# Predictors of Knowledge, Attitude and Practice of Premarital Screening Among the Attendees of General-Out Patient Bauchi State Specialist Hospital, Nigeria

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**ABSTRACT**

**Background:** Premarital screening remains the only realistic approach to reduce the burden of genetic diseases such as sickle cell disease and other sexually transmitted diseases like HIV and Hepatitis B which remain a serious public health concern. The study was conducted among GOPD attendees of Bauchi State Specialist Hospital to assess their knowledge, attitude and practice of premarital screening and to find a way of increasing the awareness to the general public. **Methods:** A descriptive cross-sectional study was employed using a semi-structured interviewer-administered questionnaire to 331 respondents among GOPD attendees of Bauchi State Specialist Hospital. The data was analyzed using SPSS version 22.0 and level of significance was set at 0.05. **Results:** The mean ±SD age of the respondents was 32.2 ±11.9 and 70.7% of the respondents have good knowledge, 73.1% positive attitude and 74.3% good practice of premarital screening. Formal levels of education, age, religion, tribe, gender, occupation and marital status were the factors associated with the knowledge, attitude and practice of the premarital screening among the GOPD attendees: levels of education, gender, age and occupation for knowledge, levels of education for attitude and age for practice; remained independent predictors of knowledge, attitude and practice of the premarital screening among the GOPD attendees. **Conclusion:** This study shows that there is good knowledge and attitude of Premarital Screening among the study participants. However, the practice is relatively poor when compared to the other two variables. Government should sustain the awareness campaign by engaging the stakeholders, media, non-governmental organizations, religious bodies, hospitals and schools.

**Keywords:** Knowledge, attitude, practice, premarital screening, Bauchi

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## Introduction

Premarital screening is defined as an effective process for the primary prevention of some sexually transmitted diseases (STDs) and specific genetic disorders among intending sexual partners and their children.[1] The conditions that are usually screened include human immune deficiency virus (HIV), hepatitis B, hepatitis C virus and genetic disorders like sickle cell disease (SCD), thalassemia and cystic fibrosis depending on the region and disease burden. Individuals who are found to be incompatible are counseled appropriately so as to make an informed decision regarding their marriage.[1] Premarital screening has been adopted by many countries globally, Cyprus is one of the first countries to start mandatory screening for B thalassemia in 1973, and it was later adopted by other countries with high consanguinity marriages such as the Arab, North African and the Mediterranean (countries).[2] Studies

have shown that mandatory premarital HIV testing has been documented in certain part of Nigeria.[3]

Sickle cell disease is one the most common genetic diseases that has been recognized as a major public health problem by international agencies like WHO. Sickle cell disease is said to be globally widespread and more commonly seen in African continent.[4] Sickle cell disease is a genetically inherited autosomal recessive blood disorder that occurs as a result of a substitution of glutamic acid with valine at position six of the beta chain of hemoglobin. It causes red blood cells to become rigid and crescent in shape and may block blood vessels causing infarction to various organs resulting in the manifestation of the disease as bone pains in the extremities which is the most distressing symptom in patients with SCD, other manifestations include leg ulcers, cerebrovascular accident, acute chest syndrome, priapism renal failure and spontaneous abortion in reproductive age woman which are responsible for considerable morbidity and mortality.[5]

The first case of AIDS was confirmed in the United States in 1981 and HIV was first isolated in 1983. HIV is a positive sense single-stranded RNA virus that belongs to the lentivirus group of retroviruses. Broadly, there are two types of HIV; HIV-1 and HIV-2, HIV-1 is the main cause of the worldwide pandemic of the infection while HIV-2 is mainly found in West Africa.[6] The continuous CD4 depletion leads to progressive immunosuppression and increases the incidence of opportunistic infections caused by protozoa, viruses, bacteria or fungal agents leading to clinical manifestations of the disease such as recurrent diarrhoea, tuberculosis, herpes zoster, candidiasis, Kaposi sarcoma and others. Sub-Saharan Africa, which has only about 10% of the world's population is the most affected region.[7]

