Factors Influencing Maternal Health Service Utilization among Pregnant Mothers: A Cross-Sectional Study in Western Uganda

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ABSTRACT

Maternal health services (MHS) play a critical role in preventing maternal health-related complications and reducing mortality rates globally. However, despite concerted efforts to improve access to and utilization of these services, many pregnant women, particularly in low-resource settings, continue to face challenges in accessing adequate care. This cross-sectional descriptive study aimed to identify the factors influencing maternal health service utilization among pregnant mothers attending Kyabugimbi Health Centre IV in the Bushenyi district of Western Uganda. A total of 113 pregnant mothers seeking maternal health care services at Kyabugimbi Health Centre IV were recruited for the study using Fischer's method for sample size determination. Data were collected using structured questionnaires and analyzed using SPSS statistical software. Descriptive statistics, including frequencies and cross-tabulations, were employed to analyze the data. The findings revealed that only 46.0% of pregnant women had good maternal health service utilization, indicating a significant gap in access to and utilization of essential services. Age, education, and occupation were identified as significant demographic factors influencing maternal health service utilization. Specifically, younger mothers aged 18–30 years and those with post-primary education were more likely to utilize maternal health services effectively. Social and cultural factors, such as decision-making autonomy and spousal support, also played crucial roles in determining maternal health service utilization. Mothers who made decisions themselves and those accompanied by their husbands were more likely to seek and utilize maternal health services adequately. Furthermore, health-related factors, including proximity to health facilities and the affordability of services, significantly influenced maternal health service utilization. Mothers living within a distance of less than 2 km from health facilities and those who perceived the cost of services as manageable were more likely to utilize maternal health services effectively. In conclusion, this study underscores the multifaceted nature of factors influencing maternal health service utilization among pregnant mothers in Western Uganda. Addressing these factors, including improving education, enhancing decision-making autonomy, promoting spousal support, and ensuring affordability and accessibility of services, is crucial for enhancing maternal health outcomes and reducing maternal mortality rates in the region. Policy interventions, community outreach programs, and health system strengthening efforts are warranted to address these challenges comprehensively and improve maternal health service utilization rates in resource-limited settings.

Keywords: Maternal health services, Utilization, Pregnant women, Factors, Western Uganda, Maternal mortality

INTRODUCTION

Maternal health services (MHS) include antenatal care services, labor, delivery, and postnatal care services. They play a crucial role in preventing maternal health-related problems [1]. Globally, some 200 million women become pregnant annually [2]. It is estimated that more than 50 million women each year develop pregnancy-related complications that require medical attention, and close to half of those complications are fatal but treatable [3]. In sub-Saharan Africa, MMR was estimated to be 500 per 100,000 live births in 2020 [3]. The United Nations Sustainable Development Goals (SDG) on

maternal health aimed to reduce the number of women dying during pregnancy and childbirth by three quarters between 1990 and 2019. To achieve this goal, it was estimated that an annual decline in maternal mortality of 5.5% was needed; however, between 2000 and 2020, the annual decline was only 1.7% in the sub-Saharan region [4]. Adequate maternal care during pregnancy enhances the chances of favourable pregnancy outcome as demonstrated by a healthy baby and mother [5, 6]. A study on social sector issues in African economies and their impact on maternal health in 2020 showed that, in the Niger

Delta, 77% of pregnant women started utilizing maternal health services in the second trimester, while 21% of pregnant mothers did not seek any form of maternal health services [7]. In terms of the number of visits, in developed countries, 97% of pregnant women make at least one antenatal visit, and 99% of these pregnant women deliver with skilled birth attendants [8]. In Uganda, according to the Uganda Bureau of Statistics (UBOS) and the Uganda National Household Survey (2017–2018) on their report on household income and its impact on health, 49% of pregnant women utilize maternal health services, and often two-thirds of these women deliver with unskilled birth attendants [9]. Studies by Ndyomugyenyi et al. [10] in rural Ugandan communities showed that low utilization of maternal health services during pregnancy was influenced by some factors such as low maternal education, teenage pregnancies, multiparity, unplanned pregnancies, and cultural factors. A study on the costs of obstetric care and the economic and social consequences for households in Uganda linked low maternal health utilization during pregnancy to poor pregnancy outcomes, which ultimately lead to higher maternal and neonatal morbidity and mortality [11]. Kyabugimbi Health Centre IV serves a number of districts in the greater Bushenyi region; thus, any factors hindering maternal health service utilization are a concern for maternal health in the region. Although initiatives have been put in place to encourage adequate utilization of maternal health services among pregnant mothers, such as intensive information, education, and communication (IEC) on maternal health services in health facilities, reproductive health policies, and other interventions promoting adequate utilization of maternal health services, very few pregnant women utilize these services.

