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KNOWLEDGE OF THE RISK FACTORS AND PREVENTION OF INFERTILITY AMONG WOMEN OF REPRODUCTIVE AGE ATTENDING FERTILITY CLINICS IN ANAMBRA STATE

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ABSTRACT
The study was aimed at assessing the knowledge of the causes and prevention of infertility among women of reproductive age attending fertility clinics in Anambra state. Stratified random sampling technique was used to select a total of 228 women who participated in the study. A self-administered questionnaire was used for data collection. A test- retest reliability coefficient of 0.82 was obtained.The data was subjected to descriptive and inferential analyses using relative frequency distribution and chi- square tests respectively. The results indicated that 97.4% of the subjects knew that sexually transmitted infections are a risk factor for infertility. About half of them were aware that infertility could be caused by both delivering in unhygienic environment and having multiple sex partners. Only very few (8.7%) identified correctly that unsafe abortion and excessive consumption of alcohol are risk factors for infertility. On the other hand, the analysis of the findings revealed that most of the subjects lacked correct knowledge of positive preventive measures of infertility. For example over 90% of them did not identify 'being faithful to one sexual partner'; 'going to good fertility clinics'; 'health education and 'avoiding unnecessary medication' as preventive measures for infertility.Based on the above findings, the researchers recommended among other things that adequate health education and counseling services should be provided, as well as planning appropriate family life education for adolescents even from secondary school.

Keywords: Knowledge; Risk Factors; Prevention; Infertility; Reproductive Age; Fertility Clinics

Introduction

Infertility is a disease of numerous etiologies, which can affect both men and women of every ethnic group and race around the world. World Health Organization (2011) identified infertility as a disease of the reproductive system defined by the failure of a woman under 35 years of age to achieve a clinical pregnancy after 12 months of regular unprotected sexual intercourse with exceptions of other reasons, such as breastfeeding or postpartum amenorrhea. Though it is rarely considered a health issue of serious concern, infertility can lead to distress and depression, as well as discrimination and ostracism in certain cultures. An estimated 48.5 million couples worldwide were infertile in 2010 (Hornstein, 2018). According to the Centers for Disease Control and Prevention (CDC),

approximately 6% of married women of reproductive age are infertile and approximately 12% of reproductive age women, regardless of marital status, have impaired fecundity in the United States of America [USA]. (Shapiro et al, 2017)

In most society especially in Africa, a man's wealth is measured, in part, by the number of children he has. In indigenous African society, children are important as farm workers and as a source of support for their parents in old age. Consequently, a wife's value to her husband is determined by her ability to bear healthy children. A wife may be deserted or divorced summarily for her inability to bear children, even if the husband is the partner responsible for the infertility problem. This high premium placed on child bearing in the African context is captured in the following Yoruba adage, which says that "children are the cloth of the body, without children you are naked" (WHO, 2011).
Infertilityis a common problem worldwide as current estimates show that this problem affects 10-15 percent of couples. Available evidence suggests that the prevalence of infertility is on the increase in many parts of sub-Saharan Africa (FOS/UNICEF 2000). The importance of this problem can be assessed from the means that have been adopted over the ages and throughout different civilizations to overcome infertility.

Many factors have been implicated in the aetiology of infertility. The cause of infertility can be in the male or in the female partners or even in both partners. The male contribution to infertility is often down played and underestimated especially in Africa. In fact, estimates show that male factor infertility is involved in up to 30 percent of couples seeking investigations and treatment globally (Lewis, 1985).The increasing prevalence of infertility is closely linked to the rising incidence of sexually transmitted infections and complication of unsafe abortions and unclean deliveries. In most part of the world, mid and late adolescence is the time for experimentation and risk taking with little regard for possible consequences. The sexual behaviour exposes the youth to the risk of sexually transmitted organisms that can cause pelvic inflammatory diseases leading to infertility. Drug exposure, alcoholism, and smoking have all been implicated to alter sperm production and function and so affect fertility especially in men.

Infertility places a huge psychological burden on infertile couples, especially for women. Women are verbally or physically abused in their own homes, deprived of their inheritance, sent back to their parents, ostracized, looked down upon by society, or even have their marriage dissolved or terminated if they are unable to conceive. Greater knowledge of the factors affecting fertility may help to decrease the incidence of infertility by allowing couples to avoid certain risk factors. Moreover, Adebayo (2019) observed that the misconceptions regarding the causes of infertility have often resulted in a great deal of social and psychological pressures,gender bias and discrimination, inappropriate interventions and financial wastages.The purpose of study was to find out what women of reproductive age attending fertility clinics know about the

risk factors of infertility by assessing their knowledge of causes and prevention.

