

PUBLIC HEALTH AND THE SOCIOLOGICAL EXAMINATION OF GENETIC COUNSELLING, PRE AND POST-MARITAL HEALTH SCREENING IN GUSAU METROPOLIS OF ZAMFARA STATE, NIGERIA

¹Bashir Bello, ²Samira Ibrahim Dosara, and ³Femi Rufus Tinuola

Department of Sociology,
Federal University Gusau, Zamfara State, Nigeria
bashirbello@fugusau.ng.edu
08065537761

<https://doi.org/10.60787/aasd.vol4no1.91>

Abstract

This paper is an empirical examination of the genetic counselling, premarital screening and post-marital health facts in the Gusau Metropolis of Zamfara State. The paper is an exploratory study which employed the use of qualitative research methodology, thereby using the Focus Group Discussion (FGD) and the Key Informant Interview (KII) for the data collection. Data collected were recorded and transcribed verbatim. It was converted into a written form, categorizations were then made and thematic analyses were provided. Findings of the study shows that although the benefits of genetic counselling and premarital screening are acknowledged by almost everyone, however, the acceptance and full conformity in Gusau is restricted by the economic challenges, inadequate infrastructural facilities, socio-cultural beliefs and religious inclination. The study therefore recommends that there are needs for policy reforms that would mandate screening for conditions that are considered highly risky; a subsidized and affordable testing; a platform that provides digital counsel; outreach services on mobile phone; advocacy through religious inclinations and a strengthened follow-up for post-marital health. The study established that implementation of these recommendations could largely lessen avoidable genetic disorders and facilitate a viable public health outcomes in the Gusau metropolis of Zamfara State.

Keywords: *Genetic Counseling, Premarital Screening, Post-Marital Health, Public Health, Gusau Metropolis.*

Introduction

Studies have revealed that Genetic counselling, premarital screening and post-marital health interventions are essential in curbing the challenges of diseases such as thalassemia, specific metabolic disorder and sickle cell anemia which are mostly hereditary (Adeyemo & Akinola, 2019). However, lack of acceptance and adherence to the aforementioned health preventive measures in some part of the northern Nigeria has remained some of the major challenges. The lack of acceptance and adherence have been attributed some socio-cultural and religious barriers (Barmo & Yahaya, 2024).

The need for genetic counseling, premarital screening and post-marital health has become necessary in every human society especially while discussing issue of public health and importantly in a city such as Gusau metropolis. Acceptance and adherence to the identified preventive measures could significantly help in impacting the well-being and health of individuals, families, groups and communities as a whole. Genetic counseling has been described as what provides individuals and families with information about genetic disorders, their inheritance patterns and the risks associated with them (Anie, Egunjobi & Akinyanju, 2022). Premarital screening on the other hand helps identify potential genetic disorders or health issues that may affect future offspring (Oyedeji, Umeh & Okafor, 2021). Post-marital health services, meanwhile, promote healthy relationships and family well-being (Gambo, Sani & Salihu, 2021).

Prevalence of genetic disorders, infectious diseases and other health issues have the potential to pose significant challenges to the well-being and health of member of society (Rosenstock, 2023). In the Northern part of Nigeria, discussion around marriage often revolves around the couple's compatibility as regards family background, economic stability and religion affiliation. Most often, such conversion hardly include compatibility as regards genetic, even with the pervasive increase in the related conditions such as sickle cell anemia. Advancement in technology and medical sciences have provided opportunities for screening and counselling services that would prevent any uncertain heartbreak or long-term health challenges, however, these opportunities and services are not accepted and adhered to (Gambo, Sani & Salihu, 2021).

Gusau metropolis is a typical example of non-acceptance and adherence to the health preventive measures. On many occasions couples who know little or nothing about each other's health status or the genetic risks get married, only to be consumed by the consequences of their actions. Children are given birth to with health conditions and to face the challenges of what could have been prevented, thereby leaving families to deal with the financial, emotional and physical strain (Bawa, 2017). Genetic counseling simply refers to the communication process that seeks to make available for individuals, groups and families the information that has to do with genetic disorders, the inheritance patterns as well as the risks that are likely associated with it (Wolff, 2025). These assist individuals, groups and families to be informed and to do the needful as regards their family planning, reproductive health and management of their medical life. By extension, genetic counseling also provides guidance and emotional support to individuals, groups and families that are affected by the genetic disorders (Reed-Fitzke, Lucier-Greer, Gamboni, Rivera & Ferraro, 2020).

Premarital screening is also an essential aspects and component of the public health discussion, especially in the realm of genetic disorders. It simply refers to the testing of individuals for the purpose of establishing the health challenges or genetic disorders that may likely affect the unborn child. Premarital screening has the potential of identifying for couples the possible health risks in their relationship and then highlight for them information about their health status and reproductive health. The information would go a long way to guide their decisions about family planning, reproductive health and management of their medical life (Rahbari, Shariati, Keramat, Yunesian, Eslami, Mousavi & Montazeri, 2015).

On the other hand post-marital health services is important in the sense that it helps promotes family well-being and healthy relationships (Sadat Hajimirzaie, Bahri, Parsajam, Razavinia, Golbani, Motaghi & Haseli, 2025). These are services that can provide couples with vital support as well as information that has to do with their relationship management, family planning and reproductive health. Post-marital health services also has the potential to identify health issues and then guide couples on how to access the medical care and support services needed.

It is apparent that Gusau metropolis, a city in the northern Nigeria is facing various public health issues which include infectious diseases, increase in the genetic disorders and some other health challenges. The metropolises also have challenges that have to do with accessibility to health awareness, health education and healthcare services. Therefore, discussion of genetic counseling, premarital screening and post-marital health services in the Gusau metropolis is crucial and has the tendency to promote and improve the public health. This paper is an empirical examination of the genetic counseling, premarital screening and post-marital health services in the Gusau metropolis. It examined various existing literature and discussion. The study was anchored on Public Health Model, which examined disease prevention, promotion and protection of health.