Viral hepatitis is liver inflammation due to a viral infection that has emerged as a major public health problem throughout the world causing considerable morbidity and mortality in the human population, both from its acute infection and chronic sequelae.[8] The manifestation of the disease could be in the form of acute, fulminant and chronic diseases which may present with symptoms such as jaundice, low grade fever and right upper quadrant pain in the acute phase while it can present with liver failure and hepatocellular carcinoma which is one of the most feared complication and the commonest cause of liver cancer in Nigeria.[9] Other conditions are also components of premarital screening. These include pregnancy, syphilis, Gonorrhoea, thalassemia and haemophilia among others.[10]

Sickle cell disease is a major public health problem that affects over 100 million people globally with over 300,000 babies born annually with the disease.[11] More than 200,000 cases are in sub-Saharan Africa and it accounts for 25% of under-five mortality. Sickle Cell Disease is a relatively common genetic disorder in Nigeria, with Nigeria having the highest burden of the disease worldwide (prevalence of 20-30 per 1000 live births yearly)[4], 25% of the population are carriers of the sickle cell gene, with 2% - 3% living with the disease and about 150,000 births annually.[4] Most of the countries in sub-Saharan Africa are underdeveloped and the levels of poverty worsen due to war. As a result, most of the children do not receive proper health intervention and therefore may not survive to adulthood.[12]

In 2010, Nigeria was ranked first as the sickle cell endemic in the world with 100,000 infant deaths annually as a result of the disease, representing 8% of infant deaths in the country.[5] A chronic state of sickle cell disease requires continuous lifelong medical care, expensive supportive therapy, and decreased life expectancy with poor school attendance and performance of the affected individuals, and the psychosocial stress leading to depression and illicit drug use. These indicate that the condition of the disease is a major public health problem in our communities.[13]

HIV/AIDS has been a threatening condition to mankind for over 40 years and has remained a major public health problem since then. Globally it is estimated that more than 37.2 million people are living with HIV, 2.1 million newly infected individuals as of 2013, and 1.2 million people died of AIDS as of 2014. Approximately over 70% of the new cases are in sub-Saharan Africa.[14] According to UNICEF Nigeria has the second highest burden of HIV/AIDS with an estimated 3 million people living with the disease and over 190,950 new infections were recorded in 2015.[14] HBV infects more than 240 million individuals worldwide with half of the cases associated with chronic liver disease, hepatocellular carcinoma and the mortality of more than 780,000 annually. In areas of high sero-prevalence, infection is more likely to be acquired prenatally. The infection is said to be hyper-endemic (more than 8% of the population carries the HBV surface antigen) in sub-Saharan countries such as

Nigeria, Gabon, Cameroon and Burkina Faso. In Nigeria, HBV prevalence was found to be around 13.6% with a high rate among surgeons (25.7%) and infants 16.3%. However, with the emergence of vaccination programme in many countries, the prevalence has decreased significantly.[8] In northeastern Nigeria, the prevalence of HBV was found to be 14.6% and 2.0% for HCV among pregnant women.[15]

Premarital screening serves as an opportunity for individuals to be aware of their status on genetic disorders and other sexually transmitted infections and for couples to know the risk of giving birth to offspring with such conditions.[16] This screening is of paramount importance, especially in the northern part of Nigeria including Bauchi State where consanguinity is commonly practiced.[17] Most individuals in the northern part of the country have persistently shown a low level of knowledge of premarital screening. Moreover, people in northern Nigeria have poor attitudes towards premarital screening which would be attributed to their lack of knowledge towards the practice.[16] Also, the GOPD of the Bauchi State Specialist Hospital serves as the first or second point of contact for most people within the Bauchi metropolis. However, a study conducted in Kano State shows that the respondents had good knowledge but poor attitude toward premarital screening because they considered it as nonreligious, unethical and that it showed a lack of faith in God.[18]

In northeastern Nigeria, a study carried out in Akko Local Government of Gombe State shows that 58.60% of the respondents have poor knowledge of premarital screening, and about 63.20% exhibit poor attitude towards premarital screening,[19] while a study in Jere LGA of Maiduguri shows that 39.1% of respondents have poor knowledge of premarital screening of SCD, 42.3% have average knowledge and 18.6% have good knowledge of premarital screening, however, there is no any available research data on premarital screening in Bauchi.[19]

This study aims to assess the knowledge, attitude and practice of pre-marital screening among GOPD attendees at State Specialist Hospital, Bauchi State.