Globally, an estimated 48 million pregnant women don't receive maternal health care services; annually, more than 75 million births take place at home, and 60 million women give birth with only a traditional birth attendant or a family member present [12]. In many cases, the mother is alone. The absence of maternal health care services has been greatly associated with the occurrence of maternal illnesses due to a lack of baseline guidance on nutrition, hygiene, and malaria prophylaxis in many developing countries [13]. The rate of utilization of maternal health care services in East Africa was reported to be fewer, with only 40% of deliveries with a skilled care provider present and/or in a health facility [14]. According to the Uganda Ministry of Health (MOH), only 17 percent of pregnant mothers made their first visit during the first three months, while 41 percent of pregnant women had their first visit during the fourth or fifth months of pregnancy, 37 percent attended ANC late in their sixth month or later, and at least 11% did attend any form of maternal health care [15]. MOH in a report by UNDP, an estimated 6.9% of pregnant mothers in Uganda never attended any form of maternal health care service [15]. There is therefore a need for a study to be done to find out factors hindering pregnant mothers from utilizing maternal health care services, and the findings from this study will fill this information gap. The researcher aimed at identifying the factors hindering maternal health service utilization among pregnant mothers attending Kyabugimbi Health Centre IV.

METHODOLOGY

Study Design
The research was a cross-sectional descriptive study. Quantitative data collection methods were used, in which the data was compiled in numerical form in accordance with the responses of participants. Survey questionnaires were administered to pregnant mothers who came for maternal health care services from Kyabugimbi Health Centre IV.

Area of Study
The study was carried out at Kyabugimbi Health Centre IV, located in Bushenyi district in the western region of Uganda. Most of the people in Bushenyi district were peasant farmers practicing substance farming, while in Kyabugimbi town council, the majority of the people practice small-scale businesses. It's a government-aided health facility offering medical, surgical, paediatric, and maternal health services. The population in the catchment area is composed of peasant farmers, while others own small-scale businesses in the trading center. Many people live in semi-permanent houses, sparsely located, with few living in permanent houses and mostly from town. Few of the people live in semi-permanent houses or temporary slum houses.

Study Population
All pregnant mothers who came to seek maternal health care services at Kyabugimbi Health Centre IV and who consented to take part in the study were recruited to participate.

Sample Size Determination
The sample size was determined by Fischer's method [16].

Sample size = Z^2PQ/d^2

Where S = sample size

Z = standard deviation at the required degree of accuracy, which is 90%, which gives 1.96.

P = proportion of population with desired characteristics.

Q = 1-P

d = the degree of error you are able to accept, 0.5

$S = (1.96)^2X (0.08 \times 0.92)/(0.5^2)$

$S = 113$ pregnant mothers

Thus, 113 respondents were recruited during the study.

Sampling Procedure
A simple random sampling method was used, where pregnant mothers were selected randomly from those who came for maternal health care services at Kyabugimbi Health Centre IV.

Inclusion Criteria
Mothers who came to seek maternal health care services at Kyabugimbi HC IV
Mothers who consented to participate in the study.

Exclusion Criteria
Those mothers who came in need of emergency care were excluded from the study.