Conceptualization of the Term

In a bid to provide understanding of the concept usage, the following provides clarification for the three integrated and interrelated concepts:

- i. **Genetic Counselling:** This refers to the process of guiding individuals, groups or communities on the possible hereditary risks or issues of genetic disorders with the aim of providing information and a guided decision-making as regard couples getting married and intending childbearing.
- ii. **Premarital Screening:** This refers to the medical testing for the prospective couples with the purpose of detecting potential genetic infectious or disorder and any uncertain chronic health conditions that may affect future marital peace or the unborn child.
- iii. **Post-Marital Health Realities:** This refers to the apparent health issues or outcomes that married couples faced after getting married. Importantly, those that are linked to the genetic disorders, undiagnosed or unchecked pre-marital issues or conditions and restricted or inadequate accessibility to continuing healthcare services.

Statement of the Problem

There are no doubt that genetic disorders have the potential to impact public health in Gusau metropolis in particular and Nigeria in general. For instance, Sickle cell disease which is an example of genetic disorder has become a major challenge in Gusau metropolis. It is pervasive genetic disorders that have been causing health issues because it is basically transmitted to the offspring from couples who have refused to accept and adhere to the premarital screening and genetic counseling, thereby, resulting in the increase of the mortality and morbidity rate. It has been found that premarital screening and genetic counseling are vital tools for curbing and preventing the potential transmission of the various and uncertain disorders to the offspring.

However, it has been noted that in spite of the services that have been made available for people to access the premarital screening and genetic counseling there seems to be an obvious gap in the awareness, acceptability and adherence among the individual and family member of the society. Studies also revealed that many individual and family member of some part of Nigeria, especially those in the rural areas are lacking the knowledge on the issue that has to do with the premarital screening and genetic counseling (Maduka and Okubor, 2023).

A study was conducted in the southern part of Nigeria, precisely in the Delta State. The study established that it was only the 30% of the 100% participants that were knowledgeable about anything that has to do with premarital screening (Ayodele, Morka & Okere, 2025). This challenge has been attributed to the lack of awareness and it has been described as factors responsible for the lack of acceptance and adherence to the premarital screening services which eventually perpetuate the increase and recycling of genetic diseases within the families and members of the communities.

The socio-cultural and religious inclination has also been attributed to the lack of acceptance and adherence to the premarital screening and genetic counselling services. The socio-cultural and religious inclination precipitated some individuals to view the screening and counselling as unnecessary and intrusive interference with decisions that has to do with marital discretions. It is therefore essential to understand these diverse predispositions for the purpose of designing socio-cultural and religious

sensitive counseling interventions for the Nigerian population. Also, importantly, the inadequate accessibility to the healthcare services which include the premarital screening and genetic counselling are significant challenge to be considered. The facts that many individuals and families, may not have access to the services in Gusau Metropolis and thereby further aggravating the challenges of genetic disorders.

It is risky if these challenges are not addressed as at when due. It is pertinent that these challenges are curbed and people are made to accept and adhere to the premarital screening and genetic counseling to avoid and put an end to the continuous increase in the risk of passing on to the offspring diseases that are hereditary which eventually leads physical, social, emotional and financial burdens on the individuals, families and communities.

This study therefore seeks to understand people's awareness, attitudes towards and accessibility to the premarital screening and genetic counseling. This study would therefore provide information to the development of important interventions capable of improving the acceptance and adherence of the premarital screening and genetic counselling services and possibly minimize the pervasive of genetic disorders in the Gusau Metropolis of Zamfara state.

Objectives of the Study

The general objective of the study is to empirically examine the health realities of the Genetic Counselling, Premarital Screening and Post-Marital Health in the Gusau Metropolis of Zamfara State.

The objectives of this paper are to:

- a) Examine the importance of premarital screening, genetic counseling and post-marital health in improving the public health in Gusau Metropolis.
- b) Discuss the state of premarital screening, genetic counseling and post-marital health in improving the public health in Gusau Metropolis.
- c) Examine how socio-cultural and religious inclinations in Gusau influence the acceptance and adherence to the premarital screening, genetic counseling and post-marital health services.
- d) Establish the need for increased education, awareness and accessibility to premarital screening and genetic counseling services in Gusau Metropolis.

Literature Review

Literature review has been subdivided into three to capture the objectives of the study as follows: significance of genetic counseling, premarital screening, and post-marital health; State of genetic counseling, premarital screening, and post-marital health in promoting public health and Cultural and religious beliefs influence on the uptake of premarital screening and post-marital health services.

Significance of genetic counseling, premarital screening, and post-marital health

Genetic counseling has been described as a vital component of public health practice, particularly in the context of genetic disorders (Akbar, Kirmani, Qazi, Ali, Ali & Afroze, 2024). It has been regarded as what provides individuals and families with information about genetic disorders, their inheritance patterns

and the risks associated with them. Genetic counseling has been noted to help individuals and families to make informed decisions about their reproductive health family planning, and medical management (Choudhury and Chaube, 2022). Schaffnit and Lawson (2021) were of the view that genetic counseling can provide individuals and families with information about genetic disorders, their inheritance patterns and the risks associated with them. Similarly, it has been discovered that genetic counseling can help individuals and families make informed decisions about their reproductive health, family planning and medical management (Magumba, 2025). It has also been observed that genetic counseling can help individuals and families plan for healthy families by identifying potential genetic risks and providing guidance on reproductive options (Scelza, Prall, & Starkweather, 2021).

