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Nursing & Healthcare International Journal
ISSN: 2575-9981

Utilization of Maternal Health Services: A Case Study of South Sudan Juba Teaching Hospital

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Research Article
Volume 6 Issue 4
Received Date: June 13, 2022
Published Date: July 08, 2022
DOI: 10.23880/nhij-16000265

Abstract

Introduction: Maternal health service (MHS) is a set of services related to maternity health care. These health services cause a serious concern worldwide. Furthermore, MHS incorporates antenatal care, delivery care and postnatal health service. The aim of this study was to assess Mother-to-Child utilization for MHS at Juba Teaching Hospital (JTH) South Sudan.

Methods: A cross-sectional research study was done among 207 women of reproductive age at the time of visits to routine immunization services for receiving free under-five immunization. The interviewers gathered data using the structured questionnaire. The data were analyzed using SPSS Statistics v20. The frequency tables were for describing data and chi-square test and logistic regression were used to determine whether there was statistical association of sociodemographic factors with MHS.

Results: Of 207 mothers, 188 (91%) utilized the maternal health. Nearly 20% did not give birth at health facility. Furthermore, there was a significant association of education attainment with place of delivery [OR at 95%CI = 3.06 (1.40 – 6.71), p-value = 0.005]

Conclusion: Maternal healthcare services were highly utilized as compared to others in the regions. Moreover, the Level of formal education found to be associated with effective maternity care. An estimated of 20% from women reported delivered at non-health facilities. Therefore, the study recommended specific attention to non-compliance mothers through reinforcement of active health education on safe reproductive and maternal childcare.

Introduction

Maternal health service (MHS) is a set of services related to maternity health care. These health services cause a serious concern worldwide. Among others, MHS incorporates antenatal care, delivery care and postnatal health service.

Global Statistics stood at 289,000 maternal deaths in 2013. The developing nations accounted for 99% (289,000) with the region of sub-Saharan Africa alone accounted for 62% (179,000) of global deaths followed by Southern Asia at 24% (69,000). For South Sudan, there was a substantial estimation of 3,000 maternal deaths as of the year 2013 [1].

While the proportion of pregnant women in developing countries attending at least four ANC visits is estimated at about 52%, the low-income countries also stood at around 38% of pregnant women who attended four times or more ANC visits [2]. For South Sudan around 46.7% of pregnant women attended at least one ANC visit [3] whereas most developing countries exceeded half of ANC visits, South Sudan was still below the half.

Furthermore, while those countries have attained at least more than four ANC visits, South Sudan has remained in use at least one ANC visit. In terms of delivery of care, it has been globally reported that there was an estimation of 66.0% of mothers who have attended the delivery care at health facilities [4].

While in developing countries, there were around 53.0% of pregnant mothers who gave birth to the newborn at health facilities [5]. This percentage for sub-Saharan Africa [6] and South Sudan was estimated at 40.0% and 14.0% of mothers who gave birth at delivery care health facilities for newborn respectively. This study looks to identify gaps and risk factors association with utilization and consumption of free maternal and childcare services in Juba Teaching hospital.

Importantly, labor, birth and the immediate span are the most critical for maternal survival. It has been shown that there has been no or little literature on the proportion of postnatal care in all levels, that is to say, at global, regional, and national levels. Nevertheless, [5] stated that it was about 30.3% for developing countries.

Materials and Methods

Study Site

This study was carried out in JTH in 2015. Moreover, the hospital is a government health facility located in Juba city of Central Equatoria State. Juba city also serves as the national capital city of South Sudan. This teaching hospital was established in 1975 by the Sudan Government to serve as a teaching hospital for medical students at University of Juba. South Sudan has upgraded the hospital to a national referral facility after its secession from Sudan in a referendum that resulted in its declaration of independence as of July 2011. JTH does now serve not only as a medical school hospital, but also as a highest referral hospital for the entire country of South Sudan [7-9].

The hospital offers health services that range from primary to tertiary health care. These services include, but not limited to antenatal care, delivery care, postnatal services. Furthermore, it provides an expanded program for immunization, pharmaceutical services, health promotion and as well as intensive care, accident and emergency, voluntary counseling and testing of HIV/AIDs, cesarean section services and among others [10,11].

Study Population

The study population consisted of women of reproductive age between 15 and 49 years of age while receiving child health care services and routine immunization at JTH at the time of collecting data in 2015.