## Methods

### Study Area

The study was carried out in Bauchi State Specialist Hospital, Bauchi Local Government Area, of Bauchi State. Bauchi State is located in the Northeastern geopolitical zone of Nigeria 10.30°N 10.00E°. The State is bordered by Kano, Jigawa, Taraba, Plateau, Gombe Yobe and Kaduna States. It has a total surface area of 49,119 km2, which makes up roughly (5.3%) of Nigeria's total land area. Based on the 2006 census, which found that the population of Bauchi State was 4,653,066 with a (3.6%) growth rate, the projected population in 2022 was 8,308,800. The State has 20 Local Government Areas (LGAs), and the Fulani, Hausa, and Gerawa ethnic groups make up the majority of the population. Islam is the predominant religion, and the residents' major vocations include farming, raising cattle, and commerce.[45]

### Study site

Bauchi State Specialist Hospital is situated at Dan Iya Hardo ward along Ran Road, Bauchi. The newly constructed Specialist Hospital was commissioned on the 27th of April 2015 with about 10 units as follows: Internal Medicine, Surgery, Paediatrics, Obstetrics and Gynaecology, Family Medicine (GOPD), Dental Surgery, Radiology, Ear, Nose and Throat and Ophthalmology among others. The General-Out Patient Department attended to about 80,663 patients in 2022 with an average of 6,722 patients monthly.

### Study design

Descriptive cross sectional study design was employed.

### Study population

The study population comprised of male and female attendees of General-Out Patient Department of Bauchi State Specialist Hospital for at least more than one visit were included while attendees who were not around during the study were excluded.

### Sample size estimation

The required sample size was calculated using Lwanga and Lemeshow formula for estimating minimum sample size in descriptive health studies;

$$n = z^2\frac{pq}{d2} \quad \text{.....}46$$ where, $Z_\alpha = 1.96$, P is the prevalence of attitude from the previous study at Akko LGA, Gombe State 73.2% [19] and 10% non-response was factored into the estimated sample size was 331.

### Sampling technique

The participants were selected using a systematic sampling technique. The clinic register was used to select the participants with 165 patients' average daily attendance. The sampling interval was 10 from the sample size of 331 and sample frame 3300. Using a simple random sampling technique by balloting, the first participant was selected from the first 10th

patients on the clinic register and a sampling interval was added to the serial number of the first sampled patient to select subsequently. If any of the patients failed to satisfy the eligibility criteria, the next patient on the register was selected.

**Data Collection Method**

An interviewer-administered, semi-structured interviewer-administered questionnaire, adapted from a study conducted from a research done in Gombe[19]and Sokoto[22] were used to collect data from the eligible and consented respondents. The Questionnaire was pre-tested at Tashan Babiye PHCC Bauchi.

**Data Management**

Both knowledge and practice were measured using 2-point scale. Each correct response was scored one mark while zero was awarded for a wrong answer or no response and the respondents' knowledge and practice were graded as either good or poor. A percentage score of 50 and above was considered as good knowledge and practice while a score of less than 50 was considered as poor knowledge and practice.

The attitude was measured using a 5-point Likert scale. The respondent's attitude was graded as either good or poor. A percentage score of 50 and above was considered good while a score of less than 50 was considered poor.

**Data Analysis**

Data obtained was appropriately sorted, coded, entered, into Excel spreadsheet and cleaned to ensure accuracy and consistency. The data was then imported and analysed using Statistical Product and Service Solutions software (SPSS version 22.0).

Demographic variables were summarised using mean and standard deviation (S.D), percentages, charts and tables were also used where necessary and Pearson's Chi-square and fishers' exact tests were used to test for association of the independent and dependent variables with significance level at 95% confidence interval. Logistic regression analysis was used to determine predictors of knowledge, Attitude and Practice of Premarital Screening among GOPD attendees.

**Ethical considerations**

An ethical clearance was obtained from the Health Research Ethics Committee of the Ministry of Health Bauchi (NREC/010/11/15B/2021/064) dated 20th July 2023. Participation in the study was voluntary and based on the ability of the respondents to sign an informed consent form or append their thumbprint. Participants were guaranteed confidentiality of the information given and anonymity.

