

Maternal Health Care Seeking Behavior of Peri-Urban Women With Disability in Busiro South, Wakiso District, Uganda: a Community Based Study

Bonny Natukunda

Uganda Martyrs University

David Musoke

Makerere University College of Health Sciences

Arthur Kiconco

Uganda Martyrs University

Samuel Mugambe

Uganda Martyrs University

Christine Atuhairwe

Clarke International University

Ivan Mugisha Taremwa (✉ imugisha@ymail.com)

Clarke International University <https://orcid.org/0000-0002-1048-1405>

Miisa Nanyingi

Uganda Martyrs University

Research article

Keywords: Peri-urban, determinants, disabled women, Uganda

Posted Date: August 10th, 2020

DOI: <https://doi.org/10.21203/rs.3.rs-41854/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Abstract

Background: In Uganda women with disabilities attend antenatal care (ANC) while pregnant, however, majority of these deliver from the hands of Traditional Birth Attendants (TBAs) due to due to fear of being mistreated by skilled birth attendants. We explored the determinants of the maternal health seeking behavior of women with disability in Busiro health sub district (HSD), Wakiso district, Uganda.

Methods: A community based cross-sectional study involving quantitative and qualitative methods of data collection was conducted among 182 participants. Quantitative data were collected from disabled women, and qualitative data from six key informants (midwives and in-charges) at selected health facilities in Busiro HSD, Wakiso district. Logistic regression was used to determine the factors influencing the decision to seek maternal health care services (ANC and delivery at health facilities) among women with disability. Qualitative data were analyzed by content analysis.

Results: The findings revealed that 82.3% of women with disability attended ANC during pregnancy, and of these, 80.8% delivered their babies at health facilities. Attendance of ANC by the women with disability was influenced by parity (having 1-3 children) (AOR 7.7; 95% CI: 0.249-239.040), mode of delivery-normal delivery verses caesarian section (AOR 2.6, 95%CI: 0.296-22921), place visited during pregnancy TBA visa vie public health facilities (AOR 4.5, 95%CI: 0.922-22.576), and distance to the health facility being less than 5 Kilometres (AOR 2.3 95% CI: 0.695-7.661).

Conclusion: There is need to intensify awareness of the use of skilled health workers during pregnancy and child birth to women with disability in the communities so as to improve uptake of maternal health care services.

Background

Globally, an estimated one billion people experience some form of disability and within this group, women are more affected and 80% of them are from developing countries [1]. In Africa, women with disability are more affected as there is no special attention given to them as they seek maternal health care [2]. Furthermore, in developing countries 10.4% and 18.6% of women with disability reside in urban and rural communities respectively [3]. This affects their health seeking behavior especially for maternal and reproductive health services [4]. Misconceptions about the health of people with disabilities have led to assumptions that they do not require access to health promotion and disease prevention [4]. Whereas the Sustainable Development Goal (SDG)-5 aims to achieve gender equality and the empowerment of all women and girls including women with disabilities, there is uncertainty that may hinder attaining this as majority of these women are discriminated [2, 4]. This is evidenced by the fact that most women with disabilities attend antenatal care (ANC), but a bigger number of these deliver in the hands of Traditional Birth Attendants (TBAs) due to the fear of being mistreated including laughed at in the health facilities by the health care providers and other women without disabilities [4, 5]. Additionally, many women with disability face transportation problems due to long distances they have to travel to the facilities and

worst of all, they are perceived by the normal population to be asexual [3]. The proportion of women with disabilities who give birth is on the rise despite the little attention given to them [6]. According to the global disability report of 2011, women with disability in reproductive age faced different challenges including: denying them care at health facilities (21%); lack of knowledge on where to go for a service (11.8%); and mistreatment by health workers (15.5%) [7]. In addition, the report highlighted that the health workers did not have enough skills to attend to women with disability, and affordability costs further complicate their health seeking behavior. Relatedly, other studies have raised numerous challenges including limited affordability to visit health facilities that was reported among 58.7% of women with disability in reproductive age, 16% had no transport means to the health facility, and 25.8% could not afford the prohibitive costs of transport [7]. These factors are main barrier to accessing sexual and reproductive health services, and may portend global efforts to achieve SDG-5 [7]. Further, the need for some persons with disabilities to have someone accompany them on the health visit not only increases transportation costs, but also raises issues of confidentiality [8, 9].

