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Knowledge, Attitude and Participation in Pre-Marital Genetic Counseling and Testing of Sickle Cell Disease among Pregnant Women in IMSUTH, Orlu

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ABSTRACT

This study was carried out to assess the knowledge, attitude and participation of pre-marital genetic counseling and testing of sickle cell disease among pregnant women in Imo State University Teaching Hospital Orlu. In order to direct the study, three objectives and research questions were formulated. Related literature was reviewed. Non-experimental survey was used. A Census Survey of 240 women within childbearing age was used for the study. The main instrument for data collection was through structured questionnaire. They were analyzed using frequency distribution tables, percentages, pie chart and bar charts. The findings of the study shows that most of the respondents were within the age group of 25-34 years (50%), married (62%), Igbo (72%) and had attended tertiary education (58.3%). More than eight percent (83.3%) had knowledge of PGCT and sourced their information from the hospital (41.7%), more than seventy-eight percent (78.3%) know what genotype entails and also know their genotype and specific genotypes of those tested for SCD were as follows AA, 97 (51.6%), AS, 89 (47.3%) and least value being SS 2(1.1%).

Keywords: Knowledge, attitude, pre-marital genetic counseling, sickle cell disease, pregnant women

INTRODUCTION

The number of cases of sickle cell disease has been on increase around the world, especially in developing countries, sickle cell disease is one of the commonest genetic diseases in Nigeria [1]. There had been persistent transmission of sickle cell disease from parents to offspring over the years and this calls for concerted efforts to combat this menace in our society as they do so unknowingly because of lack of knowledge of their genotype prior to marriage [2-6]. Sani and Suleman [7] ascertained that genetic disease have become and still remain a topical issue of growing concern in Nigeria and other parts of the world. Genetics has traditionally viewed through the window of relatively rare single gene disease.

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Sickle cell disease or sickle cell anemia is a blood disorder characterized by red blood cells that assume an abnormal sickle shape (Sharma, 2019); Sickling decreases the red blood cells flexibility and results in a risk of various other complications like occlusion of tiny blood vessels resulting in vaso-occlusive crisis and also increase in blood viscosity, The life expectancy of the blood cells is about 25 to 35 days as against normal lifespan of 120 days for normal red blood cells and the affected individuals having average life expectancy of 42 and 48 years for males and females respectively [7-10]. Sickle cell disorders were originally found in the tropics and subtropics but are now common worldwide due to migration of people from tropical to temperate zones. The prevalence of sickle cell anemia in Nigeria ranges from 0.4%- 3% affecting about 20 per thousand newborns [11]. Sickle cell anemia contributes to an equivalent of 5% of under- five deaths on Africa continent and more than 90% of such deaths occurs in West Africa in which Nigeria is among [7]. The knowledge, attitude & participation of pregnant women in IMSUTH towards sickle cell disease and other genetic disorders can be properly understood and managed through integration and interpretation of family and medical histories to assess the chances of disease occurrence and reoccurrence, education about inheritance of the disease, testing, management, prevention, research and counseling promotes informed choices which are required for effective adaptation to the risks of the condition.

Research Methodology

Design of the Study

The study adopted descriptive cross-sectional design

Setting of Study

The study was carried out in Imo State University Teaching Hospital Orlu, Imo State.

Target Population of the Study

The target population of the study included all pregnant women (15-49) years in IMSUTH, Orlu, which comprises those attending antenatal clinic, female workers in the hospital and those admitted in female medical ward (FMW) during the period of the study.

Sample

All members of the target population were included in the study.

Method of Data Collection

The researcher himself administered a total of 240 copies of the questionnaire to the selected pregnant women in IMSUTH, Orlu. The administration, filling and collection of these questionnaires lasted for a week. The researcher collected back the entire questionnaire, giving 100% return rate. A total of 148 questionnaire were shared to women attending antenatal clinic on antenatal days, 74 copies to female workers and 18 to patients in female medical ward (FMW), during working days of the week. Giving a sum total of 240, which is the sample size for the study.

