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FACTORS ASSOCIATED WITH UPTAKE OF SKILLED ATTENDANTS' SERVICES DURING CHILD DELIVERY IN GARISSA TOWN, KENYA

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R. A. ABIKAR, M. KARAMA and Z. W. NG'ANG'A

ABSTRACT

Objective: To identify the factors that are associated with uptake of skilled delivery services during child delivery among women of reproductive age in Garissa town.

Design: Cross sectional study.

Setting: Garissa town

Subject: Three hundred and thirty four women aged 15-49 years who had had at least one delivery in their lifetime were asked about the type of delivery services they had during their last child delivery.

Results: The study found that 47% of the last deliveries women were attended by skilled persons and the rest of the deliveries were provided by TBAs. The predictors of skilled delivery uptake in this study were found to be; having knowledge on skilled delivery service providers (AOR = 17.2; 95% CI: 1.05 – 281.12; p = 0.046), child deliveries numbering one to three (AOR = 116.95; 95% CI: 26.68 – 512.64; p = 0.001) and four to six (AOR = 16.75; 95% CI: 4.44 – 62.87; p = 0.001), presence of previous delivery complication (AOR = 11.71; 95% CI: 3.96 – 34.60; p = 0.001), disapproval of TBA services (AOR = 27.19; 95% CI: 6.67 – 110.76; p = 0.001), lack of preference for gender of skilled delivery service provider (AOR = 6.51; 95% CI: 1.08 – 39.37; p = 0.041), and positive view on service related factors such as time to nearest facility (AOR = 3.91; 95% CI: 1.24 – 12.34; p = 0.020), hygiene (AOR = 5.03; 95% CI: 1.49 – 17.05; p = 0.009) and operation time of health facility (AOR = 4.67; 95% CI: 1.59 – 13.76; p = 0.005).

Conclusion: The findings show that cultural and maternal factors as well as quality of services at facility level play major role in determining uptake of skilled services among women in Garissa as compared to social demographic and economic factors.

INTRODUCTION

According to WHO, maternal health refers to the health of a woman during pregnancy, childbirth and postpartum periods (1).

In the year 2008, an estimated 358000 maternal deaths occurred worldwide of which 99% (355000) occurred in developing country (2). Sub-Saharan Africa and south Asia accounted for 87 percent (313,000) of the global maternal deaths in 2008 (2).

There is a big gap in the status of mother's well being between the developed and developing countries (3, 4).

One very important factor for reducing maternal mortality is the availability of skilled birth attendance during delivery as has been reflected in the MDG 5,

where the proportion of births attended by skilled health personnel is considered a key indicator. By the year 2015, the international community aims to achieve 90% coverage of women having a skilled attendant at birth (5).

In Kenya, according to Kenya Demographic Health Survey 2008/9, only 44% of child deliveries were assisted by skilled birth attendants. In the North Eastern province (NEP), only 32% of deliveries were assisted by skilled birth attendants. The maternal mortality in NEP of Kenya is estimated to be 1000 deaths per 100000 live births (6) which is more than double Kenya's average of 488/100000 (6). This is despite the fact that there is a common global consensus on the importance of Skilled Birth Attendants during child delivery to address the high

maternal mortality as reflected in the MDG 5. The low uptake of skilled attendants' services during child delivery could be a major contributing factor to the high maternal mortality in NEP. Adequate information on the cause of the observed uptake of skilled attendants' services during child delivery in NEP is not available.

According to a health report by Bosire, a maternity wing opened in Garissa Provincial referral hospital in 2007 was projected to attract 500 deliveries in that year but had attracted 60 deliveries only over this period (7). It is against this backdrop that the current study aimed to identify the factors that are associated with uptake of skilled delivery services during child delivery among women of reproductive age in Garissa town.

MATERIALS AND METHODS

Study setting: The study was carried out in Garissa town which is in Garissa County, Kenya. The study participant comprised of women aged 15-49 who have had at least one delivery as well as Traditional Birth Attendants (TBA) and nurses who participated in Focus Group Discussion (FGDs) and key informant interviews.

Sampling: The sample size for the survey was determined using standard statistical formula and was found to be 334. Multistage cluster method was used to identify respondent for the study.

Data collection: Quantitative data was generated through the administration of semi structured

questionnaire in a face to face interview as well as conducting Focus Group Discussion (FGD) with nurses and TBAs.

