The Open Public Health Journal
DOI: 10.2174/0118749445377474250318045029, 2025, 18, e18749445377474
ISSN: 1874-9445
1

RESEARCH ARTICLE **OPEN ACCESS**

Sexual and Reproductive Health Needs of People Living with Disabilities: Family Planning Practice and Need in Gusau, Zamfara State, NW Nigeria

Rabi Yunusa[1,*], Marwa Abdallah[2], Danladi Abubakar[3], Ismail Tukur[4], Najaatu Yuguda[4], Muhammad Shitu[3], Adelakun Muyideen[3], Ania Tureczek[1], Ifie Onajite[1], David Mukasa[1] and Patience Jaman[1]

[1]*Department of Global Health, University of Washington, Seattle, USA*
[2]*Department of Epidemiology, University of Washington, Seattle, USA*
[3]*Federal Medical Centre, Gusau, Nigeria*
[4]*Zamfara State Primary Healthcare Board, Gusau, Nigeria*

Abstract:

Background: In Northwestern Nigeria, Persons Living With Disabilities (PLWD) often occupy marginalized low socioeconomic spaces, often considered as an afterthought for policy decisions and regularly face discrimination and barriers to accessing basic health needs, including access to Sexual and Reproductive Health (SRH) services, as compared to their able-bodied counterparts.

Objective: The study aims to understand the contraceptive and family planning needs and practices of PLWD, male and female, married and unmarried, living in Gusau, Zamfara State, Northwest Nigeria.

Methods: This cross-sectional study utilized primary data collected from 8 focus group discussions (FGD) with adult PLWD members of local disability community support organizations in Gusau, Zamfara State and their key informants. Participants were male and female, married and unmarried. Interviews were transcribed, translated and analyzed using descriptive thematic analysis.

Results: Most participants in all 8 FGD groups were aware of modern contraceptive methods and preferred them due to perceived safety and effectiveness in preventing pregnancy. Motivations for contraception use were to limit the number of children to avoid the financial burden of parenting. Reasons for not using contraceptives were paradoxically attributed to needing more children for assistance in activities of daily living (particularly by visually impaired PLWD), and for perceived fear of adverse effects of the contraceptives. Other barriers to use signaled access issues, included communication challenges, stigmatization by healthcare workers, and lack of disability-friendly services at the health facilities.

Conclusion: We recommend policies to improve SRH access for PLWD such as prioritizing respectful and disability-friendly healthcare environment, improved access to disability-type-specific health information, enhanced communication like braille and sign language interpretation, and free family planning services.

Keywords: Disability, Sexual and reproductive health, LMIC, Qualitative research, Family planning, Contraception.

*Address correspondence to this author at the Department of Global Health, University of Washington, Seattle, USA; E-mail: rabiy@uw.edu

Cite as: Yunusa R, Abdallah M, Abubakar D, Tukur I, Yuguda N, Shitu M, Muyideen A, Tureczek A, Onajite I, Mukasa D, Jaman P. Sexual and Reproductive Health Needs of People Living with Disabilities: Family Planning Practice and Need in Gusau, Zamfara State, NW Nigeria. Open Public Health J, 2025; 18: e18749445377474.
http://dx.doi.org/10.2174/0118749445377474250318045029

Received: December 26, 2024
Revised: January 27, 2025
Accepted: January 29, 2025
Published: April 09, 2025

1. INTRODUCTION

1.1. Background

Recently, the World Health Organization estimated that about 16% of the world's population is living with some form of disability, with about 80% of these people living with disabilities (PLWD), living or residing in developing low- and middle-income countries, with 60 million living in Africa alone [1-5]. In Nigeria, about 15% of the country's 195 million people live with some form of disability [6-9].

Despite sexual and reproductive health (SRH) being an important component of target 3.7 of goal 3 of the global sustainable development goals, throughout the world, PLWD regularly faces discrimination and restricted access to healthcare, including access to Sexual and Reproductive Health services (SRH) like contraception when compared to their able-bodied counterparts [1, 10]. Therefore, we cannot achieve "Good Health and Wellbeing for All" in an inclusive society by 2030 if we cannot address the health needs of PLWD, including their SRH needs. Moreover, health is a recognizable human right, and excluding health needs of PLWD is a violation of their human right [10, 11].

The global standard of care for SRH states that contraception must be provided to all who choose to use it. The chosen method should align with the physical and mental capacities of individuals with disabilities and their partners, ensuring it meets their personal needs, lifestyle choices, and overall perception of well-being [12]. Regardless, it is well known that there is very limited access to the ideal SRH services, including family planning and contraception, by PLWD for various reasons. For example, PLWD is notably absent from healthcare centers worldwide because those SRH clinics regularly do not provide access to effective communication methods such as sign language, alternative information formats such as Braille, audio, or plain language for PLWD, making it a significant barrier to accessing and utilizing SRH services that uniquely only disadvantages PLWD [13, 14]. Another well-known reason why PLWDs are missing in SRH clinics worldwide is due to the absence of the necessary physical structure to accommodate them, such as elevators, wheelchair ramps and other assistive devices [4, 15, 16]. As a provision of all these disability-friendly services usually rests with policy and decision-makers, it implies that those policymakers have not prioritized the healthcare needs of PLWD [4, 17]. Multiple studies have reported that some PLWD are also absent from family planning clinics globally due to a lack of information on SRH, such as being misinformed or misled by their non-disabled peers on what SRH are obtainable from the available health systems [13, 18, 19].

Other past global studies have highlighted how PLWD living in conservative settings are more likely to be socially isolated, limiting their access to family planning services, resulting in a greater likelihood of being sexually abused and having unwanted pregnancies, with the limit in access to SRH care resulting in unsafe abortions [20, 21]. In socially and culturally conservative societies of sub-Saharan Africa, studies have reported a general belief that PLWD are either asexual or unlikely to find a life partner to marry or bear future children [15, 21-23]. Unsurprisingly, this has resulted in low utilization of SRH, especially modern contraceptives, by women with disabilities in those societies who are more likely to conform to traditional conservative social norms even though disability and fertility are not usually organically related [21-23]. These traditional, cultural, gender and societal norms are predominant in NW Nigeria, including Gusau, where the people are more likely to be conservative Hausa-Fulani Muslims, less likely to be literate and more likely to conform to traditional gender norms when compared with many southern Nigerian cities who are less likely to hold conservative views to accessing SRH services [6-9, 24]. Other African continental studies have also reported other factors limiting access to and uptake of SRH by PLWD, such as poor knowledge range of services available and fear of adverse effects of modern contraceptives, as significant barriers to access and utilization of SRH services including contraception and family planning by PLWD [25-27]. These sub-Saharan African studies have also reported how PLWD are unable to access family planning services due to stigmatization and discrimination from healthcare providers [15, 28, 29].

In summary, the SRH needs of PLWDs have been overlooked by both the healthcare system and the communities where they reside, leaving PLWDs marginalized with consequent poor health outcomes as compared to their non-disabled peers. It is therefore important to explore and understand the full range of factors affecting the choice of uptake and utilization of contraceptive and family planning services by PLWD in this culturally conservative setting.

1.2. Rationale/ Justification for Study

Gusau resides in a region of sub-Saharan Africa where PLWD are often excluded or neglected from the general discourse of SRH access and where the burden of disability is high, potentially leaving them at a higher risk of unwanted pregnancies, consequent unsafe abortion and greater risk of the socioeconomic burden and limitations associated with having children. However, there is no local or regional study from NW Nigeria, a culturally and religiously conservative region of Nigeria, that has explored the various factors and barriers faced by PLWD as they access SRH services from the available health system. Therefore, the study aims to assess the SRH needs and practices of PLWD as they encounter the locally available Federal Medical Centre, Gusau, Northwestern, Nigeria, and to determine the factors responsible for the low level of family planning service utilization among them. The findings from this study will also help inform policymaking that affects the structural and health system barriers affecting access to SRH services by PLWD living in similar contexts.

