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A STUDY OF PREMARITAL SCREENING OF SICKLE CELL DISEASE AMONG UNDERGRADUATE STUDENTS OF GOMBE STATE UNIVERSITY, GOMBE, NORTHEAST, NIGERIA

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ABSTRACT

The study aimed to assess the knowledge and attitude, of premarital screening of sickle cell disease among undergraduate students of Gombe State University. A cross-sectional study was conducted in which information was obtained from 271 students who fulfilled the inclusion criteria. A P-value of <0.05 was considered to be statistically significant for data analysis. The mean age of respondents was 22.7 ± 4.2 years. Those who are aged 20 - 30years constitute 70.0% of the study population. Of the total studied participants, 187(58.6%) were female and 139(43.6%) were in their first year of study. 77.7% of the respondents had poor knowledge of premarital screening of sickle cell disease and majority (90.9%) had negative attitude toward the screening. Age, sex, religion, marital status and faculty were found to have significant association with knowledge of premarital screening of sickle cell disease (P< 0.05). Be single was significant predictor of knowledge of premarital screening of sickle cell disease among the students (P<0.05, AOR=4.008, 95%CI=1.585-10.138)). Religion, marital status and level of study were significantly associated with attitude toward premarital screening of sickle cell disease among the studied population. Religion (P<0.05, AOR=0.299, 95%CI=0.095-0.549) and marital status (P<0.05, AOR=2.858, 95%CI=1.074-7.606) were significant predictor of positive attitude toward premarital screening of sickle disease. Significant proportion of the studied population knew little about premarital screening of sickle cell disease and had negative attitude toward such screening. Religion and marital status were found that influence attitude toward premarital screening of sickle cell disease.

KEYWORDS: Attitude, Knowledge, Premarital, Screening, Sickle cell disease.

INTRODUCTION

Sickle cell disease is a genetic disorder in which an abnormal haemoglobin leads to chronic anaemia with numerous clinical consequences.[1] Sickle cell disease is a public health problem that afflicts significant proportion of Nigerian population thus premarital screening of the disease has become necessary. Premarital genotype screening creates an opportunity for people to take informed decision on the genetic predisposition of their unborn children. It is therefore important that people are screened and informed of their genetic make-up in order to help them take informed decision about their marriage so as to avoid procreation of children with genetic inheritance of grave consequences. Genetic diseases can impact greatly on a person's life, causing physical and emotional pain, developmental problems and even death.[1]

Premarital screen of sickle cell disease is one of the different methods of genetic disease prevention and an effective public health control measure which the population needs to be aware of and develop positive attitude toward. There is need to evaluate the level of knowledge and attitude of pre-marital screening as a way of reducing and/or preventing the occurrence of sickle cell disease. The youths are particularly the right target population for interventions aimed at preventing and controlling genetic diseases such as premarital genetic counseling and screening because most of them are either unmarried or preparing to get married and will procreate in the future.[2] The study aimed at searching to know the level of knowledge and attitude of premarital screening of SCD among the undergraduate students of Gombe State University so as to provide more health education and awareness on importance of the screening before marriage as a means of preventing sickle cell disease and its associated morbidities and mortality. Also the findings of this study will be useful as baseline findings for the purpose of referencing a future research on premarital screening of

SCD and for development of strategy and policy for SCD prevention and control.

MATERIAL AND METHODS

Study design

A descriptive cross sectional study was carried among randomly selected undergraduate students of Gombe State University in the month of January 2021 and the information was collected through the use of structured questionnaire to assess respondents on the study objectives.

Study Area

Gombe State University is located in Tudun Wada ward of Gombe LGA. It has five faculties and 33 departments, and on average has population of students of about 8,000

Study Population

Study populations were all registered undergraduate students of the university. It excluded all those on part time study and students on remedial study

Sample size determination

The calculated sample size was 246 using the Cochran's formula and with a non-response of 10%, minimum sample size was 271

Sampling method

A multi stage sampling technique was used to select three faculties in the first stage from the list faculties using simple random sampling technique by balloting. In the second stage, three departments were selected. Systematic random sampling was used to select the study population

Data collection

The questionnaires were pretested at Federal University Kashere with 60 participants. The questionnaire which was self-administered was adapted from a study[3] and was administered after obtaining verbal consent with the aid of 5 research assistants who were trained for 5 days. It consists of sections on socio-demographic characteristics, Knowledge and attitude of premarital screening test. Knowledge of premarital screen test of the respondents was scored by allotting a score of one for every relevant answer and zero for wrong or unanswered questions. Likewise practice of premarital screening of the respondents was also scored by allotting a score of one to every right answer and zero to every wrong answer. On overall score of 12, a total score of less than 7 is a poor knowledge of premarital screening test while a total score of 7 and above is good knowledge. For the attitude of premarital screening test, out of overall score 8, a total score of 5 and above is positive attitude while a total score of less than 5 is negative attitude.