In Uganda, 14.5% of persons with disability are women [10], and those in reproductive age are more susceptible to poor pregnancy outcome due to their anatomical nature [3]. This may be a contributing factor to the current Uganda's Maternal Mortality Ratio (MMR) of 336 per100,000 live births [8]. According to the Uganda Bureau of Statistics (UBOS) in the Uganda Population Census report of 2014, 14% of the population above five years had a disability, with more females (14.5%) having a disability compared to males (10%) [10]. Disability was also found to be higher in urban areas (15%) compared to rural areas (12%), although data on women with disability of reproductive age was not captured by the report. This creates a gap in planning service delivery for women with disabilities in the country. SDG target 3.7 calls for universal access to sexual and reproductive health services, and SDG target 5.6 further calls for ensuring access to sexual and reproductive health and reproductive rights. In Uganda, efforts to better maternal outcomes are focused on improving access and quality of women care without regards to the disabled [11]. Further, poor understanding of the maternal needs of disabled women, inadequate information, physical barriers, unfriendly health care workers and unfriendly services, which result into poor pregnancy outcomes among women with disability [12]. Worse yet, Uganda had the highest gap of skilled health workers attending to women with disability [12]. As there is limited information regarding the accessibility to maternal health care services by reproductive health of people living with disabilities, it is widely thought that people with disabilities have significant unmet needs [2]. In Wakiso district, anecdotal evidence seems to suggest that many of these women with disability do not attend ANC and delivery at health facilities due to stigma. Under ideal situations, one would expect all the planning and provision of services (both general and specific) to take care of the need of the people with disability but this is not the case. This study therefore explored the determinants of the maternal health care seeking behavior of women with disability in Busiro Health Sub District (HSD), Wakiso district, Uganda.

Methods

Study area

This study was carried out in Busiro South Health Sub District (HSD) in Wakiso district located in the central region of Uganda. Wakiso district comprises 4 municipalities, 8 town councils, 6 sub counties and 7 HSDs. These include Makindye Ssabagabo, Entebbe municipality, Kyadondo North, Kyadondo East, Busiro East, Busiro North and Busiro South. The study health sub district (Busiro South) is predominantly peri-urban, comprised 28 parishes and 141 villages with inhabitants carrying out several economic activities including agriculture, animal farming and small-scale business. Most of the women with disabilities in the HSD are at their homes and mainly involved in petty trade while others were housewives. The population of people living with disability in Wakiso is 6.6% and Busiro South contributes 1% [10]. Busiro South was selected for the study because it had the highest number of women with disability in the district according to the 2014 census [10].

Study design and data collection

This was a cross-sectional design that involved both quantitative and qualitative methods. Quantitative data were collected using a semi-structured questionnaire from women with disability. Qualitative data were collected from key informants, who were in-charges of the selected facilities and midwives, using a key informant interview guide. Data collection tools were developed based on the existing literature [1, 3-6, 11-17], and prior to data collection, the questionnaire was pretested to ensure clarity and accuracy. Women with disability were found in their homes and at the health facilities during data collection while key informant interviews were conducted at the same facilities. Three research assistants proficient in English and *Luganda* (the local language used in the study area) were recruited and trained by the research team before data collection.

Study population, sampling and recruitment

The study population comprised disabled women aged 15-49 years who had ever given birth residing in the study area. With standard normal deviation at 95% confidence interval ($Z=1.96$), P-expected proportion of women with disability in Uganda that is 14.5% [10] and sampling error (δ) of 5%, a total of 191 disabled women (15-49 years) was considered for the study. The study used a multistage sampling. In the first step, the town councils and sub county in Busiro South were stratified and three out of four (75% above recommended threshold of 60%) were considered for the study. In the next step, the facilities in the selected sub counties were stratified to select the required number of government health facilities. Snowball sampling was used to identify the women with disability that were enrolled in the study. Community Health Workers (CHWs) residing in the selected villages were also used to help in locating the women with disability in hard to reach areas.

Data management and analysis

Quantitative data were entered and analyzed using SPSS version 21 IBM statistical software. The dependent variables were ANC attendance and place of delivery while independent variables included individual, community and health facility factors. Frequencies and percentages were used to describe the characteristics of the women with disability. ANC attendance was determined by the Ministry of Health

(MOH) standard of thrice during pregnancy in comparison with those who visited facilities less times or not at all for the most recent pregnancy. On the other hand, place of delivery was assessed as either a mother delivering under skilled labor at the health facility or at other places such as TBAs which was confirmed using hospital records as well as with the aid of CHWs. Logistic regression was used to establish factors significantly associated with ANC attendance and place of delivery among the disabled women. Variables with a p-value <0.05 was considered to have an association with utilization of maternal health care by the odds ratio (OR >1). Qualitatively, the key informant interviews were audio recorded and transcribed verbatim in English and validated by three members of the research team. Thereafter, the narratives were verified for accuracy and consistence. Using content analysis, themes were created based on the data from the key informant responses.

