Uptake of hospital-based delivery services and associated infection control in Bushenyi district, of Uganda

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Abstract

Background: Maternal mortality remains high in Sub-Saharan Africa despite the progress made in recent decades to improve maternal health outcomes.

Objectives: The purpose of this study is to investigate the social, economic, and demographic factors that affect women's use of maternal health care in Africa.

Material and Methods: The data used for the study was collected from a total of six health facilities comprising of three (3) health center III (Kyezoba, Kyamunga, and Kakanju) and three (3) health center IV (Bushenyi, Kyabugimbi and KIU teaching hospital) among reproductive women of 15 to 49 years of age. Cluster sampling method was used in this study to select two hundred and seventy-two participants (272), open and close-ended questionnaires were administered; four (4) sessions of focus-group discussions were conducted.

Results: The study reveals 75.7% of the respondents delivered at the health facility, 15.1% delivered at home, 5.6% delivered at the TBA while the remaining 3.3% delivered at the private home. Some of the reasons given for delivery outside the health facility with the traditional birth attendants (TBA) were; preference, ignorance, against belief, unavailability of the services, the time factor, poor service provision, and other reasons.

Conclusions: Socio-economic and religious factors impacted the underutilization of health services and increased prevalence of associated infections among the studied population.

Introduction

Maternal delivery services may be seen as the series of care rendered to pregnant women during labor and after delivery in the hospital. According to World Health Organization (1), maternal health is the health of women during pregnancy, childbirth, and the postpartum period. In developed nations, where women have access to basic health care, giving birth is a positive and pleasant experience. It is estimated worldwide that 580,000 women of reproductive age die each year from complications arising from pregnancy. A high proportion of these deaths occur in sub-Saharan Africa. According to the United Nations estimate, developing regions accounted for 99 percent (533,000) of maternal deaths, with sub-Saharan Africa and Southern Asia accounting for 86 (%) percent of them (2).

World Health Organization (WHO) estimated the maternal mortality rate at 536,000 per year (3), with developing regions accounting for 99 percent (533,000). The existing unfavorable socio-economic conditions, inadequate health facilities, risks of morbidity and mortality expose women to the risks of pregnancy and childbearing. It has therefore attracted the interest and attention of public health to embark on how to prevent deaths from avoidable and treatable diseases. United Nations data on maternal health care utilization in developing countries reveals a wide gap in the uptake of maternal delivery services by pregnant mothers (2). Improved utilization of maternal health care is one of the most important factors to reduce the incidence of these maternal mortality rates. In developing countries such as Sub-Saharan African, millions of women experience life-threatening and other serious health-related problems to pregnancy and childbirth. Complications of pregnancy and childbirth cause more deaths and disability than any other reproductive health problems (4)

Uganda Demographic and Health Survey (5) shows that in a population of 24.7 million, the Maternal Mortality Ratio (MMR) is estimated as 504 deaths per 100,000 live births. The situation is worse in developing countries like Uganda due to inadequate access to modern health services and poor utilization despite the government's serious commitment to deliver health facilities to the doorsteps of common people. A study revealed that in developing countries, many women are still assisted in delivery either by traditional birth attendants, relatives or they deliver by themselves as shown by a report of UNFPA (6).

Underutilization of maternal delivery services is one of the public health challenges in developing countries especially in Sub-Saharan Africa such as Uganda, particularly Bushenyi district with a fertility rate of 6.5 and an associated maternal mortality rate of 435 out of 100,000 live births (7). According to updated UNICEF, Uganda health statistics 2010, revealed that 94% of pregnant women attended Antenatal Clinic (ANC), only once, 47% attended ANC at best four times, and only 42% delivered in the hospital with skilled health provider's attendance (8-9).