In a research conducted by Quinn, (2025) it has been observed that premarital screening is a critical component of public health practice, particularly in the context of genetic disorders. It was found that it involves testing individuals for genetic disorders or health issues that may affect their future offspring. It was found that premarital screening can help identify potential health risks and provide couples with information about their reproductive health. Similarly, Banerjee and Jayasankara Reddy, (2025) found that premarital screening can help identify potential health risks that may affect future offspring. It was discovered that premarital screening provides couples with information about their reproductive health and help them make informed decisions about family planning. It was also found to help promote healthy marriages and that is by identifying potential health risks and providing couples with information about their reproductive health.

Importantly also post-marital health services has been described as a vital component of public health practice in promoting healthy relationships and family well-being (Hopipah, 2025). The services can provide couples with information and support on reproductive health, family planning, and relationship management (Effiong, 2024; Khalil, Mookerjee & Ray, 2024). It has been established in a research conducted by Karim and Kakar, (2025) that post-marital health services can provide couples with information and support on relationship management and conflict resolution. It was found that post-marital health services provide couples with information and support on family planning options and reproductive health. The service has been regarded as that which can provide families with information and support on healthy lifestyle choices and disease prevention.

From the above findings, observations and study it is obvious that genetic counseling, premarital screening and post-marital health services are critical components of public health practice. These services can provide individuals and families with information and support on genetic disorders, reproductive health and family planning. Seemingly, therefore, promoting awareness, education and access to these services, it is possible to work towards improving public health outcomes and promoting healthy relationships and family well-being in Gusau Metropolis.

State of genetic counseling, premarital screening, and post-marital health in promoting public health

Studies have shown that awareness and knowledge of premarital screening are crucial in preventing genetic disorders (KT and Ahmed, 2025). A study conducted by Kundu, Mandal & Mallik, (2019) found that only 30% of participants were knowledgeable about premarital genotype screening. Similarly, Oyedele Emmanuel, Andy, Gaji Luka & Do'om, (2015) conducted a study in Plateau State, Nigeria which revealed low awareness and acceptance of premarital genotype screening among youths. It was found that premarital screening and genetic counseling can identify and modify health risk factors associated with genetic disorders. It was established that it can help prevent genetic blood disorders and reduce medical, psychological, and social marital problems. Nnachi, Ugwu, Akpa, Umeokonkwo, Nwani, Ekwe & Nnachi, (2022) conducted an analysis of 23 premarital programs and it found that these programs

improved interpersonal skills and overall relationship quality. It found that healthcare providers play a vital role in promoting premarital screening and genetic counseling. Al-Shroby, Sulimani, Alhurishi, Bin Dayel, Alsanie & Alhraiwil, (2021) conducted a study in Saudi Arabia and found that female university students had a positive attitude towards premarital screening and genetic counseling programs. It is essential that there should be increased education and awareness among healthcare providers for the purpose of effectively promoting these services.

Study further established that genetic counseling is vital because it enhances individuals with information that are unbiased and accurate about genetic disorders. Barmo and Yahaya, (2024) conducted an empirical research in one of the Nigeria community. It was discovered that the predisposition of the religious leaders towards premarital screening and genetic counselling are moderate. They were found to be indifferent in their reactions towards either to practice it or not. The study, therefore, highlighted the importance for increase in education and awareness. It was recommended that intensified campaigns on premarital screening and genetic counselling are vital and these should be done through spreading of awareness and education as well as health promotion tools. In another similar study by (Cornel, 2025), the importance of premarital screening and genetic counseling were identified and highlighted. It was stated that in a bid to protect genetic risk, it is pertinent to provide information and discussion on available testing options in premarital screening and genetic counselling. The study established that although there are great benefits of premarital screening and genetic counseling but there are various challenges that continue to hinder the widespread acceptance, adherence and adoption.

The above literature shows the importance of genetic counseling, premarital screening and post-marital health. It revealed that they are critical and components parts of promoting public health of a society. It implied therefore that it is important to provide more education, awareness and most importantly the accessibility for individuals and family members of a society. The reviewed showed that the services if provided and accessed have the potential to prevent genetic disorders and eventually improved the overall health sectors and its outcomes. It has therefore become necessary for the policy makers, religious leaders and healthcare workers to work harmoniously and consensually to promote the services. These would go a long way in addressing the various challenges that are associated with the implementation.

Cultural and religious beliefs influence on the uptake of premarital screening, and post-marital health services

Nyundo, Whittaker, Eagle & Low, (2021) conducted a research and they established that cultural beliefs and practices have great influence, as such, they shape health behaviors and healthcare utilization, including premarital screening and genetic counseling. Similarly, Birhanu, Ketema, Desta, Habtegiorgis, Mengist, Alamneh & Jemberie, (2023) also conducted a study and they found that cultural perspectives on genetic disorders and premarital screening are essential for designing culturally sensitive counseling interventions. They stated that traditional and religious norms about fertility, perception of family planning and myths about contraceptives and genetic screening can hinder the uptake of premarital screening services. They argued that in some cultures, children are viewed as "divine blessings," and procreation is not regulated, leading to resistance to premarital screening and family planning. Similarly,

Dutt and Paul (2014) were of the view that religious leaders play a vital role in promoting or hindering the uptake of premarital screening services. For example in Nigeria, some religious leaders have a moderate level of practice towards premarital genotype screening and could serve as advocates for awareness creation and community mobilization (Nweke, Ogadah & Chukwu, 2025). It has been argued that religious beliefs has the power to influence attitudes towards premarital screening, with some

individuals viewing it as intrusive or unnecessary interference in marital decisions (Lawal, Akinrinde, & Jegede, 2024).. In some communities, religious leaders and traditional rulers can support premarital screening programs, but their influence can also be limited by cultural and social norms (Eze, Ugbudian, Alaku & Nwamuo, 2024). This is similar to what is obtainable in Gusau, where many challenges are attributed to God, including illness. While this belief brings comfort, it sometimes discourages people from taking preventive actions such as screening for genetic risks (Mahmoud, Nwakasi & Oyinlola, 2023).