Method of Data Analysis

Data collected were analyzed using descriptive statistics of frequencies, percentages, pie charts and bar charts.

Ethical Consideration

In the course of the study, the researchers took into consideration all the ethics of research. The following are the ethical considerations taken care of by the researchers.

- The anonymity of the women was ensured and none of their names was ever mentioned during the course of this work.
- An informed consent was obtained from the women before the questionnaire was given to them to fill.
- The researchers addressed and explained reasons for the condition of the study and assured them of animosity and confidentiality of their responses.
- The researchers also ensured that the women were not coerced to participate rather they opted to participate voluntarily.
- In the questionnaire, the researchers ensured that only relevant questions were asked, and the confidentiality of responses ensured.

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- Before the researchers administered the questionnaire to the women in IMSUTH, Orlu, permission letter from the department of Nursing Science was sent to the head of departments of the intended points of data collection for approval.

RESULTS

Table 1: Showing the age groups of the women of childbearing age, their marital status, ethnic group and educational level

Age (years)	Frequency (f)	Percentage (%)
15-24	12	5.0%
25-34	120	50.0%
35-44	62	25.8%
45 and above	46	19.2%
Marital Status		
Married	148	61.7%
Single	20	8.3%
Divorced	27	11.3%
Widow	45	18.7%
Ethnic Group		
Hausa/Fulani	10	4.2%
Igbo	173	72.1%
Yoruba	12	5.0%
Others	45	18.7%
Educational Level		
Informal	-	0
Primary	15	6.3%
Secondary	85	35.4%
Tertiary	140	58.3%

Table 1 above shows that most of the respondents were within the age of 25-34 (50.0%), followed by those within the age of 35-44 (25.8%), 45 and above (19.2%) and the least were those within the age of 15-24(5.0%).

The table also shows that majority of the respondents were married (61.7%), single (8.3%), divorced (11.3%) and widows (18.7%). Considering the ethnic group, majority of the respondents were Igbo (72.1%), others constitute (18.7%), Yoruba (5.0%), the least being Hausa/Fulani (4.2%).

The educational level of most of the respondents fall within the tertiary institution (58.3%), followed by secondary school (35.4%) with the minority having primary education (6.3%) and none with informal education.

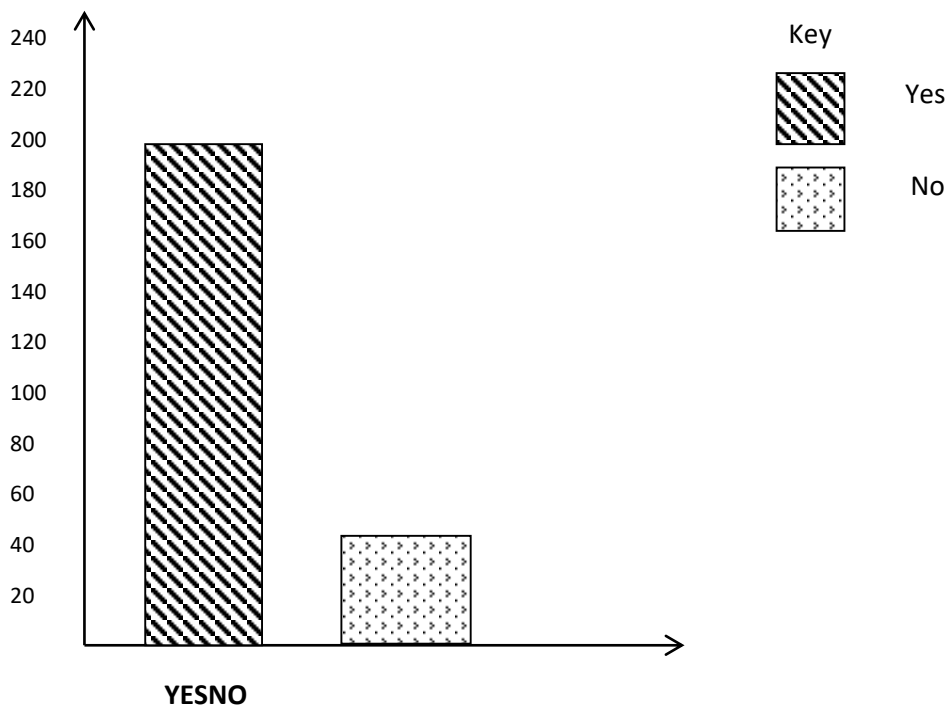
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Table 2: Knowledge of PGCT, SCD and source of information