Despite the efforts put in place by the government of Uganda such as free treatment to make maternal delivery services affordable to all Ugandans, these services are still grossly underutilized. The Millennium Summit in 2000 calls for a 75 percent reduction by 2015 in the maternal mortality ratio from 1990 levels (2) and the present set Millennium Development Goals (MDG) 4 and 5 is far from being achieved (10). It is therefore important to note that this study may be profoundly imperative because knowing the factors causing underutilization of delivery services will help the health planners in the district to develop interventions programs that will attract the mothers to attend antenatal care clinics to have their deliveries under skilled midwives and obstetricians (11). The utilization status of antenatal maternity services is an important maternal health indicator. Underutilization of maternal health care service by pregnant women in the Bushenyi district put the women at the greatest risk. The utilization requires voluntary participation by pregnant women at ANC to utilize the health services throughout the pregnancy and post-natal period. The research findings may help generate information for further study which will be used in improving the delivery

of maternity services. It is therefore imperative to assess utilization of the services to answer the questions of whether the Bushenyi district is exceptional in this National decline trend in Uganda.

It is for the above reasons that this study was designed to analyze factors associated with the utilization of health care services, which influence the use of maternal healthcare services among pregnant women in Bushenyi District.

Objective

This study hopes to: examine the effect of social, economic, and demographic factors on the utilization of antenatal care and delivery services, analyze the dominant factors that influence the utilization of maternal health facilities, and discuss the implications of the findings towards the formulation of appropriate policy and program implementation in the future.

Materials and Methods

Study area, design, population, and size

The study was carried out in Bushenyi district-Western Uganda. Bushenyi has a population of 858,600, female 124,500, expected pregnancies at 12,075 according to the national census bureau after the 2010 configuration, women of childbearing age estimated at 55,545 with a population growth rate estimated at 3.0%.

This is a population-based descriptive cross-sectional two-dimensional study (12) that was done using both quantitative and qualitative methods. Structured close and open-ended questionnaires were administered to the participants at the selected health facilities. Two research assistants were trained to assist in the data collection. The questionnaires were written in English but the translation was done in the local language of Ruyankole for the participants who did not understand English. Computation of data was done after checking for correctness and completeness of data. The study was focused on three (3) Health Centres III (Kyezoba, Kyamunga,

and Kakanju) and three (3) Health Centre IV (Bushenyi, Kyabugimbi, and Kampala International University Teaching Hospital) in Bushenyi district. Health Centres II were not visited since they report to health center III and HC IV in the Bushenyi District.

Data were collected from pregnant women, women of childbearing age (15-49 years) who delivered in the last twelve (12) months, and spouses of these reproductive-age women from the target population for the study. This age group forms an appropriate population of people from whom valid and reliable information about delivery at a health facility will be obtained. Those recruited for this study included women of childbearing age (15-49years), living within Bushenyi District and women who attended the clinic in the district but excluded women of reproductive age who decline to participate in the study, and women who believe and thinks hospital delivery is unsafe for them.

The 259 samples used in this study was determined based on the expense of data collection, and the need to have sufficient statistical power and by using the following relation: $n=N/1+Ne^2$ (13) where N= target population = 55,545, n= required sample size, e= margin of error =5%. The cluster sampling method was used in this study to select two hundred and fifty-nine (259) respondents and an additional thirteen (13) to account for possible loss to contacts to make a total sample size of two hundred and seventy-two (272) participants from the selected health facilities.

Selection of communities and hospitals

The communities were grouped into two sub-counties (Igara North and South). Three communities from each sub-county were randomly selected by balloting. Forty (40), pregnant women, women who delivered or their spouses from the six selected communities were purposively selected by the research assistants to constitute the study participants of 240. Six hospitals were used as study sites constituting three health center III and three health center IV. Systematic sampling was used to select the number

of participants from each of the six selected communities to constitute the projected sample size of **272.** Each discussion lasted for an average of twenty-thirty minutes (20-30minutes). Informed consent was sought with either a voluntary signature or thumbprint from the participant after which the questionnaires were administered. The questions were on where the mothers go for antenatal care and delivery. The reasons why they chose those places were also explored. Questions asked included the place of last delivery, intended place of delivery and who took the decision on which place to go for antenatal and delivery.

Data collection tools

Individual interviews were conducted to understand and establish the factors leading to the under-utilization of maternal delivery services. A structured questionnaire was designed to guide data collections for the individual health participants. The questionnaires will be closed and open-ended questions in the English language; which an interpreter will be used to translate in Runyankole to the respondents who do not understand the English language.