Research Method

The descriptive survey method was adopted. The population of this study comprises all women of reproductive age attending fertility clinics in Anambra State.Stratified random sampling technique was adopted. First, the population was divided into five strata, representing the five health zones in the state. Thereafter random sampling was performed independently in each stratum, (health zone) to select one general hospital for study. All the women who attended fertility clinic when their hospital was visited by the researchers were recruited for the study. All together 228 women participated in the study. A questionnaire was used for data collection. The questionnaire was made up of closed ended questions which gave the respondents opportunity to choose from the alternatives.A total of 27 questions were asked in the questionnaire. It was validated by three experts.

The reliability of the questionnaire was obtained through a test retest procedure, which yielded a coefficientof 0.82. Thereafter the questionnaire was also pretested with women of reproductive age attending fertility clinic at a hospital other than those being studied to ascertain respondents' comprehension of questions and to identify areas of ambiguity. From the pretest, the problems identified were equally corrected after which it was typed and administered to the respondents.The questionnaire was constructed to gather enough information regarding the knowledge of infertility risk factors and preventive measures among women of reproductive age attending selected fertility clinics during the time of study. The literate respondents filled the questionnaire, while the illiterate ones were interviewed directly from the questionnaire. The interview was conducted with the help of the nurses on duty under the supervision of the researchers**.**

Permission to conduct the study was sought for and obtained from the officers in charge of the health institutions. The purpose of the study was explained and the confidentiality of responses was guaranteed. The researchers visited the different health institutions selected for the study on the days they held their fertility clinic to administer the questionnaire. The respondents were instructed to answer all the questions freely and to return the questionnaire directly to the researchers or to their nurses. All the clients that attended clinics on the day of the visits were selected. A total of 232 copies of questionnaire were distributed.

In this study, the analysis of data involved tallying, grouping and conversion of figures into percentages and then presented either as tables, simple histograms, polygons and pie charts.Then a non-parametric – Chi square (X^2) test was used as a statistical tool for the testing of the hypotheses at 0.05 level of significance.

Presentation of Results

Out of the two hundred and thirty two (232) copies of questionnaire distributed, two

hundred and twenty eight (228) were completed and returned making a response rate of 98.2 percent. The non-response bias check was carried out for the educated and uneducated respondents and was found to be absent. In other words, the pattern of response was found to be the same for the different subgroups of the study sample.

Table 1: Socio demographic characteristics of the respondents

Age group	**Frequency**	**Percentages**
15-19	10	4%
20-24	22	10%
25-29	37	16%
30-39	113	50%
40-49	46	20%
Religion		
Catholics	79	35%
Protestants	74	32%
Pentecostals	47	21%
Islam	10	4%
African traditional religion	18	8%
Level of education		
Primary level	50	22%
Secondary level	76	33%
Tertiary level	102	45%
Had childbirth before		
Yes	84	36.8%
No	144	63.2%
Total	228	100%

Table 2: percentage distribution of respondents who have done something to delay or prevent pregnancy

Done anything to prevent pregnancy	**Number of respondents percentage**	**Percentages**
Yes	42	18.4%

No	186	81.6%
Total	228	100%

Table 3: Respondent perception of whom the problem of infertility arises from

Problem of infertility is from	**Number of respondents percentage**	**Percentages**
Females only	137	60.1%
Males only	28	12.3%
Both males and females	63	27.6%
Total	228	100%

Respondents' knowledge of the risk factors for infertility.Multiple responses were allowed for the identification of the risk factors for infertility for the respondents.