1.3. Objectives

The overall objective of this assessment was to assess the sexual and reproductive health needs of PLWD by assessing their family planning or contraceptive needs and practices.

The specific objectives were to assess:

[1] Family planning needs among people living with disabilities living in Gusau Zamfara state, NW Nigeria.
[2] Barriers and opportunities for family planning service utilization among PLWD.
[3] The attitudes and beliefs of PLWD to utilizing family planning methods.

1.4. Definition of Terms

1.4.1. Person living with a Disability

These are adult persons, male and female, married or unmarried, living with disabilities, including those that are physically disabled, hearing impaired, visually impaired, post-lepromatous physically disabled, multiple impaired, and intellectually disabled.

1.4.2. Family Planning Practice

It refers to methods and practices used to plan the choice of having, the timing, the number and the spacing of children by individual or couple.

1.4.3. Family Planning Need

It refers to the total number of individuals, married or unmarried or in a union, who demand family planning.

2. METHODOLOGY

2.1. Study Design

The study was a descriptive cross-sectional study with thematic analysis that utilized a qualitative data collection methodology involving qualitative data from focus group discussions. Permission was obtained from the Zamfara State Health Research Ethics Committee of the Ministry of Health on September 29th, 2022; recruitment of participants was completed by November 2022 and data was collected in December 2022.

2.2. Study Setting

The study was conducted with the various community disability-support organizations in Gusau. Gusau is the capital of Zamfara state, which is located in Northwestern Nigeria. The different location centers for disability support and community development in Gusau include Fa'ida Nursery, primary and secondary school, Gusau, and Nabilco Global links. Both are physical locations that house different community-based organizations that support all PLWDs as defined above. The organizations are the Zamfara Lepo Association, Zamfara Laba Association, Zamfara blind Association, Zamfara Handicap Association, Zamfara Community Guragu Association, Deaf Teachers Association of Nigeria Zamfara Chapter and the National Association of the Deaf Zamfara Chapter. These organizations primarily provide advocacy support services, and life, and vocational skill training designed to support everyday living and economic independence for PLWD in Gusau city.

2.3. Study Population

The study sample population included adult PLWD residing in Gusau, affiliated with disability support organizations, male and female genders, married and not married with bodily disabilities: hearing impaired, visually impaired, and physically disabled, including post-lepromatous disability.

Inclusion criteria: Participants were selected based on the following:

[1] Women in reproductive-age groups (18 - 51 years) who are living with a disability
[2] Enrollment or membership in a local community disability-support organization in Gusau. (This is because the PLWD population in Gusau is widely dispersed throughout the city and more likely to be found with cohort peers of similar disability at the community disability-support organization locations, making FGD most feasible).
[3] Women with dual disabilities, such as visual and hearing impaired, were recruited.
[4] Those who were able to give verbal or written informed consent

Exclusion Criteria:

[1] Those who were ill and unable to communicate or follow the study protocol.
[2] Those who were outside of a disability-support organization (excluded because they are more likely to be dispersed and outside of their peer cohort with a similar disability, making our chosen method of data collection FGD not feasible for those outside of community-support organizations)

2.4. Data Collection

We employed a qualitative research methodology using Focus Group Discussions (FGD) as the sole method of gathering data. Study participants were recruited using purposive sampling techniques to only sample PLWD who were members of the local community support organizations for the study. This method allowed us to collect broad information from similar disability, marital and gendered peers of PLWD.

2.4.1. Qualitative Data Collection

We conducted 8 separate focus group discussions (FGDs) representative of members from each of our 4 desired categories of disability and gender identity. We conducted 2 FGDs with hearing-impaired males and females, 2 FGDs with visually impaired males and females; 3 FGDs for non-lepromatous physically disabled males and females; and 1 FGD for post-lepromatous physically disabled males.

Four disability centers were visited for the study to access the desired participants with their peer cohort. The participants were recruited after appropriate sensitization and permission from relevant authorities in these centers, and each center's administrator helped with recruitment based on our inclusion criteria. Each FGD consisted of an average of six (5) to ten (10) women or men with similar disabilities, except the male hard-of-hearing FGD, which consisted of 2 key informants as participants and the male post-lepromatous physically disabled FGD, which consisted of 3 key informants. One data collection team was established with each FGD. Each team had a moderator, a facilitator, a note-taker, an interpreter, and an internal monitor /supervisor. The data collector, moderator, interpreter, and note taker were of the same gender as the focus group members to mitigate communication barriers that participants may feel when talking to the opposite gender in this religiously conservative region.

A key informant from each major FGD group (hard of hearing, visually impaired and physically disabled) was interviewed in the members' association offices to ensure easy delivery for participants and the comfort of familiarity with the surroundings.

Key informant interview of each focus group was conducted by the data collector. Each data collection team conducted one to two FGDs per day, with the entire data collection taking one week to complete in December 2022. The FGDs were conducted in the local Hausa language and audio recorded using a structured interview guide designed **(Appendix 1)** to help gather key data on (1) knowledge of sexual and reproductive health, (2) family planning use, (3) barriers and facilitators for family planning service utilization, and (4) attitudes, behaviors and preferences of participants while using different family planning methods. Both the FGD interview guide and the consent form **(Appendix 2)** were first prepared in English and then translated into Hausa.

The data collectors were healthcare providers with experience in conducting FGDs. The entire data collection process was supervised by the principal investigators and research team.

3. STUDY LIMITATIONS AND MITIGATIONS

Because the study focused on recruitment of key informants from only disability-support groups, it is possible that some PLWDs in the general population were missed. The study relied on data from FGDs; it is possible that some biases were introduced by participants (social desirability and groupthink bias) and/or facilitators (moderator bias). Both were mitigated by using seasoned moderators who were the same gender as the participants in the FGD groups. The study authors also acknowledge the possibility of narrow views and social desirability bias from the key informants, which were similarly mitigated by interviewers being from the same gender, the use of their community disability center as a study location and the use of probing questions to dig deeper. The authors also acknowledge the possibility that some information might have been lost in translation by utilizing sign language interpreters for study participants with hearing impairments, although this was mitigated by using experienced sign language interpreters.

3.1. Qualitative Data Analysis

After concluding the FGDs interviews, both written and recorded data were transcribed from Hausa to the English language. A blinded transcriber was utilized to validate the transcripts generated to develop a second transcript of the interviews.

The actual data analysis involved reading through all the transcribed interviews and listening to the audio recordings to understand all the data.

Thematic analysis was then utilized to identify key ideas and concepts which were coded and from which several themes emerged. Findings were then organized into common themes that were then used to organize and present the study findings. Direct quotes were also identified and used were applicable to present the study findings for more impact.

The major themes that emerged from the analysis:

[1] Knowledge and awareness of available SRH services
[2] Accessibility of facilities and services to enhance SRH of PLWD
[3] Family planning and contraception use preference among PLWD
[4] Facilitators to use of contraceptive and family planning service
[5] Barriers to the use of contraceptive and family planning service

Subgroup analysis was also conducted to further examine each main theme in relation to different categories of disabilities as well as FGD groups, with the hope that unique and intersecting experiences will be highlighted from the experiences of PLWD while they access and utilize SRH services, including contraception or family planning.