Focus Group Discussions (FGDs)

A Focus Group Guide was developed to guide the researchers to collect the data. The focus group discussion was conducted with the six selected communities sampled. This is in anticipation that these communities are served by the health facilities nearby. An interview guide was designed and pre-tested before use. Each group consisted of ten people. Using, as a moderator, a diploma in midwifery and a guide captured the required information. An assistant who had been trained for the purpose noted non-verbal communication and was in charge of the tape recorder. Each discussion lasted for an average of one hour and thirty minutes. The questions were on where the mothers go for antenatal care and delivery. The reasons why they chose places were also explored. Questions were asked on who decided on which

place to go for antenatal and delivery. Responses were recorded on the questions and analysed using a spreadsheet for the quantitative component.

Quality control measures

To collect quality data, a team of Research Assistants went through a 2-day training to ensure a good understanding of the concept of underutilization, study methodology, and the data collection process. The tools were pre-tested to further refine and standardize them. Data collection covered eight (8) weeks for the interview and focus group discussions. During data collection, the research supervisor ensured that the right tools and sampling techniques were used to get the interviewees and to review the completed questionnaires after the interviews to ensure they are complete and accurate. Data generated from each Health Unit was entered in a database separately to ensure the data generated from the sample size is adequate for the investigation. The technique assists to improve the reliability and reduce on the replication of the observations and interpretations. The data collected was adequate for all questions to be answered. After the data collection, there were further clearance and handing over to the statistician for entry and cleaning after which a clean data set was produced ready for analysis and report writing. Data were analyzed using descriptive and inferential statistics, statistical package for social scientists (SPSS), and Microsoft Excel, and the findings will be presented in graphs, tables, and charts.

Ethical consideration

This study was approved by the research and ethics committee of Kampala International University and permission was granted for the research team to enter the community for data collection. A written application was written to Bushenyi's Chief Administrative Officer (CAO) with permission granted for data collection. Informed consent was obtained from participants. Participants were informed of their safety from

any hazard from the study financial, emotional, or physical. There was neither the use of name nor any form of identification to ensure confidentiality. The participants were asked to either sign or thumbprint willingly after their understanding of the information given by the researcher. The participants were given enough information about the study upon which to base their decision such as what their participation entails the importance of the study, the advantages, and the risks involved. Participants were assured of the confidentiality of any information given by them will be strictly for the use of the study only. No motivation to the participants either in form of cash or kind.

Limitation of the study

A major limitation of the data is that it does not cover some important possible predictors about the utilization of maternal health services, for example, quality of health care delivery services and respondent's belief concerning health practices. Data accuracy may be a limitation due to a lack of adequate record-keeping, especially outside health facilities.

RESULTS AND ANALYSIS

This chapter discusses the results of bivariate analysis statistics on maternal health care utilization. The bivariate analysis was used to observe a significant association between dependent variables and the independent variables. The descriptive statistics of all variables were also described to get a clear picture of the characteristics of each variable. It is important to carry out a statistical analysis that would incorporate more than one independent variable at a time. The most suitable analytical technique is a multivariate analysis which allows the exploration of the effect of different independent variables on a dependent variable corrected for other independent variables (Tabachnick & Fidell 2007). The multiple regression analysis methods adopted in the present study is multiple logistic regression, which would allow the identification of the effect of each of the selected independent variables on maternal health care utilization controlling for the effects of other independent variables.

Table 1 & 2: Demographic data of the respondents and associated statistical assessment

Variables	No.(%)	P=value
Age		
15-25	136 (50.0)	0.52
26-35	110 (40.4)	(<0.01)
>36	26 (9.6)	0.08
Sex		
Male	33 (87.9)	<0.09
Female	239 (12.1)	3.1
Marital Status		
Single	39 (14.3)	
Married	203 (74.6)	<0.01
Divorced/Separated	12 (4.4)	
Widow	18 (6.6)	0.66
Education level		
None	30 (11.0)	<0.01
Primary	137 (50.4)	0.06
Secondary	66 (24.3)	<0.01
Tertiary	39 (14.3)	1.3
Occupation		
Peasant	161 (59.2)	0.02
Salary/wage earners	34 (12.5)	<0.01
Business person	56 (20.6)	0.02
Student	21 (7.7)	
Religion		
Catholic	111 (40.8)	1.0
Protestants	118 (43.4)	<0.01
Moslem	32 (11.8)	
Others	11 (4.0)	0.58
Tribe		
Muyankole	212 (77.9)	0.3
Mukiga	34 (12.5)	<0.01
Muganda	13 (4.8)	
Others	13 (4.8)	0.09