**Results**

The mean ±SD ages of the respondents were 32.2 ±11.9 and the age distribution showed that (49.2%) of the respondents were 18-27 years and most of the respondents (59.8%), (26.3%) and (13.9) were Hausa, Fulani and other tribes respectively.

The gender of the respondents showed most of the respondents were females (56%) and males (44%) while majority of the respondents were Muslims (96%) and Christians were 4%. About half (49.9%) of the respondents were married and 6.0% were widowers. Majority of the respondents had a tertiary level of education (54.4%), (14.2%) had only Islamic and (3.0%) had none. Business constitute (20.2%) of the occupation and (22.1%) for the other major occupations of the respondents.

The respondents that had good knowledge of premarital screening were (70.7%) while only (29.3%) had poor knowledge of premarital screening but (73.1%) of the respondents had positive attitude and only (26.9%) had negative attitude of premarital screening. However, (74.3%) of the respondents had good practice and only (25.7%) had poor practice of premarital screening.

Religion (p = 0.037), levels of education (p = 0.021) and occupational status (p = 0.001) of the respondents were significantly associated with knowledge of pre-marital screening but levels of

education (p<0.001) was the only factor significantly association with good attitude of pre-marital screening. Meanwhile, age (p<0.001), gender (p<0.001), marital status (p<0.001), levels of education (p<0.001) and occupational status (p = 0.001) of the respondents were significantly associated with the practice of pre-marital screening.

Levels of education and occupation were the predictors of good knowledge of premarital screening. Secondary and tertiary levels of education were 2.2 and 3.2 times more likely to have good knowledge of premarital screening compared to those with none. This finding was statistically significant with a p-value of 0.006 (CI 1.253-3.718) and <0.001 (CI 2.262-4.488) respectively. Respondents whose occupations were business and civil servants had 3.8 and 10.8 odds of good knowledge of premarital screening compared with artisans. This finding was statistically significant with a p-value <0.001 (CI 2.101-6.822) and <0.001 (CI

3.859-29.948). Education was found to be the predictor of positive attitude toward premarital screening. Those with tertiary and secondary levels of education had 2.8 and 2.5 odds of having a positive attitude of premarital screening compared with those who had none. These findings were statistically significant with p-values of <0.001(CI 2.439-3.284) and <0.001(CI 4.060-10.660).

Age, gender and level of education were the predictors of good practice of the premarital screening while Age ≤30 had 5.2 odds compared with those above 30 of good practice of premarital screening with a p-value of <0.001 (CI 3.553-7.573). Meanwhile, the male sex had 6.6 more odds than the females of having good practice of premarital screening with a p-value of <0.001 (CI 4.060-10.660) but Secondary and tertiary levels of education have 2.8 and 6.2 more odds of having good practice of premarital screening than those with Islamic level of education. This finding was statistically significant with p-values of 0.001 (CI 1.552-4.873) and <0.001 (CI 4.064-9.459).

**Table 1: Respondents socio-demographics variables**

| **Age (years)** | **Frequency** | **Percentage (%)** |
|---|---|---|
| 18-27 | 163 | 49.2 |
| 28-37 | 78 | 23.6 |
| 38-47 | 46 | 13.9 |
| 48-57 | 26 | 7.9 |
| ≥58 | 18 | 5.4 |
| Mean ±SD = 32.2 ±11.9 | | |
| **Tribes** | | |
| Fulani | 87 | 26.3 |
| Hausa | 198 | 59.8 |
| Others | 46 | 13.9 |