4. ETHICAL CONSIDERATION

The authors confirm this research was conducted on humans by the Helsinki Declaration of 1975, as revised in 2013 (http://ethics.iit.edu/ecodes/node/3931). Ethical approval was sought from the Zamfara State Health Research Ethics Committee of the Zamfara State Ministry of Health (folio # ZSHREC01092022/105). Permission was obtained from the administrators of the disability-support organizations to approach their program members for the study. We obtained informed consent from each individual participant included in our study. Each participant was offered a hard copy of the informed consent document in Hausa or English, then had it read to them verbally (for all non-literate, all who were hard of seeing or post-lepromatous and could not write a signature) or using Sign language (those hard of hearing). Research investigators were open to participants about the benefits, risks, study procedures and purpose of the study and allowed time to

ask questions and have them answered. The participants were informed that the results of the research will be shared with policymakers with the hopes that it will be used to improve policy decisions and service provisions for persons living with disability while they seek care from the health system, thus improving universal and equitable access to healthcare. Study participants were repeatedly informed of their right to withdraw from the study at any stage of the study process with no consequences or disadvantage during future interactions with the healthcare system or the disability support group that they were members of. They were also informed of grievance procedures should they have a problem with the conduct of the research.

The confidentiality of research participants was maintained throughout the research procedure by collecting data in private settings, identifying data during analysis and ensuring the anonymity of the participants throughout. In this religiously conservative setting, we have taken care to especially maintain the privacy of all female participants in the study.

5. RESULTS

The key results from the various FGDs with PLWD, as categorized by the type of disability, are presented below. The mean age group of participants was 82.1 +/- 30 years. Other key findings of this qualitative study are highlighted below:

A. Knowledge, Practice, Need and Challenges of Family Planning Among Married Hearing Impaired PLWD

5.1. Biographical Profile of Study Participants

A total of two FGDs were conducted with married male and female PLWD who were hard of hearing. There was one experienced facilitator who knew sign language and 2 key informants, each representing hearing-impaired men and their female counterparts. All participants were within the reproductive age group (15-51 years).

5.2. Findings

Hearing-impaired individuals, males and females, echoed high knowledge of different family planning methods and sources of services with a sense of high acceptance of modern methods.

The preferred method among hearing-impaired men was withdrawal, while their female counterparts preferred to use hormonal implants.

The economic hardship of having and raising children was the main motivation for the uptake of family planning among hearing-impaired men and women. Maintaining financial stability was attributed to keeping family size manageable. One respondent said, **"…more than 80% of the people are now using family planning because they don't want too many children; they cannot take care of their responsibilities".**

Both groups expressed facing communication barriers in healthcare settings such as the absence of sign language interpreters to assist with clinic visits. One woman expressed concern about being ignored by healthcare providers who cannot communicate with them; **"… (when) they notice that we are deaf, they ask us to wait and that is all, they forget us and most of us easily get angry and leave. So, to be sincere, we faced a lot of discrimination from some doctors".**

Another man reported, "…**they should at least employ one (sign) interpreter who will be called whenever a deaf patient goes to the hospital or clinic for his/her needs. This will help both the service providers and (the deaf) to communicate effectively**".

B. Knowledge, Practice, Need and Challenges of Family Planning Among Married Visually Impaired PLWD

5.3. Biographical Profile of Study Participants

A total of two separate FGDs were conducted with 5 married visually impaired men and women. All participants were within the reproductive age group (15-51 years).

5.4. Findings

Married visually impaired individuals, male and female, had high awareness and knowledge of family planning, using both traditional and modern methods. Both genders reported barriers to family planning including financial issues, communication barriers, limited access to services, and lack of awareness tailored to their needs. They suggested solutions like providing Hausa interpreters as many were not literate enough to use braille (nor were they offered) or spoke English (the official language in Nigeria, including in health settings), training healthcare providers on their specific needs, offering social and financial support, and ensuring free medical care and special consideration that accommodates their loss of sight.

The visually impaired men disclosed discussing the methods with their wives and often sought professional medical advice together. Importantly, visually impaired women preferred not to use family planning due to the desire for more children to help them navigate the world; as one woman put it, **"…they (children) are a replacement for my lost sight".**

C. Knowledge, Practice, Need and Challenges of Family Planning Among Physically Challenged PLWD Including Post-Lepromatous Physical Disability

5.5. Biographical Profile of Study Participants

A total of three FGDs were conducted with physically disabled men and women. One of the FGDs was conducted

with married physically disabled men, one with married physically disabled women, and the last was conducted with married post-lepromatous physically disabled men. All participants were within the reproductive age group of 15-51 years.

5.6. Findings

Overall, the non-lepromatous physically disabled participants, regardless of gender, showed a high level of knowledge and awareness of family planning methods and services. Modern methods such as pills, injectables, and implants were commonly used among them. The preferred method among females was the implant due to its ease of use, longer-lasting quality (years) and perception of safety. Only one participant reported a negative experience with implants associated with very heavy menstrual bleeding that required hospitalization.

Both genders preferred to obtain their contraceptive and family planning methods from clinics and hospitals in their proximity, with financial stability, limiting the number of children, and child spacing to promote maternal and child health identified as the reasons for seeking family planning. The study also found that the commodities for family planning were readily available, and service providers often showed a positive attitude toward the physically challenged, treating them well. Barriers to access among this group included negative attitudes of some healthcare providers, stigma and discrimination. The creation of awareness to address stigma among healthcare workers and the general public was identified by the participants as a key issue to address.

In a separate analysis of physically challenged post-lepromatous men, it was found that their knowledge and understanding of family planning were poor compared to all other groups. However, some of them preferred modern methods due to their ease and safety. Economic reasons, spacing of children, and improving maternal and child health were identified as the most pressing family planning needs among post-leprous individuals. The attitude of leprous individuals toward family planning was fair, and they were satisfied with the service provided by healthcare providers. One said, **"... they (healthcare providers) always treat us quickly and with kindness in the clinics".** Lack of awareness, poverty, communication barriers, and the need for privacy during healthcare encounters were identified by them as major barriers; while access to free medical services, privacy, and awareness campaigns through media were similarly suggested by the participants as solutions to improve the utilization of family planning services.

D. Knowledge, Practice, Need and Challenges Of Family Planning Among Unmarried Physically Challenged PLWD

5.7. Biographical Profile of Study Participants

One FGD was conducted with single, unmarried, physically disabled men and women. All participants were within the reproductive age group of 15-51 years.

5.8. Findings

The females of the group denied using family planning but were knowledgeable of the methods of modern and traditional contraception available and where to get them. The women also expressed a high desirability to use contraception when they marry but emphasized that spousal consent was important before they access or use them.

Both genders agreed that financial hardship was a good motivator to using contraception to limit family size. They also described a generational divide in that they feel they accept modern contraception because they are young and aware of the changing economic times more than older generations.

Both genders, however, admitted to witnessing instances where their disabled peers were ridiculed for asking to use family planning or contraception. One woman reported, **"... when some people see a PLWD trying to access family planning, they start gossiping and saying- look at this disabled! What is she going to do with Family planning? And as a result, they (PLWD) feel discouraged and stop visiting the hospital".** Other major barriers to access identified were difficulty physically accessing health facilities with no wheelchair ramps, language barrier and rude medical providers.

Both genders suggested addressing the barriers mentioned and that health centers should employ a disability liaison officer who will specifically cater to the needs of PLWD when they encounter the health system for any reason.