Ethical considerations

Ethical approval to conduct the study was obtained from Uganda Martyrs University. Administrative permission was obtained from the District Health Officer, Wakiso district. Participation in the study was voluntary, and the researcher obtained verbal assent (below 18 years) and consent from the participants before they participated. Verbal consent was used to expedite the recruitment of study participants and allow normal clinical care patient flow. Additionally, as this study did not carry any procedural risk, we obtained ethical clearance to obtain verbal consent from the research and ethics committee of Uganda Martyrs University.

Results

A total 182 women with disability were obtained in Busiro HSD with a response rate of 95.3%. Overall, 150 (82.3%) of the disabled women had attended ANC during pregnancy and 147 (80.8%) had delivered their babies at the health facility.

Background characteristics of participants

As shown in Table 1; majority of participants were physically disabled (98.4%), 39.0% were above 35 years, and 47.8% were married. Among the participants, 58.8% had attained primary education and (46.7%) were self-employed. Regarding spouses of the participants, 34.1% had attained primary education while 47.3% were self-employed. Majority of the women with disability (55.5%) had had at least 1-3 pregnancies, while 65.4% had 1-3 children. Less than half (42.0%) of the participants had attended ANC four or more times. Most participants (43.8%) did not have any means of transport to go to public health facility or felt the need, while 50.3% started ANC at less than 20 weeks of gestation. Over 78.2% of the participants reported that they had not been given special attention by nurses/midwives at maternal health facility, and 51.9% had received support from family members to be able to access ANC services. Majority of women with disability (83.0%) had normal deliveries. Among the women with disability that had a caesarian section, 69.7% reported that it was due to their disability. When the women with disability were due to deliver their baby, the first option was to go to a government medical facility (48.9%). Among the participants, 62.3% had delivered their babies at government run health facilities,

while 16.5% had complications during delivery. Among those that had complications, 55.6% sought medical attention. When asked about accessibility to maternal health care services in Busiro HSD, 48.6% compared to 51.4% of the disabled women had knowledge where the health centre could be accessed. In contrast, midwives reported that few women with disability had visited the health facilities during pregnancy for ANC. *“One disabled pregnant woman in a month and at times after three months; women with disability rarely come to the health facility. They may be going to Mpigi Health centre IV which is far and costly or Entebbe Grade B hospital.”* KI, Midwife, Kajjansi HC IV

Among the women with disability, 41.7% lived less than 5Km from the nearest health facility, while 56.2% reported that maternal health care services were always available in Busiro HSD. However, more than half (59.5%) reported that there were no special delivery beds at the health facility for physically disabled women. Most of the women with disability thought that the available delivery beds at the health facilities were too high. In addition, 56.7% thought that the health care providers were friendly as they sought maternal care, while 69.5% of them were charged user fees at the maternal unit. Among the women with disability that were charged a fee at ANC, 39.6% paid 5000Ugx (1.34USD), 22.9% paid 10,000Ugx (2.69 USD), 20.8% paid 20,000Ugx (5.37USD) and 16.7% paid more than 20,000 Ugx (>5.37 USD). Also, 70.2% were charged at maternity units with the amount of money ranging from less than 20,000Ugx (5.37USD) to more than 200,000Ugx (53.71USD) for the specific services offered during child birth. In contrast, the key informants reported that the maternal services were offered free of charge by the government. This was stressed by one key informant in the narrative; *‘All the key informants reported that the maternal health care services were free of charge, although they received appreciation tokens (in cash) from women with disability’*. KI, Kajjansi Health Centre IV

Key informants also mentioned different things they are doing to raise awareness of the importance of maternal and child health services to the disabled and the general population such as carrying out community outreaches and dialogues. This was stressed by one key informant in the narrative; *‘The midwives go to the communities for outreaches where some of these women with disability are captured. Of late community dialogues have also come up, community members are asked about service delivery and health education talks are being carried out by the assistant health educator on the available services.’* KI, Kajjansi Health Centre IV

Factors associated with ANC attendance and place of delivery among women with disabilities