One hundred and thirty six (136) of the respondents (50.0%) (P-value =0.24) are within 15-25years of age, one hundred and ten (110) of the respondents (40.4%) (P-value = <0.01) are within 26-35years of age while the remaining twenty six (26) (9.6%) (P-value = 0.52) were within the age of 36years and above. However, age group 26-35 (p-value <0.01) is statistically significant about hospital delivery services utilization.
Above table show thirty (30) of the respondents (11.0%) (P-value<0.01) had no formal, one hundred and thirty seven (137) of the respondents (24.3%) (P-value = 0.06) had primary education, sixty six (66) of the respondents (24.3%)

(P-value<0.01) had secondary education while thirty-nine (39) of the respondents (14.3%) (P-value = 1.34) had tertiary education. None formal education and secondary level of education (p-value<0.01) are statistically relevant in the utilization of hospital delivery services. The above table shows thirty nine (39) of the respondents (14.4%) (P-value<0.0.1) were single, two hundred and three (203) of the respondents (74.6) (P-value<0.01) were married, twelve (12) of the respondents (4.4%) (P-value=<0.01) were either divorced or separated, eighteen (18) of the respondents (6.6%) (P-value = 0.66) were widows. All the other categories in marital status are statistically significant (p-value<0.01) except the divorced or separated (p-value=0.66) as related to hospital delivery services utilization.
Thirty-three (33) of the respondents (12.1%) (P-value<0.01) were male while two hundred and thirty-nine
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(239) respondents (87.9%) (P-value=3.9) were female by sex distribution to hospital delivery services utilization. However, male respondents (p-value<0.01) are statistically significant in the utilization of hospital delivery services whereas female respondents (3.9) are not statistically significant. Respondents to hospital delivery services utilization by occupation shows peasants/farmers 161 respondents (59.2%), (p-value=1.18) thirty four respondents (34) salary/wage earners (12.5%), fifty six (56) (P-value=0.02) respondents business persons (20.6%) (P-value=0.01) while twenty one (21) of the respondents were students (7.7%) (P-value = <0.01). Occupation in the business group is statistically significant about hospital delivery services utilization. The above table shows one hundred and eighteen (111) of the respondents (40.18%) (P-value=1.01) were Catholics, one hundred and eighteen (118) of the respondent (43.4%) (P-value<0.01) were Protestants, thirty two (32) respondents (11.8%) (P-value=<0.01) were Muslims while the remaining eleven (11) respondents (4.0%) (P-value=0.58) are other religious groups. Religion in the protestants and Muslim groups (p-value<0.01) is statistically significant in this study related to hospital delivery services utilization. Above table shows two hundred and twelve (212) respondents (77.9%) (P-value=0.30), thirty four (34) respondents (12.5%) (P-value=<0.01), and thirteen (13) respondents (4.8%) (P-value=<0.01) while thirteen (13) respondents (4.8%) (P-value=0.66) were other tribes. There is statistical significance in both Mukiga and Muganda tribes in this study relating to maternal delivery services utilization

Table 3&4: Socio-economic factors affecting

Utilization of health facility by respondents

Variables	No (%)	p-value
Distance		
<1km	62 (25.9)	0.01
2-3kms	98 (41.0)	0.06
4-5kms	79 (33.1)	0.86
Transport		
Foot	128 (53.6)	0.13
Bicycle	32 (13.4)	0.91
Motorcycle	64 (26.8)	<0.01
Vehicle	15 (6.3)	0.54
Cost of transport		
<500ugs	123 (51.5)	0,77
600-1000ugs	52 (21.8)	0.22
1100-1500ugs	20 (8.4)	0.04
1600-2000ugs	35 (14.6)	0.01
>2000ugs	9 (3.8)	0.79
Time spent at a visit to health facility		
<30minutes	56 (23.4)	0.01
1-2hours	131 (54.8)	0.74
3-4hours	45 (18.8)	0.01
5-6hours	7 (2.9)	0.01
Do you use health facility?		
Yes	239 (87.9)	0.23
No	33 (12.1)	0.14
If yes how often?		
Sometimes	126 (52.7)	0.01
Most times	56 (23.4)	0.19
All times	47 (19.7)	0.21
Seldom	6 (2.5)	0.01
Indifferent	- -	0.01
I don't know	4 (1.7)	
Place of last delivery		
Hospital	181 (75.7)	
Home	36 (15.1)	0.01
TBAs	14 (5.9)	
Private Home	8 (3.3)	0.13
Intended place of delivery		
Hospital	221 (95.5)	
Home	12 (5.0)	
TBAs	4 (1.7)	
Private Home	2 (0.8)	
Who decides place of delivery?		
Self	159 (66.5)	
Husband	62 (25.9)	
In-laws	14 (5.9)	
Friends	4 (1.7)	