Data Collection Methods
Questionnaires were given to the pregnant mothers who consented to take part in the study, and they were analyzed for the final information. Checking all missing data in the questionnaires was done so that they were cross-checked before being put into data analysis. The questions in the tools were pre-coded to help the researcher get uniformly qualified data; coding frames were done and were facilitated by the codes given to the responses given in the tool (the questionnaire). This made the process of presentation and analysis easy. The research instruments were checked for errors and omissions in order to ensure consistency, completeness, and accuracy. This was done in the field before going to the next respondent. Questions that were not answered well were written in a note book in consideration of the information.

Data Analysis
The collected data was analyzed using SPSS statistical software for Windows version 20. Descriptive statistics, including frequencies and cross-tabulations, were used to generate output on all variables. Data was presented in frequency distribution tables, pie charts, and bar graphs, while other data was presented in statements.

Ethical consideration
A letter of approval was obtained from the KIU research and ethics committee, as well as an introduction letter to Kyabugimbi HC IV, where research was carried out. The purpose and objectives of the study were explained to the relevant authorities at the health facility and to the respondents. Protection of the pregnant mothers, as the research is meant to generate useful information for their good and not for harm. No names were used or displayed. Informed consent was obtained from the respondents before giving them questionnaires.

RESULTS
Maternal Health Services Utilization.
From Table one below, the study shows that 52(46.0%) had good Maternal Health Services, while 61(54.0%) have poor maternal Health Services

Table 1: Showing Maternal   Health Services Utilization

Maternal Health Service Utilization	Frequency	Percentage
Always seek MHS	52	46.0
Sometimes seek MHS	61	54.0
Never seek MHS	0	0.0

Social Demographic Factors and maternal Health Service Utilization
Table 2: Showing Association between Social Demographic Factors and Maternal Health Service Utilization

Demographic factors	Good MHS utilization(52)		Poor MHS utilization(61)		Odds Ratio	P- value
	Freq.	**Percent**	**Freq.**	**Percent**	**95%CI**	**<0.05sg**
Age						
18-30	30	57.7	24	39.3		
30-45	22	42.3	37	60.7	0.9(0.45-4.56)	0.028
Education						
Primary	24	46.2	46	75.4		
Post primary	28	53.8	15	24.6	0.3(0.15-7.49)	0.015
Occupation						
Peasant	43	82.7	58	95.1		
Formally employed	09	17.3	03	05.2	0.5(0.22-3.61)	0.175
Parity						
One child	22	42.3	12	19.7		
More than one child	30	57.7	49	80.3	0.4(0.20-5.76)	0.226

Sg; significance; 0.05, MHS; Maternal Health   Services

From table two above, participants were assessed for age in relation to maternal health utilization, and the majority of the pregnant mothers aged 18–30 had good maternal health service utilization services at 30 (57.7%), and at least 22 (42.3%) pregnant mothers aged 30-45 had good maternal health service utilization. Therefore, age was found to be significantly associated with maternal health service utilization at an odds ratio of 0.9 (0.45–4.56) and a p-value of 0.028. The participants were also assessed for education, in which the majority (53.8%) of participants with good health service utilization had a post-primary level of education, while 15 (24.6%) with poor maternal health service utilization had a primary level of education, at an odds ratio of 0.3 (0.15-7.49) and a p-value of 0.015. The study shows

that education was a significant factor in maternal health service utilization. The study also showed that the majority of participants (43, or 82.7%) with good maternal health service utilization and 58 (95.1%) with poor maternal health service utilization were peasants, with an odds ratio of 0.5 (0.22–3.61) and a p-value of 0.175. The study shows that occupation is not a significant factor in MHS utilization. The study also showed that the majority of the participants who had more than one child had both good and poor health service utilization (30 (57.7%) and 49 (80.33%), while participants who had only one child had poor maternal health service utilization (12 (19.77%), with an odds ratio of 0.4 (0.20-5.76) and a p-value of 0.226. This shows that parity was not significantly associated with maternal health service utilization.