Eligibility Criteria

Inclusion Criteria: Women aged 18_49 years of age with infants and agreed to participate by signing consent form were enrolled in the study voluntarily.

Exclusion Criteria: Women whose children developed severe medical condition at the time of the visit to MHS and women refused to sign consent form.

Sampling Techniques

Random sampling:

By counting each number 5 from the list of participants and select it; if she refuses the research assistant will select number 6 if she refuses to participant will select number 4. This study procedure has chosen to voluntarily situatable to all participants who accepted to enroll.

Study Unit

The Study unit was an individual woman of reproductive age that had accessed the child healthcare services, the routine immunization at JTH in South Sudan.

Study Variables

Independent variables were age: 15 – 49 years of age, religion, education level, occupation, employment status, family income per month in SSP: South Sudanese pound, marital status, type of marriage, parity. Dependent variable was level of mothers' MHS utilization.

Data Source

The source of data was primary data which was collected by interviewing women of reproductive age at the time when they were bringing their children for child healthcare services, the routine immunization at JTH.

Data Collection Techniques and Instrument

The face-to-face interview was conducted in collection of quantitative data by research assistants that were recruited in accordance to their competency in terms of administering questionnaires and skills in conducting interviews as well as previous experience in this context. At routine immunization service delivery point of JTH, eligible women of childbearing age attending the service were interviewed. The purpose, objectives and method of the study were explained to each woman. They were assured that the research did not

carry any physical harm. Furthermore, the high degree of confidentiality and privacy were also guaranteed and particularly anonymity of their responses in the entire research process. Afterwards, the consent was received by signing on the consent form that followed by the interview in the closed curtain. This procedure was conducted repeatedly till the process of data collection was attained.

The tool that was used in collecting data was a structured questionnaire. This questionnaire was drawn from three previously used questionnaires. These were adapted to this research study. Some questions were derived from previous studies about utilization of MHS in health facilities [11].

The data collection tool was organized into two sections: Section I: Demographic factors. Section II: MHS utilization (antenatal care, delivery care and postnatal service).

Data Management and Analysis Techniques

In EpiData version 3.1, the software questionnaire was designed, prepared and checked (legal range, jump, must enter value label). This was designing process which was carried out after the data had been cleaned up for omission and errors at collection of the data process. Afterwards, the data were entered into the EpiData (CDC, USA) so as to form a database (rec) that was exported into a statistical package for social science (SPSS statistics v20, IBM, USA) database (spv) for analysis phase.

Since, the outcome of this study was categorical variables; cross tabulation and logistic regression were conducted using SPSS statistics v20. The process was carried out in order to check up for chi-square test, Fisher exact values, Spearman correlation, odd ratios, confidence interval at 95% level, p-values; and to determine whether there was an association between sociodemographic factors with MHS utilization. This stage was also conducted after some incompatible data were transformed into dichotomous variables. The data were validated and reduced for logistic regression analyses. Furthermore, frequencies and percentages were carried out. For the numeric variables, mean and range were summarized. At these phases of analysis, tables of results were generated.

Quality Control Techniques

The quality control procedures consisted of a preliminary visit, training of research assistants and data management.

Both preliminary visit to the hospital and the Ministry of Health were conducted so as to get acquainted with ethical procedures of conducting the research study.

The training of research assistants on problem statement, objectives, method, consent process, the questionnaire interview was carried out with the emphasis on administering the use of random tables and conducting interviews.

The pretest of the questionnaire was carried out for 5% of the sample size at the hospital. It was found that the questionnaire was well understood. As a result, the questionnaire remained unchanged. This percentage of sample size was included in the analysis.

Quality of data was ensured by checking for quantitative data completeness, clearing, entering into Epidata; data validating, coding, and transforming until they were presentable for the analysis.

Ethical Consideration

The study has received approved letter with Ref: MOH-RSS/15/07/014 from Ministry of health ethical board to conduct the cross-sectional survey on utilization of MHS in Juba Teaching Hospital. Furthermore, the study received a second letter approval for Publication with Ref: MOH-RSS/23/05/022.

Results

Sociodemographic Factors of the Mothers

The Table 1 shows descriptive analysis of the mothers' demographic characteristics. A total of 207 women were interviewed with the response rate stood at 100%. The mean (±SD) age of the respondents was 27±4.9, the youngest was 19 years old and the oldest was 42 years old. The proportion of the participants within the range of 18 to 35 years of age was the highest (94.20%).