6. DISCUSSION

This study offers a window into the knowledge, practice, and SRH needs of family planning among PLWDs in Gusau, Zamfara State, Northwest Nigeria and similar sociocultural settings in Nigeria and, indeed, sub-Saharan Africa. It sheds light on the barriers and opportunities to accessing contraception and family planning in conservatively Muslim religious low-income settings where gendered social norms intersect with the identity and general societal marginalization of PLWD. The participants in this study had a median age of 40 years, falling within the global reproductive age group of 15-51 years.

Our study findings from Gusau indicate that most participants were knowledgeable about modern family planning methods, consistent with previous research in Ethiopia's Amhara state, a place noted for its religious conservatism, albeit of the Christian faith [30]. Elsewhere in Nepal, another largely religiously conservative country, PLWD was generally also found to be quite knowledgeable of the various contraceptive methods available and how to

access them [31]. We found that compared to data of their able-bodied peers contained in the Nigeria Demographic Health Survey, the knowledge of contraceptive methods among PLWD was lower [7]. This may be due to the overall societal advantage of having more access to information, resources and education that being able-bodied confers, as compared with socioeconomically marginalized PLWD. In Ethiopia, PLWD exhibited relatively low knowledge, attitude, and practice regarding modern family planning methods, which authors attributed to general restricted access to modern contraceptives/ family planning methods and social isolation in obtaining family planning services among persons with disabilities in that setting [32].

6.1. Barriers and Opportunities for Family Planning Service Utilization among PLWD

The commonly used modern family planning methods/ contraceptives among female respondents included implants (commonest used method), injectables, and pills, which were consistent across different disability categories and countries, as reported in previous studies across the African continent [33-35]. The least utilized modern family planning methods among respondents were condoms and calendar methods, as observed in recent studies in Southern Nigeria and Ethiopia [9, 35], while withdrawal was the least utilized traditional family planning method, similar to the recent findings from a study in Ibadan, SW Nigeria [9, 35].

Some female participants in our Gusau study reported occasionally using traditional methods such as herbs, beads (*karfu* and *laya*), and seeds but discontinued their use due to perceived ineffectiveness in preventing pregnancy and potential risk of harm. Still, we did not find this in other studies, suggesting this was a localized cultural phenomenon unique to Gusau women.

6.2. The Attitudes and Beliefs of PLWD to utilizing Family Planning Methods

Although most female participants in our study had a positive attitude towards modern contraception, only a few were currently utilizing any modern contraceptive method, citing poverty as the main reason. Poverty was a common reason to not use by women living with disability in other poor settings of Africa and Asia [36-39].

In Gusau, all the young unmarried women denied ever using contraceptives compared to a Southern Nigeria study where about a third of adolescent girls living with physical disabilities utilized modern contraceptive methods [8, 9]. These differences may be attributed to factors such as cultural differences in encouragement of sexual-related discussions among young people, including disabled individuals, public and community awareness about the importance of family planning, and the fact that Southern Nigeria is not as religiously conservative when compared to NW Nigeria [8, 9]. Similar findings regarding low family planning use among unmarried women of reproductive age living with disabilities were observed in culturally conservative Ethiopia and Senegal but not in more culturally liberal South Africa or Zimbabwe [15, 21, 23, 40].

In this study, we discovered that the primary reasons for seeking family planning among PLWDs were financial stability, limiting the number of children, spacing childbirth, and promoting maternal and child health, which are similar to the motivations of PLWDs around the world, regardless of region or situations, including in humanitarian settings, which is increasingly becoming important in Gusau that is a new home to thousands of internally displaced people fleeing violence from more rural towns and villages of Zamfara state [20, 35, 39, 41].

Factors associated with higher family planning utilization among PLWDs in our study included free medical services, positive service provider attitudes towards PLWD, increased awareness, and higher educational status. Although the hard of hearing was the most educated and literate group identified in our study, they still found the healthcare system lacking, not prepared to engage them in sign language or have readily available health resources to share. These experiences were echoed widely across other studies in low- and middle-income countries where the health system was also unprepared to accommodate the SRH health needs of often literate and educated deaf and hard-of-hearing PLWD in those settings [42-44].

The attitude of service providers towards PLWDs was found to be mixed in our study. Some participants described helpful and appealing interactions with healthcare workers, similar to the Nigerian demographic health survey of other regions of Nigeria [7]. Other participants described multiple instances of rude, ridiculing and discriminatory attitudes from healthcare workers, similar to studies in Uganda and Nepal that identified the attitude of healthcare providers as a major barrier to the utilization of family planning services by PLWD [45, 46]. Our study hints at the status of women and gendered social norms that affect women's participation in healthcare settings and advocating for themselves in society. Throughout our study, we have had to hide the participation of women to protect them from the social stigma associated with talking about sexuality, which hints at their overall ability to relay their concerns and address their SRH needs in the health system. This exaggerated intersecting health and gender response is found in other recent regional African studies (Senegal, Nigeria, Ethiopia), although none was reported as pronounced as in Gusau [9, 12, 24, 30, 32, 35].

Lastly, the study also identified factors relating to stigmatization, discrimination, financial and economic disadvantage and communication barriers as the main obstacles to accessing family planning services and information among most participants, consistent with the findings from studies conducted in other sub-Saharan cities of Ghana, Kenya, Uganda, Zimbabwe, South Africa and Southern Nigeria [6, 9, 18, 20, 35].

The proposed policy solutions provided by most respondents in this study included health facilities provision of sign language interpreters for those hard of hearing to utilize in health facilities, providing credible health information designed specifically for consumption by PLWD according to their respective abilities to read, access and understand the material, and the improved attitudes of healthcare workers; all the recommendations align with numerous best practices highlighted in other studies in the African region and around the world, to meet WHO standards [1, 5, 10, 16, 19, 39, 42].

Further research is needed to determine the most effective policies to address the non-physical barriers to care access, such as community and healthcare worker stigma, gendered social norms and discrimination of women among PLWD in low resource settings such as Gusau (Annex 1-2) (Tables **1**-**9**).

Table 1. Biophysical profile of hearing-impaired men group.

S/NO	SEX	AGE	MARITAL STATUS	FP USE	NAME OF ASSOCIATION	MEMBERSHIOP STATION
1.	M	31	Married	Yes	Deaf teachers association of Nig.	Chairman
2.	M	35	Married	Yes	National association of the deaf.	P.R.O

Table 2. Key Findings among Hearing Impaired Men.

Category	Key Findings Among Hearing Impaired Men
Family Planning Practice	- Most prefer modern methods (e.g., implants, withdrawal). - Married males favor methods like withdrawal; females prefer implants. - High utilization among the deaf community (>80%) to control family size and responsibilities.
Family Planning Needs	- Main needs: control childbearing, protect maternal and infant health. - Preferred method: implants due to minimal side effects. - Unmarried males prefer condoms, married males prefer withdrawal, females prefer implants. - Unmet needs: interpreter services, free medical care.
Service Providers	- Preferred facilities: Yariman Bakura Specialist Hospital and FMC. - Challenges: discrimination and lack of communication by health providers. - Recommendations: employ interpreters, show kindness, and ensure effective communication to encourage hospital visits.
Attitude and Behavior	- Generally positive acceptance of family planning among married individuals. - Unmarried individuals are less accepting but change attitudes after marriage. - Negative attitudes persist in a small minority (5%-10%).
Barriers	- Communication issues due to lack of interpreters. - Financial constraints due to poverty.
Opportunities	- Employ interpreters for effective communication. - Provide free or discounted medical care. - Foster positive attitudes through kindness and prioritization (e.g., special queues for deaf patients).

Table 3. Key findings among hearing impaired women.

