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Facilitators of Skilled Birth Attendants' Utilization in Government and Christian Health Association of Malawi Hospitals: A Cross-Section Study of Lilongwe Rural

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ABSTRACT

Background: Every woman must have access to a Skilled Birth Attendant (SBA) for routine care and management of complications during labour, childbirth, and early postnatal period. SBA utilization has been identified as an essential approach of reducing maternal morbidity and mortality among reproductive age group of 15-49. Malawi as a developing country is also utilizing skilled birth attendants in an effort to reduce maternal death by 70 per 100,000 births. Report of 2020 from Demographic and Health Survey (DHS) on skilled birth attendants (SBA) revealed that Malawi was 89.8% by 2018, while Lilongwe District, the study area, was 67% of SBA utilization against a target of skilled birth attendant utilization of 95% by the year 2022.

Purpose: To evaluate the facilitators of skilled birth attendants' utilization in government and CHAM hospitals and their relationship to hospital delivery.

Methods: This research used logistic regression test and quantitative cross-sectional approach. Questionnaires were used to collect data from December 2021 to February 2022 in 390 participants. The sampling techniques used were cluster and random sampling.

Results: Based on logistic regression marital status ($p=0.001$, OR 14.56), pregnancy complication ($p=0.000$, OR 12.21), and ANC three times ($p=0.010$, OR 2.11) and four times ($p=0.000$ OR 0.76) were found to be significantly associated with hospital delivery. On the other hand ANC once ($p=0.005$, OR -2.33) and twice ($P=0.008$, OR -1.94) did not significantly influence utilization skilled birth attendants by pregnant mothers

Conclusion: Based on the results, it is concluded that age from 15 to 30 and employment, marital status, education, complication, antenatal clinic, are the facilitators for pregnant mothers to utilize skilled birth attendant. These facilitators might be of importance for policy makers to consider when coming up with programs to increase skilled birth attendants utilization at rural area of Lilongwe District.

Keywords: *Skilled birth attendants; Christian Health Association of Malawi; utilization.*

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BACKGROUND

Every woman must have access to a Skilled Birth Attendant (SBA) for routine care and management of complications during labour, childbirth, and early postnatal period (Dirirsa, 2021). SBA utilization has been identified as an essential approach of reducing maternal morbidity and mortality among reproductive age group of 15-49 (Mitikie et al., 2020). Empirical evidence shows that the global consensus is to improve maternal health and reduce maternal mortality by utilization of professional maternal health care services worldwide (Damian et al., 2020). Malawi is one of the countries in Sub-Saharan Africa with a high maternal mortality rate of 439 per 100,000 live births and has a goal of attaining universal health coverage with quality, equitable and affordable health care for all through utilization of SBA (Government of Malawi National Statistical Office, 2020). World Health statistics has shown that skilled birth utilization is being underutilized. According to WHO from 2015-2022 there has been an increase in access to the use of skilled birth attendants from 81% to 86%. (World Health Statistics 2019, 2019). Based on this finding, some pregnant mothers are still delivering at home or with unskilled personnel like traditional birth attendants. Unprofessional services are conducted in unsafe and unhygienic areas, and many complications are mismanaged, leading to increased maternal mortality and morbidity (Mitikie et al., 2020).

Malawi as a developing country is also utilizing skilled birth attendants in an effort to reduce maternal death by 70 per 100,000 births (Government of Malawi National Statistical Office, 2020). Report of 2020 from Malawi Demographic and Health Survey (MDHS) on skilled birth attendants (SBA) revealed that Malawi was 89.8% by 2018, while Lilongwe District, the study area, was 67% of SBA utilization against a target of skilled birth attendant utilization of 95% by the year 2022 (Government of Malawi National Statistical Office, 2020). Based on the study, there is still a problem with utilization of skilled birth attendants in Lilongwe rural, Malawi which has both government and CHAM hospitals therefore this study aimed to find out what factors that influence skilled birth attendants' utilization in government and Christian Health Association of Malawi hospitals and their association to hospital delivery in Lilongwe rural.

Studying factors that influence skilled delivery services may be vital in designing effective strategies and interventions targeting a decrease in maternal mortality and morbidity at the areas of study. Given the demonstrated health benefits of SBA and the fact that no similar study had been carried out before, it was necessary to evaluate factors influencing skilled delivery utilization. Furthermore the study's findings might be helpful as a guide to developing effective maternity services in the area, increasing skilled service utilization, and informing policy makers. SBA studies conducted in parts of the world have shown that factors such as education (Sserwanja et al., 2022), occupation (Tadele & Lamaro, 2017), family decisions (Ayele & Melku, 2019), employment (Tadele & Lamaro, 2017), distance (Negero et al., 2018), number of ANC (Negero et al., 2018), knowledge of SLA, pregnancy-related complications (Olowokere et al., 2020), and abortion (Olowokere et al., 2020) affect the utilization of skilled delivery services Whether these factors influence the utilization of SBA among women of reproductive age in Lilongwe rural was the subject of this study.