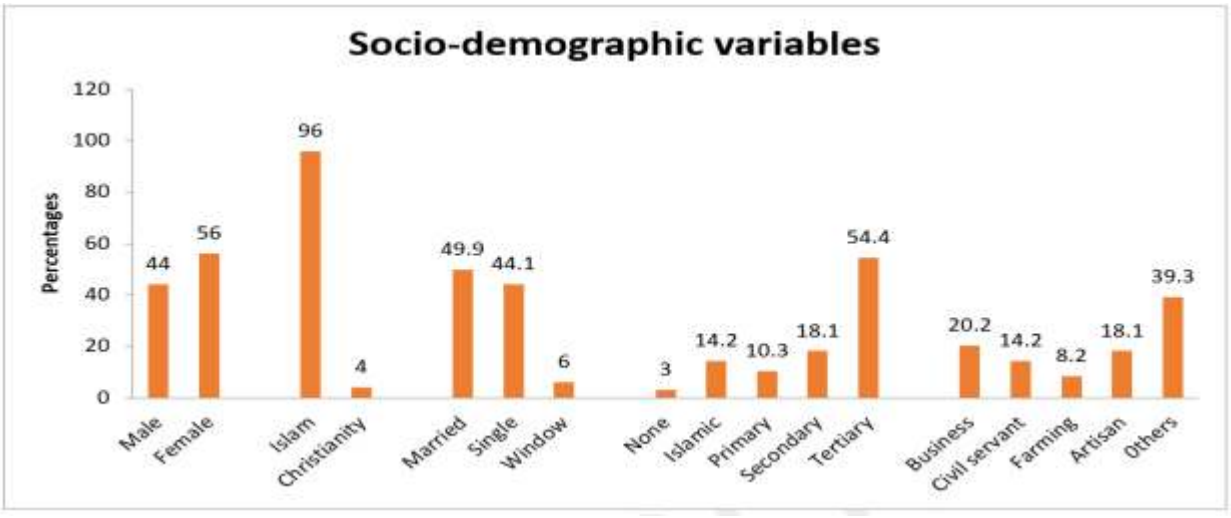


**Figure 1: Socio-demographic variables of the respondents**

**Table 2: Knowledge, Attitude and Practice of premarital screening of the respondents**

| Variables | Frequency | Percentage |
|---|---|---|
| **Knowledge Grading** | | |
| Good Knowledge | 234 | 70.7 |
| Poor Knowledge | 97 | 29.3 |
| **Attitude** | | |
| Positive Attitude | 242 | 73.1 |
| Negative Attitude | 89 | 26.9 |
| **Practice** | | |
| Good Practice | 246 | 74.3 |
| Poor Practice | 85 | 25.7 |
| **Total** | **331** | **100** |

**Table 3: Socio -demographic factors associated with knowledge of premarital screening of the respondents**

| Variables | Good | Poor | Total | $\chi^2$ | p-value |
|---|---|---|---|---|---|
| **Age** | | | | | |
| ≤30 | 143 | 55 | 198 | 0.5549 | 0.456 |
| >30 | 91 | 42 | 133 | | |
| **Gender** | | | | | |
| Female | 125 | 62 | 187 | 3.0753 | 0.079 |
| Male | 109 | 35 | 144 | | |
| **Marital Status** | | | | | |
| Married | 113 | 52 | 165 | 4.2892 | 0.117 |
| Single | 110 | 36 | 146 | | |
| Widow | 11 | 9 | 20 | | |
| **Tribes** | | | | | |
| Fulani | 50 | 32 | 82 | 5.1010 | 0.078 |
| Hausa | 149 | 54 | 203 | | |
| Others | 35 | 11 | 46 | | |
| **Religion** | | | | | |
| Islam | 224 | 94 | 318 | | 0.037* |
| Christianity | 10 | 3 | 13 | | |
| **Levels of Education** | | | | | |
| None | 3 | 7 | 10 | | 0.021* |
| Islamic | 30 | 17 | 47 | | |
| Primary | 23 | 11 | 34 | | |
| Secondary | 41 | 19 | 60 | | |
| Tertiary | 137 | 43 | 180 | | |
| **Occupational Status** | | | | | |
| None | 40 | 17 | 57 | | 0.001* |
| Artisan | 35 | 25 | 60 | | |
| Business | 53 | 14 | 67 | | |
| Civil servant | 43 | 4 | 47 | | |
| Farming | 17 | 10 | 27 | | |
| Others | 46 | 27 | 73 | | |