In regard to Level of education, 158 of the mothers (76.33%) had acquired primary education with only 8.21 % having attained tertiary qualifications. Unemployment accounted for more than half (53.14%) among the women while low proportion of them (12.56%) revealed to have had a self-employed. The mean monthly income of the family was US$407.81 with very wide standard deviation (US$328.26) and the lowest family income per month was US$15.67 and the highest was US$2821.32.

There were 202 (97.48%) married women and approximately two-third (64.73%) of them indicated to have had a monogamy union. Most of them (85.51%) were with multipara parity or with two to four births. The mean (±SD) parity of the mothers as 3.15±1.52. The lowest figure was 2 and the highest was 9 parity.

Factors	n=207	Percent
Age*		
18-35years	195	94.2
35-49years	12	5.8
Religion		
Christian	187	90.3
Islam	18	8.7
Others	2	1
Level of Education		
No formal education	49	23.7
Primary education	78	37.7
Secondary education	63	30.4
Tertiary education	17	8.2
Occupation		
Housewife	184	88.9
Others	23	11.1
Employment status		
Employed	71	34.3
Unemployed	110	53.1
Self-employed	26	12.6
Monthly income*		
<US$300	94	45.4
US$300-600	76	36.7
US$600-900	16	7.7
US$900-1200	16	7.7
>US$1200	5	2.4
Marital status		
Married	202	97.6
Separated/widow	3	1.4
Others	2	1
Type of marriage		
Monogamy	134	64.7
Polygamy	73	35.3
Parity		
Multipara	177	85.5
Grand multipara	30	14.5

*upper included in next category.

Table 1: Sociodemographic factors of the mothers.

Utilization of MHS

Considerably, while the proportion varied among the users of maternal healthcare services only by few per cent, it was much more higher than those who did not utilize the services (Table 2).

Of the 207 studied mothers, only 14 (6.8%) reported to have never attended antenatal care (ANC) at all while the majority 193 (93.2%) indicated that they attended ANC. Of those women who utilized ANC checkups, 142 (73.6%) were at JTH.

While the delivery of the women at health facility accounted for 168 (81.2%), the non-health facility delivery stood at approximately one-quarter of the participants. Of the mothers who delivered at health facilities, 146 (70.5%) revealed to have received this service from JTH.

The users of the postnatal care service were much higher 205 (99.1%) than non-users that just accounted for small number (two) of the mothers.

Variables	n = 207	Percent
ANC visit		
Yes	193	93.2
No	14	6.8
Place of ANC visit*		
Juba Teaching Hospital	142	73.6
Other health facilities	51	26.4
Place of delivery (a)		
Health facility	168	81.2
Non-health facility	39	18.8
Place of delivery (b)		
Juba Teaching Hospital	146	70.5
Other health facilities	22	10.6
Traditional Birth Attendant	3	1.4
Home	36	17.4
PNC use		
Yes	205	99
No	2	1
Place of PNC visit**		
Juba Teaching Hospital	200	97.6
Other health facilities	5	2.4
Maternal Health Care Use		
Utilized	188	91
Unutilized	19	9

Table 2: Ulitilization of materanl health services.

Variation in n (* n = 193, **n = 205) was due to systematic missing. Because the women who did not attend a service at Juba Teaching Hospital were systematically excluded using questionnare.

The Influence of Demographic Factors on Utilization of MHS

The bivariate results in Tables 3-5 indicate demographic determinants of mothers of reproductive age with utilization of maternal health services. Cross tabulations were used and chi-square test, exact values of Pearson and Spearman correlation were examined.

Of the women who considered to this research study, 39 (18.8%) did not give birth at health facilities whereas 168 (81.2%) delivered at health facilities. Of those non-health facility deliveries, women with no formal education were the highest among them (43.6%) while those who were literate; women with primary education qualification were the highest utilizers of that healthcare. The results indicated that there had been a significant association between the level of education and utilization of the delivery care services (Pearson chi-square [df=3, n=207] =14, p-value= 0.004). Furthermore, it was likely that those who were literate had the chance of using the care 16 folds than those who had no formal education level. Additionally, the Spearman correlation test indicated inverse relation between the level of education and the utilization. This means the higher the level of education attainment, the lower the utilization level.

Nonetheless, the results demonstrated that there were no statistical relations between the utilization of delivery care service; and religion, occupation and marital status. It was, further, shown that there had been no significant association between the use of that service with age, type of marriage, parity and employment status.

