KNOWLEDGE AND USE OF MODERN CONTRACEPTIVES AMONG MOTHERS OF REPRODUCTIVE AGE IN ENUGU STATE; SOUTHEASTERN NIGERIA

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ABSTRACT
Evidence from various studies shows that there is a high level of knowledge and awareness of contraceptive methods in Nigeria, yet the rate of use remains low. This study explored broadly the level of knowledge and extent of utilization of modern contraceptives among mothers of reproductive age in Enugu State, Southeastern Nigeria. Questionnaires (n=1200), in-depth interviews (n=6), and focus group discussions (n=96) were used to collect data from three local government areas (LGAs). The results showed high levels of knowledge (87.0%). However, only 47.0% used a type of modern contraceptive. The oral contraceptive pill was the highest mentioned (333 mentions) of modern contraceptives. Chi-square values showed that level of education, type of residence, number of living children, and income were significantly related to the use of modern contraceptives and that mothers of reproductive age with higher education (secondary and tertiary) tended to use modern contraceptives more than their counterparts. Urban residents used modern contraceptives more than the ruralites. The number of living children also influenced the use of modern contraceptives, and income also influenced the use of modern contraceptives because the higher the income of a mother of reproductive age in Enugu State, the more likely she may use a modern contraceptive ($p< 0.05$). Qualitative data indicated that the majority of married mothers of reproductive age who used any other modern contraceptive aside from the male condom often do

so without the knowledge or consent of their spouses due to male dominance and some patriarchal values/beliefs. This study highlights the need for males to be actively involved in the reproductive health of females and helps to understand the essence of the use of modern contraceptives; this will invariably increase the utilization of modern contraceptives among mothers of reproductive age in Enugu State, Southeastern Nigeria. Finally, this study is different from various related studies because it revealed that male dominance is a major cultural factor that impedes the usage of modern contraceptives, unlike other studies that may focus on the fear of side effects.

Introduction

Contraceptives are essential to maternal, newborn, and child health services (World Health Organization [WHO], 2015). They play a significant role in fertility reduction by facilitating the spacing and limiting of pregnancies in women of reproductive age (Bogale et al., 2011).

Contraceptive use, particularly modern contraceptive use, remains prominent in demographic and health literature because of its numerous health benefits to women and families, such as preventing unintended pregnancies, promoting healthy birth spacing, reducing lifetime risk of maternal deaths, and enhancing the attainment of sustainable development goals (Bongaarts et al., 2016; Ahmed et al., 2012).

Singh and Darroch (2012) reported that the use of modern contraceptives in Sub-Saharan Africa will prevent 12 million unintended pregnancies, which in turn will avert almost seven million unplanned births, almost four million abortions, two million miscarriages, and 35,000 maternal deaths, and prevent an estimated 397,000 infant deaths. Fertility regulation also significantly increases women's access to educational and empowerment opportunities (Akinyemi et al., 2015).

Evidence from various studies shows that there is a high level of knowledge and awareness of contraceptive methods in Nigeria, yet the rate of use remains low (Monjok et al., 2010; Olugbenga et al., 2011). The predominantly high fertility rates in developing countries (Population Reference Bureau [PRB], 2017), especially in sub-Saharan Africa, are connected to low contraceptive use (Fagbamigbe et al., 2011; PRB, 2012; Lawani et al., 2014).

Women's knowledge and ability to use contraceptives and to determine whether and when to have children enhances their education and employment chances. This, in turn, improves their income, family stability, mental health, happiness, and the well-being of their children (Sonfield et al., 2013). Some studies (e.g., Bogale et al., 2011) have revealed a preference for modern contraceptives like hormonal and non-hormonal methods are preferred above traditional methods like periodic abstinence and coitus interruptus because they are more efficacious and are associated with lower failure rates.

In order to promote reproductive rights and gender equality, the need to improve the uptake of modern contraceptive methods has been consistently reiterated in the last few decades (Austin, 2015; Fagbamigbe & Ojebuyi, 2017). Women with an unmet need for modern contraception account for 84% of unintended pregnancies in developing countries (Bamgboye & Ajayi, 2016). The need to ensure universal access to modern contraception is particularly acute in Nigeria, where population control and women empowerment are crucial for

sustainable development (Egede et al., 2015; Feyisetan & Bankole, 2009; Kollehlon, 2003).