Category	Key Findings among Hearing Impaired Women
Family Planning Practice	- Preferred method: Implant (safe and no side effects). - Men prefer withdrawal; women favor implant, injections, or pills. - Current utilization is higher and better than before. - Hospitals are the main providers.
Family Planning Needs	- Main needs: Control birth spacing, reduce financial and health burdens. - Implant is the most preferred method due to safety and efficacy. - Lack of knowledge is a concern; education is vital before starting family planning.
Service Provider and Quality of Service	- Services are judged as fair and good. - Hospitals are the primary service points. - Recommendations: Increase awareness campaigns, include interpreters for effective communication, and target both schools and communities.
Attitude and Behavior	- Positive attitude from service providers: prioritize and provide free services for disabled individuals. - Equal respect for males and females, married and unmarried.
Barriers	- Major barriers: Lack of awareness, religious misconceptions, and safety concerns.
Opportunities	- Raise awareness and educate about family planning benefits. - Promote hospital-based family planning to ensure proper guidance and safe methods. - Educate people on long-term benefits to address fears about physical changes (e.g., weight loss).
Additional Comments	- Education on family planning is critical to reduce challenges faced by disabled women. - Encouraging hospital-based services ensures proper methods and reduces risks associated with unregulated services.

Table 4. Key findings among visually impaired males.

Category	Key Findings among Visually Impaired Males
Family Planning Practice	- All respondents use modern methods (pills, injections, implants). - Traditional methods (herbs, seeds, charms) were abandoned due to ineffectiveness and health risks. - Men do not use male-oriented methods (e.g., withdrawal, condoms); they rely on women to manage family planning.
Preferred Methods	- Preferred method: Injection, as it is simple and poses no issues. - Some allow service providers to choose after tests.

(Table 4) contd.....

Category	Key Findings among Visually Impaired Males
Views on Gender Differences	- No differences in preferences or views between males and females. Both genders recognize the importance of family planning.
Service Providers	- Main facilities: Shagari clinic and hospitals. - General satisfaction with services but concerns over having to queue despite disabilities.
Utilization of Family Planning	- High utilization among PLWDs due to financial constraints and recognition of the importance of controlling family size.
Family Planning Needs	- Critical needs: Free family planning services, prioritization in hospitals (no long queues), and inclusion in health programs (especially educated disabled individuals).
Service Quality Suggestions	- Kindness and special consideration for PLWDs. - Ensure that PLWDs are treated first due to their disabilities.
Attitude and Behavior	- Positive attitude and acceptance of family planning as necessary due to current economic challenges. - No significant differences between attitudes of males and females, or between married and unmarried individuals.
Barriers	- Key barriers: Financial constraints and discrimination by service providers.
Opportunities	- Free family planning services and prioritization of disabled individuals could significantly improve hospital attendance and utilization.
Additional Comments	- Emphasis on implementing discussed solutions to improve accessibility and treatment for disabled individuals in family planning services.

Table 5. Key findings among visually impaired females.

Category	Key Findings among Visually Impaired Females
Family Planning Knowledge	- Respondents know about local methods like **laya** and **karfu**. - Only one respondent used pills but stopped after conceiving while using them, citing ineffectiveness.
Reasons for Non-Usage	- Majority have not used family planning due to: - Desire for many children, as children are considered their “sight” and support system. - Fear of side effects (e.g., bleeding from injections) based on others' experiences.
Advice from Service Providers	- Service providers encourage family planning during antenatal care (ANC), advising a gap of 3–5 years between pregnancies. - Most respondents do not return for family planning after delivery despite the advice.
Reasons for Avoidance	- Women are generally the ones unwilling to use family planning, not their husbands. - Natural child-spacing occurs for some, as they cannot conceive while breastfeeding.
Experience with Service Providers	- Positive experiences: Service providers are kind, considerate, and prioritize them over healthy individuals. - Often, services and medications are provided free of charge.
Suggestions and Comments	- Respondents express gratitude for the care and kindness of service providers. - Some indicated they might try family planning if services were explicitly offered free of charge.

Table 6. Key findings among men living with physical disabilities.

Category	Key Findings among Men Living with Physical Disabilities
Family Planning Practice	- Unmarried respondents plan to use family planning in the future. - Married respondents prefer modern methods, e.g., injection, implant, and pills, obtained from hospitals or chemists. - Majority started with modern methods without prior use of traditional methods.
Preferred Methods	- Preferences: Injection (2- or 3-month interval) and implant. - Reasons: Safer and cause fewer negative reactions. - Decisions often based on consensus with spouses or advice from health providers.
Service Locations	- Family planning services received at: Farida Hospital, FMC Gusau, Yariman Babura, Shagari Clinic, and Gangaren Kwata Clinic.
Current Utilization	- High utilization due to increased knowledge and awareness of family planning's importance.
Family Planning Needs	- Needs identified: Health reasons, poverty, child spacing, and managing expensive living conditions. - Women require family planning to avoid frequent pregnancies and associated health issues.
Views on Contraceptive Methods	- Preferences differ slightly: Married women favor injections and implants; unmarried men prefer pills for affordability and minimal side effects.
Unmet Needs	- Requests: Free healthcare services, prioritization (no long queues), and employment of educated individuals with disabilities in hospitals to cater to disabled patients.
Service Providers	- Health providers: Qualified, kind, and non-discriminatory. Services provided are mostly satisfactory. - Some facilities are preferred for proximity and affordability.
Suggestions for Improvement	- Exemption from queues for disabled individuals. - Employment of disabled personnel to support their community in healthcare settings.
Attitudes and Behaviors	- PLD accept and use methods like injections, implants, and pills based on suitability and health provider recommendations. - Common need for family planning to manage family size and handle health challenges during pregnancy.
Barriers	- Lack of kindness and stigmatization from non-disabled individuals at hospitals discourage PLD from seeking services. - Opportunity: Kindness from service providers encourages PLD to visit hospitals.

Table 7. Key Findings from women living with physical disabilities incl post leprosy.

Category	Findings from Women Living with Physical Disabilities incl Post Leprosy
Usage of Family Planning	Most participants use family planning; only one respondent has never used any method.
Methods Used	Common methods include injection, implant, and pills; implant is the most preferred method.
Reason for Implant Preference	Easier to use and fewer side effects, although some experience weight changes.
Issues with Methods	Some users experienced prolonged bleeding with implants and injections, leading to discontinuation.
Differences in Male and Female Views	Mixed: Some males support family planning for spacing, others want more children. Husbands generally allow wives to choose.
Service Locations	Common facilities: Yariman Bakura Specialist Hospital, King Fahad Samaru, Shagari Clinic.
Treatment by Providers	Service providers show care and prioritize people living with disabilities (PLDs). No discrimination or stigmatization reported.
Unmet Needs	All family planning needs are met, with access to desired methods.
Non-Users of Family Planning	Some do not use family planning because they conceive and deliver easily without complications.
Current Utilization Trends	Utilization has increased significantly due to better awareness in rural and urban areas.
Barriers	No major barriers or challenges reported.
Support from Males	Males generally agree with family planning to allow rest between pregnancies (5–6 years).
Additional Comments	Family planning promotes healthier children and supports older siblings in caring for younger ones.

Table 8. Key Findings among unmarried PLWD physically disabled.

