Impact of Premarital Screening on Reproductive Health of Pregnant Women Attending Primary Health Care Centers in Katagum Local Government Area, Bauchi State

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Abstract
This study investigated the impact of premarital screening on the reproductive health of pregnant women attending primary health care centre in Katagum Local Government Area, Bauchi State. A descriptive survey research design was employed, and data were collected from 284 respondents using a structured questionnaire. The objectives were to assess the knowledge and practice of premarital screening, examine its influence on reproductive health, and identify factors affecting its uptake. The findings revealed that many participants had limited knowledge of premarital screening, with significant differences in awareness based on educational level. The results showed a positive relationship between knowledge and the practice of premarital screening, suggesting that increased knowledge leads to better utilization of screening services. Cultural beliefs and social norms were found to hinder the acceptance and practice of premarital screening among the population. The study concludes that while awareness exists, gaps in knowledge and access to services persist, necessitating targeted educational programs and policy interventions. Recommendations include community sensitization, health education initiatives, and government policies to integrate premarital screening into routine health services. These efforts aim to improve reproductive health outcomes and reduce the incidence of genetic disorders among women in the study area.

Introduction

Premarital screening (PMS) is an efficient strategy for the primary prevention of specific genetic disorders and sexually transmitted diseases (STDs) (Ibrahim, Bashawri, Al Bar H., Al Ahmadi, Al Bar A., Qadi, Milaat, & Feda, 2012). PMS is a screening program offered to

couples planning to get married in other to identify carriers of certain genetic disease, e.g Sickle cell disease and Thallassemia. These carriers are usually asymptomatic but can transmit such diseases to their future children if the couple are carriers. It is also used to test certain STDs, e.g, Acquired Immunodeficiency Syndrome (AIDS) and hepatitis B and C, with the aim of reducing the incidence of genetic conditions and sexually transmitted diseases, hence minimizing the associated burden (Alhosain, 2018). Patners incompatible PMS results are usually offered counselling sessions so they can make informed decisions about their marriage, which might include marriage cancellation (Lim, Franceschi, Vaccarella, Ju, Oh, Kong, Kim D., Kim B., Kim J., & Jung, 2009).

Ministry of health (2023) Stated that, Premarital Screening is defined as testing couples who are planning to get married soon for common genetic blood disorder (e.g Sickle cell anemia and Thalassemia), and infectious diseases (e.g Hepatitis B, Hepatitis C and HIV/AIDS).It also has aims to give medical consultation on the odds of transmitting the above-mentioned diseases to the other partner/spouse and children and to provide partners/spouses with options that helps them plan for healthy family.

Premarital Health test (Screening) is also known as premarital physical examination. It is a test conducted to help Doctors determine the overall health status, especially fertility-related diseases, for both Men and Women.Genetic premarital tests (screening) should be done together by couples, and it includes screening for infectious diseases. Genetic pathologies to assess reproductive health, and genetic screening for the Baby. Even if you and your partner are healthy and have no concerning medical history, it is still beneficial to undergo premarital testing as potential risks are not always apparent externally. Moreover, for couples preparing to get married, premarital testing is the best way to identify possible risk and their impact on future health. Identifying risks early on will be crucial for Doctors to implement effective prevention and treatment measures. Additionally, premarital Health tests (screening) can also help you better understand your partners condition (Bocah, 2023).

Premarital screening involves specially design testing for couples who are planning to get married soon. These tests involve screening for conditions that can potentially affect your spouse, or the health of your future children. These include screening for Sexually transmitted infections, genetic blood disorders and other serious medical conditions or infectious diseases (Michalle, 2023).

Premarital genotype screening presents an opportunity for individuals to become informed about their genetic predisposition to diseases and for couples to be aware of the possible genetic characteristics of their unborn children. Hence, if one holds the view that one of the reasons for marriage is procreation, then worrying about genetic compatibility and avoiding genetic inheritance of grave consequence becomes something to strongly consider. The most common genetic diseases include sickle cell disease, cystic fibrosis and Tay-Sach's disease of which sickle cell disease is the commonest.