As shown in Table 2: parity significantly influenced utilization of maternal health care services of women with disability. A disabled woman with 1-3 children was more likely to attend ANC during pregnancy compared to those than had more than four children (AOR 7.710; 95% CI 0.249-239.040). The study findings revealed that a disabled woman having 1 to 3 children was twice as likely to attend ANC compared with a woman who had 4-6 children (AOR 2.6; 95% CI: 0.139-49.004). The odds of a disabled woman attending ANC was twice as likely if she had a normal delivery during the most recent pregnancy compared to those who had cesarean section (AOR 2.605; 95% CI:0.296-22.921). In addition, a woman with disability was 3.3 times less likely to attend ANC if she was not seeking care from a health facility

than if she was visiting a private health facility (AOR 3.361; 95% CI: 0.732-15.424). The odds of a disabled woman attending ANC was 4.5 times lower among those who visited TBAs than those who went to the private health facility (AOR 4.562; 95% CI: 0.922-22.576). A woman with disability was twice more likely to attend ANC if she resided less than 5 Km from a health facility compare to those who stayed more than 5 Km away (AOR 2.308; 95% CI: 0.695-7.661). Also, the friendliness of the health care providers was found to influence ANC attendance of women with disability in Busiro South HSD, Wakiso district. A disabled woman was less likely to access ANC services if the health care providers were unfriendly (AOR 0.393; 95% CI: (0.127-1.212)). In addition, distance to the health facility was found to significantly influence delivery of a disabled woman at the health facility, as shown in table 3. A disabled woman living less than 5Km from a health facility was more likely to deliver her baby at the health facility in comparison with those that stayed more than 5 Km (AOR 4.546; 95% CI: 1.597-12.938). It was reported that people with disability had no handles on the walk ways, unsuitable reception chairs, too many staircases to climb, no specialized medical equipment, lack of wheel chairs to support entrance into the building, and no specialized support health workers. This was stressed by one key informant in the narrative; *“At the entrance of Kajjansi Health Centre IV, there are no steps; there is a walk way that allows use of a wheelchair to ease access to maternity ward, however, this remains a big challenge at out-patient department. We have tried to ensure that these midwives handle those mothers with priority so that they do not over stay at the facility, the blind are not allowed to be in queues and samples are taken at ANC to limit movements.”* KI, Kajjansi HC IV

The health workers also reported that a few disabled women visited Kajjansi HC for ANC and delivery, and that most preferred hospitals that are better equipped. This was stressed by one key informant in the narrative; *“NO, only a few pregnant disabled women attend ANC for screening. After identification, midwives refer the disabled pregnant women to Entebbe hospital for future management. This is because there are no theater services and few interventions have been put in place to cater for the needs of women with disability at Kajjansi H/C 1V in Busiro South HSD, Wakiso district,”* KI, Kajjansi HC IV. *“Also Kasanje Health H/C III is the only government run health facility in Kasanje town council serving seven parishes and more than 30 villages. We do not have the provisions to cater for the disabled women.”* KI, Kasanje HC III. Further, it was also established from the key informant interviews that there was need to construct more latrines for the disabled. This was stressed by the key informants at the different health facilities as narrated below; *“The available latrine is not in use because it has to be serviced. It is not user really friendly; it does not have stairs. It is spacious, so a disabled woman can enter with her wheel chair “but it is not suited for disabled.”* KI, Kajjansi Health Centre IV. *“An NGO called VAD constructed new toilets with provisions for the disabled patients. Although the lame still say they are not to their standards.”* KI, Kasanje Health Centre III. *“There are no latrines for the disabled patients, the few latrines available are not user friendly for the non-disabled patients.”* KI, Nakawuka H/C III.

Most of the key informants reported that they had not received special training in handling disabled pregnant women at the respective health facilities. When asked if the health care workers attend to mothers with disability, the key informants said they normally refer them to other health facilities although they deliver some during emergencies. The health workers reported that they were not well

equipped to handle the needs of women with disability. As narrated; *“When identified early during ANC, the pregnant women with disability are advised to visit better equipped public health facilities with more specialized services for better management. But if the disabled woman comes in when already in labor, we try to manage using the available resources.”* KI, Kasanje HC III.