ANC Utilization				
Variables	Yes: n (%)	No: n (%)	Total: n (%)	
Age group				
18-35years	182 (94.3)	13 (92.9)	195 (94.2)	0.823
35-49years	11 (5.7)	1 (7.1)	12 (5.8)	
Religion				
Christian	173 (89.6)	14 (100)	187 (90.3)	0.448
Islam	18 (9.3)	0 (0.0)	18 (8.7)	
Others	2 (1.0)	0 (0.0)	2 (1.0)	
Level of Education				
No formal education	46 (23.8)	3 (21.4)	49 (23.7)	0.68
Primary education	72 (37.3)	6 (42.9)	78 (37.7)	
Secondary education	58 (30.1)	5 (35.7)	63 (30.4)	
Tertiary education	17 (8.8)	0 (0.0)	17 (8.2)	
Occupation				
Housewife	171 (88.6)	13 (92.9)	184 (88.9)	0.625
Others	22 (11.4)	1 (7.1)	23 (11.1)	
Monthly family income				
<US$300	89 (46.1)	5 (35.7)	94 (45.4)	0.036
US$300-600	71 (36.8)	5 (35.7)	76 (36.7)	
US$600-900	16 (8.3)	0 (0.0)	16 (7.7)	
US$900-1200	12 (6.2)	4 (28.6)	16 (7.7)	
>US$1200	5 (2.6)	0 (0.0)	5 (2.4)	
Marital status				
Married	188 (97.4)	14 (100)	202 (97.6)	0.83
Separated/widow	3 (1.6)	0 (0.0)	3 (1.4)	
Others	2 (1.0)	0 (0.0)	2 (1.0)	

Type of marriage				
Monogamy	126 (65.3)	8 (57.1)	134 (64.7)	0.538
Polygamy	67 (34.7)	6 (42.9)	73 (35.3)	
Parity				
Multipara	167 (86.5)	10 (71.4)	177 (85.5)	0.121
grand multipara	26 (13.5)	4 (28.6)	30 (14.5)	

Table 3: The association of demographic factors with utilization of ANC services.

Health facility delivery				
Variables	**Yes: n (%)**	**No: n (%)**	**Total: n (%)**	**P-value**
Age group				
18-35years	159 (94.6)	36 (92.3)	195 (94.2)	0.574
35-49years	9 (5.4)	3 (7.7)	12 (5.8)	
Religion				
Christian	151 (89.9)	36 (92.3)	187 (90.3)	0.369
Islam	16 (9.5)	2 (5.1)	18 (8.7)	
Others	1 (0.6)	1 (2.6)	2 (1.0)	
Level of Education				
No formal education	32 (19.0)	17 (43.6)	49 (23.7)	0.004*
Primary education	64 (38.1)	14 (35.9)	78 (37.7)	
Secondary education	55 (32.7)	8 (20.5)	63 (30.4)	
Tertiary education	17 (10.1)	0 (0.0)	17 (8.2)	
Occupation				
Housewife	149 (88.7)	35 (89.7)	184 (88.9)	0.85
Others	19 (11.3)	4 (10.3)	23 (11.1)	
Monthly family income				
<US$300	79 (47.0)	15 (38.5)	94 (45.4)	0.853
US$300-600	61 (36.3)	15 (38.5)	76 (36.7)	
US$600-900	12 (7.1)	4 (10.3)	16 (7.7)	
US$900-1200	12 (7.1)	4 (10.3)	16 (7.7)	
>US$1200	4 (2.4)	1 (2.6)	5 (2.4)	
Marital status				
Married	164 (97.6)	38 (97.4)	202 (97.6)	0.374
Separated/widow	3 (1.8)	0 (0.0)	3 (1.4)	
Others	1 (0.6)	1 (2.6)	2 (1.0)	
Type of marriage				
Monogamy	112 (66.7)	22(56.4)	134 (64.7)	0.227
Polygamy	56 (33.3)	17 (43.6)	73 (35.3)	
Parity				
Multipara	147 (87.5)	30 (76.9)	177 (85.5)	0.091
grand multipara	21 (12.5)	9 (23.1)	30 (14.5)	

Table 4: The association of demographic factors with utilization of delivery services.