Table 4: Distribution of respondents by knowledge of risk factors forinfertility

Risk Factor For Infertility	**Knowledge correct**		**Knowledge incorrect**	
	F	%	F	%
Having more than one sexual partner	112	49.%	116	50.9%
Present of infections like sexually transmitted	222	97.4%	6	2.6%
Having unsafe abortion	20	8.7%	208	91.3%
Child delivery in unhygienic environment	114	50%	114	50%
Consumption excessive alcohol	20	8.7%	208	91.3%
Hormone disorder	12	5.3%	216	94.9%
Witchcraft	207	90.8	21	9.2%
Fibroids	219	96.1%	9	3.9%
Excessive smoking	11	4.8%	217	95.2%

Table 5: Respondents knowledge about the preventive measures for infertility

Preventive measures for infertility	**Knowledge correct**		**Knowledge incorrect**	
	F	%	F	%
Health education of the masses on the prevention of infertility	15	6.6%	213	50.9%
Being faithful to only one sexual partner	8	3.5%	220	2.6%
Go to a good fertility clinic for	13	5.7%	215	91.3%

treatment				
Go to traditional healers for treatment	198		30	50%
Go to the prayer houses for necessary prayers and sacrifices	158	69.3%	70	30.3%
Try premarital sex to assess one's fertility before marriage	211	92.5%	17	7.5%
Avoid excessive alcohol	82	36%	146	645
Stop smoking	54	23.7%	174	76.3%
Maintaining a healthy weight	112	49.1%	11.6	50.9%
Avoid unnecessary medications	20	8.7%	208	91.3%

Table 6: Relationship between the ages of the respondents and their knowledge of causes of infertility

Ages	**Correct**		**Incorrect**		**Total**		**df**	**Table value**	**X2 Value**	**Decision**
	F	**%**	**F**	**%**	**F**	**%**				
15 - 19	33(30.8)	14%	22(24.1)	9.6%	55	24%				
20 - 24	61(49.4)	26.7%	27(38.5)	11.8%	88	38.5%	4	9.49	15.8	Reject
25 - 29	8(12.3)	3.5%	14(9.0)	6.7%	22	9.2				
30 - 39	15919.6)	6.5%	20(15.3)	8.7%	35	15.3				
40 - 49	11(15.7)	4.81	17(12.2)	7.4%	38	12.2				

Calculated x^2 value = 15.8
Table x^2 value = 9.49
Degree of freedom = 4
Level of significance = 0.05
Table 6 showed that there is a significant difference between the ages of the respondents and their knowledge of the causes of infertility (P>0.05).

Table 7: x^2 Relationship between the ages of the respondents and their knowledge of the preventive measures of infertility

Ages	**Correct**		**Incorrect**		**Total**		**df**	**Table value**	**X2 Value**	**Decision**
	F	**%**	**F**	**%**	**F**	**%**				
15 - 19	17(18.3)	7.4	38(36.6)	16.6	55	24				
20 - 24	29(29.3)	12.7	59(58.6)	25.8	88	39.1	4	9.49	127.7	Accept
25 - 29	6(7.3)	2.6	16(14.6)	7.0	22	10				
30 - 39	14(11.6)	6.1	21(23.3)	9.2	38	15				
40 -49	10(9.7)	4.3	18(18.6)	7.8	28	12				

Calculate x^2 value = 1.27; Table x^2 value = 9.49; Degree of freedom = 4; Level of significance = 0.05

Table 7 revealed that there was no significant difference between the ages of the respondents and their knowledge of preventive measures of infertility. (P = > 0.05)

Discussion of Findings

The result of the study show that all the respondents who participated in the study were women of child bearing age attending different hospitals for cases of infertility. By virtue of the psychological aspect of their problems, they are supposed to be knowledgeable in certain concepts, especially as it affects their wellness. Such knowledge of health issues may have been acquired through personal experiences and inquisitiveness about the case and review of related literature and also instructions from the health care givers.

This study showed that it is exactly the case with women of reproductive age attending fertility clinics in Anambra with regards to their knowledge of causes and prevention of infertility. The study revealed that most of the respondents 128 (54.92%) had current knowledge of the causes of infertility. Majority of the respondents were still ignorant of these facts about infertility for instance 219 (96.1%) and 201 (90.8%) of the respondents indicated that fibroids and witchcraft respectively could be causes of infertility. Infertility cannot be caused by witchcraft but rather hormonal disorder and other causes that can affect both men and women. According to Adebayo (2019) the causes of 30 percent of the cases of infertility are traceable to the men another 30 percent are because of factors related to the women, while reasons involving both man and wife, account for the third 30 percent of the causes while the remaining 10 percent of couple infertility are unknown. From the study, the data analyzed revealed that it does not agree with the above as 137 (60.1%) respondents opined that the causes of infertility are from the females, 63 (27.6%) of the cause are from the male only.