“No. During ANC screening, the midwives assess if the woman with disability will be able to have a baby naturally (normal delivery or not) to avoid complications they are referred to Entebbe Hospital. There is no theatre, so timely referral for difficult cases is done,” KI, Kajjansi HC IV

Discussion

In our study, the overall ANC attendance among women with disability in Busiro South HSD was high (82.3%). A previous study by Omona demonstrated a similar finding in that more women with disability attended ANC and delivered their babies at government run health facilities [14]. In contrast, Gichane in a study carried out in Cape Town on disabled women revealed that only 39% of women received ANC when they were pregnant with their youngest child [15]. However, there is need to raise awareness about the importance of skilled labor aided hospital delivery among women with disability. Our results also showed that majority of the women (62.3%) with disability delivered their babies at government health facilities. It was revealed that 80.8% of the disabled women had delivered their babies at the health facilities in Busiro HSD. The midwives and in charges indicated that an average number of women with disability come to the facilities for ANC but they reported a very small number of them delivering at the facilities with most being referred to higher facilities and some delivering at TBAs. Our results are supported by earlier findings of other studies [4, 16] that showed most women with disabilities having attended ANC but a bigger number having delivered from the hands of TBAs [4, 16]. In contrast, the Uganda Demographic and Health Survey (UDHS) report indicated fewer (37%) women with disability having delivered in a health facilities compared to 49% of women with no disability [9]. In contrast, Morrison reported that most women with disability preferred to deliver at home than going to the health facilities as they considered pregnancy a natural process [5].

The study findings revealed that the distance to the health facility (< 5 Km) was significantly associated with the place of delivery among disabled women in Busiro HSD. The study concurs with the studies that were conducted by Ledger in UK [17] and Ganle [3] in Ghana where the long distances women with disability had to travel with their caretakers made it difficult for them to access maternal health care especially those with visual impairments. This means that a bigger number of women with disability that stay far away from the health facilities, thus there is need to take health care services to the individual communities to increase utilization.

Our study found that parity influenced maternal health care seeking behavior among the women with disability. Indeed, women who had delivered more than three children had few deliveries in health facilities than those that had delivered more than three children. This is in agreement to the study conducted by Kifle in Ethiopia that showed a decrease in seeking for maternal services with increased

parity [17]. This is further in agreement to the study that was carried out by Kawungezi in Uganda [18]. In contrast, a study done in Malawi indicated that high parity women tend to go for maternal services more such as ANC services compared to their counterparts [19]. The prime gravida have higher chances of seeking maternal health care compared to multi gravida, so there is need to stress the importance of hospital managed delivery to maternal and child health outcomes.

Our study found that ANC attendance and the choice of place of delivery was not significantly influenced by the attitude of the health workers in Busiro HSD. This is in agreement to the studies that were carried out in Uganda and Zimbabwe indicating that people with disabilities were still treated as any other normal person [20, 21] forgetting that these women with disability have special care needs. For that matter, very few women with disability go to health facilities for ANC and delivery services [19, 20]. In addition, the friendliness of the health care providers was found to influence health seeking behavior among women with disability in Busiro South HSD, Wakiso district. A previous study in Uganda indicated that a woman with disability to utilize maternal health care is affected by the poor attitude of health workers [12], lack of clear directions on services offered at the different facilities, crowding and lack of privacy [18]. We found out that maternal health care seeking behavior of women with disability was influenced by the mode of child delivery. Most women with disability had normal deliveries (83.0%) compared to those that had a caesarian section (17.0%). It was revealed that women with disability who had given birth normally in the recent pregnancy were more likely to seek health care service compared to their counterparts that had C-sections (AOR 2.763; 95% CI: 0.303–25.226). This is because those that were operated feared operations at the subsequent deliveries. The physical disability affects the pelvic bones so there is need for specialized care in handling pregnant women with disability and adequate assessment prior to baby delivery to avoid complications that may arise during child birth.

The distance to the health facility was found to have a positive impact on the maternal health seeking behavior of a disabled woman in our study. Indeed, our study found that women with disability living less than 5 Km (41.7%) were found to have attended ANC and delivered at health facilities more compared to those that lived beyond 5 Km (57.2%). This concurs with the studies that were conducted in Ghana [3] where the long distances women with disability had to travel with their caretakers to access maternal health care especially those with visual impairments. There is need to provide free transport to pregnant women with disability so that they can easily access maternal health facilities.

