually set at 0.05

$n = 1.96^2 \times 0.58 \times 0.42 = 374$

If we approximate the Z statistics to the nearest whole number for convenience, it is 2.0, then the

ns = 274/0.95

= sample size is

$$n = \frac{1.96^2\ (0.58)\ (0.42)}{(0.05)^2} \times 1000$$

= 374

Where,

n = Calculated sample size

ns = sample size to compensate for non-response

0.95 = taken that 95% response rate is anticipated

The sample size for this study is 374.

Sampling Techniques

Purposive sampling technique, which is a non-probability sampling, was used to family planning department because the study target only women of childbearing age. In addition, Systematic-sampling method, which is a probability sampling technique, will be used to select the respondents for the study. In selecting the respondents, the first woman who will come to the clinic will be selected, the second woman will be skipped, while the third woman will be selected. Thus, the interval of one person will be observed before the next person will be selected this process will be adopted until the sample size will be completed. If there is any situation where eligible respondent refuse or decline to participate in the study, the next person will in the clinic will be used.

Results and Discussion

Socio-Demographic Profile

Table 1 shows that the participants, 293 (100%) were females. This can be attributed to the fact that it is mostly women that engage in family planning and the study is also directed to female respondents. Regarding the age distribution of respondents, majority of the respondents 180 (61.4%) were twenty-six to thirty years of age, followed by 61 (20.8%) were between thirty-one to forty years of age, 48 (16.4%) of the respondents were between eighteen and twenty-five years, while 4 (1.4%) were forty-one and forty-five years. The table also shows that majority of the respondents who participated in the study, 265 (90.4%) were married, while 25 (8.5%) were widows, and 3 (1.0%) of the respondents were singles. This can be attributed to the fact that majority of the respondents were within the age range 26-41years and above and it is believed that most people of this age categories were married and are women of child bearing age. Also, regarding the religious affiliation of respondents, 120 (41%) of the respondents were of the Christian faith, while 172 (58.7%) practiced Islam, and only 1 (0.3%) was identified as a Traditionalist.

Concerning the academic qualification of the respondents, the Table 1 shows that 9 (3.1%) of the respondents had no formal education, 38 (12.9%) were primary school graduates, 162 (55.3%) were secondary school graduates, while 84 (28.6%) of the respondents possess other Tertiary qualifications which include university degree, diploma certificate, NCE, and HND. The table also indicates that significant number of the people who participated in the study were 113 (38.6%) were self-employed, closely followed were 92 (31.4%) were engaged in other activities to sustain their living which include trading, while 73 (24.9%) of the respondents were civil servants, and 11 (3.8%) were farmers. This shows that the study involves

people from different works of life and different socioeconomic strata in other to obtain divergent view on the uptake of family planning.

Table 1: Knowledge of Family Planning in Jos North

Sex	Frequency	Percentage (%)
Male	0	0
Female	293	100%
Total	**293**	**100%**
Age		
18- 25 years	48	16.4%
26-30 years	180	61.4%
31-40 years	61	20.8%
41-49 years	4	1.4%
Total	**293**	**100%**
Marital Status		
Single	3	1.0%
Married	265	90.4%
Widow	25	8.5%
Total	**293**	**100%**
Highest Qualification Acquired		
No Formal Education	9	3.1%
Primary School	38	12.9%
Secondary School	162	55.3%
College/university	84	38.6%
Total	**293**	**100%**
Occupation		
Civil Servant	73	24.9%
Farmer	11	3.8%
Self Employed	113	38.6%
Student	4	1.4%
Others	92	31.4%
Total	**293**	**100%**
Religious Affiliation		
Christianity	120	41%
Islam	172	58.7%
Traditionalist	1	0.3
Total	**293**	**100%**

The study investigated respondents knowledge of family planning and found out that majority of women of childbearing age (97.8%) are knowledgeable of the importance of child spacing and are aware of the health implications of child spacing to both the mother and the child. Further investigation shows that 80.2% of the respondents engaged in family planning (pills, injectables, implant and so forth).