Social Culture Factors and Maternal Health Service Utilization
Table 3: Showing association between social cultural and MHS Utilization

Social culture factor	Good MHS utilization		Poor MHS utilization		Odds Ratio	P-value
	Freq.(52)	Percent	Freq.(61)	Percent	95%CI	0.05sg*
Decision making						
Mother	47	90.4	54	88.5		
Another person	05	9.6	07	11.5	0.6(0.01-1.04)	0.578
Husband accompany mothers						
Yes	27	51.9	26	42.6		
No	25	48.1	35	57.4	0.8(0.05-7.01)	0.001
Seeking MHS						
Traditional herbalist	00	0.0	02	3.3		
Medical Health facility	52	100.0	59	96.7	0.3(0.25-467)	0.934
Sg* less than 0.05; MHS Maternal Health Service						

From table three above, participants were assessed for decision-making, in which 54 (90.4%) and 47 (88.5%) with good and poor maternal health service utilization, respectively, said they always make decisions themselves. At an odds ratio of 0.6 (0.01-0.04) and a p-value of 0.578, the study shows that the social culture decision of who makes a decision to seek MHS is not associated with its utilization. The study also showed that 27 (51.9%) mothers with good MHS utilization said they were always accompanied by their husbands when seeking MHS, and 25 (48.1%) mothers with poor MHS said they were not always

accompanied by their husbands when seeking MHS. With an odds ratio of 0.8 (0.05–7.01) and a p-value of 0.001, the study shows that a mother being accompanied by their husband when seeking MHS was a significant factor for its utilization. The study also shows that all the participants with good maternal service utilization said they would seek MHS from medical facilities; only 3.3% of mothers with poor MHS said they could seek services from traditional herbalists. The OR was 0.3 (0.25–4.67), and a p-value of 0.934 was not significantly associated with the study.

Health-Related Factors and MHS Utilization
Table 4: Showing Association between MHS Utilization

Health related factors	Good MHS Utilization (52)		Poor MHS Utilization (61)		Odds Ratio	P-value
	Freq.	Percent	Freq.	Percent	95%CI	<0.05sg
Distance from HF						
Less than 2km	29	55.8	27	44.3		
More 2 km	23	44.2	34	55.7	0.4(0.22-4.69)	0.003
Health service						
Costly	25	48.1	38	62.3		
Manageable	27	51.9	23	37.7	0.2(0.10-2.85)	0.012
Medical supplies						
Available	40	76.9	44	72.1		
Not available	12	23.1	17	27.9	1.2(0.48-6.17)	0.842
Medical staff						
Available	45	86.5	48	78.7		
Not available	07	13.5	13	21.3	0.8(0.51-8.75)	0.606

Sg; significance less than 0.05; Maternal Health Services   HF; Health Facility

The study showed that the majority of the mothers (55.8%) with MHS utilization said they came from a distance of less than 2km, with an odds ratio of 0.4 (0.22-4.69) and a p-value of 0.003. This shows that a distance of less than 2km from a health facility was significantly associated with good maternal health utilization practice. The study also shows that the majority of mothers with good MHS utilization, 27 (51.9%), said they could manage the cost of care, and at least 38 (62.3%) of the participants thought the cost of care was costly for them. At a p-value of 0.012, the study shows that the cost of health services was significantly associated with MHS utilization. The study showed that the majority of the participants, 40 (76.9%), had good MHS utilization, and 44 (72.1%) said there were always medical supplies in the hospital, such as drugs, although this was not significant in its utilization. The study also shows good maternal health service utilization. 45 (86.5%) said there are always medical health workers such as drug workers in the hospital, while at least 13 (21.3%) said there were no medical health workers in the hospital, with an odds ratio of 0.8 (0.51–87.75) and a p-value of 0.606. This was however not significantly associated with its utilization.