Knowledge of contraceptive methods is an essential precondition for its utilization. Morgan and Heather (2010) posit that women may not use any modern contraceptive method to regulate fertility not because they lack knowledge of modern contraceptives but because they experience various barriers posed by some socio-cultural and institutional obstacles to the adoption of fertility control mechanisms. Such barriers may include religious and cultural factors, lack of access, opposition to use by spouses, fear of health risks, and side effects of modern contraceptives (Carr & Khan, 2004). Additionally, women's sexual and reproductive health rights are often deeply engrained in societal values about women's sexuality. Patriarchal concepts of women's roles within the family mean that women are often valued based on their ability to reproduce. Pregnancy or repeated pregnancies spaced too closely together, often as the result of efforts to produce male offspring because of the preference for sons, has a devastating impact on women's health with sometimes fatal consequences (United Nations [UN], 2017).

There are several obstacles to contraceptive use in Nigeria. Studies in Nigeria and elsewhere in Sub-Saharan Africa have shown that significant obstacles to adopting modern contraceptive (MC) behavior include myths, misinformation, rumors, and unconfirmed information passed within social networks (Ankomah et al., 2011). The primary sources of information on family planning in the country are friends or siblings, media, formal education, and health workers (Ankomah et al., 2011). Additionally, several supply-related factors limit contraceptive use. These include the erratic supply of modern contraceptives, gaps in the logistics supply chain, donor dependence, poor quality services, and a dearth of skilled health personnel to provide family planning services (Federal Government of Nigeria [FGN], 2014). These are in addition to the many socio-cultural and demographic drivers of high fertility.

Examining barriers to contraceptive use among women of reproductive ages in a southeastern state where patriarchal values are dominant is therefore of crucial importance because many studies have found that there is a high level of knowledge of modern contraceptives but low utilization. This study thus seeks to ascertain knowledge and the extent of utilization (use) of modern contraceptives among mothers of reproductive ages in Enugu State, Southeastern Nigeria, to either back up the other various studies or bring bare new findings. Although there has been a considerable amount of research on contraceptives, to the best knowledge of the research, very few have directly addressed actual mothers instead of generalizing to women of childbearing age, not considering if they have ever given birth.

The Health Belief Model (HBM) and the Social Cognitive Theory (SCT) were adopted for this study and provided the anchorage. The HBM was first developed in the 1950s by Social Psychologists Hochbaum, Rosenstock, and Kegels. On the other hand, Albert Bandura started the SCT as Social Learning Theory (SLT) in the 1960s and developed into the SCT in 1986. These theories best explained the essence of this study on the "knowledge and use of modern contraceptives among mothers of reproductive age (15-49 years). The HBM holds that health behavior is a function of an individual's socio-demographic characteristics (Like –sex, age, residence, occupation, marital status, income, educational status, number of children, etc.), knowledge, and attitudes. On the other hand, the SCT considers a person's past experiences, which factors into whether behavioral action will occur. These past experiences influence reinforcements, expectations, and expectancies, all of which shape whether a person will engage in a specific behavior and why a person engages in that behavior. These two theories best explain the knowledge and attitudes mothers of reproductive age have about modern contraceptives and consequently explain the reasons women of this group (mothers of reproductive age) use or do not use modern contraceptives in Enugu State, Southeastern Nigeria.

Methods

Study area and setting

The study area was Enugu State, Southeastern Nigeria. The name of the State is derived from its capital city – "Enugwu," – meaning "top of the hill." Enugu State comprises social groups that are patrilineal and patrilocal, which encourages son preference because it is the male child that will remain to extend the family bloodline when girls have been married off. This kinship system might subject women to frequent pregnancies as families attempt to bear their desired number of male children, thereby posing cultural barriers to the use of modern contraceptives. Owing to this backdrop, research on women's reproductive health became essential to ascertain the current trends.

Design and Sampling Techniques

A cross-sectional survey involving a mixed-methods approach was adopted for this study. Ultimately, mixed methods research is about heightened knowledge and validity (Johnson & Christensen, 2017; Onwuegbuzie & Johnson, 2006). The sample for the questionnaire consisted of 1200 mothers of reproductive age (15 – 49 years who were purposively selected using the study's selection criteria and 200 respondents drawn from each community visited; six communities were studied; 200 respondents multiplied by six communities resulted in 1200 respondents) both single and married women who had at least given birth to a child. This study also accommodated widows who are within reproductive ages because most widows still conceive amidst their spouses' absence. Again, some women are often encouraged or even persuaded to remain in their natal families and conceive without getting married. This is often done in the absence of a male offspring. In addition to this sample, 48 males and 48 females, totaling 96 respondents, participated in focus group discussions (FGDs), and six participated in in-depth interviews (IDIs).