Above table shows over thirty percent (34.9%) (0.01) of the respondent lives within less than 1kilometre to the nearest health facility, over forty percent (41.0%) (0.06) lives within two to three (2-3kms) kilometers to the nearest health facility while over eighteen percent (18.8%) (0.86) lives within four to five kilometers to the health facility. Over fifty percent (52.2%) (0.01) of respondents walk to the nearest health facility; over twelve percent (12.9%) (0.91) get to the health facility by bicycle, over twenty percent (27.2%) (<0.01) while over seven percent (7.7%) (0.54) reaches the health facility by use of vehicles.

The above table shows one hundred and thirty-four (123) (0.77) of the respondents (51.5%) spend five hundred shillings (500ugs) or less on transport to the nearest health facility, fifty-two (52) respondents (21.8%) spend between six hundred and one thousand shillings (600-1000ugs),

twenty (20) respondents (8.4%) spend between one thousand ix hundred and two thousand (1600-2000ugs) while thirty-five (35) respondents (14.6%) (<0.01) respondents spend above two thousand (2000ugs) shillings and others spend above two thousand shillings (>2000ugs) (0.69) on transport to the nearest health facility per visit.

Over twenty percent (23.4%) (<0.01) of the respondents spend less than 30minutes at the health facility during a visit, over fifty percent (54.8%) (0.74) spent between one and two hours (1-2hours), over twenty percent (18.8%) (<0.1) spend three to four hours (3-4hours) while over four percent (4.4%) (0.01) spend between five and six hours (5-6hours) during one single visit to the health facility. The perception variable shows the respondents about service delivery at the health facility. Two hundred and sixty-three (236) of the respondents (84.4%) (<0.01) are aware that the health workers are available at the health facility while only nine (3) of them (1.3%)

(<0.01) were not aware of the health workers availability at the health facility.

Two hundred and forty-nine (226) of the respondents (94.6%) (0.12) said the health

delivery variable shows two hundred and two (181) of the respondents (75.7%) (1.14) had their last baby delivered at a health facility, thirty-six (36) of the respondents (15.1%) (<0.01) said their last baby was delivered at home, fourteen (14) of the respondents (5.9%) (<0.01) delivered at the TBAs while eight (8) of the respondents (3.3%) (1.30) delivered at a private home.
Intended place of delivery: Two hundred and forty-eight (221) of the respondents (95.5%) (<0.01) intended to deliver their next baby at the health facility, twelve (12) of the respondents

Distance to a health facility within less than 1kilometre (25.9%) (P-value<0.01) and the cost of transport within the motorcycle group (26.8%) (P-value<0.01) respectively are statistically significant in the utilization of health services while others in the same group are not statistically significant. However in the group with transport cost between 1600ugs-2000ugs (14.6%) (P-value,0.01) and those who spend less than thirty minutes (30mins) and those who spend three to four hours (3-4hours) at the health facility in a visit (P-value<0.01) are statistically significant to the utilization of the health services. The frequency of health facility utilization is statistically significant (<0.01) among the sometimes, seldom and I don't know groups respectively while others most times (0.19) and all times (0.21) groups are not statistically significant in the study.
However, the decision of place of delivery is statistically significant (<0.01) among the husband and in-laws groups while the others in the group are not significant statistically to this study. The place of last delivery is also significant statistically (<0.01) in the Home and TBA groups while private home (0.13) and hospital (1.14) are not statistically significant to the study. Also intended

workers are friendly to them at the health facility while twenty-three (13) of them (5.4%) (<0.01) said the health workers at the health facility were not friendly. Place of last