Most of the subjects lacked knowledge of possible preventive measures for infertility. It was noted that 220 (96.5%) , 215 (94.3%), 213 (93.4%) and 208 (96.5%) of the respondents indicated that being faithful to only one sexual partner, going to good fertility clinics for treatment, health education to the masses for the preventions of infertility and avoiding unnecessary medications respectively were not preventive measures for infertility.
Following lack of knowledge, little or no efforts are made to prevent infertility except going for treatment of infertility. The treatment according to the study can be obtained at a good fertility clinic as indicated by 13 (5.7%), or the traditional healers 198 (86.8%) or the prayer houses by 158 (69.3%).

There is need for health talks, group and individual counseling of clients who attend fertility clinics on the aetiology and preventive measures of infertility. This will

go a long way in updating the knowledge of masses on infertility causes and prevention because when you educate a woman you educate a nation. Early detection and treatment of STIS in good clinic is very important as Adebayo (2019) observed that youths are exposed to various health hazards ranging from unwanted pregnancy to illegal abortions and sexually transmitted infection.

From the data collected and analyzed it was found out that most of the respondents 222 (92.4%) knew that sexually transmitted infections is a risk factor for infertility. Other causes were identified as follows:
Child delivery in unhygienic environment 114 (50%) having multiple sexually partners 112 (49.1%), having unsafe abortion and excessive consumption of alcohol 20 (8.7%) each, hormonal disorder 12 (5.3%) and excessive smoking by 11 (4.8%) of the respondents. However, some respondents thought that infertility can be caused by witch craft 20 (90.7%) and fibroids 219 (96.1%).

The implication of this finding is that some people still lack adequate knowledge of the disease entity and it is not likely they will attempt to diagnose or prevent the disease. This has been confirmed by Deatsman, et al. (2016) when he stated that person generally will not attempt to diagnose or prevent a disease condition unless they posses minimal level of relevant health knowledge, they cannot perceive themselves as potential vulnerable and the condition as threatening. Most of the respondents lack current knowledge of positive preventive measures of infertility. They indicated that the following were not preventive measures of infertility: being faithful to only one sexual partner 220 (96.5%), going to good fertility clinic for treatment 215 (94.3%), health education to the masses on the prevention of infertility 213 (93.4%) and avoiding unnecessary medication 208 (91.3%).

There is need for effective health enlightenment of the masses to update their level of knowledge on the risk factors and prevention of infertility. There was a significant difference between the ages of the respondents and their knowledge of the causes of infertility. This means that the response of each sub-unit was peculiar to it, and not as a result of chance. The implication of this is that in terms of planning enlightenment programmes for the masses such characteristics should be taken into consideration.

The analysis of result also revealed that there was no significant difference between the ages of the respondents and their knowledge of preventive measures of infertility. The ages of the respondent had no effect on their knowledge of the preventive measures of infertility. More efforts are required on the part of health workers to raise the level of knowledge of individuals on health issues bearing in mind that the percentage of individuals who will adopt the life style will increase when they have the desired knowledge.
One of the major factors affecting reproductive health of women in Nigeria is the low status accorded their gender in this country. This leads to less access to sources of health information, low level of education, less contact with the services needed to safeguard their health and less

power to obtain services. This is a result of their poor financial status and cultural barrier. As education is one of the products of the transformation of the cultural structure as a result of contact with the western worlds, there is need, therefore to improve the level of education of women both formally and informally. Efficient knowledge on health issues will also go a long way in helping individual to understand, appreciate and apply principles involved in the prevention on infertility.

Women of reproductive age attending various hospitals for infertility cases need to be exposed to various information networks concerning their conditions. This is not only true with this group of clients but with the general public at large. The client deserves to know and understand the full implication of his/her ailment. This will help in understanding, appreciating, synthesizing and applying preventive principles.

Health workers should provide health information aimed at creating awareness of the aetiology and preventive measures of illness and disease as it applies to individual clients. These educational effects should be able to dispel rumours and misconceptions about disease causation and prevention. This health education camping can be achieve through health talks, group and individual counseling, seminars, symposium, lectures and colloquium.

It is also necessary that the education ministry should include some basic health knowledge about causes and prevention of diseases in the tropics in the education curriculum starting from primary to the tertiary level. It is by so doing that health knowledge as well as attitudes and practices of individual towards health and health related concepts would be improved.

Health facilities should also be made accessible and friendly so that individuals will feel free to come for medical advice at any time even when they are not ill.

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