PNC utilization				
Variable	**Yes: n (%)**	**No: n (%)**	**Total: n (%)**	**P-value**
Age group				
18-35years	193 (94.1)	2 (100)	195 (94.2)	0.724
35-49years	12 (5.9)	0 (0.0)	12 (5.8)	
Religion				
Christian	185 (90.2)	2 (100)	187 (90.3)	0.898
Islam	18 (8.8)	0 (0.0)	18 (8.7)	
Others	2 (1.0)	0 (0.0)	2 (1.0)	
Level of education				
No formal education	47 (22.9)	2 (100)	49 (23.7)	0.089
Primary education	78 (38.0)	0 (0.0)	78 (37.7)	
Secondary education	63 (30.7)	0 (0.0)	63 (30.4)	
Tertiary education	17 (8.3)	0 (0.0)	17 (8.2)	
Occupation				
Housewife	182 (88.8)	2 (100)	184 (88.9)	0.615
Others	23 (11.2)	0 (0.0)	23 (11.1)	
Monthly family income				
<US$300	94 (45.9)	0 (0.0)	94 (45.4)	0.208
US$300-600	75 (36.6)	1 (50.0)	76 (36.7)	
US$600-900	16 (7.8)	0 (0.0)	16 (7.7)	
US$900-1200	15 (7.3)	1 (50.0)	16 (7.7)	
>US$1200	5 (2.4)	0 (0.0)	5 (2.4)	
Marital status				
Married	200 (97.6)	2 (100)	202 (97.6)	0.975
Separated/widow	3 (1.5)	0 (0.0)	3 (1.4)	
Others	2 (1.0)	0 (0.0)	2 (1.0)	
Type of marriage				
Monogamy	134 (65.4)	0 (0.0)	134 (64.7)	0.054
Polygamy	71 (34.6)	2 (100)	73 (35.3)	
Parity				
Multipara	175 (85.4)	2 (100)	177 (85.5)	0.559
grand multipara	30 (14.6)	0 (0.0)	30 (14.5)	

Table 5: The association of demographic factor with utilization of PNC services.

Logistic Regression Analysis

There are enormous demographic and health system factors that influence utilization of women of reproductive age with maternal healthcare services. Nevertheless, in bivariate analyses in the Tables 3-**5**, it was observed that only level of education was the factor with statistically significant association. Hence, this factor was considered for further multivariate analysis.

Importantly, system related factor place of giving birth was influenced the utilization of the MHS. The multivariate analyses, as in the Table **6,** demonstrated that the majority of the women delivered at health facilities, 168 (81.2%) whereas above 18.8% did not give birth at health facilities at the odd ratio with 95% confidence interval = 3.06 (1.40 – 6.71) and p-value = -0.005. While this significance value is less than 0.05, there was a statistical association between literate and delivery place. Furthermore, literate women

cease considerable chance of giving birth at health facility by approximate three folds than those who had no formal education.

Variables	n	%	OR	95% CI	P-value
Age					
<30	163	-78.7	1	(0.35 - 2.53)	0.909
>30	44	-21.3	0.94		
Religion devotion					
Christian	187	-90.3	1	(0.28 – 4.06)	0.921
Non-Christian	20	-9.7	1.07		
Education					
No	49	-23.7	1	(1.40 – 6.71)	0.005**
Yes	158	-76.3	3.06		
Occupation					
Housewife	184	-88.9	1	(0.24 – 3.26)	0.843
Others	23	-11.1	0.88		
Employment					
Yes	97	-46.9	1	(0.29 – 1.47)	0.297
No	110	-53.1	0.65		
Monthly family income					
<US$500	163	-78.7	1	(0.29 – 1.66)	0.408
>US$500	44	-21.3	0.69		
Marriage					
Yes	202	-97.6	1	(0.05 – 5.20)	0.583
No	5	-2.4	0.53		
Type of marriage					
Monogamy	134	-64.7	1	(0.30 – 1.37)	0.251
Polygamy	73	-35.3	0.64		
Parity					
<4	177	-85.5	1	(0.22 – 1.78)	0.378
>4	30	-14.5	0.62		

Table 6: Results of logistic regression for demographic factors and place of delivery.

Discussions

The key emphasis of this study was on assessing the utilization of maternal healthcare services. The discussions were in accordance with results of this research study and in its connection with others related studies in some developing and developed nations. The arrangement of discussions was according to this study objectives while placing emphasis on areas of significance.

Proportions of MHS

The discussion is here arranged into sequences of utilization of MHS that is antenatal care (ANC), delivery care (DC) and postnatal care (PNC) services; and discussion of the utilization in the context of previous research findings which is followed by the implications of this research findings.