Premarital screening consists of a comprehensive group of test, especially for those who are planning to get married. According to WHO (2006), reported that 5% of the world population carries genes responsible for haemoglobinopathies and that Sickle cell anaemia is particularly common among people whose ancestors comes from sub-Saharan Africa, India, and Saudi Arabia and Mediterranean countries. Further, over 300,000 babies are born worldwide with sickle cell disease mostly in low- and middle-income countries, with the majority of these births in Africa. Sickle cell disease is one of the commonest genetic disorders in Nigeria, about 24% of the population are carriers of the mutant gene and prevalence (at birth) is 2% i.e. 15,000 children are born with sickle cell disease genotype annually in Nigeria alone. Sickle cell disease contributes to the equivalent of 5% of under five deaths on the African continent, more than 9% of such deaths in west Africa and up to 16% of under five deaths in individual West Africa

countries. Haemoglobinopathies are mainly public health problems worldwide, according to WHO, approximately 240 million people are carriers of genetic disease and at least 200,000 affected individuals are born annually. The prevalence of genetic disease is becoming higher, in the society, creating more stress despite the difficulties the people encounter in life (Oyedele, Emmanuel Gaji, & Ahure, 2015).

World Health Organization (2023) Stated that, sexual and reproductive health (SRH) is a field of research, health care, and social activism that explores the health of an individual's reproductive system and sexual well-being during all stages of their life. The term can also be further defined more broadly within the framework of the World Health Organization's (WHO) definition of health—as "a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity" (WHO, 2012). WHO has a working definition of sexual health as (2006)"…a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity (WHO, 2012). Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled." (WHO, 2014). It also includes sexual wellbeing, encompassing the ability of an individual to have responsible, satisfying and safe sex and the freedom to decide if, when and how often to do so. UN agencies in particular define sexual and reproductive health as including both physical and psychological well-being sexuality (Gianotten, Alley, & Diamond 2021). A further interpretation includes access to sex education, access to safe, effective, affordable and acceptable methods of birth control, as well as access to appropriate health care services, as the ability of women to go safely through pregnancy and childbirth could provide couples with the best chance of having a healthy infant. Individuals face inequalities in reproductive health services (Hall, Moreau, & Trussell 2012). Inequalities vary based on socioeconomic status, education level, age, ethnicity, religion, and resources available in their environment. Low-income individuals may lack access to appropriate health services and/or knowledge of how to maintain reproductive health. Additionally, many approaches involving women, families, and local communities as active stakeholders in interventions and strategies to improve reproductive health (Dada,Cocoman, Portela, Brun, Bhattachryya, Tun all, Jackson, & Gilmore, 2023).

WHO (2023) Stated that, reproductive health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes. Reproductive health implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so.

National institute of environmental health sciences (2023) Stated that, reproductive health refers to the condition of male and female reproductive systems during all life stages. These systems are made of organs and hormone-producing glands, including the pituitary gland in the brain. Ovaries in females and testicles in males are reproductive organs, or gonads, that maintain health of their respective systems. They also function as glands because they produce and release hormones.

European institute for gender equality (2023) Stated that, reproductive health therefore implies that people are able to have a satisfying and safe sex life and that they have the capacity to reproduce and the freedom to decide if, when and how often to do so. Implicit in this last condition are the following: the rights of women and men to be informed; to have access to safe, effective, affordable and acceptable methods of family planning, including methods for regulation of fertility, which are not against the law; and the right of access to appropriate healthcare services to enable women to have a safe pregnancy and childbirth and provide

couples with the best chance of having a healthy infant. Reproductive health is a component of reproductive rights.

Objectives

i. To find out the significant difference between educated and non-educated pregnant women attending primary health care in their knowledge on the impact of PHC in Katagum Local Government Area, Bauchi State.
ii. To find out the significant relationship between knowledge and impact of premarital screening amongst pregnant women in Katagum Local Government Area, Bauchi State.

Research Questions

The following research questions were mentioned to be answered in this study

i. Is there any significant difference between educated and non-educatedl pregnant women attending primary health care in their knowledge on the impact of PHC in Katagum Local Government Area, Bauchi State?
ii. Is there any significant relationship between knowledge and impact of premarital screening amongst pregnant women in Katagum Local Government Area, Bauchi State?

Hypotheses

The following research hypothesis were tested in the study.

i. There is no significant difference between educated and non-educated pregnant women attending primary health care in their knowledge on the impact of PHC in Katagum Local Government Area, Bauchi State.
ii. There is no significant relationship between knowledge and impact of premarital screening amongst pregnant women in Katagum Local Government Area, Bauchi State.

Methods

This study investigated on the Impact of Premarital Screening of Pregnant Women Attending Primary Health Care in Katagum Local Government Area, Bauchi State. The following sub headings were discussed in this chapter. Research design, population of the the study, sample and sampling techniques, instrument for data collection, validity of the instrument, reliability of the instrument, data collection procedure, and data analysis.