Multistage sampling was employed by using the three senatorial zones in Enugu State and choosing one local government area out of each zone, making the total LGAs selected three. One urban and one rural community were selected from each LGA by separating the urban communities to be studied individually, using the simple random technique (balloting). This totaled the study communities six – Enugu North: Nsukka LGA – Nsukka town (urban community) and Lejja (rural community); Enugu East: Isi-Uzo LGA – Ikem (urban community) and Isu (rural community); Enugu West: Oji-River (urban community) and Ugwunzu (Agbalenyi) (rural community). Two hundred respondents were purposively selected to meet the study criteria. The questionnaire was administered.

The FGD was used to obtain information from those respondents who did not participate in filling out the questionnaire. It was also used to accommodate the views and opinions of males. This was necessary to obtain a more in-depth knowledge of the research issue(s). Sixteen respondents (eight males and eight females) from each community made up the FGD group, and information was obtained from females (15-49 years) and males (30 years and above). The IDI was used to obtain information from health workers. One health worker was selected from each community's health center/family planning center, which amounted to six health workers.

Data collection

The study was conducted between June 2019 and February 2020. A total of 1200 questionnaires were administered among mothers of reproductive age. In addition, IDIs and FGDs were held. Before the actual data collection, the study communities were visited, and information on how and when the research would be conducted was discussed with community heads. During data collection, white chalk was used to mark the houses where the respondents administered questionnaires. The five male and female research assistants marked each house where an eligible respondent was found – E.R. meaning "Eligible Respondent." The trend continued till the number of respondents needed for the study was reached for each community. The questionnaire was administered through an extensive review of some related literature on the knowledge and use of modern contraceptives. The questionnaire was face-validated by three experts in the field of study. The reliability of the

questionnaire was determined using Cronbach's alpha, which obtained a reliability of 0.89, and the instrument was judged reliable.

FGDs and IDIs were conducted by using structured guides. The information obtained was triangulated with the quantitative data. The consent of the participants was sought and obtained, thereby recording FGD and IDI sessions. The recording was audio and hand (note taking) records. A Sony tape recorder was used alongside two smart phones as backups in case of any technical eventualities. The note taker recorded the respondents' verbal and nonverbal (gestures) cues in both FGD and IDI sessions. The lead researcher moderated all the FGD and IDI sessions. Some FGDs were held at community halls, others on church premises, and just a session in the market square on a Sunday afternoon. The study used contact persons responsible for selecting participants for the FGDs and IDIs, following the given criteria, and arranging session dates and venues. These contact persons were well-known persons in the communities, and this strategy enhanced the success of the sessions.

Data processing and analysis

Data editing and validation were done immediately on the field and upon return. This method ensured that specific errors were detected and corrected accordingly. The data was computer-processed using the Statistical Package for the Social Sciences (SPSS) version 20. Univariate and bivariate analyses were carried out. Logistic regression was also used for prediction.

The qualitative data was analyzed using transcriptions from the audio records. The audios were transcribed verbatim. Those that were recorded in Igbo were translated into English for general understanding. The transcripts were studied, and a codebook was subsequently developed, which reflected various themes. Emerging ideas were then analyzed according to themes. Areas of consensus or divergence were identified. Statements with contextual importance or connotations were extracted as illustrative quotes to complement the qualitative data. ATLAS-ti, computer-assisted qualitative data analysis software (CAQDAS), was partially used for qualitative analysis.

Results

The study used 1,200 respondents. Married mothers comprised most respondents (66.9%), and single mothers were at the lowest percentage (1.6%).

The majority (50.4%) of the respondents was aged between 15 and 32 and was classified as older mothers of reproductive age. Younger mothers constituted 49.6% of the respondents (595).

The majority of the respondents, 403 (33.6%), had a secondary school education, followed by 366 (30.5%) with a Primary school education and 256 (21.3%) with tertiary education. The lowest frequency (175) and percentage (14.6) of respondents did not acquire formal education.

None of the respondents were Moslems, and most of 1170 (97.5%) were Christians. A minority of 30 (2.5%) were African Traditionalists.

Most of the respondents, 490 (40.8%), were in business/trading. This was followed by Artisans, 319 (26.6%), and farmers, 260 (21.7%). The lowest number of respondents, 131 (10.9%), were public/civil servants.

Most respondents, 581 (48.5%), earned or were given between ₦1000 and ₦50,000 and are classified among the low-income/allowance earners. This was followed by those respondents 400 (33.3%) who earned or were given between ₦51,000 and ₦99,000. The lowest was those respondents 219 (18.2%) who earned or were given between ₦100,000 and above.

Respondents were distributed equally among rural and urban dwellers. Mothers of reproductive age who have ever had between 1 and 5 children were in the majority (8%), while those with six children and above were in the minority (92%).

Mothers of reproductive age whose living children are within number(s) 1-5 were in the majority (95%). In comparison, mothers of

reproductive age whose living children fall within number 6 and above were in the minority (5%).