(5.0%) (<0.01) intended to deliver at their homes, four (4) of them (1.7%) (<0.01) intended to deliver at TBAs while two (2) of the respondents (0.8%) (0.13) intended to deliver at the private home. Intention to deliver at the house, home and TBAs are statistically significant in the utility of delivery services by pregnant women.
Decision making on the place of delivery shows one hundred and fifty-nine (159) respondents (66.5%) (0.50) decides the place of delivery by themselves, sixty-two (62) of the respondent's (25.9%) (<0.01) husbands decide the place of delivery, fourteen (14) of the respondent's in-laws (5.9%) (<0.01) decides the place of delivery while friends decide the place of delivery for four (4) of the respondents (1.7%) (0.20). Decision-making of the place of delivery by the husband and in-laws are statistically significant.

place of delivery is statistically significant (<0.01) among Hospital, Home, and TBA groups whereas Private home (0.13) is not statistically significant to the study.

Over ninety percent (94.6%) (<0.01) of the respondent affirmed their perception that the health workers are friendly to them, over eighty percent (84.8%) (<0.01) affirmed the health workers are available at the health facility, over ninety percent (95.0%) (0.02) perceived there is the availability of drugs at the health facility, over ninety percent (92.5%) (0.05) affirmed that the desired services are available at the health facility and over seventy percent (79.1%) (0.23) perceived there are outreach services at the health facility. It was also evident that 1.3%, 5.4%, 5.0%,7.5%, and 20.9% of the respondents perceived the health workers are not available, not friendly, no drugs in the health facility, desired services are not available and no outreach services respectively.

The perception that the health workers are available or not has a significant (<0.01) influence on the decision to utilize delivery services at the

health facility. The perceived attitude of the health workers to be unfriendly is also significant (<0.01) in the utilization of delivery services at the health facility. The assessment on availability of drugs at the facility, availability of desired services, and outreach services about the utilization of delivery services at the health facility did not show any statistical significance (0.02), (0.05), and (0.23) respectively. Counseling and health education (<0.01) are statistically significant to the study while immunization (0.19), family planning (0.02), and antenatal care (0.53) are not statistically significant. Time factor and poor service provision (<0.01) are statistically significant to this study while reasons such as preference (0.06), ignorance (0.10), against belief (0.57), service not available (0.23), and other reasons (0.81) are not statistically significant in the study.

Analysis of appraisal of factors affecting utilization of delivery services in hospitals by pregnant women aged 15-49 years in this study was done by employing linear regression analysis after the variables were compared using cross-tabulation. The data were analyzed using SPSS 16.0 version window System. Frequency distributions were used for the demographic characteristics of the respondents. Regression and Pearson Correlation analysis were used to determine if significant correlations existed between alcohol intake and selected health parameters.

Linear regression analysis (P. 0.05) was used to find the relationship between some variables and utilization of delivery services at the health facility. All variables related to the utilization of delivery services utilization at the nearest health facility were listed (such as age, sex, tribe, marital status, education level, occupation, religion, distance, means of transport, cost on transport, time spent, availability of health workers, the attitude of health workers, reasons for outside delivery, frequency of visit to the health facility, place of last delivery, intended place of delivery and who decides on the place of delivery) and analyzed, but there was statistical significance in these variables to the study which means there is the relationship between all these variables and utilization of delivery services except (availability of desired services, availability of drugs and outreach services) among these group being studied.

The P-value from the same linear regression analysis shows that people within twenty-six − thirty (26-30) years have a 0.324 likelihood to utilize delivery services than the other age groups. Men have a 0.603 likelihood of making the choice of hospital delivery services utilization than women, Mukiga tribe is statistically significant while Bayankoles has 0.603 likelihood of utilization of delivery services over the other tribes in the study. The marital status variable shows that single, married, and divorced have a 0.888 likelihood of utilizing hospital delivery services of the widow. Those with tertiary level of education have 0.316 likelihood of utilizing hospital delivery services while the salaried employers have 0.018 over the others in the group, the Protestants and Muslims in the religious group have the likelihood of 0.881 to utilize hospital delivery services over the other religious groups. However, those living within less than one kilometers (<1km) from the health facility has 0.331 likelihood of utilization, those with one thousand six hundred −two thousand shillings (1600-2000ugs) cost on transportation has a likelihood of 0.233 utilization over the others in the group, while those that spend less than thirty minutes (<30minutes) and those with three-four (3-4hours) has the likelihood of 0.142 of delivery services utilization.