Table 2: Respondents Source of Information on Family Planning

Response	Frequency	Percentage (%)
Radio	13	4.4%
Health Facilities	183	62.5%
Friends	97	33.1%
Total	293	100%

Table 2 indicated that majority of the respondents 183 (62.5%) know about family planning in health facilities. This corroborate the responses of the Focus Group Discussion where a significant number of the participants said they know about family planning in health facilities, some who claimed to know about family planning when they came for antenatal care in various clinics. However, 97 (33.1%) of the respondents said they know about family planning through friends and relations, 13 (4.4%) said they know about family planning through jingles and adverts on radio, television and other sensitization programs.

Table 3: Types of Family Planning Methods Respondents are using

Response	Frequency	Percentage (%)
Implant	3	1.0%
Injectable	60	20.5%
Tubal ligation	0	0%
Oral pills	207	70.6%
Others	26	8.9%
Total	293	100%

Table 3 indicates that majority of the respondents 70 (70.6%) are using oral pills. This finding aligned with the Focus Group Discussion where majority of the respondents said they were using oral pills.
In the words of Mrs. A *"I prefer to use contraceptive pills because it is cheaper and I feel it is safer compared to other family planning methods."* Although a significant number of the respondents (20.5%) were using injectable. This can be attributed to factors that include cost of family planning, fear of the risk of losing fertility and religious/cultural factors as identified by some participants during Focus Group Discussion. In the words of **Mrs. K** *"I am afraid of the injectable family planning method because I might not be able to conceive again… worst of it the tubal ligation and the implant method"*. However (8.9%) of the respondents indicated that they were using other family planning method that include withdrawal method, traditional method, condoms, etc. The implication of this finding is that most women of child bearing age are sufficiently informed of other family planning methods aside from the use of condoms, injectable and oral pills.

Table 4: Distribution of Respondents View on the Implications of Family Planning

Response	Frequency	Percentage (%)
Side effects	150	51.2%
Cost	42	14.2%
Sources	15	5.1%
Services	86	29.4%
Total	293	100%

Table 4 shows that 150 (51.2%) of the respondents do not want to engage in any family planning because of the perceived side effects, a significant number of the respondents 86 (29.4%) do not like the services rendered by health professionals when it comes to family planning uptake, 42 (14.3%) of the respondents indicated that the cost of family planning is what is limiting them, this finding corroborates with the Focus Group Discussion where majority of the respondents maintained that the cost of family planning has hindered them from the uptake. However, 15 (5.1%) of the participants said they do not have access to family planning. In the words of **Mrs. R**, during Focus Group Discussion said *"I don't like all this hospital family methods because of the attitudes given by the health professionals most especially nurses. "* she further stressed that *"the manner which the nurses talk to them is discouraging and they hardly attend to patients on time, so, I don't want to go to any hospital for the purpose of family planning."*

Table 5: Respondents Perceptions of the Influence of Religion on Family Planning Uptake in Jos

Response	Frequency	Percentage (%)
Yes	86	29.4%
No	207	70.6%
Total	293	100%

Table 5 shows that 207 (76.6%) of the respondents disagreed that religion influence their uptake of family planning, this finding aligned with the Focus Group Discussion where majority of the participants said that their religion encouraged child spacing (family planning). in the words of **Mrs. F**, "womenin my church are strongly advised to engage in family planning" in the vain, **Mrs. H** stated that "when getting married, a lady is thought more about child spacing by 'mallama' a religious leader in the Muslim faith". However, 86 (29.4%) of the respondents agreed that their religion influence their uptake of family planning, this finding is supported by two women in Focus Group Discussion who spoke in strong terms that "family planning is a serious sin against the almighty, it is as equivalent as murder" they lamented.

Table 6: Can you recommend the use of family planning?