Increased education, awareness and accessibility to genetic counseling and premarital screening services

Abd Eltawab, Eldesokey, Mostafa & Morad, (2025) conducted an empirical research which established that awareness and uptake of premarital screening services are low, particularly in developing countries. Similarly, Bolanle, Sonola, Oyundoyin, Onasanya & Afolabi, (2024) conducted a study in Nigeria and found that only a small percentage of participants were knowledgeable about premarital genotype screening. They established that education plays a crucial role in increasing awareness and uptake of premarital screening services. That individual with higher educational attainment is more likely to understand the importance of premarital and genetic screening. They stressed further that access to genetic counseling services is also essential for individuals and couples to make informed decisions about their health.

However, they discovered that many communities lack access to these services. They, therefore, highlighted the need for increased investment in healthcare infrastructure. Al Eissa, Almsned, Alkharji, Aldossary, AlQurashi, Hawsa & Assiri, (2024) conducted a research and found that increased awareness and education enable individuals and couples to make informed decisions about their health, potentially reducing the number of children born with genetic disorders. They established that promoting awareness and education, premarital screening and genetic counseling services would contribute to improved health outcomes and reduced healthcare costs. They pointed to the need for specified educational and awareness campaigns that could enhanced the counseling services. These should basically focused on peculiar and health related issues such as genetic diseases, mental health, reproductive health, chronic diseases, cancer and this should be with aim of improving efficiencies and effectiveness.

In another empirical finding by Kamga, Marlyse, Nguetack & Wonkam, (2025), it was argued that in a bid to achieve the best in health sector, funding is a major criterion. It has become necessary therefore that increasing funding is essential in meeting the deficit of healthcare infrastructure, basic amenities and providing the premarital screening and genetic counseling services. They argued that in a bid to improve the accessibility to the services of screening and counselling funding must be provided. They were of the view that there are communities that without provision of the funding certainly the aims and objectives may not be achieved.

Theoretical Framework

This study employed the Public Health Framework to proffer explanation to the discussion of premarital screening and genetic guidance. This framework is a theoretical perspective in the realm of Medical Sociology. It is a fundamental concept that evolved gradually and it was the results of the contributions from numerous individual scholars as well as organizations. The development of the theory has not been singly attributed to any particular scholar; however, some important milestone and figures have significantly shaped and refined the framework. For example Charles-Edward Winslow who has mostly been considered the father of public health has published several books and reports that have significantly contributed to the development of the public health framework in general. The World

Health Organization (WHO) as an organization has played an important part in shaping and refining the world public health framework and policies.

The contribution of organizations such as the Health for all Strategy and Ottawa Charter for Health Promotion (1986) has also contributed tremendously to the development of the framework. The various contributions have generally and collectively refined, shaped and improved the public health framework and it has helped in the continuous evolving of the framework in responding to the emerging health issues and challenges as well as the advances in knowledge. The Public Health theoretical Framework is a basic and comprehensive attempt that seeks to provide possible ideas and knowledge that could prevent diseases, improve and promote healthy life and possible elongation of life by means of organized efforts of society. The ideas include numerous strategies of promoting health, preventing diseases and protecting health. In the discussion about the premarital screening and genetic counseling, the framework may be applied in the following ways:

- a) Promoting of Health: In a bid to promote health, the framework suggests that various strategies could be used to increase, facilitate and enhance knowledge and awareness about premarital screening and genetic counseling. The framework highlighted the importance of community outreach, public education campaigns and health education programmes.
- b) Preventing of Diseases: The framework stated that premarital screening and genetic counseling should by itself be regarded as a form of disease prevention strategies which seeks to identify and manage genetic issues and risks involved with the aim of preventing it and avoids it becoming a critical health challenges or problems.
- c) Protecting of Health: The framework suggest that protection of health is possible by ensuring that individuals and families have accessibility to premarital screening and genetic counseling services. This is possible through implementation of programs and policies that are aimed at enhancing the accessibility of individuals, families and vulnerable populations to healthcare services.

The Public Health Framework theory encompasses various components and indices that point to how health could be promoted and protected as well as how diseases could be prevented. It seeks to provide identification of health challenges and monitor how health problems should be protected and prevented. It seeks to curb the menaces of genetic disorders, suggest policies and programs that could possibly address health challenges and problems. The framework encouraged premarital screening and genetic counseling and propagates the need and essentiality for individuals to have access to healthcare facilities and services. Application of the Public Health Framework for healthcare is essential because it is capable of providing guidance and the way to develop interventions that would be geared towards promoting premarital screening and genetic counseling. The knowledge and awareness through educational campaigns could be designed.

Programmes and policies could be developed for the purpose of increasing the accessibility to the services. The framework facilitates the basic understanding of how to promote premarital screening and genetic counseling for the aim of preventing future challenges. This framework may therefore be regarded as a form of guidance for healthcare providers because it helps to develop intended interventions that are capable of increasing knowledge, awareness and accessibility to the services, thereby minimizing the pervasive challenges of genetic disorders.

Study Setting and Methods

Gusau Metropolis is the largest city and the capital of Zamfara State of Nigeria. It is located in the Northwest, covering an area of 3,364 km and with a population of 383,162 according to the 2006 census. Gusau metropolis is the Zamfara state economic and administrative economic hub. The populations are predominantly Hausa and Fulani ethnic groups and mainly Islamic traditions and inclinations. The economy is basically agriculture with main focus on farming, live stocking, trading and civil service. Even though, the metropolis hosts both public and private health services and facilities, awareness and accessibility to important services like genetic testing are scarce. In some cases referral to other metropolis facilities becomes necessary. A Socio-cultural and religious affiliation seems to have much influence on health and marital decisions, including predisposition to premarital screening and genetic counseling.