Finally, the friendliness of the health care providers was found to influence health seeking behavior among women with disability in Busiro South HSD, Wakiso district (AOR 2.268; 95% CI: 0.632–8.1396). Previous studies in Uganda by Ahumuza and Mulumba further indicated that these women with disability were despised and were being mistreated by health workers [11]. This concurs with the study findings by Ledger that found that most health care workers were untrained [19]. This implies that most women with disability are deterred from seeking maternal health care due to poor attitude of the health care workers thus there is need to improve customer/clients care skills of the different health care providers. The study further found that most building were inaccessible with an exceptional of the entrance of maternity ward at Kajjansi H/C 1V. A study conducted in Uganda indicated that most buildings lacked disability friendly

services such as lack of space for disability equipment such as wheelchairs and lack of ramps that can ease women with disability's movement [12]. Other studies [19, 20] found that inaccessible health facilities and equipment at the health centre were among the biggest barriers to access healthcare by women with disabilities. This was also established in a study conducted in Ghana especially among women with disability with physical and visual impairments who were unable to climb the stairs of buildings with ease [3]. Lack of friendly services for the disabled was also cited by most of the KIs, most visited facilities lacked latrines for the disabled a part from Kasanje H/C 111 that had a latrine for the disabled that was constructed by Voluntary Action for Development (VAD). All the facilities lacked wheel chairs and they were no special seats for the disabled. This is in agreement with studies that were conducted [20, 21]. In unison, another study by Ganle further showed lack of disabled friendly services such as latrines [3]. It is therefore important for health facilities to have amenities that are friendly to women with disabilities as a strategy to increase their utilization of services. The results of this study ought to be interpreted in light of the shortcoming that: a) the respondents gave self-reported information that cannot be ascertained for accuracy, 2) recall bias.

Conclusion

The study revealed that the maternal health seeking behaviour among women with disabilities was influenced by parity, place visited during pregnancy (TBA, private clinics or public health facilities, mode of child delivery (normal vs C-Section) and distance to the health facilities. There is therefore need to raise awareness on pregnancy management among the disabled by carrying out more outreaches and routine check-up for women with disability in the community. Based on the findings of this study, a multi sectoral approach is needed to encourage women with disability to use maternal health services. These include provision of user friend maternal facilitates, training health workers in customer care to improve their attitude, provide advanced screening equipment at the health centre and regular training of midwives/nurses in handling women with disability so as to attract more women to the health facilities.

Abbreviations

HSD

health sub district; ANC:Antenatal care; PWDs:People with disabilities, UBOS:Uganda Bureau of Statistics; WWD:women with disability

Declarations

Ethics approval and consent to participate

Ethical approval to conduct the study was obtained from Uganda Martyrs University. An introductory letter was then taken to the District Health Officer Wakiso district who gave permission to conduct the study. Participation in the study was voluntary, and the researcher obtained verbal assent (participants below 18 years of age) and consent from the participants before they were enrolled. For participants

below 18 years of age (18 years is the minimum age of adulthood in Uganda), parental consent was not sought from their parents or guardians as these are regarded as emancipated minors due to the fact that they had given birth previously. Indeed, as these women had given birth previously, they were emancipated hence able to consent on their own as per standard research practice in Uganda. Therefore, a written informed consent was obtained from the women themselves and not their parents/guardians (reference is made to Uganda National Council of Science and Technology-National Guidelines for Research Involving Human Subject available at:

http://research.ciu.ac.ug/files/National_Guidelines_for_Research_Involving_Human_Participants.pdf, section 9.3 on page 33). Verbal consent was used to expedite the recruitment of study participants and allow normal clinical care patient flow. Additionally, as this study did not carry any procedural risk, we obtained ethical clearance to obtain verbal consent from the research and ethics committee of Uganda Martyrs University.

Consent to publish

Not applicable

Availability of data and materials

We did not obtain consent to share data obtained from the questionnaire, however the datasets used may be availed on request from the corresponding principal investigator.

Competing interests

The authors declare no conflict of interest in this work.

Funding

Not applicable

Authors' contributions

BN, and MN conceived the study idea, participated in study design; data acquisition, analysis, and interpretation. BN oversaw the drafting of data collection tools, and scheduling for internal responsibilities. DM, BN, CA and IMT participated in study design; data acquisition, analysis, and interpretation, drafted and critically reviewed the manuscript. All authors read and approved the final manuscript.

Acknowledgements

The authors would like to appreciate our participants who voluntarily responded to the questionnaire, and the research assistants for the field support.