Response	Frequency	Percentage (%)
Yes	221	75.5%
No	65	22.2%
No Response	7	2.4%
Total	293	100%

Table 6 shows that majority of the respondents 221 (75.4%) agreed that they can recommend the use of family planning, this finding aligned with the Focus Group Discussion where most of the participants agreed that they can recommend the use of family planning because of its advantages to the woman, children and the family's economic wellbeing. However, some respondents 65 (22.2%) disagreed that they can't recommend the use of family planning due to fear of complications side effects, poor knowledge of family planning usage by the women (patients) and high cost of family planning most especially implants and injectable.

Table 7: Which family planning method will you recommend?

Response	Frequency	Percentage (%)
Pills	117	38.9%
Injectable	59	20.1%
Implants	9	3.1%
Condoms	102	34.8%
Others	6	2%
Total	293	100%

Table 7 shows that majority of the respondents 117 (39.9%) indicated that they will recommend the use of pills for birth control this they suggest is relatively cheap and easy to withdraw when a woman wants to get pregnant again, 102 (34.8%) of the respondents indicated that they will recommend the use of condoms for family planning as it has no side effects, very cheap, very easy to access and can be used by anyone. While 59 (20.1%) respondents indicated that they will recommend the use of injectable and 9 (3.1%) recommend the use of implants for family planning.

Conclusion and Recommendations

The study established that when women are knowledgeable of the social and economic benefit of family planning it will help in reducing the risk of unwanted pregnancy, abortion and maternal mortality rate. The findings from this study have important implications for efforts to strengthen the family planning program in Nigeria:

1. Endorse the idea of smaller family size and work to change negative attitudes toward couples with relatively few children. Targeted messaging should promote smaller families (fewer than four children). Ideas about promiscuity, prostitution, and selfishness need to be delinked from couples who choose to have a small family. Culturally appropriate messages should also seek to increase peoples' understanding about how couples can achieve a smaller family size, and LA/ PMs should be positioned as effective and safe methods for couples to achieve their reproductive health goals.
2. Promote long-acting methods by increasing knowledge and correcting misinformation. Messages need to emphasize these methods' effectiveness and relatively minor side effects. Improving counseling should be part of a comprehensive family planning program, to enable users to understand the side effects of the methods and how to deal with them. It is important to address misinformation, including the belief that there is a link between the IUD and STIs.
3. Highlight the attributes of LA/PMs. Most attributes that study participants deemed important (e.g., requiring the minimum number of visits to a health facility, having minimal side effects, being easy to use, not interfering with sexual relations, etc.) are naturally associated with LA/ PMs. It is important that efforts to promote these methods emphasize these attributes.
4. Transform gender norms to support joint, informed decision making. The data show that while respondents think it is ideal for couples to decide together to adopt family planning, gender norms often lead to less-than-ideal decision making. Therefore, efforts to transform gender norms need to be part of family planning programming. Wives typically bring up the idea of contraceptive use. However, husbands' opposition often hinders or delays the decision to use a method.Women need to know how to approach discussions about contraceptive use in general and about LA/ PM use in particular. Men need to learn more about contraception and respect women's choices to control their fertility. Providers need to find better ways to help women address any relationship insecurities that may prevent use of LA/PMs.
5. Address supply-side issues that hinder expanded use of LA/PMs. Methods should be made available to clinics and stock-outs minimized. Steady availability of supplies and equipment needs to be ensured. Shortages of trained staff should also be addressed, possibly through strategies such as task shifting and use of dedicated providers, and in-service and refresher training for current providers should include LA/PMs. Efforts should also be made to introduce training on LA/PMs into the curricula for medical and nursing/midwifery students.

6. Redress provider biases. Potential users of LA/PMs rely extensively on service providers to guide them in the choice of appropriate methods. Providers, however, have their own biases and misinformation about LA/PMs. Indeed, study participants cited service providers as the source for some of the misconceptions they had regarding LA/PMs. It is important to increase service providers' knowledge about LA/PMs, correct their misconceptions, and strengthen their technical competence to provide the various methods.