This research is an empirical analysis of the genetic counselling, premarital screening and post-marital health with a focus on public health realities in Gusau metropolis. The study is a qualitative research that employed the use of exploratory research. Focus group discussion (FGD) as well as the key informant interview (KII) were used for the collection of primary data. The FGD involved purposively selecting twenty (20) married women and twenty (20) married men and who might have or not had genetic counselling, premarital screening and post-marital health. The research also engaged ten (10) health workers and ten (10) community and religious leaders who were purposively selected in Gusau Metropolis for the KII. The basis of employing the qualitative method was to have thorough understanding of the causes and implications of genetic counselling, premarital screening and post-marital health in Gusau metropolis. The following are the questions that were posed to the participants:

- a) What are the significance of genetic counseling, premarital screening, and post-marital health in promoting public health in Gusau?
- b) What are the current state of genetic counseling, premarital screening, and post-marital health in Gusau?
- c) How does the cultural and religious belief in Gusau influence the uptake of premarital screening, and post-marital health services?
- d) Are there need for increased awareness, education, and access to genetic counseling and premarital screening services in Gusau Metropolis?

The researchers sought an audience with selected married men and women, health workers, community leaders, and religious leaders. The participants were allowed to determine the venue, the day and the time; Data were generated, transcribed and recorded verbatim as well as converted into written form after collection. Data categorization and thematic analysis were provided, according to the objectives. Internet information and relevant books were employed to sourced Secondary data. Highlighted quotes were provided and sorted in accordance to data that were generated. It was necessary that differences were provided in the various participants' responses as a result of which following coding were made: MMale/FGD/Gusau. Contrived names such as MMale of MFemale, Health workers, Community or Religious Leaders were used to identify the participants; FGD or KII as the type of interview and Gusau as the community of the participants.

Discussions of Findings

The findings of the study showed the importance of premarital screening and genetic counseling and its role in promoting and facilitating the public health. The discussion here synthesized the vital findings and the implications:

The Importance of genetic counseling, premarital screening and post-marital health

The study showed the role of genetic counseling in guiding individuals, families, groups and community with rational, unbiased and accurate information on genetic disorders. It showed the importance of genetic counseling in helping individuals and couples in making informed and guided decisions that has to do with their health, thereby minimizing the possibility of increase in the number of children to be given birth to with genetic disorders. Genetic counseling has been noted to help individuals and families about their reproductive health family planning, and medical management. This is consistent with Scelza, Prall, & Starkweather, (2021); Choudhury and Chaube, (2022). Schaffnit and Lawson (2021); Magumba, 2025) that have shown that genetic counseling is essential in promoting public health. They were of the view that genetic counseling can provide individuals and families with information about genetic disorders, their inheritance patterns and the risks associated with them.

The study also established that pre-marital screening and post-marital health services can provide couples with information and support on relationship management and conflict resolution. This is similar to the findings of Banerjee and Jayasankara Reddy, (2025); Khalil, Mookerjee & Ray, 2024) Karim and Kakar, (2025) who found that pre-marital screening and post-marital health services provide couples with information and support on family planning options and reproductive health.

Focus Group Discussion (FGD) conducted with the Married men and women clarifies the following:

Several examples of complications recorded in the Gusau Metropolis that resulted from the lack of doing the genetic counselling and premarital screening has revealed the importance of doing them. It is therefore essential for couples to have genetic counselling and premarital screening because it is an opportunity for them to know their status in terms of what should be avoided, what prevention should be made and what options are there for them. This is also pertinent because it would assist them to make informed decisions about their health. Importantly also, it largely reduce the potential number of children that may be born with genetic disorders. It has also been established that genetic counseling and premarital screening have been helpful for individuals and families in the aspect of their medical management, reproductive health and family planning. (MMale/FGD/Gusau)

Genetic counseling and premarital screening are vital and they promotes public health. They strengthen post marriage health among couples. This is because they provide relevant information about potential genetic disorders and any risks associated with them. (FMale/FGD/Gusau)

The Key Informant Interview (KII) conducted reiterates the significant of genetic counselling and premarital screening

*Genetic counselling and premarital screening are vital because they serve as a form of health and conflict services that provide couples with information and support for relationship conflict management and resolution.
(Community Leaders/KII/Gusau)*

The genetic counselling and pre-marital screening serve essential purposes such as how, when and what to do about family planning and reproductive health (Health Workers/KII/Gusau).

Genetic counselling and premarital screening prevents potential marital crisis and unwarranted divorce that are on the increase (Religious Leaders/KII/Gusau).

The above responses from the FGD and KII revealed the significances of genetic counselling and premarital screening. It established how it unveils health challenges in case there are any and the capacity of preventing any potential crisis.

State of genetic counseling, premarital screening, and post-marital health in promoting public health

The research found that genetic counselling and premarital screening are crucial. It discovered that they prevent any future challenges of genetic disorders. It established that there are low awareness and acceptance of premarital genotype screening among couples; it revealed that premarital screening and genetic counseling can identify and modify health risk factors associated with genetic disorders. It found that genetic counseling are important in assessing genetic risk, providing information, and discussing available testing options, but people are not aware of the importance, This consistent with the findings of Oyedele Emmanuel, Andy, Gaji Luka & Do'om, (2015); Kundu, Mandal & Mallik, (2019); Nnachi, Ugwu, Akpa, Umeokonkwo, Nwani, Ekwe & Nnachi, (2022); KT and Ahmed, (2025) who found that genetic counseling is essential because it provides individuals with accurate and unbiased information about genetic disorders. However, people are not aware of the importance of genetic counselling and premarital screening.

Focus Group Discussion (FGD) conducted with the Married men and women clarifies the following:

Genetic counselling and premarital screening are essential because they prevents future challenges of genetic disorders. Unfortunately, there are high level of low awareness. There are need for enlightenments (MMale/FGD/Gusau)

People are not aware of the importance of genetic counseling and premarital screening. It may be vital and that they promotes public health is unarguably. However, people seems not to e aware of the importance. (FMale/FGD/Gusau)

The Key Informant Interview (KII) conducted reiterates the significant of genetic counselling and premarital screening.