To start with, the utilization of ANC, DC and PNC services estimated at 91%, 93% and 99% respectively. It was observed that there was a slight variation between ANC services and DC services. Furthermore, it was detected that the use of PNC services was the highest which implied that although some of the women gave birth in some place whether health facility delivery or not, they were able to attend the PNC at Juba Teaching Hospital.

Secondly, this study indicated that the utilization of maternal health service (MHS) was at 91%. This was much higher than the findings of research study conducted at health facility in Egypt that stood at 46.7% [12-14].

Additionally, use of antenatal care (ANC) services was estimated at 93%. This was two times that of the previous National Household survey that was undertaken in South Sudan which was at 46.7% [3]. This implies that the utilization of ANC has improved than ever before. Furthermore, this proportion of utilization is much higher than other previous Ugandan research studies conducted by different authors which were at 35% [15] and at 46.3% [16].

Another finding point out that utilization of delivery care (DC) services stood at 81%. This rate was incomparable with the study that was conducted in the country (12.3%). This means that the utilization of DC services has substantially increased. As a result, it is expected that maternal mortality death will decrease in upcoming years. There were previous studies undertaken by various authors in (70%) South Africa [17] and (42%) India [18] that had statistical evidence lower than of this study.

Finally, use of postnatal care services accounted for 99%. As there has been no literature on utilization of PNC, this study has provided baseline information. This had the highest rate among previous studies in other nations for instance 60% was in Ethiopia (Workineh and Hailu, 2014), 33.2% was in Nigeria [19] and 15.4% was in Eastern Uganda [8,20-25].

These highest proportions in this study might be due to the fact that the nation has been transitioning from the post conflict to development phase where the women had little opportunity to access healthcare. Moreover, it might be due to the fact that primary health care and emergencies were relative free of charges. Importantly, study research interviewed women who were already coming to health facility for care. Perhaps, if it had been at community settings, the utilization would have been lower.

Determinants of MHS Utilization

There are enormous sociodemographic and health system factors that determine women utilization of maternal healthcare services (MHS). These services incorporate antenatal care, delivery care and postnatal care. This research study indicated only one of factors was a statistical significance with MHS.

The system related factor place of giving birth was influenced the utilization of the delivery care services. It was in both bivariate and multilevel analyses indicated that there was a statistically significant association of the delivery place with education attainment whereby majority of the women were delivery at health facilities 158 (74.4%) whereas above quarter (24.6%) did not give birth at health facilities.

The results of this research study were consistent with recent studies conducted in Ethiopia where the authors investigated 594 women on use of postnatal care services and demonstrated that the level of education was significantly associated with the use of the services [26-28]. Similarly, it examined the factors associated with utilization of MHS in multilevel analysis methods and reported that the education attainment was statistically significant with the use [29].

Furthermore, in a previous Nigerian study assessed utilization of MHS in five states of the country and revealed the literacy was a significant factor which had no contradiction with this finding of this study [26].

In addition to that, there were previous studies that had been undertaken in Uganda and the findings of this study were consistent with their findings. It assessed factors influencing use of antenatal care (ANC) among women and had found that education attainment was a significant predictor [15]. Moreover, this reported that level of education was significantly associated with the services use [16]. Similarly, it investigated factors affecting the ANC use among women who were expected to give birth and demonstrated education level as significant [30-35]

In another research study conducted in Northern Malawi health facilities [12] on utilization of maternal healthcare services and indicator that education attainment was a significant factor and this study was consistent with their findings

Nevertheless, it had shown a contrast to a study conducted in Western Uganda [8] where the author investigated use of early postnatal care among postpartum in regional health facilities and revealed that the education attainment was insignificantly associated with the utilization of the care.

The study had faced several limitations such being cross-sectional survey where the evidence and causation may be difficult to proof. The study doesn't know the source of bias that could alter the results and conclusion.

Conclusions and Recommendations

The purpose of this study was to assess the utilization of MHS among women of reproductive age at JTH in order to fill the knowledge gap in quality of maternal care [36-40]. As a result, this research document will be helpful in decision making to improve the health delivery at large as well as to

enhance the health of mothers in particular.

Conclusions

This research study revealed firstly that the utilization of maternal health care services (antenatal care, delivery care and postnatal care) as high. Secondly, it was determined that only the educational attainment had a statistically significant association.

Recommendations

High utilization levels of maternal healthcare should be maintained in that level and even to the highest. This is because it improves health of women of reproductive age.

While about 20% of women were taking risk of giving birth at non-health facilities, there should be a great concern to place on educational attainment of the women.

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