Only married people were used for the interview. None of the IDI respondents were single, separated, divorced, or widowed. Among the FGD respondents, all the males were married, and only 4 of the females were widowed, compared to 34 who were married. The IDI male respondent was within the age range of 50yrs – 54yrs. Among the female IDI respondents, two were within the age range of 40 yrs – 44 yrs and 45 yrs – 49 yrs, and only one health worker was within the age range of 50 yrs – 54 y Among the FGD male respondents, the highest number (12) of respondents were within the ages of 40yrs – 44yrs and just one male FGD respondent was within the age range of 55yrs – 59yrs. Among the FGD female respondents, the highest number (14) of respondents were within the age range of 25yrs – to 29yrs, and the lowest number (2) were within the age range of 45yrs – to 49yrs. Only those who have acquired tertiary education participated in the IDI. This was possible because only top health workers participated in the IDI. Among the male FGD participants, the majority (16) acquired Primary education, and the minority (6) acquired tertiary education. Among the female FGD respondents, the majority (17) had acquired Secondary education, and the minority (8) had acquired Primary education. This shows that higher educated respondents were found among the FGD female respondents, and the highest educated with tertiary education were the IDI respondents.

A significant number of respondents have heard of modern contraceptives, with a majority of 87%. Respondents who have never heard of modern contraceptives comprised 11% of the population. This is quite encouraging because awareness is the first step in using it.

A majority (982) of the respondents have heard of the male condom as a modern contraceptive. This was followed by 691 respondents who had heard of the female condom, 615 respondents who had heard of oral contraceptive pills, and 435 respondents who had heard of sterilization. The least (1 respondent) heard of the modern contraceptive grouped under emergency contraceptives, maybe because of the term used.

IDI respondents have all heard of the modern contraceptives listed in the study. This is not surprising because they are health workers. On the other hand, among the FGD participants from both urban and rural communities, all the modern contraceptives listed were recorded to have ever been heard of by various participants.

A majority (52.8%) of mothers of reproductive age got their first information on modern contraceptives from medical personnel. This was followed by those respondents (30.8%) who got their first information about modern contraceptives from friends. This result might be because of how medical personnel in Enugu State create and raise awareness among people, especially mothers of reproductive age, who visit health centers on various occasions. Some views from the IDI respondents back up this assertion:

> *We, the health workers, give health talks during antenatal days and immunization. We also go to churches to reach out to mothers in their reproductive stages and to everybody. We also visit mothers during August annual meetings (**IDI respondent, Female, Isu, 46 years**).*

> *Health talks are conducted in this health center because we know the importance of family planning. Talks are scheduled on Mondays, which are immunization days, and Wednesdays, which are antenatal days. We do our best to enlighten them on all family planning issues, including modern contraceptives (**IDI respondents, Male, Nsukka town, 51 years**).*

Amongst the Christian and African traditional religion adherents, the majority of Christians have heard of modern contraceptives compared to adherents of ATR.

Urban residents have heard about modern contraceptives more than rural dwellers. 51.5% of urban dwellers have heard of modern

contraceptives, compared to 48.5% of rural dwellers who have also heard of modern contraceptives.

A majority (53%) of the respondents do not use any form of modern contraceptives. A majority (61.3%) of those respondents who reported having ever used any modern contraceptives belong to the low-income/allowance cadre. This is reinforced by the responses from the various health workers in all the six communities visited. Some of their views are expressed below:

In this health centre, the administration of modern contraceptives, that is, family planning is free. We do not charge for it (IDI respondent, Female, Isu, 46 years).

It was cheap, and most of them were even free. It is available and accessible (IDI respondent, Female, Ugwunzu, 52 years).

A majority (65.8%) of urban residents have used any MC, compared to 34.2% of rural residents who have used any MC. A majority (42.9%) of those who have used any MC clustered around mothers of reproductive age with tertiary education, and the lowest percentage (12.5%) clustered around mothers with no formal education.

A majority (333) of the respondents used oral contraceptive pills, followed by 321 respondents who used the male condom and 184 respondents who used the female condom. The least-used modern contraceptive was the vasectomy, which only one respondent indicated to have used with her partner. This may be probably because vasectomy is done on only the males, and the question was for mothers of reproductive age (females).