References

1. 2018. *Maternal mortality: Key facts* [online]: World Health Organization. Available at: <https://www.who.int/news-room/fact-sheets/detail/maternal-mortality> [Accessed 23 June 2019].
2. 2017. *Disabilities* [online]: World Health Organization. Available at: <https://www.who.int/topics/disabilities/en/> [Accessed June 23, 2019].
3. Ganle, J.K. et al., 2016. Challenges women with disability face in accessing and using maternal healthcare services in Ghana: a qualitative study. *PloS one* 11(6) e0158361.
4. Devkota, H.R., Kett, M. and Groce, N. 2019. Societal attitude and behaviours towards women with disabilities in rural Nepal: pregnancy, childbirth and motherhood. *BMC pregnancy and childbirth* 19(1) 20.
5. Morrison, J. et al., 2014. Disabled women's maternal and newborn health care in rural Nepal: A qualitative study. 30(11) 1132-1139.
6. Abimanyi-Ochom, J. and Mannan, H. 2014. Uganda's disability journey: Progress and challenges. *African Journal of Disability* 3(1).
7. Horner-Johnson, W., Biel, F.M., Darney, B.G. and Caughey, A.B. 2017. Time trends in births and cesarean deliveries among women with disabilities. *Disability and health journal* 10(3) 376-381
8. Sakellariou, D. and Rotarou, E.S. 2017. The effects of neoliberal policies on access to healthcare for people with disabilities. *International journal for equity in health* 16(1) 199.
9. UDHS 2011. Uganda demographic and health survey. Kampala Uganda, Uganda Bureau of Statistics.
10. UDHS 2016. Uganda Demographic and Health Survey 2016 Kampala Uganda, Uganda Bureau of Statistics.
11. Ahumuza, S.E., Matovu, J.K., Ddamulira, J.B. and Muhanguzi, F.K. 2014. Challenges in accessing sexual and reproductive health services by people with physical disabilities in Kampala, Uganda. *Reprod Health* 11(1) 59.
12. Mitra, S., Posarac, A. and Vick, B. 2013. Disability and poverty in developing countries: a multidimensional study. *World Development* 41 1-18.
13. Rugoho, T. and Maphosa, F. 2017. Challenges faced by women with disabilities in accessing sexual and reproductive health in Zimbabwe: The case of Chitungwiza town. *African Journal of Disability (Online)* 6 1-8.
14. Gichane, M.W., Heap, M., Fontes, M. and London, L. 2017. "They must understand we are people": Pregnancy and maternity service use among signing Deaf women in Cape Town. *Disability and health journal* 10(3) 434-439.
15. Malouf, R., Henderson, J. and Redshaw, M. 2017. Access and quality of maternity care for disabled women during pregnancy, birth and the postnatal period in England: data from a national survey. *BMJ open* 7(7) e016757
16. Kifle, D., Azale, T., Gelaw, Y.A. and Melsew, Y.A. 2017. Maternal health care service seeking behaviors and associated factors among women in rural Haramaya District, Eastern Ethiopia: a triangulated community-based cross-sectional study. *Reprod Health* 14(1) 6.

17. Kawungezi, P.C. et al., 2015. Attendance and utilization of antenatal care (ANC) services: multi-center study in upcountry areas of Uganda. *Open journal of preventive medicine* 5(3) 132.
18. Muula, A., Siziya, S. and Rudatsikira, E. 2011. Parity and maternal education are associated with low birth weight in Malawi. *African health sciences* 11(1).
19. Mulumba, M. et al., 2014. Perceptions and experiences of access to public healthcare by people with disabilities and older people in Uganda. *International journal for equity in health* 13(1) 76.
20. Ediau M, Wanyenze RK, Machingaide S, Otim G, Olwedo A, Iriso R et al., 2013. Trends in antenatal care attendance and health facility delivery following community and health facility system strengthening interventions in Northern Uganda. *BMC Pregnancy Childbirth*, 2013.
21. Kasasa, T.A., Luck, T., Bekele, A. and Riedel-Heller, S.G. 2016. Sexual and reproductive health of young people with disability in Ethiopia: a study on knowledge, attitude and practice: a cross-sectional study. *Globalization and health* 12(1) 5.

Tables

Table 1
Characteristics of women with disability

Variables	Category	Frequency (N = 182)	Percentage (%)
Type of disability	Physically disabled	179	98.4
	Blind	3	1.6
Age of respondent (years)	Below 25	44	24.2
	26–34	67	36.8
	Above 35	71	39.0
Marital status	Single	31	17.0
	Married	87	47.8
	Divorced/separated	48	26.4
	Widowed	16	8.8
Level of education	No Education	35	19.2
	Primary	107	58.8
	Secondary	35	19.2
	Tertiary	5	2.7
Occupation	Unemployed/housewife	78	42.9
	Self employed	85	46.7
	Employed	19	10.4
Spouse level of education (n = 127)	No Education	13	10.2
	Primary	62	48.8
	Secondary	41	32.3
	Tertiary	11	8.7
Spouse's employment status	Unemployed	116	30.1
	Self employed	182	47.2
	Employed	49	12.7
Number of pregnancies ever had	1–3 pregnancies	101	55.5
	4–6 pregnancies	68	37.4
	More than 7 pregnancies	13	7.1