Knowledge of PGC	Options	Frequency	Percentage %
Information on PGCT and SCD	Yes	200	83.3%
	No	40	16.7%
Source of Information	Mass media	43	21.5%
	Textbooks	29	14.5%
	Hospital	115	57.5%
	Others	13	6.5%
Understanding of PGCT and SCD	It is a medical screening for admission	12	5.0%
	It is a screening done before marriage to determine specific genotype	200	83.3%
	It is a screening done during antenatal visit to determine the sex of child		
	It is a screening done during admission to determine the time of delivery	16	6.7%
		12	5.0%

Fig 1.



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Results from table 1 and figure 1 show that 200 (83.3%) of the women agree to have heard of PGCT and SCD while 40(16.7%) indicated that they had no knowledge of such. Considering the medium of which they obtained their information Hospital provided the greatest sources of 115 (57.5%) followed by mass media 43 (21.5%), textbooks representing 29 (14.5%) and 13 (6.5%) identified from other sources.

Results on the table further showed that 200 (83.3%) of the women had a correct knowledge of PGCT and SCD as they rightly answered that it is a screening done before marriage to determine genotype.

Table 3: Attitude of women of child bearing age towards sickle cell disease testing and premarital genetic counselling

Statements	SA	A	D	SD	Mean	Remark
Genotype testing before marriage is important	110	90	25	15	3.22	Positive
I will subject myself to pre-marital counselling & testing of sickle cell disease	139	61	13	27	3.30	Positive
I will advise my children and others to go for premarital testing	97	103	10	30	3.11	Positive
Premarital testing does not cause harm to unborn child	121	79	22	18	3.26	Positive
Premarital genetic counselling is testing should be encouraged	181	19	17	23	3.49	Positive
There should be law to enforce premarital counselling and testing	83	117	6	34	3.04	Positive
					3.24	
Cumulative mean						

Data on table 3 shows the attitude of women of child bearing age towards sickle cell disease testing and premarital genetic counselling. The mean scores of their responses to the items on attitude towards SCD testing and PGC are 3.22, 3.30, 3.11, 3.26, 3.49 and 3.04 respectively which are all above the cut off mean mark of 2.5. The cumulative mean is given as 3.24 and this by implication means that the respondents have a positive attitude SCD testing and premarital genetic counselling.

Table 4: Response on participation in genetic counselling and testing

Variables	Options	Frequency	Percentage (%)
Genotype testing in the past	Yes	188	78.3%
	No	52	21.7%
What is your genotype?	AA	97	51.6%
	AS	89	47.3%
	SS	2	1.1%
Reason for taking the test	Screening for admission/Employment	86	45.7%
	As pre-requisite for marriage rites	70	37.2%
	On admission in the hospital	12	6.4%
	During ante-natal visits.	20	10.6%