OBJECTIVE

The purpose of the study is to find out the facilitators of skilled birth attendants' utilization in government and CHAM hospitals and their relationship to hospital delivery.

METHODS

This research employed a quantitative cross-section research method; using logistic regression approach (Hayes & Moulton, 2021). The study took place in the Southwest of Lilongwe in Malawi where there are CHAM and government hospitals from December 2021 to February 2022. The population of the study was all mothers between the ages of 15 to 49 who had given birth from 2017 to the time of study. These mothers were the beneficiaries of service level agreement which CHAM hospital signed to offer free services to pregnant mothers. Using cluster and systematic sampling the study enrolled 390 women (Hayes & Moulton, 2021). Questionnaires in vernacular language were used during data collection and analyzed using SPSS version 23 and Stata version 14 soft wares. This questionnaire was developed by researchers and its validity was measured using Pearson correlation analysis and proven to be valid ($p < 0.05$), and its reliability has been measured using Cronbach alpha analysis and proven to be reliable (Bujang & Hon, 2022). In filling out the questionnaire, the data collectors were Health Surveillance Assistance to reduce errors when filling out the questionnaire.

Statistical analysis used logistic regression (Bwambale et al., 2021) to measure the association between the dependent variable of skilled delivery utilization and the independent variables which included age, educational level, marital status, distance to a health facility, ANC, complication, abortion, number of pregnancies. A mother was considered to have used skilled birth attendant if she delivered at Government and CHAM hospital.

Ethical approval was obtained from College of Medicine Research Ethical Committee with reference number (P.09/21/33). To maintain confidentiality, the identification of the participants was by numbers, not names to ensure anonymity. Participation in the study was voluntary and participants signed consent forms to ensure they understood the research and that nobody coerced them (Kaewkungwal & Adams, 2019).

RESULTS

Table 1: Summary of the findings

Study objective	Variable	Frequency (n)	Percentage (%)	
Socio-demographic	Age	15-20	80	20.5
		21-30	221	56.7
		31-40	81	20.8
		41-49	8	2.1
	Marital status	Married	362	92.8
		Not married	28	7.2
	Mother's education	No education	23	5.9
		Primary	319	81.8
		Secondary	46	11.8
		Tertiary	2	0.5

Mother's occupation	Working	21	5.4
	Not working	369	94.6

From table 1, the study enrolled 390 participants from eight VDCs. 20.5% were aged 15 to 20, 56.7% aged 21 to 30. Marital status registered 362 married participants. Many participants (81.8%) attained primary school education and 94.6% were not working.

Table 2: Place of delivery

VARIABLE	HOME N (%)	HOSPITAL N (%)	TBAS N (%)
Age			
15-20	4 (5.0)	76 (95.0)	0 (0.0)
21-30	19 (8.6)	200 (90.5)	2 (0.9)
31-40	14 (17.3)	61(75.3)	6 (7.4)
41-49	4 (5.0)	3 (37.5)	1 (12.5)
Occupation			
Employed	0 (0.00)	21 (100)	0 (0.0)
Non employed	41 (11.1)	319 (86.5)	9 (2.4)
Marital status			
Married	36 (9.9)	318 (87.9)	8 (2.2)
Not married	5 (17.9)	22 (78.6)	1 (3.6)
Total	41 (10.5)	340 (87.2)	9 (2.3)

The findings from table 2, show that 87.2% of the total respondents delivered at the hospitals, 10.5% at home, and 2.3% with the TBAs. Respondents aged 15-20 and 21-30 had the highest hospital deliveries of 95% and 90.5% respectively. Furthermore, those aged 41-49, 12.5% delivered with the TBA, while those aged 31-40, 17.3% delivered at home. Many respondents, 87.9%, who were married delivered at the hospital compared to 78.6% of those who were not married, while 17% of those who were not married delivered at home compared to 9.9%, of those who were married. A total of 100% of the respondents working delivered at the hospital. Furthermore, 86.5% of those who were not working delivered at the hospital, 11.1% at home, and 2.4% with the TBAs.

Table 3: Logistic regression analysis.

Hospital Delivery	Odds Ratio	Standard Error	z	P>z	[95% Conf. Interval]	
Marital status						
Married	14.56097	11.94987	3.26	0.001***	2.914925	72.7366
Not married	-0.129853	0.134852	-1.97	0.049	-0.01696	-0.99408
Education						
primary	-0.00062	0.00088	-5.27	0.000***	-0.00004	-0.00973
secondary	6523.141	9987.442	5.74	0.000***	324.4893	131133.4
Number of pregnancies/ deliveries						
1	0.1753319	0.0454171	3.86	0.000***	0.0861091	0.2646422
2-4	0.1084372	0.1021096	2.36	0.018**	0.0171256	0.6866097
more than 4	-5.706826	1.130686	-5.05	0.000***	-7.92293	-3.490722
ANC frequency						