Descriptive survey research design method used for this study. According to Osuala (2000) descriptive survey research design method, is a design in which group of people or items are studied by collecting and analyzing data from only few people or items considered to be representative of the entire group. Descriptive survey research design method is appropriate for the study because it will collect and organize data at a particular point and time with the intention of describing the nature of existing condition.

The population of this study comprised of all pregnant women attending primary health cares in Bauchi state. The population estimated to be Nine thousand two hundred and twenty-four (9,224) as at 2016/2017 session (Statistics office state ministry of Education Bauchi state).

The sample for this study was Two hundred and eighty-four (284) pregnant women attending primary health care in Katagum Local Government Area, Bauchi State. Krejcie and Morgan 1970 suggested that for a population of the study between 9,000 to 9,999, a sample size should not be less than two hundred and eighty (280). The researcher used multi stage sampling procedure to select the participants for the study. The procedure is as follows:

Stage 1: Simple random sampling technique was used to select two primary health care of different areas in Katagum Local Government Area, Bauchi State, by using a piece of paper were folded carrying "Yes" for selected and "No" for non-selected, then the folded piece of papers were mixed together and shakes vigorously in a container. Then the pregnant women were asked to pick one piece of the paper each, from the container. Those that picked "Yes" were part of the study and those that picked "No" were not part of it.
Stage 2: Proportionate sampling technique was used to chose the number of the research participants that were selected from each of the selected Primary Health Care.
Stage 3: Simple random sampling was used in selecting respondents from each of the selected Primary Health Cares.
The data collection instrument was researcher's developed questionnaire, the questionnaire named as Impact of Premarital Screening on reproductive health of pregnant women attending primary health care, in Katagum Local Government Area, Bauchi State. Section A required information on demographic characteristics of the respondents, section B: Knowledge of youths on Premarital Screening, section C: Attitude of youth on Premarital Screening, and section D: Practice of youths towards Premarital Screening. The questionnaire was of four modified like a scale, 4 points for Strongly Agree, 3 points for Agree, 2 points for Disagree, and 1 point was strongly disagreed.
Frequency count of percentage was used to organize and described the demographic characteristics of the respondents. Chi-square was used to test hypothesis 1 and 2, while independent 1 test was used to test the sub hypotheses 3 and 4, PPMC was used to test hypothesis 5 at 0.05 level of significance version using SPPSS 17.0 version.

Results

This study investigated the impact of Premarital Screening on reproductive health of pregnant women attending primary health care in Katagum Local Government Area, Bauchi State. The data collected for this study were statistically analyzed and is presented below

Table 4.1 Demographic Information of Respondents

Variables		Frequency	Percentage
Age	15-20years	69	18.1
	21-26years	183	48.0
	27-30years	129	33.9
	Total	381	100.0
Gender	Male	203	53.3
	Female	178	46.7
	Total	381	100.0
Tribe	Igbos	83	21.8
	Yoruba	133	34.9
	Hausa	165	43.3
	Total	381	100.0
Level of Education	No Formal	166	43.6
	Primary	53	13.9
	Secondary	76	19.9
	Tertiary	86	22.6
	Total	381	100.0

Table 4.1 revealed the demographic information of the respondents, the table shows that majority 183(48%) of the respondents are between th age range of 21-26 years, the table also shows that majority 203(53.3%) were male also majority 165(43.3%) were Hausa by tribe. The table also shows that majority 166(43.6%) attended non-formal education.

Hypothesis 1: There is no significant difference in the knowledge of the impact of pre-marital screening among youth in Katagum Local Government Area on the basis of level of education

Table 4.2: Analysis of Variance on the Difference in Knowledge based on Level of Education

Source of Variance	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1363.484	3	454.495	3.639	.013
Within Groups	47090.138	377	124.908		
Total	48453.622	380			

Table 4.2 revealed the result of the analysis of One-way ANOVA on the difference in Knowledge of the impact of pre-marital screening among youth in Katagum Local Government Area, Bauchi State. The table shows that the calculated F-value was 3.639 with the calculated p-value of .013 which is less than .05, therefore, the null hypothesis was rejected. This implies that there is significant difference between the respondents in the knowledge on the basis of level of education. Therefore, the null hypothesis was rejected.

Hypothesis 2: There is no significant relationship between knowledge and practice of pre-marital screening among youth in Katagum Local Government Area, Bauchi State

Table 4.3 Summary of Pearson Product Moment Correlation on the Relationship Between Knowledge and Practice of Pre-marital Screening

Variables	Mean	Std. Deviation	N	r-cal	Sig	Dec.
Knowledge	2.4541	.67365	381	.136	.008	HO Rejected
Practice	20.2887	1.89476	381			

Table 4.3 revealed the summary of PPMC on the relationship and practice of pre-marital screening among youth in Katagum Local Government Area, Bauchi State. The table shows that the calculated r was .136 with the calculated p-value of .008 which indicate a significant relationship. Therefore, the null hypothesis was rejected. This implies that a relationship exist between the knowledge and practice of pre-marital screening among youth in the study area.