*Fisher's exact

**Table 4: Socio -demographic factors associated with attitude of premarital screening of the respondents**

| Variables | Positive Attitude | Negative Attitude | Total | $\chi^2$ | p-value |
|---|---|---|---|---|---|
| **Age** | | | | | |
| ≤30 | 145 | 53 | 198 | 0.0036 | 0.952 |
| >30 | 97 | 36 | 133 | | |
| **Gender** | | | | | |
| Female | 132 | 55 | 187 | 1.3925 | 0.238 |
| Male | 110 | 34 | 144 | | |
| **Tribes** | | | | | |
| Fulani | 59 | 23 | 82 | 0.1631 | 0.922 |
| Hausa | 150 | 53 | 203 | | |
| Others | 33 | 13 | 46 | | |
| **Religion** | | | | | |
| Christianity | 11 | 2 | 13 | 0.9109 | 0.340 |
| Islam | 231 | 87 | 318 | | |
| **Levels of Education** | | | | | |
| None | 4 | 6 | 10 | | < 0.001* |
| Islamic | 47 | 0 | 47 | | |
| Primary | 15 | 19 | 34 | | |
| Secondary | 43 | 17 | 60 | | |
| Tertiary | 133 | 47 | 180 | | |
| **Occupational Status** | | | | | |
| None | 46 | 11 | 57 | 6.9943 | 0.221 |
| Artisan | 38 | 22 | 60 | | |
| Business | 52 | 15 | 67 | | |
| Civil servant | 37 | 10 | 47 | | |
| Farming | 18 | 9 | 27 | | |
| Others | 51 | 22 | 73 | | |

*Fisher's exact

**Table 5: Socio -demographic factors associated with practice of premarital screening of the respondents**

| Variables | Good | Poor | Total | $\chi^2$ | p-value |
|---|---|---|---|---|---|
| **Age** | | | | | |
| ≤30 | 166 | 32 | 198 | 23.390 | <0.001* |
| >30 | 80 | 53 | 133 | | |
| **Gender** | | | | | |
| Female | 121 | 66 | 187 | 20.8185 | <0.001* |
| Male | 125 | 19 | 144 | | |
| **Marital Status** | | | | | |
| Married | 122 | 43 | 165 | | <0.001* |
| Single | 120 | 26 | 146 | | |
| Widow | 4 | 16 | 20 | | |
| **Tribes** | | | | | |
| Fulani | 67 | 15 | 82 | 3.7143 | 0.156 |
| Hausa | 148 | 55 | 203 | | |
| Others | 31 | 15 | 46 | | |
| **Religion** | | | | | |
| Christianity | 11 | 2 | 13 | | 0.386 |
| Islam | 235 | 83 | 318 | | |
| **Levels of Education** | | | | | |
| Islamic | 22 | 25 | 47 | | <0.001 |
| Primary | 25 | 9 | 34 | | |
| Secondary | 44 | 16 | 60 | | |
| Tertiary | 155 | 25 | 180 | | |
| None | 0 | 10 | 10 | | |
| **Occupational Status** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Artisan | 34 | 26 | 60 | 21.7467 | 0.001* |
| Business | 58 | 9 | 67 | | |
| Civil servant | 42 | 5 | 47 | | |
| Farmer | 18 | 9 | 27 | | |
| Others | 53 | 20 | 73 | | |
| None | 41 | 16 | 57 | | |

*Fisher's exact

**Table 6: Logistic regression showing predictors of good knowledge and attitude of premarital screening**

| Predictors | Odds ratio | 95% confidence interval | p-value |
|---|---|---|---|
| **Levels of education** | 1 | | |
| None | 0.429 | 0.111-1.657 | 0.220 |
| Islamic | 1.765 | 0.973-3.199 | 0.061 |
| Primary | 2.091 | 1.019-4.289 | 0.044 |
| Secondary | 2.158 | 1.253-3.718 | 0.006 |
| Tertiary | 3.186 | 2.262-4.488 | <0.001 |
| **Occupation** | | | |
| Artisan | | | |
| Business | 1 | | <0.001 |
| Civil servant | 3.786 | 2.101-6.822 | <0.001 |
| Farmer | 10.750 | 3.859-29.948 | 0.183 |
| Others | 1.700 | 0.778-3.713 | 0.028 |
| None | 1.704 | 1.059-2.740 | 0.003 |
| | 2.353 | 1.334-4.150 | |
| **Levels of education** | | | |
| None | 1 | | |
| Islamic | | | |
| Primary | 0.789 | 0.534-1.167 | 0.236 |
| Secondary | 2.529 | 1.910-3.349 | <0.001 |
| Tertiary | 2.830 | 2.439-3.284 | <0.001 |