ANC one	-2.330107	.8341524	-2.79	0.005***	-3.965016	-.6951981
ANC twice	-1.942951	.7269049	-2.67	0.008***	-3.367658	-5182436
ANC thrice	2.117899	.8231089	2.57	0.010**	.5046357	3.731163
Four times	0.7635152	0.05893	12.95	0.000***	0.6476	0.879342
complication	12.21429	6.923156	4.42	0.000***	4.021611	37.09676

Regression details

Sample size	390
Wald chi2	76.26
Prob>chi2	0.000
Pseudo R2	0.544

Table 3 shows logistic model that was run to determine conditional margin effects (at means) for delivering at home and at the hospital. The models were both significant all levels with the Pseudo R-Squared at 45.92% for home delivery and 62.19% for hospital delivery. Variables age 41-49 no education level were found to be collinear, however, tertiary level of education was not included because only two respondents from the data had reached that level such that it was less than the minimum of 30 observations for model reliability.

The remaining variables represented a large sample size and were not found to be collinear. Based on those variables marital status ($p=0.001^{***}$, OR 14.56), pregnancy complication ($p=0.000^{***}$, OR 12.21), and ANC three times ($p=0.010^{***}$ OR 2.11) and four times ($p=0.000$ OR 0.76) had p-values of less than 0.05 with positive odds ratio while primary education ($p=0.000$, OR -0.0006), antenatal visits first ($p=0.005$, OR -2.33) and second ($p=0.008$, OR -1.94) had negative odds ratios.

DISCUSSION

This study found that mothers aged 15 to 30 (90.5% to 95%) used SBA more than the other ages. This could be attributed to the fact that most young women are educated and have less parity which encourages them to deliver at the hospital. In contrast, older women might have delivered many babies and have the experience of delivering at home. This is in agreement with study by (Dirirsa, 2021), who found that mothers under the age of 30 delivered at the hospital compared to those above 40 who preferred to deliver at home.

In addition, this study found employed mothers (100%) to use skilled delivery services. (Tolossa & Bekele, 2020) also found that employed mothers used skilled delivery services more than those unemployed. In contrast, Ahmed (Ahmed, 2020) found that employed women were less likely to deliver at health institutions because their work was not giving them enough money to support them financially (Ahmed, 2020). The principal investigator agrees with Tolossa & Bekele (2020) that employment helps mothers earn money for transport and pay for health services. Having many educated and employed women in the communities would help reduce maternal mortality (Ahmed, 2020).

Furthermore, the study found that marriage, as indicated by the value of $P=0.001$, OR 14.56 was associated with utilization of skilled delivery services. Married women have a sound physical and financial support system from their husbands and relatives, who encourage them to use skilled delivery services (Yaya et al., 2021). The finding

agrees with a study by (Yaya et al., 2021), which found that married women tend to use maternal services.

This study also found that secondary education (with the $p=0.000$, OR 6523) was also associated with use of SBA. This was in agreement with studies in Ethiopia, where mothers who attained secondary and tertiary education preferred to deliver at the hospital because of the general knowledge of what they got at school (Sserwanja et al., 2022). (Sserwanja et al., 2022) argued that educated women had developed greater confidence, are more conscious of their health, and are knowledgeable of many health issues, which help them make informed decisions to deliver under SBA.

In addition, the study found that going to the hospital three times ($P=0.010$, OR 2.117) and four times ($P=0.000$, OR 0.76) significantly influenced skilled birth attendants. ANC visits help mothers with enough information from the midwives who motivate them to use skilled delivery services since mothers are given health talks to allow them to make better decisions, and the rapport mothers develop with the midwives encourages them to deliver at the hospital (Damian et al., 2020). Antenatal visits less than three times might influence pregnant women to deliver at home or with the TBA signifying a critical gap in skilled birth attendant utilization. Nevertheless, the finding disagreed with a study done in Ghana, which indicated that despite high ANC attendance, delivery by SBAs was suboptimal (Adjei, 2019).

Lastly this study also found that knowledge on complications as indicated by the value of $P=0.000$, OR 12.21 was significantly associated with the use of skilled delivery services. Mothers who know pregnancy-related complications prefer to visit a health facility where complications are identified and monitored earlier. (Tolossa & Bekele, 2020) disagrees with the finding. In their study they used 2016 Ethiopian Demographic and Health Survey (EDHS 2016) data which might be old compared to this data. He argues that mothers who have history of bad maternal or child bearing are more likely to deliver at home than at health facility by a skilled birth attendant (Tolossa & Bekele, 2020).

CONCLUSION

Based on the results, it is concluded that age, employment marital status, education, knowledge of complication, attending antenatal three and four times are the facilitators for pregnant mothers to utilize skilled birth attendant. These facilitators might be of importance for policy makers to consider when coming up with programs to increase skilled birth attendants utilization at rural area of Lilongwe district. It is hoped that the future researchers can explore more on these factors qualitatively.

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