Table 8: Abbreviations

PHC	Primary Health Care
SDGs	Sustainable Development Goals
WHO	World Health Organization
UNFPA	United Nations Population Fund
HIV	Human immunodeficiency viruses
CDC	Centers for Disease Control and Prevention
PMTCT	Prevention of the Transmission of HIV/AIDS from Mother-to-Child
STI	Sexually Transmitted Infections
NDHS	Nigerian Demographic Health Survey
CPR	Contraceptive Prevalence Rate

References

1. Hone T, Macinko J, Millett C. Revisiting Alma-Ata: What is the role of primary health care in achieving the Sustainable Development Goals? The Lancet. 2018; 392(10156):1461-1472.
2. Berhan Y, Ali M, Tassew A, Nonogaki A. Universal health coverage policy and progress towards the attainment of universal sexual and reproductive health and rights services in Ethiopia. Ethiop. J. Health Sci. 2022; 32(1):181-200.
3. Sadiq M, Manj YN, Iftikhar N. Family planning in Pakistan: A site of confrontation in Islam. Pak J Soc Res. 2021; 3(3):379-385.
4. Chauhan N, Rattan S. Determine the unmet need for family planning in a hilly area in a state of North India. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2021; 10(6):2234-2239.
5. Chukwuji CN, Tsafe AG, Sayudi S, Yusuf Z, Zakariya J. Awareness, access and utilization of family planning information in Zamfara State, Nigeria. Library Philosophy and Practice (e-journal). 2018; 771:1-15.
6. Hellwig F, Moreira LR, Silveira MF, Vieira CS. Quituizaca PR, Masabanda M, Serucaca J, Rudasingwa S, Nyandwi A, Mulu S, Rashad H. Policies for expanding family planning coverage: Lessons from five successful countries. Front Public Health. 2023; 12:1339725.
7. Dietz WH. The response of the US Centers for Disease Control and Prevention to the obesity epidemic. Annu Rev Public Health. 2015; 36:575-596.
8. Girma Garo M, Garoma Abe S, Dugasa Girsha W, Daka DW. Unmet need for family planning and associated factors among currently married women of reproductive age in Bishoftu town, Eastern Ethiopia. PloS one. 2021; 16(12):e0260972.
9. Genet E, Abeje G, Ejigu T. Determinants of unmet need for family planning among currently married women in Dangila town administration, Awi Zone, Amhara regional state; a cross sectional study. Reproductive health. 2015; 12:1-5.
10. Gribble JN. Fact Sheet: Unmet Need for Family Planning. Washington, D.C.: Population Reference Bureau, 2012.
11. Cahill N, Sonneveldt E, Stover J, Weinberger M, Williamson J, Wei C, *et al*. Modern contraceptive use, unmet need, and demand satisfied among women of reproductive age who are married or in a union in the focus countries of the Family Planning 2020 initiative: A systematic analysis using the Family Planning Estimation Tool. Lancet. 2018; 391(10123):870-882.
12. New JR, Cahill N, Stover J, Gupta YP, Alkema L. Levels and trends in contraceptive prevalence, unmet need, and demand for family planning for 29 states and union territories in India: A modelling study using the Family Planning Estimation Tool. Lancet Glob Health. 2017; 5(3):e350-8.
13. NPC. Nigeria Demographic and Health Survey. Abuja Nigeria; 2014, 2013, 89-139.
14. NPC/UNICEF. Children's and Women's Rights in Nigeria: A Wake-up Call. Situation Assessment and Analysis; Abuja, Nigeria: National Planning Commission (NPC) and UNICEF, 2001.
15. Onyemachi PE, Maduabuchi E, Ibe IU, Emenike IF, Okafor AF, Mark U. Evaluation of maternal and perinatal mortality in Amachara general hospital, Umuahia south local Government Area (LGA), Abia State, Nigeria, 2014–2017. GSCBPS. 2023; 24(3):108-121.