The genetic counselling and premarital screening are importance and everyone knows. However, people are not aware of the implications of not doing it. (Community Leaders/KII/Gusau)

Many of those facing the implication of not doing the

genetic counselling and premarital screening are as a result of the lack of awareness from the onset.
(Health Workers/KII/Gusau).

Because of the religious and cultural believes of everything have been ordained by God may be attributed to why people are not aware of the implications (Religious Leaders/KII/Gusau).

The above responses from the FGD and KII revealed there are low awareness and acceptance of premarital genotype screening. These have been attributed to the need for enlightenment to increase the awareness.

Cultural and religious beliefs influence on the uptake of premarital screening, and post-marital health services

The study highlights the influence of cultural and religious beliefs on the uptake of premarital screening services. Cultural and religious beliefs are vital role in promoting or hindering the uptake of these services. The findings suggest that designing culturally sensitive counseling interventions and public health campaigns can improve the uptake of premarital screening services. This is consistent with Nyundo, Whittaker, Eagle & Low, (2021); Effiong, (2019); Birhanu, Ketema, Desta, Habtegiorgis, Mengist, Alamneh & Jemberie, (2023); Eze, Ugbudian, Alaku & Nwamuo, (2024); Nweke, Ogadah & Chukwu, (2025) who also conducted a study and they found that cultural perspectives on genetic disorders and premarital screening are essential for designing culturally sensitive counseling interventions. Their research has established that cultural and religious beliefs can influence health behaviors and healthcare utilization

Focus Group Discussion (FGD) conducted with the Married men and women clarifies the following:

Religious and cultural believes play significant roles in the northern part of Nigeria. Therefore, it largely determine peoples' predisposition to the genetic counselling and premarital screening. Religious and cultural sensitive counseling interventions are very vital
(MMale/FGD/Gusau)

Genetic counseling and premarital screening are largely determined by the religious and cultural believes. Therefore, the two should be used to propagate the importance of the former.
(FMale/FGD/Gusau)

The Key Informant Interview (KII) conducted reiterates the significant of genetic counselling and premarital screening.

Genetic counselling and premarital screening are important, however, cultural and religious leaders play significant roles in either hindering or promoting these services
(Community Leaders/KII/Gusau).

Despite the health importance of the genetic counseling

and pre-marital screening. Religion and cultural beliefs decide the acceptances by the members of the Gusau community serve essential (Health Workers/KII/Gusau).

Religious and our cultural inclination are major determinant of our acceptances of the genetic counselling and premarital screening. Therefore, religious leaders are very crucial in the propagation of these services (Religious Leaders/KII/Gusau).

The above responses from the FGD and KII revealed the significances of cultural and religious beliefs and how it play vital roles in promoting or hindering the uptake of genetic counselling and premarital screening. The response shows the importance of designing religious and culturally sensitive counseling interventions.

Increased education, awareness and accessibility to genetic counseling and premarital screening services

The study examined the importance for the increased education and awareness for genetic counselling and premarital screening. The findings recommended that specified educational campaigns and facilitated counseling services can improve awareness and effectiveness. The study also showed that awareness and knowledge of genetic counselling and premarital screening are crucial in preventing genetic disorders. The findings also indicate that many individuals lack knowledge about premarital genotype screening, which can lead to low uptake of these services. This is consistent with the findings of Bolanle, Sonola, Oyundoyin, Onasanya & Afolabi, (2024); Al Eissa, Almsned, Alkharji, Aldossary, AlQurashi, Hawsa & Assiri, (2024); Kamga, Marlyse, Nguefack & Wonkam, (2025); Abd Eltawab, Eldesokey, Mostafa & Morad, (2025) who conducted empirical research which established that awareness and uptake of premarital screening services are low, particularly in developing countries and also that education plays a crucial role in increasing awareness and uptake of premarital screening services.

Focus Group Discussion (FGD) conducted with the Married men and women clarifies the following:

Awareness and knowledge of genetic counseling and premarital screening are important in preventing genetic disorders. This will go a long way in propagating the services (MMale/FGD/Gusau)

Awareness about premarital screening services is very low, particularly in Gusau, Zamfara state. Therefore, education shall play important roles in increasing awareness and uptake of premarital screening services (FMale/FGD/Gusau)

The Key Informant Interview (KII) conducted reiterates the significant of genetic counselling and premarital screening

There are needs to further provide people with the knowledge and awareness about genetic counselling and premarital screening. This will enhance more participation (Community Leaders/KII/Gusau)

The awareness and knowledge about genetic counselling and pre-marital screening will serve essential purposes like the family planning and reproductive health (Health Workers/KII/Gusau).

Through the religious leaders the knowledge about genetic counselling and premarital screening will increase and these will further prevents the increases in the potential marital crisis and unwarranted divorce (Religious Leaders/KII/Gusau).

The above responses from the FGD and KII revealed the importance of awareness and enlightenment about genetic counselling and premarital screening. It shows that it will increase the uptake of the services

Implications for Public Health

The study has several implications for public health. Firstly, it highlights the need for increased investment in healthcare infrastructure and genetic counseling services. Secondly, it emphasizes the importance of designing culturally sensitive counseling interventions and public health campaigns. Finally, it suggests that increased awareness and education about premarital screening and genetic counseling can improve health outcomes and reduce healthcare costs.

Conclusion

This study has revealed that genetic counselling, premarital screening and post-marital health services are not properly utilized in Gusau which has been attributed to religious, socio-cultural and awareness barriers. In a bid to address these challenges, there must be implementations of some approaches, such as culturally sensitive education, enforcement of some policies through awareness and sensitizations; sustained as well as follow-up services. Doing these is by integrating the various interventions into the healthcare system in Gusau. This would largely position the metropolis as one of the model for northern Nigeria striving to combats the preventable genetic disorders.