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Figure 2

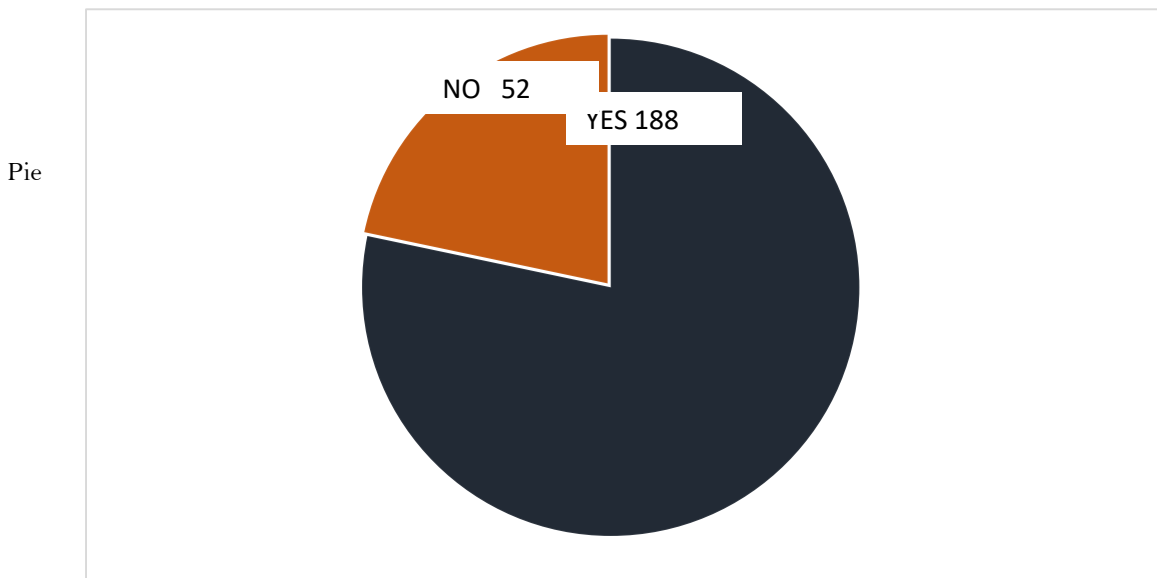


chart representing practice of genotype testing in the past by respondents.

Data on table 4 and figure 2 reveal the response of the women on their participation in genetic counselling and testing. Results from the table shows that out of the 240 respondents for the study, only 188 (78.3%) have had genotype testing in the past. The table also illustrated that specific genotypes of those tested for SCD were as follows AA, 97 (51.6%), AS, 89 (47.3%) and least value being SS 2(1.1%). Out of the 188 who took genotype tests in the past, 86 (45.7%) took the test for the purpose of admission/employment; 70 (37.2%) did so as a pre-requisite for marriage; 12 (6.4%) took the test on admission into the hospital while 20 (10.6%) took the test during antenatal sessions in the clinic.

DISCUSSION

Findings from the study revealed that 200 (83.3%) of the women have heard about PGCT and sickle cell disease while 40 (16.7%) of the women ascertained that they have no knowledge of such. This is in line with Moronkola and Fadairo [12] who that ascertained that a high knowledge level of PGCT and SCD exist in Nigeria. They further suggested that more education about sickle cell disease and access to genetic counseling especially for students in tertiary institutions in Nigeria should be encouraged [13-16]. This finding is in line with the findings of Adewuyi [17] who conducted a study in Ilorin, Nigeria among new undergraduates of Nigeria tertiary education institution, to assess their knowledge and attitude to sickle cell disease testing. The researcher further reported that there was favourable attitude towards genetic counselling among the students. Findings from the study in research question 3 revealed that out of the 240 respondents for the study, only 188 (78.3%) have had genotype testing in the past. Out of the 188 who took genotype tests in the past, 86 (45.7%) took the test for the purpose of admission/employment; 70 (37.2%) did so as a pre-requisite for marriage; 12 (6.4%) took the test on admission into the hospital while 20 (10.6%) took the test during antenatal sessions in the clinic. This finding is debunked by the findings of Moronkola and Fadairo [12] who in their study reported that although there was a high knowledge of PGCT and SCD among women in Nigeria, there is low practice of genetic counselling as a lot do not know their genotypes and the best match for them in cases of marriage. They further reported that a majority of the women who knew their genotype opted for the testing as a prerequisite for employment.

CONCLUSION

High level of knowledge of sickle cell disease exists among the women as against backdrop of women, that lack knowledge of the issue. Participation in PGCT and SCD among the women is encouraging as obtained

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from the study (78.3%). Pregnant women in IMSUTH, Orlu, have positive attitude towards premarital genetic counseling and testing of sickle cell disease. There is impact of religion on practice of PGCT of SCD, though the effect was less on the women without religion barrier.

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