Data analysis

The data were coded, checked, and processed with version 23 Statistical Package for the Social Sciences. Descriptive statistics, such as means, standard deviations (SD), frequencies, and proportions, were used to summarize variables. Chi-square tests were used to identify associations between categorical variables using a P-value of 0.05 at 95% confidence interval as the significance level. Logistics regression was used to determine the predicators of positive attitude toward premarital screening of sickle disease among the students.

Ethical consideration

Institutional approval for the conduct of the study was obtained from Gombe state ministry of health. The study was conducted according to the Principles of the Helsinki Declaration. Before the questionnaires were applied to the respondents, permission was obtained from the university authority and verbal consent was obtained from all the respondents who participated in the study. The respondents were specifically informed regarding their entitlement to information regarding the study, voluntary participation, privacy issues, their right to refuse to divulge information, and to terminate their participation at any time.

RESULTS

Table 1: Socio-demographic characteristics of the respondents.

Variables	Frequency (%) n=271
Age <20 20-30 >30	 73(22.9) 233(73.0) 13(4.1)
Mean age	22.65±4.157
Sex Male Female	 132(41.4) 187(58.6)
Tribe Fulani Hausa Tangale	 134(42.0) 90(28.2) 39(12.2)

Tera	38(11.9)
Others	18(5.5)
Religion	
Christian	55(17.2)
Islam	264(82.8)
Marital status	
Single	239(74.9)
Married	80(25.1)
Faculty	
Sciences	152(47.6)
Education	51(16.0)
Art and social sciences	116(36.4)
Level	
100	139(43.6)
200	88(27.6)
300	92(28.8)

Table 2: Knowledge and attitude grading on premarital screening of SCD.

Variable	Knowledge Grading	Attitude Grading
Mean	6	4
Maximum score	0	0
Minimum score	12	8
Good/positive	71(22.3%)	29(9.9%)
Poor/negative	248(77.7%)	290(90.9%)

Table 3: Chi square analysis of socio-demographic characteristics and knowledge of premarital screening of SCD.

Variables	Poor knowledge	Good knowledge	X^2	df	P value
Age					
<20	47(61.8%)	29(38.2%)		0.001*†	
20-30	191(83.0%)	39(17.0%)			
>30	10(76.9%)	3(23.1%)			
Sex					
Male	110(83.3%)	22(16.7%)	4.067	1	0.004*
Female	138(73.8%)	49(26.2%)			
Religion					
Christian	37(67.3%)	18(2.7%)	4.210	1	0.040*
Islam	211(79.9%)	53(20.1%)			
Marital status					
Single	178(73.3%)	65(26.7%)	11.894	1	0.001*
Married	70(92.1%)	6(7.9%)			
Faculty					
Sciences	75(85.2%)	13(14.8%)	8.905	2	0.012*
Education	111(79.9%)	28(20.1%)			
Art and social sciences	62(67.4%)	30(32.6%)			
Levels					
100	101(72.7%)	38(27.3%)	5.597	2	0.061
200	68(77.3%)	20(22.7%)			
300	79(85.9%)	13(14.1%)			

***Statistically significant †Fisher exact test**

Table 4: **Logistic regression analysis of predictors of knowledge of premarital screening of SCD**

VARIABLES	Odds ratio	AOR (95% CI)	p-value
Age group			
<20	1		0.028*
20-30	0.103	1.108 (0.241-5.102)	0.895
>30	-0.733	0.480 (0.113-2.038)	0.320

Sex			
Male	1		
Female	-0.567	0.567 (0.303-1.061)	0.076
Marital status			
Single	1		
Married	1.388	4.008 (1.585-10.138)	0.003*
Religion			
Christian	1		
Islam	0.917	0.426 (1.248-5.015)	0.076
Faculty			
Sciences	1		0.019*
Education	-0.720	0.487 (0.220-1.078)	0.076
Art and social sciences	-0.899	0.407 (1.133-3.752)	0.006*

***Statistically significant**

Table 5: Chi square analysis of socio-demographic characteristics and attitude toward premarital screening of SCD.