Recommendations

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

- i. Policy Reform: Enact state legislation mandating premarital screening for high-burden genetic conditions.
- ii. Subsidized Testing: Allocate public funds or insurance support for low-income couples.
- iii. Faith-Based Advocacy: Engage religious leaders to incorporate genetic health education into marriage counselling.
- iv. Mobile Health Units: Bring screening services to underserved wards and villages.
- v. Post-Marital Follow-Up: Institutionalize annual reproductive health check-ups for couples.
- vi. Digital Platforms: Develop mobile applications for confidential counselling, test booking, and follow-up reminders.

- vii. Capacity Building: Train primary healthcare workers in culturally sensitive genetic counselling.
- viii. Research Funding: Establish local studies tracking health outcomes over time to guide policy updates.

References

- Abd Eltawab, G. A. M., Eldesokey, A. S., Mostafa, M. Y., & Morad, E. S. (2025). Perception of Premarital Screening and Genetic Counseling among Prospective Marital Individuals in Maternal and Child Health Centers at El-Fayoum City. *Tanta Scientific Nursing Journal*, 37(2).
- Adeyemo, A. A., Olayemi, E., Omotade, O. O., & Ogunrinde, G. O. (2017). Knowledge and attitude of Nigerian youth to sickle cell disease. *Nigerian Journal of Paediatrics*, 44(3), 137–144.
- Al Eissa, M. M., Almsned, F., Alkharji, R. R., Aldossary, Y. M., AlQurashi, R., Hawsa, E. A., ... & Assiri, A. M. (2024). The perception of genetic diseases and premarital screening tests in the central region of Saudi Arabia. *BMC Public Health*, 24(1), 1556.
- Al-Shroby, W. A., Sulimani, S. M., Alhurishi, S. A., Bin Dayel, M. E., Alsanie, N. A., & Alhraiwil, N. J. (2021). Awareness of premarital screening and genetic counseling among Saudis and its association with sociodemographic factors: a national study. *Journal of Multidisciplinary Healthcare*, 389-399.
- Akbar, F., Kirmani, S., Qazi, M. F., Ali, N. M., Ali, Z. H., & Afroze, B. (2024). Clinical experience of next generation sequencing based expanded carrier screening in high-risk couples from a tertiary healthcare center in Pakistan. *Prenatal Diagnosis*.
- Anie, K. A., Egunjobi, F. E., & Akinyanju, O. (2022). Psychosocial impact of sickle cell disorder: Perspectives from a Nigerian setting. *Global Health*, 12(1), 1–6. <https://doi.org/10.1186/s12992-016-0162-3>
- Ayodele, k., morka, e., & okere, s. (2025). Effect of communication interventions on genotype compatibility decision among youths to prevent sickle cell disease. *Cuestiones de fisioterapia*, 54(5), 965-974.
- Barmo, S. A. A., & Yahaya, A. G. (2024). Islamic Perspective and Socio-Cultural Aspects of Pre-Marital Medical Test in Sokoto Metropolis. *ASANKA: Journal of Social Science and Education*, 5(2), 205-220.
- Banerjee, T., & Jayasankara Reddy, K. (2025). The Paradox of Sex: A Thematic Analysis of Identity Among Indian Cis-Gendered Female Asexuals. In *Psychology of Sexuality & Mental Health Vol. 2: Modern Approaches* (pp. 147-172). Singapore: Springer Nature Singapore.

- Bawa, B. Y. (2017). The Role of Premarital Counselling for Marriage Stability: A Pastoral Examination of the Interface between the Christian and Alago Indigenous Epawoza Concept of Marriage Preparation. A PhD thesis submitted to the School of Religion, Philosophy and Classics, University of KwaZulu-Natal, Pietermaritzburg, South Africa in.
- Bolanle, O., Sonola, O., Oyundoyin, T., Onasanya, O., & Afolabi, W. (2024). Genetic Testing: Knowledge, Attitude and Genetic Risk Information of Women, Implications for Counselling among Girls in Oyo State, Nigeria. *Ghana journal of education and teaching*, 14(1).
- Birhanu, M. Y., Ketema, D. B., Desta, M., Habtegiorgis, S. D., Mengist, B., Alamneh, A. A., ... & Jemberie, S. S. (2023). Married women pre-marital HIV testing status in Ethiopia: Individual and community level factor analysis. *Frontiers in Medicine*, 10, 913040.
- Choudhury, M. C., & Chaube, P. (2022). Integrating rare disease management in public health programs in India: exploring the potential of National Health Mission. *Orphanet Journal of Rare Diseases*, 17(1), 43.
- Cornel, M. C. (2025). Preconception carrier screening in 2025: what's next? A collection in the journal of community genetics. *Journal of Community Genetics*, 16(1), 1-3.
- Dutt, S., & Paul, B. K. (2014). Factors influencing willingness to comply with HIV/AIDS prevention measures by female college students in Kolkata, West Bengal, India. *GeoJournal*, 79(1), 113-126.
- Effiong, U. U., (2024). Social Security in Nigeria. In Destiny Eze Agwanwo (Eds.). *Social Work and Social Legislations in Nigeria*. Pp: 35-52. Prime Publishers and Educational Services: Ibadan.
- Effiong, U. U. (2019). Cultural Dynamics of Burial Rites in Annang Traditional Society. *AWOROM: Annañ Studies Journal*, 1(1), pp: 92-102.
- Eze, O. C., Ugbudian, L. I., Alaku, E. C., & Nwamuo, B. E. (2024). Marriage Institution and Christianity in Nsukka, Nigeria: Between Acculturation and Syncretism, 1970-2013. *Culture & History Digital Journal*, 13(1), 409-409.
- Gambo, A. B., Sani, A. M., & Salihu, B. H. (2021). Cultural perceptions of premarital genetic screening in Northern Nigeria. *African Journal of Medical Ethics*, 10(2), 89–97.
- Hopipah, E. N. (2025). The Significance of Pre-Marital Education and Post-Marital Counseling in Minimizing Divorce Rates. *Journal of Islamic Psychology and Behavioral Sciences*, 3(2), 78-90.
- Kamga, K. K., Marlyse, P. F., Nguéfack, S., & Wonkam, A. (2025). Advancing genetic services in African healthcare: Challenges, opportunities, and strategic insights from a scoping review. *Human Genetics and Genomics Advances*.