**Table 7: Logistic regression showing predictors of good practice of premarital screening**

| Predictors | Odds ratio | 95% confidence interval | p-value |
|---|---|---|---|
| **Age** | | | |
| >30 | 1 | | |
| ≤30 | 5.188 | 3.553-7.573 | <0.001 |
| | | | |
| **Gender** | 1 | | |
| Female | 1.833 | 1.358-2.475 | <0.001 |
| Male | 6.579 | 4.060-10.660 | <0.001 |
| | | | |
| **Levels of education** | | | |
| None | | | |
| Islamic | 1 | | |
| Primary | 2.778 | 1.297-5.951 | 0.009 |
| Secondary | 2.750 | 1.552-4.873 | 0.001 |
| Tertiary | 6.200 | 4.064-9.459 | <0.001 |

**Discussion**

This study assessed the level of knowledge, attitude and practice of pre-marital screening among GOPD attendees of Bauchi State Specialist Hospital and found them to be high.

A bit more than half of the respondents are females (56%) which is in contrast with a similar study in Borno State where (31.4%) of the respondents are females[4] while a similar study conducted in Qatar shows that about 80% of the respondents were females.[1] Hausa language constitutes slightly above half of the respondents (59.82%) and majority are Muslims (96%) which is a result of predominance of Hausa and Islam in Northern Nigeria which is in contrast to a study conducted in Akko LGA, Gombe

State, Lagos and Cameroon where (47.9%), (78.8%) and (99.5%) of the respondents are Christians respectively.[19,47,48] Most of the respondents are married; this finding is in contrast to a similar study conducted in Borno where (18.6%) only of the respondents are married. The literacy level observed may be associated with the urban setting of the study area and the availability of formal institutions.

Findings from this study reveal that majority of the respondents (70.69%) have good knowledge of premarital screening which is in concordance with but slightly lower than similar studies conducted in Sokoto (89.2%) and Yaba (80%).[22,11] Although, the differences can be explained by the study population which was among lecturers and university students. However, it is in contrast to similar studies conducted in Akko Local Government of Gombe State, among the youth of Jere Local Government of Borno State and Saudi Arabia were (41.4%), (18.6%) and (28.8%) respectively.[4,19,35] Most of the respondents' source of information is through family and friends (33.23%) who are not in keeping with a similar study conducted among tertiary students in Kano and Abuja were (51%) and (52.7%) of their source of information is from school.[33,38]

Most of the respondents (73.11%) have a good attitude toward premarital screening which is similar to a study conducted among undergraduate students of the University of Abuja on knowledge, attitude and practice of genotype screening of which 93.8% of respondents have a good attitude.[33] But opposed to a study conducted among students of the State School of Nursing Sokoto where only 55.4% of respondents have a good attitude towards premarital screening[22], and another study conducted in Saudi shows that 41% of the respondents have a good attitude. [35]

Out of the 331 respondents, 77.35% think that carrying out premarital screening is of great importance, 73.1% believe it will prevent them from contracting the disease while 71.6% believe that it will prevent their children from contracting the disease. More than half of the respondents 59.2% do not agree that premarital screening should be stopped because the outcome does not favour the marriage sometimes, and 63.1% of the respondents do not believe that premarital screening interferes with the will of God. A good fraction of the respondents, about 68.8%, said that premarital screening should be made obligatory for couples before their marriage, while about 64.1% said they won't marry their partner if he/she is positive for any of the premarital screened diseases.

Among the 331 respondents, only 195 58.9% ever had sickle cell screening of which 91.8% are aware of their genotype unlike a study conducted in Abuja among undergraduate students which shows that only 76.6% of the participants are aware of their genotype.[33] However, 134 respondents 40.5% had hepatitis B screening which is close to a study conducted by A. Adeyemi in Ibadan which shows 32.6% of the respondents were screened for hepatitis B.[8] One hundred and eighty one respondent had HIV testing in contrast to a study in Kano which shows that only 11.1% of the respondents had premarital HIV testing.[7]