Other factors such as availability of health workers at the facility with a likelihood of 0.011 of affecting utilization of delivery services, the attitude of the health workers with 0.007 likelihood of affecting utilization of delivery services, place of last delivery have 0.062 likelihood of delivery services utilization while who decide on the place of delivery has 0.450 likelihood of effect on delivery services utilization by the pregnant women. When the various variables were tested for significance using chi-square those indicated in Tables 2, 4, and 6 were found to be significant.

The findings in this study that 25.9% and 53.6% of mothers interviewed lived within a walk-able (the major means of transport being by foot) distance to the nearest health facility providing delivery services was fair to the national average

for Uganda at 45%. Despite these attributes, 75.7% (1.14) of mothers interviewed, delivered in a health facility, over fifteen (15.1%) (<0.01) delivered at home, over three percent (3.3%) (1.30) delivered from private homes while over five percent (5.9%) (<0.01) were assisted by TBAs.

DISCUSSIONS, RECOMMENDATION, AND CONCLUSION

This study revealed that fifty-eight (58%) (<0.01) percent were married to peasants/cultivators while 27.3% were married to petty traders, 14% salaried employment, and other employments accounted for 6.1%. Seventy-eight of the respondents had attended school with education level between primary and secondary, twelve percent (12.1%) (<0.01) had no formal education while only fifteen percent (15.1%). Education and occupation were found to be statistically significant as factors contributing to the underutilization of delivery services by pregnant women.

This supports the assertion of another study, by the same author, of the empirical effects of schooling on health found it to be the most important correlate of good health (14). This is also in line with another study on the impact of income on health which reveals that low- and middle-income countries are considered to have achieved above-average social development relative to income emphasized on the need for a high education base as a prerequisite for high returns from health sector investment (15).

Education level (<0.01) and occupation (>0.01) were discovered in the study to have a statistical significance on maternal delivery services utilization by pregnant women. This supports the assertion that education is a long-established determinant of the demand for health and health care. It was incorporated as a determinant of the production function of health in the early Grossman human capital model of health (16-20). The study revealed that over sixty-six percent (66.9%) of the women lived within two-three (2-3) kilometers while the remaining thirty percent (30.1%) of a health facility offering delivery

services. This means that health facilities in the district are cited in the places closer to the residents which makes access to these health facilities easier for delivery services to pregnant women. This is in line with the assertion of Bergstrom et al (21) that one in three women in most rural areas in Africa lives more than five (5) kilometers from the nearest health facility. Therefore distance (p-value 0.86) has no statistical significance on the utilization of delivery services by pregnant women. The distances to the nearest health facility and means of transport to the nearest health facility offering delivery services are given in Table 3.

The study also showed that the major means of transport to the health facility was by walking, above forty-six percent (46.4%) took transport to the nearest health facility and it takes only over twenty percent (23.4%) less than thirty minutes (30min), forty-eight percent (76.6%) of one hour or more to get to the nearest health facility. This implies that majority of the pregnant women need means of transport and sometimes to access health delivery services at the nearest health facility. Transport (<0.01) and time spent at the health facility (<0.01) were statistically significant in the utilization of delivery services by pregnant women. This finding shows that a pregnant woman could be delayed by transport and time at the health facility thereby contributing to factors influencing the underutilization of delivery services by the pregnant women. This finding supports the study in that income also has a positive impact on attendance at immunization clinics in Ghana (22-23).

The study also reveals that the cost of transport was less than five hundred shillings (<500ugs) in 51.5% of the respondents (p-value= 0.77) has no statistical significant influence on the use of health facility in the other groups except those that spend between one thousand six hundred thousand to two thousand shillings (11600-2000ugs) (<0.01) which is statistically significant in this study, this is in line with the findings of a previous study on maternal delivery services underutilization which states that high cost of transport delay pregnant women in reaching the nearest health facility to

access the nearest health facility for delivery services (24). In the district, it means the cost of transportation by some pregnant women to the health facility may deter access to hospital delivery services.