Category	Findings among Unmarried PLWD Physically Disabled
Current Usage	None of the participants are currently using family planning since they are unmarried.
Knowledge of Methods	Participants are aware of methods like injection, implant, pills, and traditional methods.
Future Intentions	They plan to use family planning after marriage, provided their husbands agree.
Stigmatization Experiences	Mixed responses: Some participants mentioned societal gossip discourages hospital visits, but none personally faced mistreatment.
Acceptance in the Past	Historically, family planning was not accepted; current awareness has increased acceptance.
Barriers to Access	- Shyness among some individuals to seek family planning services. - Physical inaccessibility of buildings and locations. - Language barriers, including challenges for the deaf due to lack of interpreters. - Unfriendly or harsh attitudes from some service providers.
Service Preferences	Some prefer clinics, while others have shifted away from traditional methods due to ineffectiveness.
Suggestions for Improvement	- Employ liaison officers to assist people living with disabilities (PLWDs). - Increase awareness about the importance of family planning and its methods.

Table 9. Key Findings among post lepromatous men.

Category	Key Findings among post Lepromatous Men
Current Family Planning Practices	Most participants do not currently use family planning. However, modern methods are increasingly preferred over traditional ones.
Past Family Planning Methods	Traditional methods, such as herbal remedies, were used for managing frequent deliveries in the past.
Preferred Methods	Modern methods are favored for their safety and ease of use. Implants are the most preferred due to fewer reactions compared to injections or pills.
Gender Perspectives	There are no significant differences in views between males and females. Males and females largely agree on family planning, particularly to manage frequent deliveries or spacing children.
Service Providers	Family planning services are mostly sought at clinics and hospitals like Farida Hospital. Service providers are described as kind and accommodating.
Unmet Needs	- Some participants desire free medical care and greater privacy during consultations. - More awareness campaigns are needed via radio and other media.
Attitudes and Behaviors	Family planning is understood and accepted as both traditional and religious values support it. Married individuals are more likely to use family planning than unmarried individuals. Some women pursue family planning without their husbands' consent.
Barriers to Access	No significant barriers were identified. Participants feel they can access family planning services easily.
Opportunities for Improvement	Continue providing quality care, maintain a stigma-free environment, and increase awareness about family planning's benefits and methods.
Utilization of Services	Despite an understanding of family planning's benefits, utilization among participants' communities remains low.
Community Acceptance	Acceptance of family planning has increased due to greater knowledge and economic pressures.
Suggestions for Service Providers	Maintain current quality of care, ensure privacy, and conduct more outreach to increase family planning adoption.

CONCLUSION

This study found that the knowledge, attitude, and practice of PLWD about contraceptive and family planning methods were relatively better compared to previous reports in some other studies. All disability groups overwhelmingly expressed a need for family planning to control the number of children, promote the health of mothers and children, and achieve financial stability. PLWD emphasized the importance of tailored awareness programs in community and healthcare centers alike to address the intersecting challenges they face that affect their health and well-being. When PLWD encounters healthcare centers, they face many structural barriers like inaccessible buildings, poor communication from healthcare providers, including lack of accessible health information, poor health worker attitude, and lack of interpretation services like sign language and braille.

Policymakers involved in funding, designing and running health facilities in this region must prioritize funding resources that support the health needs of PLWD, such as upgrading all health facilities to be wheelchair accessible with ramps and elevators provided; increasing SRH support resources, including modern contraceptive devices in local community clinics that are easily accessible to PLWD without need for costly travel and time. Policymakers must work with and also channel resources to the various community disability support organizations that are closer to the people and are experienced in grassroots initiatives to address the problems of the marginalization of PLWD, including stigma and poverty. All community programs that support the vocation, independence and autonomy of PLWD must be supported, including ensuring that PLWD, like their able-bodied peers, have access to Health, including quality sexual and reproductive health services.

AUTHORS' CONTRIBUTIONS

It is hereby acknowledged that all authors have accepted responsibility for the manuscript's content and consented to its submission. They have meticulously reviewed all results and unanimously approved the final version of the manuscript.

LIST OF ABBREVIATIONS

PLWD	=	Persons Living With Disabilities
SRH	=	Sexual and Reproductive Health
FGD	=	Focus group discussions
SRH	=	Sexual and reproductive health

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Ethical approval was sought from the Zamfara State Health Research Ethics Committee of the Zamfara State Ministry of Health, Nigeria (folio # ZSHREC01092022/105).

HUMAN AND ANIMAL RIGHTS

All human research procedures followed were in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national), and with the Helsinki Declaration of 1975, as revised in 2013.

CONSENT FOR PUBLICATION

We obtained informed consent from each individual participant included in our study.

STANDARDS OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The data supporting the findings of the article is available in the Science Data Bank at https://www.scidb.cn/en and reference number https://doi.org/10.57760/sciencedb.17542, and https://cstr.cn/31253.11.sciencedb.17542.

FUNDING

This study was funded by personal funds from the study Principal Investigator Dr. Abubakar Danladi.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

ACKNOWLEDGEMENTS

Declared none.

Appendix 1. Focus Group Discussion Guide - Assessment on Family Planning Needs of People living with Disability

I. Introduction – 5 Minutes

§ Provide a brief introduction on the family planning needs assessment, purpose and process.

§ Explain that you will ask the group to spend a few minutes identifying their current family planning needs, practice, attitudes and belief on using different family planning methods, and barriers and opportunities to access family planning services,

§ Emphasize that their input is vital in helping to identify and prioritize needs, create solutions, and plan for services.

§ Explain that you are not trying to evaluate or judge any one person's opinions or experiences, but rather to capture the thinking of as many people as possible.

§ Ask if there are any questions before you begin. Answer questions and then begin with the facilitation questions.

Major Talking Points:

§ The study is interested in assessing the current family planning practice, needs and associated barriers and opportunities of people leaving with disability.

§ The assessment looks at the following three broad categories:

[1] The current family planning practices
[2] The extent of current family planning need
[3] The attitude and beliefs of people living with disability with different family planning use
[4] Barriers and opportunities for family planning service utilization among people living with disabilities.

§ The information will be helpful in identifying the family planning practice and needs of people living with disability and recommends ways for better future service delivery for people living with disability.

§ The discussion will require no more than 45 minutes.

1. FGD Participant Demographics (5 minutes)

Would you please introduce yourself and respond to the following questions?

Number	sex	age	Marital status	Types of disabilities	Family Planning Use	Name of Your Association	Membership status

2. Family Planning Practice: (10 minutes)

- Would you please tell us which family planning practice do you use?
- What method have you used in the past and why do you choose it?
- Would you tell us which method do you prefer? Why?
    - Is your views different among females and males? How? Why?
- Where were you offer the method?
- How do you see the current family planning service utilization among people living with disability compared with former times? Why?

[1] Family Planning Need: (10 minutes)

- Would you please tell us about family planning needs among people living with disability?
    - Is your views different among females and males? How? Why?
- Is there any preference in different family planning (contraceptive) method use? Which method/s is/are mostly preferred? Why?
    - Is there any difference in contraceptive method preference between:
        [1] Males and females?
        [2] Married and unmarried?
- How much do you think is the unmet needs of family planning among people living with disability?

4. Service Providers and Quality of Service Received (10 minutes)

■ Where do people living with disability receive family planning services? Why?

■ Looking from the perspective of disability how do you judge the family planning service being rendered? Why?

■ What do you think service providers should do in order to fulfil the family planning needs of people living with disability?

5. Attitude and Behavior (10 minutes)

- Would you tell us the attitude and behavior of people living with disability in using different family planning methods? Why?
    - Is there any difference in attitude and behavior between:
        [1] Males and females?
        [2] Married and unmarried?

Barriers and Opportunities(5 minutes)

■ What do you think are barriers for people living with disability in obtaining family planning services? Why?

■ What opportunities do you think will have for people living with disability to obtain quality family planning service? Why?