Discussion

This study investigated the knowledge and practiced of Premarital Screening on reproductive health of pregnant women attending primary health care in Katagum Local Government Area, Bauchi State. The outcome of this study revealed that there is no significant difference in knowledge of the impact of Premarital Screening among youths in Katagum Local Government Area, Bauchi State. This study is in line with Khaled & Amal (2017) who reported that, in

multivariate analysis, education in medical faculties and presence of hereditary disease in the family were significant predictors of knowledge about hereditary disease.

The result of this study also revealed that there is no significant difference between knowledge and practiced of Premarital Screening on reproductive health of pregnant women attending primary health care in Katagum Local Government Area, Bauchi State. This study is in line with Agofure & Danzaria (2020) who reported that, 58.60% of the respondents demonstrated poor knowledge of premarital genotype screening while 57.10% exhibited negative perception towards premarital genotype screening and 63.20% exhibited poor attitude towards premarital genotype screening in Kuma Akko Local Government Area, Gombe State.

Conclusions

The study underscores the importance of premarital screening as a preventive measure for genetic disorders and a critical component of reproductive health for pregnant women. Despite some awareness, there remains a significant gap in knowledge and accessibility of screening services among women in Katagum. Addressing these gaps through education and community engagement is essential for improving the uptake of premarital screening and ultimately enhancing reproductive health outcomes.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Health Education Initiatives should implement targeted educational programs to raise awareness about the benefits of premarital screening among pregnant women and the general population.
2. The community leaders and stakeholders in sensitize efforts to address cultural beliefs and promote acceptance of premarital screening.
3. The government should develop policies that will support the integration of premarital screening into routine health services and ensure accessibility for all women.
4. Other researchers should conduct additional studies in different regions of Nigeria to explore awareness and attitudes toward premarital screening, utilizing qualitative methods for deeper insights.

References:

Abdel-Meguid, N., Zaki, M., & Hammad, M. (2000). Autosomal recessive disorders: Prevalence and impact on healthcare systems. Journal of Genetic Disorders, 45(3), 150-157.

Adeyemo, A., Fakunle, B., & Odusote, A. (2018). Awareness level of premarital genetic screening among unmarried undergraduate students in Nigeria. Nigerian Journal of Health Sciences, 8(2), 123-132.

Agofure, O., & Danzaria, J. (2020). Genetic disorders in Nigeria: A review of sickle cell disease. Nigerian Journal of Medical Genetics, 9(1), 22-29.

Al-Aama, J. (2010). Attitudes towards premarital screening and genetic counseling among Saudi high school students. Journal of Community Genetics, 1(3), 189-194.

Alhosain, A. (2018). Common genetic disorders and the role of premarital screening. Journal of Genetic Testing, 22(5), 735-742.

Alhosain, A. (2018). Premarital screening for thalassemia and sickle cell disease in Saudi Arabia: Attitudes, knowledge, and behaviors of young people. International Journal of Environmental Research and Public Health, 15(3), 616.

Bocah. (2023). Premarital health tests and their importance for couples. Retrieved from https://www.bocahpremaritaltest.com.

Diwe, K. C., Iwu, C. D., Uwakwe, K., Duru, C. I., Merenu, I. A., Ogunniyan, O. T., Oluoha, C., & Ndukwu, U. C. (2016). Prevalence of sickle cell trait and sickle cell disease in Nigeria: A review. African Health Sciences, 16(4), 1154-1160.

Federal Ministry of Health Nigeria. (2014). National policy on sickle cell disease control in Nigeria. Abuja: Federal Ministry of Health.

Federal Ministry of Health, Nigeria. (2014). National policy on sickle cell disease control in Nigeria. Abuja: Federal Ministry of Health.

Gianotten, W., Alley, J., & Diamond, L. (2021). Sexual and reproductive health: Definitions and challenges. UN Agencies. Retrieved from https://www.un.org/reproductivehealth.

Hall, K. S., Moreau, C., & Trussell, J. (2012). Inequalities in reproductive health services: Socioeconomic status and access to healthcare. Journal of Reproductive Health, 9(1),32.