Variables	Category	Frequency (N = 182)	Percentage (%)
Children ever had	1–3 Children	119	65.4
	4–6 Children	54	29.7
	7 or more Children	9	4.9
ANC attendance	Yes	150	82.4
	No	32	17.6
	Total	182	100.0

Table 2
Factors associated with ANC attendance

Variable	Utilized MHCS		Attended ANC			
	Yes(n = 150)	No(n = 32)	COR(95% CI)	P-value	AOR(95% CI)	P-value
Age group (years)						
< 25	42(28.0)	2(6.2)	0.290(0.038–2.186)	0.2295	0.299(0.042–2.142)	0.229
26–34	56(37.3)	11(34.4)	0.483(0.118–1.981)	0.3125	0.517(.133-2.007)	0.341
> 35	52(34.7)	19(59.4)	1		1	
Number of pregnancies						
1–3	91(60.7)	10(31.2)	0.059(0.003–1.157)	0.0623	0.060(0.003–1.247)	0.069
4–6	51(34.0)	17(53.1)	0.302(0.025–3.637)	0.3458	0.269(0.021–3.464)	0.314
> 7	8(5.3)	5(15.6)	1		1	
Children Ever Born						
1–3	102(68.0)	15(46.9)	6.174(0.191-199.934)	0.3049	7.710(0.249–239.040)	0.244
4–6	39(26.0)	15(46.9)	2.043(0.109-38.1148)	0.6324	2.606(0.139–49.004)	0.522
> 7	9(6.0)	2(6.2)	1		1	
Mode of delivery						
Normal	120(80.0)	31(96.9)	2.763(0.303–25.226)	0.3678	2.605(0.296–22.921)	0.388
C-section	30(20.0)	1(3.1)	1		1	
Place visited						
Stayed home	9(6.0)	11(34.4)	3.793(0.377–38.171)	0.2577	3.361(0.732–15.424)	0.119
Went to a TBA	9(6.0)	11(34.4)	3.720(0.517–26.756)	0.1918	4.562(0.922–22.576)	0.063
Went to PHF	50(33.3)	3(9.4)	0.159(0.012-2.100)	0.1625	0.373(0.073–1.917)	0.238
Went to GHF	82(54.7)	7(21.9)	1		1	

	Utilized MHCS		Attended ANC			
Distance to health facility (Km)						
< 5	56(37.3)	19(63.3)	2.268(0.632–8.136)	0.2091	2.308(0.695–7.661)	0.172
> 5	94(62.7)	11(36.7)	1		1	
Friendly health workers						
Yes	87(59.6)	8(34.8)	0.365 (0.114–1.168)	0.0894	0.393(0.127–1.212)	0.104
No	59(40.4)	15(78.9)	1		1	

Table 3
Factors that influenced place of delivery

Variable	Utilized MHCS		Place of delivery			
	Yes(n = 150)	No (n = 32)	COR(95% CI)	P-value	AOR(95% CI)	P-value
Age group						
< 25	42(28.0)	2(6.2)	0.625(0.128–3.053)	0.562	0.596(0.127–2.795)	0.512
26–34	56(37.3)	11(34.4)	1.168(0.317–4.298)	0.815	1.080(0.309–3.778)	0.904
> 35	52(34.7)	19(59.4)	1		1	
Number of pregnancies						
1–3	91(60.7)	10(31.2)	0.451(0.039–5.161)	0.522	0.292(0.050–1.717)	0.173
4–6	51(34.0)	17(53.1)	0.327(0.043–2.480)	0.279	0.269(0.051–1.416)	0.121
> 7	8(5.3)	5(15.6)	1		1	
Children ever born						
1–3	102(68.0)	15(46.9)	0.548(0.050–6.076)	0.625		
4–6	39(26.0)	15(46.9)	0.778(0.094–6.444)	0.816		
> 7	9(6.0)	2(6.2)	1		1	
Distance to HS						
< 5 km	120(80.0)	31(96.9)	4.546(1.597–12.938)	0.005*	4.333(1.554–12.078)	0.005*
> 5 km	30(20.0)	1(3.1)	1		1	
Friendly health workers						
Yes	87(59.6)	8(34.8)	0.530(0.198–1.419)	0.206	0.540(0.204–1.429)	0.215
No	59(40.4)	15(78.9)	1		1	

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [DataCollectionTools.docx](#)