The perception of the health facility such as the attitude of the health workers (whether friendly or not) (<0.01), whether the health workers are available at the health facility (<0.01) also had statistical significance on the utilization of delivery services by the pregnant women. This is in line with the study of Cham et al (25) who said lack of sympathy, lack of understanding, and failure to see the need to care on the part of health providers are contributing factors to the nonutilization of delivery services during labor and childbirth.

A total of three (3) FGDs were held during the study, in two of the FGDs, it was revealed that most of the pregnant women go for delivery services in health facilities. The other places for these services mentioned were homes, TBAs, private clinics, and outreaches. The reasons why they go there were the following: preference, ignorance, time factor, against belief, unavailability of the services, poor service provision, and others. All the 3 groups mentioned the availability of TBAs who were particularly involved in the provision of herbs before, during, and after delivery in their previous deliveries.

One of the reasons given in the interviews and FGD was a financial difficulty. Income of the spouse (p=0.02) and of the mother herself (p = <0.01) are very significant contributions to delay and even barriers to health unit delivery. Long-distance to the health facility although mentioned in FGD as a factor to underutilization of health facility delivery is disqualified by the fact that 66.9% of the women interviewed lived near a health facility with delivery services. Preference for place of delivery was the major significant reason for delivery outside the health facility. There are other reasons although not captured in this study but have been identified elsewhere in Uganda. This is in support of a study by Kyomuhendo Bantebya in Hoima District located in western Uganda which found out that there were barriers between the rural mothers and the health care system. Some of these barriers include lack of skilled staff, abuse and neglect in health units, and poorly understood procedures in health units.

Complications/health risks associated with home birthing

Despite the awareness of the respondents and their knowledge about the availability of maternal delivery services, 60(25.6%) of the respondents still believes pregnancy is a normal phenomenon with no risk involved and they can deliver anywhere they choose outside the health facility as they believe nothing will happen. This is in line with the study carried out by Amooti (26), in Rakai District, 61.8% delivered at home, Otim-Odoi (27), in Lira District found that 68% delivered at home, Hitimana- Lukanika in Kabale District 60% delivered at home, and Charlotte Jackson who found out that 85% of women in Pallisa and 77% in Kapchorwa delivered at home despite their awareness of maternal delivery services (28).

Conclusion

Based on the demographic information and study objectives and discussions the following conclusions were made. The greatest percentage of the respondents were Christians with few belonging to the other religions which show there is no influence on the beliefs and practices on underutilization of maternal services among the women of childbearing. The majority of the respondents were peasants, farmers and the rest were businesswomen or employees; this shows low financial status which may make TBAs or homes a better alternative due to their low charges, and this is found to be a contributing factor to the underutilization of maternal delivery services. More than half of the respondents had attained primary education, which gives the impression of a low literacy level. This could be one of the factors responsible for the underutilization of maternal delivery services. Underutilization of maternal delivery services is a health problem that should be addressed to prevent both maternal and child morbidity and mortality rates.

Recommendation

To change the habit of home delivery, requires sustained messages to our community. Therefore, information, education, and communication culturally acceptable strategies should be designed to target couples using the most cost-effective local channels. This could be local radio stations, print, local drama, and songs. In-service training should be organized on regular basis for the health workers on professional ethics to improve their attitude to pregnant mothers especially the midwives. Health workers should be encouraged to take the opportunity of the large numbers of mothers that attend antenatal and health- educates them on the unpredictability of complications of pregnancy and delivery. This opportunity should also be used to impress upon the mothers, their spouses, and community the importance of a planned birth. Although poverty is a reality among our populations, planning for delivery of a pregnancy whose length is usually several months away is very feasible. Health workers should emphasize the dangers of HIV/AIDS mother-to-child transmission should be given priority during health talk during antenatal visits and to encourage the mothers in the study area to come for delivery at the institution during labor. A further study on the factors influencing underutilization of maternal services in other districts in the country to identify other factors and a possible approach to the identified factors.

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