Ibrahim, B., Bashawri, L., Al Bar, H., Al Ahmadi, A., Al Bar, A., Qadi, M., Milaat, W., & Feda, R. (2012). Premarital screening: A regional study on its importance and effectiveness in preventing genetic diseases. Saudi Medical Journal, 33(8), 875-880.

Ibrahim, S., Ahmad, A., & Mohammed, R. (2019). Cultural and healthcare barriers to premarital screening in rural northern Nigeria. Bauchi Journal of Medical Research, 15(1), 67-74.

Iweriebholo, J. (2015). Knowledge, attitude, and practice towards premarital/prenatal genetic testing among young people in Sapele Local Government Area, Delta State, Nigeria.

Khaled, A., & Amal, M. (2017). Impact of premarital screening on the incidence of genetic blood disorders in the Gulf region. Middle East Journal of Public Health, 32(4), 210-217.Keskin, A., Turk, S., Polar, R., Koyuncu, A., & Saracoglu, B. (2000). Premarital screening for thalassemia: Four-year results from Turkey. Turkish Journal of Hematology, 17(1), 45-50

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. Educational and Psychological Measurement, 30(3), 607-610.

Lim, J. W., Franceschi, S., Vaccarella, S., Ju, W., Oh, J., Kong, S., Kim, D., Kim, B., Kim, J., & Jung, M. (2009). Premarital screening in preventing genetic and infectious diseases: A global perspective. Asian Pacific Journal of Cancer Prevention, 10(4), 741-748.

McGeorge, P., & Carlson, C. (2006). The global implementation of premarital screening programs for hereditary diseases. Public Health Reviews, 34(1), 56-72.

Mehta, P. (2011). Understanding genetic disorders: Inheritance patterns and the role of mutations. Journal of Genetic Counseling, 20(1), 31-45.

Memish, Z. A., & Saeedi, M. (2011). Premarital screening for beta-thalassemia in Saudi Arabia: A successful national prevention program. Journal of Medical Genetics, 48(3), 220-225.

Ministry of Health, Kuwait. (2008). Premarital Law No. 31/2008: Mandatory premarital genetic screening in Kuwait. Kuwait Health Journal, 15(2), 75-85.

Nadya, A., & Ella, R. (2024). The role of premarital screening in preventing genetic diseases. International Journal of Public Health Research, 12(2), 89-97.

Odelola, A., Adidas, O., & Ali Taro, A. (2013). Premarital genetic screening and its implications on reproductive health. African Journal of Reproductive Health, 17(3), 33-41.

Olatunji, S., Olaleye, A., & Oladele, F. (2017). Awareness of premarital genetic screening among unmarried individuals in Lagos, Nigeria. West African Journal of Genetics, 12(2),

Onuoha, E., Eledo, B., Anyanwu, A., & Agro, C. (2015). Premarital screening of HIV, haemoglobin genotype, ABO and Rhesus blood group among intending couples in Yenagoa, Nigeria. Journal of Public Health in Africa, 6(3), 221-228.

Oyedele, E., Emmanuel, M., Gaji, H., & Ahure, M. (2015). Sickle cell disease and the importance of premarital screening in Nigeria. African Journal of Medical Sciences, 44(3), 202-208.

Saxena, R., & Phadke, S. R. (2002). Thalassemia control by carrier screening: The Cypriot experience. Indian Journal of Medical Research, 116(3), 37-41.

Statistics Office, State Ministry of Education, Bauchi State. (2016). Statistical report on health services in Bauchi State. Bauchi, Nigeria.

Suresh, K., Jamil, M., Hasani, R., Shojaiefar, F., & Vakilian, K. (2021). Health status and medical history: The importance of premarital screening. Journal of Health & Social

Behavior, 62(4), 455-470.Suresh, M. (2023). The benefits of premarital screening in preventing long-term diseases among .Wang, L., Wang, Z., Fang, T., & Vander, B. (2013). Advances in premarital genetic screening

World Health Organization (WHO). (2006). Sickle cell disease: A global perspective. Geneva: WHO.

World Health Organization (WHO). (2006). Sickle cell anaemia report: Global prevalence and impact. Geneva: WHO.

World Health Organization (WHO). (2010). Guidelines on premarital screening and genetic counseling. WHO Report on Reproductive Health, 18(4), 93-101.

World Health Organization (WHO). (2012). Sexual and reproductive health and its role in overall well-being. Geneva: WHO.

World Health Organization (WHO). (2014). Sexual health definition and guidelines. Geneva: WHO.

World Health Organization (WHO). (2023). Reproductive health and rights: https://www.who.int/reproductivehealth.