The health workers' responses (IDI respondents) do not exactly correspond with the quantitative data because the majority of the health workers opined that the majority of their clients who access modern contraceptives usually go for injectables, followed by male condoms and oral contraceptive pills. Below are their views:

I do not know of any modern contraceptives we lack here at this health center. We have almost all types, depending on which type you prefer. These contraceptives are primarily meant for women, except for the male condom. Most of our clients use injectables because they find them more convenient ***(IDI respondent, Female, Ikem, 42 years).***

Our clients are women of childbearing age, and they usually opt for injections (injectables) ***(IDI respondent, Male, Nsukka Town, 51 years).***

*We have condoms (male condoms) which we label a dual method approach because they prevent STIs/STDs and pregnancy; we have the pills (oral contraceptive pills), which are a 28days cycle tablet to be taken daily, preferably at specific times and we nicknamed "echelon" (this means "do not forget me" because, if you forget to take it even in a day; you risk getting pregnant); we also have the injections (injectables). Our clients prefer the injections but will also ask for male condoms maybe to complement the injections (****IDI respondent, Female, Oji Central, 48 years****).*

A majority of the male FGD respondents who use modern contraceptives patronize only the male condoms and interruptus coitus or withdrawal method (which is considered a traditional method). The quotes below express some of their views:

*A male condom can be bought at any nearby chemist shop, so I prefer using it with my woman anytime my body changes …… (****FGD respondent, Male, Oji Central, 42 years****)*

*I have been using a condom (male condom) with my women and will continue using it with my wife when I finally get married (**FGD respondent, Male, Oji central, 32years**)*

*My partner usually complains of stomach upset anytime I use Gold Circle (male condom) with her, but I use it anyway because of sexually transmitted infections (STIs); then, I use the withdrawal method on my wife. I do not want any mistakes, so when the feeling of ejaculation is coming, "Mmiri mma m tinye n'obo" (this means he will withdraw his penis and zip up) (**FGD respondent, Male, Lejja, 40 years**).*

On the other hand, the FGD female respondents seem not to rely on only the male condom and withdrawal method done by their partners or spouses. This is because a majority of them use injectables, followed by oral contraceptive pills and implants. The expressions below reflect their views:

*I use the injection type (injectables). I decided to use it because my husband is careless and can have sexual intercourse without any protection. I am suffering a lot with raising my six children, and I am still young (**FGD respondent, Female, Ugwunzu, 28 years**).*

*I am a nursing mother, so I was advised at the health center to use the pill. I have been using it. I stay just two weeks after childbirth, and I get the drugs from our community's health center. If I do not do this, my husband will not mind getting me pregnant while nursing a newborn……. (**FGD respondent, Female, Oji Central, 34 years**).*

A majority (344) of mothers of reproductive age mentioned that the reason why they do not use modern contraceptives was that they preferred traditional or alternative ways of contraception. This was followed by those (166) who gave the reason for non-use as fear of modern contraceptives' side effects. The latter may be the reason why they prefer traditional or alternative forms of contraception. Only 1 out of the population of non-users of modern contraceptives gave the reason for non-use as a financial constraint. The IDI respondents thoroughly debunked the idea of financial constraint because they opined that family planning and modern contraceptives are free or, at times, subsidized to a minimal cost of 200 naira (not up to a dollar) due to transportation fare government intermediaries charge them when they supply the contraceptives. The significant reasons given for the non-use of modern contraceptives by both IDI and FGD respondents are spousal/partner refusal (due to ignorance), fear of side effects (due to rumors), and age of the woman (younger women still trying for a child; do not use it; and older women who have reached menopause, do not use it). Some of their views are reflected below:

> *We have seen outright rejection of the use of modern contraceptives because they (women and men) have heard some side effects of modern contraceptives. These people are ill-enlightened and counseled (**IDI respondent, Female, Ugwunzu, 52 years**).*
>
> *Young couples without a child do not need to use modern contraceptives. Again, older couples do not need it because the woman will be in a period known as menopause, so she will not conceive anymore (**IDI respondent. Female, Ikem, 42 years**).*
>
> *My friend went for an IUCD implant and started bleeding non-stop. It has many side effects, so I will not want to use it ……. (**FGD respondent, Female, Oji Central, 38 years**).*

*Some of our women do not even allow their husbands to use condoms (male condoms) with them. They complain that they feel inadequate and unsafe (**IDI respondent, Male, Nsukka Town, 51 years**).*

A majority (84%) of the respondents think married couples should use modern contraceptives, and only 7% of the respondents think married couples should not use modern contraceptives. A majority 570 (64.8) of the respondents think married couples should use modern contraceptives because they help limit the number of children; this was followed by 480 (54.5%) respondents who think modern contraceptives are suitable for spacing children and 475 (54.0%) thinks modern contraceptives should be used by married couples in order to reduce pregnancy risks because frequent pregnancies lead to some reproductive health complications (morbidity) and possibly death (mortality).