7. Do you have any additional comment or suggestion?

Thank You!!

Appendix 2. CONSENT FORM

This research, Sexual and Reproductive Health of Women with Disability: An Assessment of Family Planning Practice and Need in Gusau, Zamfara State, Northwest Nigeria, will be carried out in accordance to the ethical guidelines of FMC, Gusau and your consent will be needed for eligibility to participate in the study

Before you decide if you would like to take part or not, please read the following carefully.

WHAT IS THE STUDY ABOUT?

The study is aimed to assess family planning practice and needs of people living with different type of disabilities. Findings/ information from this study will assist in drawing attention to quality of family planning service provision, help in improving on provision of family planning methods and practice, understand the family planning need of people living with disabilities, addressing the barrier and challenges associated with their family planning need, in designing SRH policy for people living with disabilities and to guide interventions in our resource constrained environment.

WHAT WILL BE DONE IF YOU PARTICIPATE IN THIS STUDY?

People living with different disabilities and their family planning practice and need will be the focus of the study. Different focus groups will be created. Each interview will last about 45-50 minutes. Key informant interviews with participants in each focus group by the facilitator will take place in each to ensure visual and auditory privacy. During each interview, data will be recorded by taking handwritten notes and audio recording of the interviews. At the end of the interview, debriefing will be carried out

and some quotations will be read back to the participants especially on some important points.

Necessary steps will be taken to secure transcripts and data sources in a secure place.

WILL THE INFORMATION BE CONFIDENTIAL? YES

Anonymity, confidentiality and privacy will be maintained as the interview will be carried out within a focus group discussion following advance booking. The information collected during this study will be stored and analyzed without including your unit and position. The results of the study will be published in medical literature and may be used in health policy formulation but your identity will not be revealed.

WRITTEN CONSENT FORM

I…… (Initials please) have read and understood all the information given to me about my participation in this study and I have been given the opportunity to discuss it and ask questions. All my questions have been answered to my satisfaction and I voluntarily agree to take part in this study. I understand that I will receive a copy of this signed written informed consent form. I authorize the release of my information and interview to the investigator, regulatory authorities and ethical committee as may be required.

Signature of participant ……Date…….

Initials of participants ……

Signature of investigator …… Date…….

Initials of investigator ……

REFERENCES

[1] World Health Organization. Global report on health equity for persons with disabilities. Geneva: Licence: CC BY-NC-SA 3.0 IGO. 2022. Available from: https://www.who.int/publications/i/item/9789240063600

[2] World Health Organization & World Bank. Summary: World report on disability. World Health Organization. 2011. Available from: https://iris.who.int/handle/10665/70670

[3] Iezzoni LI. Public health goals for persons with disabilities: Looking ahead to 2020. Disabil Heal J 2009; 2(3): 111-5. http://dx.doi.org/10.1016/j.dhjo.2009.03.002 PMID: 21122749

[4] Kirschner KL, Breslin ML, Iezzoni LI. Structural impairments that limit access to health care for patients with disabilities. JAMA 2007; 297(10): 1121-5. http://dx.doi.org/10.1001/jama.297.10.1121 PMID: 17356035

[5] Bickenbach J. The world report on disability. Disabil Soc 2011; 26(5): 655-8. http://dx.doi.org/10.1080/09687599.2011.589198

[6] Arulogun OS, Titiloye MA, Desmenu A. Barriers faced by service providers in meeting the sexual and reproductive health needs of deaf persons in Ibadan metropolis: A qualitative study. J Med Medi Sci 2013; 4(11): 433-8.http://www.interesjournals.org/JMMS

[7] National Population Commission (NPC)/Nigeria & ICF. *Nigeria demographic and health survey* 2018. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF. 2019. Available from: https://dhsprogram.com/pubs/pdf/FR359/FR359.pdf

[8] Olajide FO, Omisore AG, Arije OO, Afolabi OT, Olajide AO. Awareness and use of modern contraceptives among physically challenged in-school adolescents in Osun State, Nigeria. Afr J Reprod Health 2014; 18(2): 87-96. http://dx.doi.org/10.2307/24362170 PMID: 25022145

[9] Solanke BL, Adetutu OM, Rahman SA, Soladoye DA, Owoeye MO. Prevalence and determinants of unmet need for contraception among women in low and high-priority segments for family planning demand generation in Nigeria. Arch Public Health 2022; 80(1): 239. http://dx.doi.org/10.1186/s13690-022-00997-x PMID: 36404339

[10] United Nations. Global Sustainable Development Goals. 2015. Available from: https://creativecommons.org/licenses/by-sa/3.0/ and https://www.globalgoals.org/goals/3-good-health-and-well-being/

[11] World Health Organization & United Nations Population Fund. Promoting sexual and reproductive health for persons with disabilities: WHO/UNFPA guidance note. World Health Organization. 2009. Available from: https://iris.who.int/handle/10665/44207

[12] Shiwakoti R, Gurung YB, Poudel RC, *et al*. Factors affecting utilization of sexual and reproductive health services among women with disabilities- a mixed-method cross-sectional study from Ilam district, Nepal. BMC Health Serv Res 2021; 21(1): 1361. http://dx.doi.org/10.1186/s12913-021-07382-4 PMID: 34949185

[13] Agaronnik N, Campbell EG, Ressalam J, Iezzoni LI. Communicating with patients with disability: Perspectives of practicing physicians. J Gen Intern Med 2019; 34(7): 1139-45. http://dx.doi.org/10.1007/s11606-019-04911-0 PMID: 30887435

[14] Smith DL. Disparities in patient-physician communication for persons with a disability from the 2006 Medical Expenditure Panel Survey (MEPS). Disabil Health J 2009; 2(4): 206-15. http://dx.doi.org/10.1016/j.dhjo.2009.06.002 PMID: 21122761

[15] Alemu T, Fantahun M. Assessment of sexual and reproductive health status and related problems of young people with disabilities, Addis Ababa. Ethiop Med J 2011; 49(2): 97-108. PMID: 21796909

[16] Paul A, Rob K. Disability, space and sexuality: Access to family planning services Northern Ireland, UK. Soc Sci Med 2012; 51(8): 1163-73. http://dx.doi.org/10.1016/s0277-9536(00)00019-8 PMID: 11037207

[17] Steinberg AG, Barnett S, Meador HE, Wiggins EA, Zazove P. Health care system accessibility. J Gen Intern Med 2006; 21(3): 260-6. http://dx.doi.org/10.1111/j.1525-1497.2006.00340.x PMID: 16499543

[18] Ganle JK, Baatiema L, Quansah R, Danso-Appiah A. Barriers facing persons with disability in accessing sexual and reproductive health services in sub-Saharan Africa: A systematic review. PLoS One 2020; 15(10): e0238585. http://dx.doi.org/10.1371/journal.pone.0238585 PMID: 33044966

[19] Werner S, Yalon-Chamovitz S, Tenne Rinde M, Heymann AD. Principles of effective communication with patients who have intellectual disability among primary care physicians. Patient Educ Couns 2017; 100(7): 1314-21. http://dx.doi.org/10.1016/j.pec.2017.01.022 PMID: 28190542

[20] Tanabe M, Nagujjah Y, Rimal N, Bukania F, Krause S. Intersecting sexual and reproductive health and disability in humanitarian settings: Risks, needs, and capacities of refugees with disabilities in Kenya, Nepal, and Uganda. Sex Disabil 2015; 33(4): 411-27. http://dx.doi.org/10.1007/s11195-015-9419-3 PMID: 26594076