Cumulatively, 246 of the respondents had good practice of premarital screening while 85 had poor practice which is in contrast to a similar study conducted in Yaba which shows that 65% had good practice of premarital screening[11] as well as in another research done in Saudi Arabia showing only 19.1% of the respondents and 80.9% of the respondents had good and poor practice of premarital screening respectively.[39]

Bivariate analysis showed a significant association between the level of knowledge and level of education and occupation with p-values of 0.018 and 0.002 respectively. The association between level of education and practice of premarital screening is significant with tertiary level of education having the best where 137 out of 331 respondents had good knowledge of premarital screening while those with no education (formal and informal) had the worst practice with 7 out of 10 respondents having poor knowledge of premarital screening. The association between level of knowledge and occupation is significant with businessmen having the highest level of education with 53 out of 67 while the poorest was among farmers with 10 out of 27 having poor knowledge.

Among the 242 respondents with a good attitude, those below 30 years have good attitudes (145 respondents) than those above 30 years (97 respondents), which shows that the young are likely to embrace premarital screening more than the old. Likewise, females have good attitudes (132 respondents) than males (110 respondents). Also, those with a tertiary level of education that have good attitudes are 133 respondents while those with no level of education are 6 respondents which shows that a good attitude toward premarital screening can be attributed to one's level of education. In this study, 72.51% of respondents agree that premarital

screening should be made obligatory before marriage which is similar to a study conducted in Sokoto where 57.6% of respondents think that the government should prohibit marriage between couples that are not compatible.[22] This differ from a study conducted at Sultan Qaboos University Oman in 2012.[34] where 36% agreed with making laws and regulations so as to prevent marriage between couples that are not compatible.[22] The study also showed that 57.7% of respondents said for sure they would not marry a partner that they are not compatible with while 21.2% said they may go ahead with the marriage when they are not compatible which differs from the study conducted in Sokoto where 13.3% of respondent said they will go ahead with the marriage while 22.4% said they may go ahead if they are not compatible with the partner.

Bivariate analysis showed a significant association between the practice levels and age groups, sex, marital status, level of education and occupation with p-values of 0.000, 0.000, 0.000, 0.000, and 0.001 respectively. The age group with the best practice of premarital screening is ≤ 30 years with 166 out of 198 having good practice. Surprisingly, male gender had the best practice of premarital screening with 125 out of 144 respondents compared to 121 out of 187 of the females. Similarly, the association between level of education and practice of premarital screening is significant with tertiary level of education having the best where 155 out of 180 respondents had good practice of premarital screening while those with no education (formal and informal) had the worst practice with all the 10 respondents having poor practice of premarital screening.

Level of education and occupation were the predictors of good knowledge of premarital screening. Respondents with secondary and/or tertiary levels of education are more likely to have good knowledge of premarital screening than those with no education. This is similar to the studies conducted in Qatar, Bayelsa and Kano respectively[1,3,38].

Among the occupations, civil servants and businessmen are more likely to have good knowledge of premarital screening compared to artisans and farmers.

Education was found to be the predictor of positive attitudes toward premarital screening. Respondents with secondary and/or tertiary levels of education are more likely to have good knowledge of premarital screening than those with no education. This is also similar to the studies conducted in Saudi and Lagos.[35,36]

Age, sex and level of education were the predictors of GOOD practice of premarital screening. Respondents who are 30 years and below are more likely to practice premarital screening than those above 30 years. Male respondents are more likely to practice premarital screening than females.

This may be a result of their high level of education in our environment and exposure to their female counterparts. Respondents with secondary and tertiary levels of education are more likely to practice premarital screening than those with no education.

**Conclusion**

This study was able to show that there is good knowledge and attitude of premarital screening among the study participants. However, the practice is relatively poor when compared to the other two variables. Formal levels of education, age, religion, tribe, gender, occupation and marital status were the factors associated with Knowledge, attitude and practice of premarital screening among the respondents. The independent predictors of knowledge, attitude and practice of premarital screening were the levels of education, gender, age and occupation of the respondents. There is a need for the Government to sustain the awareness campaign by engaging the stakeholders, media, non-governmental organizations, religious bodies, hospitals and schools.

**Competing interests**

Nil

**Authors' contributions**

Contributed to steps in the production of this article in line with the IJCME criteria.

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