In the views of FGD participants, the majority of those who use modern contraceptives gave reasons for use as purely economic. This was sharply followed by those participants who gave reasons for the use of modern contraceptives as a way to limit the number of children. This may even be because of economic reasons if viewed in another way. Some of their views are reflected below:

*I have four children, and paying for their school fees gives me a headache, so I do not want to have a fifth child. This is why I use a condom (male condom) with my wife. She does not like it because she always complains that I may be using it with other women….. (**FGD respondent, Male, Oji Central, 42 years**).*

*I am very fertile. I do not even have safe periods, so after my sixth child, I told my husband to take me for family planning. Things are complicated in our country, so having many children will put one in so much economic difficulty (**FGD respondent, Female, Nsukka Town, 38 years**).*

A majority, 72 (97.3%) of respondents ascribed non-use of modern contraceptives by married couples because they think that its use encourages promiscuity, and this was followed by respondents 51 (68.9%) who ascribed non-use of contraceptives by married couples to faith/beliefs.

Following the different methods used by males and females in the various communities visited, it was recorded that males and females expressed divergent reasons why married couples should not use modern contraceptives. The majority of male respondents thought that modern contraceptives have side effects. On the other hand, the majority of female FGD respondents who gave reasons why married couples should not use modern contraceptives thought that modern contraceptives encourage promiscuity. Their different views are highlighted below:

*Married couples should desist from using artificial things (modern contraceptives) to control childbearing. It is dangerous and might prevent the woman from getting pregnant again when she wants it (**FGD respondent, Male, Lejja, 42 years**).*

*Why should married couples use contraceptives? Why did I marry my wife if not to be having sexual intercourse freely with her and producing children? All these things (modern contraceptives) make some women look like castrated pigs (obese) (**FGD respondent, Male, Ugwunzu, 38 years**).*

A majority (78.3%) of the respondents think singles should also use modern contraceptives, and a majority of 686 (83.9%) of the respondents think that singles should use modern contraceptives because they prevent sexually transmitted diseases, followed by 528 (64.5%) who think that modern contraceptives

prevent unsafe abortion among singles, and 332 (40.6%) that think singles should use modern contraceptives because they help reduce pregnancy risks. The lowest number of respondents, 79 (9.7%), think singles should use modern contraceptives because they allow for sexual exploitation.

A majority (50.2%) indicated that the decision on contraceptives and the type to be used was made jointly, followed by 32.8% of respondents who made the decision solely and 16.5% who indicated that their spouse/partner made the decision.

Health workers that made up the IDI respondents had this to say about decision-making on the use of modern contraceptives (family planning):

> *The decision should be made by the man and woman (jointly), but most women come for family planning alone. In this situation, we inquired about their reasons, and if they were genuine, we proceeded (**IDI respondent, Female, Isu, 46 years**).*

> *Decisions on the use of modern contraceptives for family planning should be made by the man and the woman (jointly). In cases where the man refused any form of family planning, the woman might decide to come to us. We usually administer the injection type (injectables) so that it will not cause any form of misunderstanding. It is done secretly unless the woman wants to open up (**IDI respondent, Female, Ugwunzu, 52 years**).*

> *Of course, the decision should be made between the man and woman (jointly). Before a woman comes for family planning, she must discuss it with her husband or partner. If the husband is against it, the woman should not come (**IDI respondent, Female, Ikem, 42 years**).*

> *The right thing is for both parties (man and woman) to decide on how and when to use modern contraceptives for family planning purposes. A woman should not decide alone because she did not marry (**FGD participant, Male, Oji Central, 52 years**).*

A majority (53%) of the respondents indicated that there are implications of not using modern contraceptives for family planning purposes. (78.2%) of the respondents indicated that the significant implication of not using modern contraceptives for family planning was that it could lead to unwanted pregnancy. This was followed by respondents (13.4%) who indicated that it can lead to diseases (STDs). A minority (0.4%) of the respondents indicated that the implication for non-use of modern contraceptives for family planning was endangering women's health.

The IDI and FGD respondents added two more implications of not using modern contraceptives to the already mentioned implications. These two are that non-use of modern contraceptives hinders women's progress and promiscuity and affects children's well-being. The views of the IDI and FGD respondents include the following:

> *Women should not depend on traditional or alternative methods of contraception. Modern contraceptives are very convenient and efficient. A woman who does not use modern contraceptives of any type might risk an unwanted pregnancy (**IDI respondent, Female, Lejja, 41 years**).*

> *Using a gold circle (male condom) if you do not want a child is very advisable. This will help with the proper spacing of the children and even improve their health; they will not always look or be sickly. Gold circle (male condom) is also used to prevent sexually transmitted diseases (STDs),*

*especially if a married man decides to play outside (have sexual intercourse with someone other than his wife) (**FGD respondent, Male, Lejja, 43 years**).*

A majority, 608 (58.2%) of the respondents, indicated that the government can help improve the use of modern contraceptives through regular public awareness. This was followed by respondents 195 (18.7%) and 131 (12.5%) who indicated that the government should make modern contraceptives available and affordable.