VARIABLES	Negative attitude	Positive attitude	X^2	Df	p-value
Age					
<20	68(89.5%)	8(10.5%)			
20-30	209(90.9%)	21(9%)			0.475 ŧ
>30	13(100%)	0(0%)			
Sex					
Male	119(92.2%)	13(7.8%)	0.156	1	0.693
Female	171(91.4%)	16(8.6%)			
Religion					
Christianity	44(80.0%)	11(20.0%)	9.50	1	0.002*
Islam	246(93.2%)	16(8.6%)			
Marital status					
Single	226(93.0%)	17(7.0%)	5.417	1	0.012*
Married	64(84.2%)	12(15.8%)			
Faculty					
Sciences	83(94.3%)	5(5.7%)			
Education	125(89.9%)	14(10.1%)	1.349	2	0.509
Art and social sciences	84(91.3%)	8(8.7%)			
Level					
100	129(92.8%)	10(7.2%)			
200	74(84.1%)	14(15.9%)			0.007* ŧ
300	89(96.7%)	3(3.3%)			

***Statistically significant ŧ Fisher exact test**

Table 9: Logistic regression analysis of predictors of attitude of premarital screening of SCD

Variables	Crude OR	AOR (95% CI)	p-value
Religion			
Christianity	1		
Islam	-1.475	0.299 (0.095-0.549)	0.001*
Marital status			
Single	1		
Married	2.858	2.858 (1.074-7.606)	0.035*
Level			
100	1		0.039
200	-1.233	0.291 (0.070-1.217)	0.091
300	-1.715	0.180 (0.048-0.677)	0.011

***Statistically significant**

DISCUSSION

This study assessed the level of knowledge and attitude of premarital screening of sickle cell disease and factors influencing it among students of Gombe State University. The respondent's mean age in this study is similar to a study done in Lagos 23.35±0.25,[2] but higher

than a study in Kano 19.05±2.16, [4] and lower than similar study in south-south Nigeria and Borno 30.55±4.1, 28.5±1.09 respectively.[5,6] This may be due to different type of population studied. The Muslim predominance in this study is similar to study done in Borno.[6] This may be explained by the fact that the Northern part of Nigeria is dominated by Muslim community. More female respondents participated in this study as compared to a similar study in Ebonyi.[3] This may be because more female students were willing to participate in this study. This study also revealed that 100level students were predominant which was lower than the study in Kano 92.5%.[7] This may be as a result of lower number of school admission and different department studied. The number of unmarried respondents in this study is similar to a study done in Benin (74.9%)[8] and higher than study in Kano 41.0%.[7] This may be due to the fact that this study is done among University students who are mostly adolescents and young adults and are mostly unmarried.

The good knowledge of premarital screening of SCD was higher than the study done in Benin 17.8% and lower to a study done in Saudi Arabia 28.8%, Yaba 80%, Sokoto 89.2% and south-south Nigeria 78.97%.[2,4,8,9,10] This may be attributed to lack of concern for such inherited diseases and inadequate awareness about premarital screening and its consequences.

Findings in this study shows a significant association between level of knowledge of premarital screening of SCD with age, sex, marital status, religion and faculty and these were in agreement with study in Benin for marital status (p-value=0.017) and faculty (p-value=0.000),[8] and with study in Kano for age (p-value=0.00) and religion (p-value=0.00).[5] The findings were in disagreement with a similar study done in Ghana where there were no significant association between sex, age and marital status, and knowledge (p-value 0.08, 0.15 and 0.5) respectively.[11] Marital status of the respondents remains significant predictor of knowledge of premarital status after adjusting for confounders using logistic analysis.

The percentage of respondents with positive attitude of premarital screening of SCD in this study is much lower to findings in the studies in Saudi (41%,) Ogun (60.7%), and Yaba (86.6%).[4,9,12] It is not surprising looking at percentage of the respondents with good knowledge of premarital screening of SCD. This study shows significant association between level of attitude of premarital screening of SCD with religion, marital status and level of study which is not different from what was obtained in a similar study in Kano.[7] This could be due high proportion of Muslims and married individual in the Northern part of Nigeria where both studies were carried out. After adjusting for confounders using logistic analysis, religion and marital status remain significant predictors of positive attitude of premarital screening of SCD.

CONCLUSION

This study was able to determine the level of knowledge, attitude, practice and factors influencing premarital screening of sickle cell disease among students of Gombe State University which were found to have poor knowledge, negative attitude, good practice which are influence by age, sex, religion and marital status. Respondents feel genetic status of their partners will not contribute to the decision of them getting married, as this is a matter concerning the safety of their future.

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COMPETING INTEREST

The authors have declared that there is no know competing interest existing.

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