- Karim, F., & Kakar, M. M. (2025). Gender Roles and Their Influence on Women's Educational Aspirations after Marriage. *Policy Journal of Social Science Review*, 3(3), 24-32.
- Khalil, U., Mookerjee, S., & Ray, A. (2024). Post-marital residence and female wellbeing. *Journal of Population Economics*, 37(2), 49.
- KT, A. K., & Ahmed, A. (2025). "Marriage should not mean losing myself": Changing expectations and relationship concerns among unmarried young adults in Kerala. *Journal of Human Behavior in the Social Environment*, 1-18.
- Kundu, R., Mandal, I., & Mallik, G. (2019). Modern life and its complexities: A study of extramarital relationships in Sikkim. *JIMS8M: The Journal of Indian Management & Strategy*, 24(4), 54-62.
- Lawal, M. O., Akinrinde, O. O., & Jegede, A. S. (2024). Faith Healing Techniques in the Management of Sickle Cell Anaemia in Nigeria. *Global Social Welfare*, 1-10.
- Maduka, N. R., & Okubor, P. O. (2023). Awareness and uptake of pre-conceptional genotype screening among pregnant women in South-South Nigeria. *Annals of Clinical and Biomedical Research*, 4(2).
- Magumba, P. J. (2025). Step-Parents-Step-Children Relationship Nurture: The Invisible Clerical Role of Religious Leaders in Uganda. *African Multidisciplinary Journal of Research*, 10(1), 310-329.
- Mahmoud, K., Nwakasi, C., & Oyinlola, O. (2023). The influence of religion and socio-economic status on coping with chronic diseases among older adults in Nigeria. *Journal of Religion, Spirituality & Aging*, 35(1), 2-20.
- Nnachi, O. C., Ugwu, G. C., Akpa, C. O., Umeokonkwo, A. A., Nwani, F. O., Ekwe, A. N., & Nnachi, O. A. (2022). Knowledge of Premarital Genotype Screening Among Women Receiving Care at a Tertiary Centre in Ebonyi State, Nigeria. *Haematol Int J*, 6, 00207.
- Nweke, I. P., Ogadah, C. O., & Chukwu, C. V. (2025). Sickle Cell Disease and Newborns Screening in Nigeria: A Systematic Review Enhancing Community Level Awareness and Engagement. *Asian Journal of Medical Principles and Clinical Practice*, 8(1), 262-272.
- Nyundo, L., Whittaker, M., Eagle, L., & Low, D. R. (2021). Adaptation of community-based distribution of family planning services to context-specific social networks: a case of marriage counsellors in Lusaka district, Zambia. *BMC Health Services Research*, 21(1), 437.
- Oladipo, O. A., & Falusi, A. G. (2020). Genetic screening in Nigeria: Challenges and prospects. *African Journal of Medical Sciences*, 49(1), 25–31.

- Oyedeji, K. S., Umeh, C. A., & Okafor, I. P. (2021). Post-marriage reproductive health challenges and the role of genetic counseling. *Nigerian Health Review*, 21(4), 312–326.
- Oyedele Emmanuel, A., Andy, E., Gaji Luka, D., & Do'om, A. (2015). Awareness and acceptance of premarital genotype screening among youths in a Nigerian community. *Age (years)*, 14(19), 20-25.
- Quinn, A. N. (2025). *From ecology to ideology: environmental and cultural drivers of menstrual taboos* (Doctoral dissertation, Lethbridge, Alta.: University of Lethbridge, Dept. of Psychology).
- Rahbari, M. M., Shariati, M., Keramat, A., Yunesian, M., Eslami, M., Mousavi, S. A., & Montazeri, A. (2015). Content validity of national post marriage educational program using mixed methods. *Iranian journal of public health*, 44(4), 535.
- Rassool, G. H. (2015). *Islamic counselling: An introduction to theory and practice*. Routledge.
- Reed-Fitzke, K., Lucier-Greer, M., Gamboni, C. M., Rivera, P. M., & Ferraro, A. J. (2020). Beliefs about Romance and Mate Selection and Intentions to Seek Pre-or Post-Marital Counseling: a Latent Profile Analysis of Emerging Adults. *Marriage & Family Review*, 56(1), 72-90.
- Rosenstock, I. M. (2023). Historical origins of the Health Belief Model. *Health Education Monographs*, 2(4), 328–335. <https://doi.org/10.1177/109019817400200403>
- Sadat Hajimirzaie, S., Bahri, N., Parsajam, T., Razavinia, F., Golbani, F., Motaghi, Z., & Haseli, A. (2025). Iranian women's perception of marital dissatisfaction formation: an explanatory qualitative study.
- Schaffnit, S. B., & Lawson, D. W. (2021). Married too young? The behavioral ecology of 'child marriage'. *Social Sciences*, 10(5), 161.
- Scelza, B., Prall, S., & Starkweather, K. (2021). The role of spousal separation on norms related to gender and sexuality among Himba pastoralists. *Social Sciences*, 10(5), 174.
- Wolff, S. (2025). *Premarital Education in the Orthodox Jewish Community: Exploring Knowledge Gaps and the Lived Experiences of Newlywed Couples* (Doctoral dissertation, Rutgers The State University of New Jersey, Graduate School of Applied and Professional Psychology).
- World Health Organization. (2020). Community genetics services: Report of a WHO consultation on community genetics in low- and middle-income countries. <https://www.who.int/publications/i/item/9789240009875>