The central idea that IDI and FGD respondents propagated was public awareness on how the government can help improve the use of modern contraceptives in Enugu State. This was followed by providing resident doctors and nurses at the various health centers, which will be possible by providing accommodation. Bad road repairs were also mentioned as one of the help the government should provide so that accessibility will be increased. Some of their views are thus reflected:

*The government should engage in enlightenment programs to educate people on the importance of modern contraceptives and family planning. The perceived side effects of modern contraceptives should be adequately explained so that interested couples or individuals will make the right choices (**IDI respondent, Female, Isu, 46 years**).*

*It seems family planning and modern contraceptive teachings are women-based. The health workers only teach our women about them, leaving us (men) ignorant. The government should organize seminars in order to let men into these teachings ……. (**FGD respondent, Male, Lejja, 42 years**).*

A majority (40.7%) of the respondents suggested that community leaders should help create more awareness of modern contraceptives, while 23.9% indicated that community leaders should encourage their community to use modern contraceptives. This might be done through public awareness programs like workshops, symposia, etc.

Discussion

Knowledge of Modern Contraceptives

Ever heard of modern contraceptives?

The study found that the mothers of reproductive age in Enugu State had a very high knowledge of modern contraceptives in that 87% of them had heard of some sought modern contraceptives. Among the survey respondents, a majority (94.0%) have heard more of the male condom. The IDI respondents were all aware of the types of MC under study (maybe because they are health workers specially attached to family planning units in various communities' health centers). At the same time, among the FGD participants, all of them have heard of at least one form of modern contraceptives.

Numerous studies on the knowledge of modern contraceptives support the above findings. Across the literature, high knowledge of modern contraceptives has been recorded among different sects of females of reproductive age. Concentrating on the earlier reviewed literature in this study, the findings correspond to those of Lwelamira et al. (2010), who studied married women of reproductive age in Mpwapwa District, Central Tanzania, and found an overwhelming majority (98.8%) of respondents aware of MC methods. Another study by Kei et al. (2015) supports this study conducted in Enugu State, Nigeria. Kei et al., who studied women of childbearing age in Uasin Gishu County, Kenya, found that (98.9%) of their respondents knew about modern contraceptives. This study, done in Enugu State, South-eastern Nigeria, also agrees with the study done in a rural community of Osun State, South-western Nigeria, among women of reproductive ages. Their study found that a good number (75.8%) of the respondents had a good knowledge of modern contraceptives.

The most popular MC among the survey respondents was the male condom. This corresponds to various research conducted around the world, specifically in Nigeria. It agrees with the study conducted by Envuladu et al. (2012) among female traders in Jos, Plateau State, Nigeria, in which it was discovered that (93.4%) of the women were aware of modern contraceptives and the most popular (95.5%) were the male condom. This might be because their spouses/partners used it with/on them.

Source of the first information

Most respondents (52.8%) attributed their first-ever information about MC to the medical personnel. This finding agrees with various studies like Ankomah et al. 2010 study among married young adults in Kano, Katsina, Maiduguri, Gombe, Makurdi and Okene; Lagos, Ondo, Oshogbo, Portharcourt, Calabar, Enugu and Benin; reported that most of the married women (90%) had heard of MC methods during routine sessions about family planning at antenatal clinics. In the current study, medical/health personnel across the six communities visited attested to giving health talks on antenatal and immunization days. Ofonime and Ikobong's (2013) study on knowledge of family planning among women in a rural community in Southern Nigeria also found that among 358 women of childbearing age, 299 had heard of MC methods through the clinic (Health Centre). This shows that health personnel/workers do their best to ensure widespread information on MC, especially among women of reproductive age at the grassroots level, not only in Enugu State but across Nigeria.

Use of modern contraceptives

First, the findings reported that 47% of the respondents have ever used any form of MC, while 53% reported having never used any method of MC. This shows that most respondents have never used any method/type of MC. It has been reported from various research studies that the educational attainment of women plays a vital role in the utilization of MC. This applies to this study because most respondents (33.6%) obtained secondary school education, followed by (30.5%) who obtained primary education. Again, a majority (42.9%) of those respondents who obtained tertiary education reported ever using any MC. It is then pertinent to assert that the study agrees with Hussain's 2011 study on married women of reproductive age in Malda District, West Bengal, India, which identified the level of education as a barrier to the use of MC. Asiimwe et al. (2011), who studied modern contraceptive use among young and older women in Uganda, also associated the use of MC with women's educational attainment. The more schooling a woman has, the more likely she is to report the use of a modern contraceptive method.