DISCUSSION

The study found that 52(46%) of pregnant women had good maternal health services utilization, while 61(54%) had poor utilization due to lack of information on available services Simkhada et al. [17]. However according to study results of Obeagu et al. [8], in developed countries, majority of the pregnant women make at least one antenatal visit and 99% of these pregnant women deliver with skilled birth attendants. Age was significantly associated with maternal health service utilization, with 30.7% of mothers aged 18-30 having good service utilization and 42.3% having good service utilization. Age was found to be significantly associated with maternal health service utilization at an odds ratio of 0.9(0.45-4.56) and p-value of 0.028, this could be because at this age, mothers are curious about their health and that of children while as mothers age, they tend to believe that they can treat minor illnesses from home. When compared with other studies, Magadi et al. [14] had indicated that, only 9% of pregnant mothers who were between 18 to 27 years did not seek maternal health services during pregnancy as compared to 31% of mothers between 28 to 37 years who didn't seek maternal health care. Another study by Ndyomugyenyi [10] showed that mothers who were 35 years and above were less likely utilizing ANC services due to stigma from health workers as compared to those below 25 years. Education was also a significant factor, as more mothers had access to MHS information. Education is a form of knowledge empowerment and it enhances the healthy lifestyle among women [18]. Occupation was not a significant factor to maternal health service utilization, as unemployment was a contributing hinderance. Unemployed mothers failed to raise baseline costs for transport to access health facilities for pregnancy-related healthcare services, making transportation the second most expensive item for mothers to attain early antenatal care services. Multigravida mothers were 2.5 times less likely to seek maternal health

services during pregnancy than prime gravid mothers, and 68% of multigravida mothers cited previous well deliveries as a reason for their reluctance to seek ANC services [19]. Decision-making was also assessed, with 90.4% of participants making decisions themselves, and 88.5% saying they always make decisions themselves. The social culture decision of who makes the decision to seek MHS was not associated with its utilization, as many families have mothers seeking permission from their husbands to seek health care. In some African societies, the mother-in-law dominates decisions on when to start attending ANC visits and other forms of care related to pregnancy, particularly in the early stages of marriage. The study found that 51.9% of mothers with good maternal health service utilization were accompanied by their husbands when seeking MHS, while 48.1% of mothers with poor MHS were not always accompanied. This is a significant factor for MHS utilization, as it gives confidence to the husband and helps him understand the rationale of MHS services. The majority of mothers with good MHS utilization sought services from medical facilities, while only 3.3% of mothers with poor MHS sought

services from traditional herbalists. Traditional medicine involves the use of herbs in the management of various diseases and maintenance of healthy living. It is an age-long practice especially by rural dwellers [20, 21]. A less than 2 km distance from health facilities was significantly associated with good MHS utilization, as it reduces costs and makes it easier for people to access services [22]. Good MHS utilization was also found to be influenced by the availability of medical health workers and supplies in hospitals. However, the presence of drugs in hospitals was not significantly associated with its utilization. The availability of resources necessary to carry out health care services also affects the quality of maternal care given to pregnant mothers [23]. Long distance to health centers, high cost of medications and shortage of health practitioners are some factors that make individuals resort to the use of traditional medicine [24, 25]. In Uganda, there is a shortage of essential drugs in most government health facilities by 32-50%, affecting the treatment of common diseases like malaria, pneumonia, diarrhea, HIV/AIDS, TB, diabetes, and preeclampsia [26].

CONCLUSION

The study concluded that there was poor maternal service utilization, in which only 52 (46.0%) of the mothers had good maternal service utilization. Secondly, the study showed that age between 18 and 30 (OR: 0.9 (0.45-0.56) and p-value 0.028) and post-primary education (OR: 0.3 (0.15-7.49) and p-value 0.015) were significant factors for good maternal health service utilization. The study also concludes that husbands accompanying their spouses were a significant social cultural factor towards good maternal health service utilization, with a p-value of 0.001 and an odds ratio of 0.08 (0.05–7.01). It was also concluded in the study that a distance of less than 2 km (OR: 0.4 (0.022–4.69) and p-value of 0.003) and the cost of services being manageable at odds ratio 0.2

(0.10-2.85) and p-value of 0.012 were significant factors for good maternal health service utilization.

Recommendation

At the end of the study, the following recommendations were made by the researcher:

i. Government should increase services related to MHS, such as equipping MCH clinics and employing more health workers.
ii. The mothers attending ANC should be health-educated on the importance of utilizing MHS so that they continuously utilize the services.
iii. Community outreaches should be conducted by health workers to increase awareness of the utilization of MHS among mothers.

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