[21] Burke E, Kébé F, Flink I, van Reeuwijk M, le May A. A qualitative study to explore the barriers and enablers for young people with disabilities to access sexual and reproductive health services in Senegal. Reprod Heal Matt 2017; 25(50): 43-54. http://dx.doi.org/10.1080/09688080.2017.1329607 PMID: 28784062

[22] Tefera B, Van Engen M, Van der Klink J, Schippers A. The grace of motherhood: Disabled women contending with societal denial of intimacy, pregnancy, and motherhood in Ethiopia. Disabil Soc 2017; 32(10): 1510-33. http://dx.doi.org/10.1080/09687599.2017.1361385

[23] Peta C. Disability is not asexuality: The childbearing experiences and aspirations of women with disability in Zimbabwe. Reprod Heal Matt 2017; 25(50): 10-9. http://dx.doi.org/10.1080/09688080.2017.1331684 PMID: 28784066

[24] Ahinkorah BO, Obisesan MT, Seidu AA, Ajayi AI. Unequal access and use of contraceptives among parenting adolescent girls in sub-Saharan Africa: A cross-sectional analysis of demographic and health surveys. BMJ Open 2021; 11(9): e051583. http://dx.doi.org/10.1136/bmjopen-2021-051583 PMID: 34551951

[25] Eide AH, Mannan H, Khogali M, *et al*. Perceived barriers for accessing health services among individuals with disability in four African countries. PLoS One 2015; 10(5): e0125915. http://dx.doi.org/10.1371/journal.pone.0125915 PMID: 25993307

[26] Eliason S, Awoonor-Williams JK, Eliason C, Novignon J, Nonvignon J, Aikins M. Determinants of modern family planning use among women of reproductive age in the Nkwanta district of Ghana: A case–control study. Reprod Heal 2014; 11(1): 65. http://dx.doi.org/10.1186/1742-4755-11-65 PMID: 25117887

[27] Yimer AS, Modiba LM. Modern contraceptive methods knowledge and practice among blind and deaf women in Ethiopia. A cross-sectional survey. BMC Womens Heal 2019; 19(1): 151. http://dx.doi.org/10.1186/s12905-019-0850-y PMID: 31783844

[28] Bongaarts J, Hardee K. Trends in contraceptive prevalence in sub-Saharan Africa: The roles of family planning programs and education. Afr J Reprod Heal 2019; 23(3): 96-105. PMID: 31782635

[29] Mprah WK. Knowledge and use of contraceptive methods amongst deaf people in Ghana. Afr J Disabil 2013; 2(1): 43. http://dx.doi.org/10.4102/ajod.v2i1.43 PMID: 28729988

[30] Mekonnen AG, Bayleyegn AD, Aynalem YA, Adane TD, Muluneh MA, Asefa M. Level of knowledge, attitude, and practice of family planning and associated factors among disabled persons, north-shewa zone, Amhara regional state, Ethiopia. Contracept Reprod Med 2020; 5(1): 8. http://dx.doi.org/10.1186/s40834-020-00111-y PMID: 32626598

[31] Adhikari KP. Realising the rights of persons with disability in Nepal: Policy addresses from the health, education, and livelihoods perspectives. Nepal J Develop Rur Stud 2019; 16: 23-34. http://dx.doi.org/10.3126/njdrs.v16i0.31532

[32] Mesfin Yesgat Y, Gebremeskel F, Estifanous W, *et al*. Utilization of family planning methods and associated factors among reproductive-age women with disability in Arba Minch Town, Southern Ethiopia. Open Acce J Contracept 2020; 11: 25-32. http://dx.doi.org/10.2147/OAJC.S240817 PMID: 32308510

[33] Kassa TA, Luck T, Bekele A, Riedel-Heller SG. Sexual and reproductive health of young people with disability in Ethiopia: A study on knowledge, attitude and practice: A cross-sectional study. Global Heal 2016; 12(1): 5. http://dx.doi.org/10.1186/s12992-016-0142-3 PMID: 26864115

[34] Seyife A, Fisseha G, Yebyo H, Gidey G, Gerensea H. Utilization of modern contraceptives and predictors among women in Shimelba refugee camp, Northern Ethiopia. PLoS One 2019; 14(3): e0212262. http://dx.doi.org/10.1371/journal.pone.0212262 PMID: 30840634

[35] Tenaw Z, Gari T, Bitew ZW, Gebretsadik A. Contraceptive use among people with disabilities in sub-Sahara Africa: A systematic review and meta-analysis. J Publ Heal Res 2023; 12(4): 22799036231204330. http://dx.doi.org/10.1177/22799036231204330 PMID: 37822993

[36] Rugoho T, Maphosa F. Challenges faced by women with disabilities in accessing sexual and reproductive health in Zimbabwe: The case of Chitungwiza town. Afr J Disabil 2017; 6: 252. http://dx.doi.org/10.4102/ajod.v6i0.252 PMID: 28730062

[37] Ganle JK, Otupiri E, Obeng B, Edusie AK, Ankomah A, Adanu R. Challenges women with disability face in accessing and using maternal healthcare services in Ghana: A qualitative study. PLoS One 2016; 11(6): e0158361. http://dx.doi.org/10.1371/journal.pone.0158361 PMID: 27347880

[38] Ahumuza SE, Matovu JKB, Ddamulira JB, Muhanguzi FK. Challenges in accessing sexual and reproductive health services by people with physical disabilities in Kampala, Uganda. Reprod Heal 2014; 11: 59. http://dx.doi.org/10.1186/1742-4755-11-59 PMID: 25086444

[39] Ayiga N, Kigozi S. Access to and uptake of contraception by women with disabilities. J Soc Sci 2016; 12(4): 171-81.

[40] Mavuso SS, Maharaj P. Access to sexual and reproductive health services: Experiences and perspectives of persons with disabilities in Durban, South Africa. Agenda 2015; 29(2): 79-88. http://dx.doi.org/10.1080/10130950.2015.1043713

[41] Gürel R, Yılmaz DV. Examining the attitude towards family planning of women with disability in Turkey. Sex Disabil 2018; 36(3): 265-75. http://dx.doi.org/10.1007/s11195-018-9518-z

[42] Panko TL. Reproductive justice for the Deaf community. Obstet Gynecol 2022; 140(4): 560-4. http://dx.doi.org/10.1097/AOG.0000000000004944 PMID: 36075071

[43] Nketsia W, Mprah WK, Opoku MP, Juventus D, Amponteng M. Achieving universal reproductive health coverage for deaf women in Ghana: An explanatory study of knowledge of contraceptive methods, pregnancy and safe abortion practices. BMC Heal Serv Res 2022; 22(1): 954. http://dx.doi.org/10.1186/s12913-022-08323-5 PMID: 35897008

[44] Kuenburg A, Fellinger P, Fellinger J. Health care access among deaf people. J Deaf Stud Deaf Educ 2016; 21(1): 1-10. http://dx.doi.org/10.1093/deafed/env042 PMID: 26405210

[45] Devkota HR, Murray E, Kett M, Groce N. Healthcare provider's attitude towards disability and experience of women with disabilities in the use of maternal healthcare service in rural Nepal. Reprod Heal 2017; 14(1): 79. http://dx.doi.org/10.1186/s12978-017-0330-5 PMID: 28662710

[46] Mulumba M, Nantaba J, Brolan CE, Ruano AL, Brooker K, Hammonds R. Perceptions and experiences of access to public healthcare by people with disabilities and older people in Uganda. Int J Equi Heal 2014; 13(1): 76. http://dx.doi.org/10.1186/s12939-014-0076-4 PMID: 25928896