Secondly, the findings indicated that a majority (65.8%) of urban residents had never used any MC, against 34.2% of rural residents. This finding agreed with the findings of Mackfallen and Upendo (2014), Teye (2013), Dessalegn et al. (2014), Omedi and Nyauchi (2015), Adebowale and Palamuleni (2014), Igbodekwe et al. (2014), etc. All these studies revealed some conclusions which are also in agreement with the findings of this study – urbanites are more exposed to sources of information on contraception, urban residents are exposed to the small family norms, they are likely to be more educated, they enjoy far better access to family planning services than rural residents, greater exposure to mass media messages, and more knowledge about modern contraceptive issues than their counterparts who dwell in the rural areas.

Finally, on the type of MC used, the majority (68.1%) of the respondents reported having used oral contraceptive pills. Among the female FGD respondents, the majority used the injectables, while the majority of the male FGD respondents used the male condom. From the various FGDs conducted among males, it was found that women (their spouses/partners) do not like using the male condom. The reason was that they (women) felt that it may encourage promiscuity. It was concluded that women felt that men would feel comfortable using the male condom with "other women."

Reasons for non-use of modern contraceptives

A majority (61.9%) of the respondents reported having preferred traditional or alternative ways of contraception, followed by (29.9%) that gave reason for non-use as fear of side effects. Looking inward on a more critical analysis, it might be that the actual reason for their choice of contraception was because of the fear of side effects of MC. On the qualitative hand, the male FGD respondents gave the primary reason for the non-use of MC for family planning purposes as fear of side effects (due to rumors). In contrast, FGD female respondents gave the primary reason for the non-use of MC for family planning as spousal refusal (due to ignorance). Again, this finding, when critically analyzed, reveals that the primary reason for the non-use of MC is fear of side effects. The FGD males who gave the major gave the primary reason for the non-use of MC methods with their spouses/partners as fear of side effects might, in turn, refuse that their spouses/partners go to the health centers for the utilization of MC. In a study conducted by Kabagenyi et al. (2014) in Uganda, they found that a commonly reported disincentive among men to support their partner's use of contraceptive methods was related to perceived side effects, which they perceive reduces the sexual pleasure and increased women's risk of infertility and illness. Men reported being frustrated by several observed side effects like prolonged bleeding, vaginal dryness, and decreased sex drive or libido. On this particular issue of side effects of modern contraceptives, IDI respondents who were health workers at the various health centers visited in the various communities asserted that MCs do not have any side effects. They observed that most women use a particular MC because their friends use it, not bothering to come to the health center for proper counseling on the type(s) suitable for their body type and medical history.

Women's autonomy in decision making

Among the survey respondents, a majority (50.2%) indicated that choosing MC and the type to be used should be made jointly (by both spouses/partners). This was followed by those mothers (32.8%) who reported making decisions using MC alone (sole decision-making). Most of the IDI and FGD respondents followed the same line of thought, giving their views that joint decision is what ought to be and the best. However, some female FGD respondents claim to decide on their own if their husbands or partners refuse their use of MC.

The findings agree with Olugbenga-Bello et al. (2011) among women of reproductive age, and (73.3%) made joint decisions on MC use. It was interesting that some FGD female respondents said they made some decisions on the refusal of their husbands or partners to use MC since their reproductive health is their utmost concern. This finding contradicts Eguavoen et al.'s 2007 study in Ekpoma, Delta State, which asserted that traditional thought patterns still predominate.

Conclusion

High awareness/knowledge of modern contraceptives among mothers of reproductive age in Enugu State did not lead to its high usage. This supports many types of research done in and outside the study area that knowledge of modern contraceptives by women does not necessarily lead to their usage. The study also indicates that the State government should address those factors that pose a barrier to the utilization of modern contraceptives. The findings of the study, therefore, imply that it is not enough to supply modern contraceptives to the various primary health centers in various communities; instead, efforts should also be channeled into enlightening the general public on the benefits of using different types of modern contraceptives; especially for family planning purposes; and more so enlighten the general public on the right modern contraceptive to use at each time and occasion; for example – those for nursing mothers; those for mothers with some health challenges; even those specifically done on males etc. Having done all these, the government should also equip the health centers and provide them with medical personnel, especially those living in the clinical environment. This means that accommodations should be provided in and around the health centers in addition to accessible roads. Again, if traditional methods are accepted, they should be encouraged to use them if they are comfortable using them. The

main goal is to reduce frequent pregnancies that lead to various health challenges, etc.

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