Data analysis: Data were analysed in SPSS20. Mean standard deviation and median were calculated for continuous data as frequency distribution such as cross tabulation and proportions were generated for categorical data. In bivariate analysis, Pearson's Chi-square and Fisher exact tests were used to test for the strength of association between categorical variables. All Independent variables were associated with the dependent variable to determine which ones had significant association. Odds Ratio (OR) and 95% Confidence Interval (CI) were used to estimate the strength of association between independent variables and the dependent variable. The threshold for statistical significance was set at $p < 0.05$.

All independent variables identified to significantly associate with dependent variable at bivariate analysis were considered together in a Multivariate analysis. This was performed using binary logistic regression. Qualitative data was manually analysed thematically.

RESULTS

Descriptive analysis: The study found that 47.6% of the women had skilled delivery services, assisted either by a nurse or a doctor while the rest had unskilled delivery service and were assisted by TBAs as shown in Figure 1.

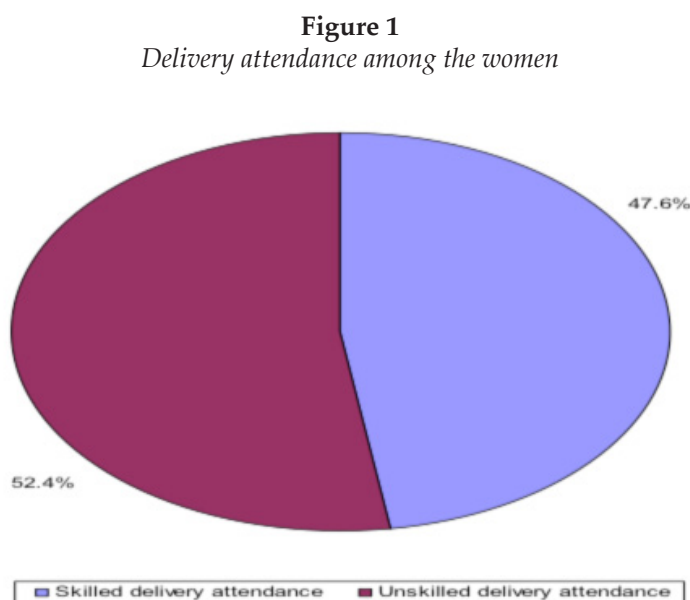


Table 1 presents selected demographic characteristics of the study participants. The age of the participants ranged between 15 to 45 years. A high proportion (64.1%) was aged between 21 and 31 years. Majority of respondents were Somali (94.3%) most were Muslims (96.1%). Eighty three point two percent of the respondents were married, 82% of them had attained at most primary education while 69.2% of the respondents were housewives with only 8.1% being salaried and the rest involved in business.

Assessment of knowledge of the women on skilled delivery service providers and obstetric history of the women is presented in Table 2. 92.8% demonstrated that they had knowledge of skilled delivery service providers as 85.6% of the respondents reported to have sought antenatal care services at least ones, during their last pregnancy. 83.8% of those who attended ANC received it in health facility while the rest had it at home. The number of child deliveries per respondent ranged between zero to twelve with 35.3% of the respondents having had one to three deliveries and the rest having four to six (25.4%), seven to nine (32.3%) and over seven (6.9%) deliveries. Only 37.4% of the respondents ever had delivery complication.

Table 3 shows an analysis of the selected cultural factors. Thirty two point three percent of the respondents were of the view that TBAs should provide delivery services while 40.4% were of the contrary opinion. Twenty seven point two percent respondents were unable to decide whether TBAs should provide delivery services or not. 69.2% of

the respondents also reported that they decide by themselves on the place of delivery as husbands decide for 27.5% of the participant while smaller proportion (3.3%) were decided for by their in-laws. Majority (81.1%) of the respondents prefer to be attended to by female service providers while a smaller proportion (13.8%) did not show any preference.

Service related factors have been analysed in Table 4. Majority (91.3%) of the respondents reported that the services were affordable. Delivery charges ranged from US\$29.5 to 117.6 with higher (65.9%) proportion responding in the category of US\$29.5-58.8. As many as 68% of the respondents reported that they took less than one hour to get to the nearest health facility by walking. Slightly more than half (55.1%) the respondents reported that the health facility they attended was hygienic as (47.3%) considered it to be convenient in terms of operation times. When the respondents were asked of the means to reach to the community in order to enhance use of skilled attendance during delivery, majority (66.5%) of them opted radio while other options included television (17.7%), personal interaction with health providers (15%) and posters (0.3%). 0.6% of them did not know what to recommend. The participant response on the kind of person to provide safe delivery information to the community was varied with many (59%) of them opting for nurse. Other options included religious leaders (20.4%), educated women (10.8%) and medical doctors (9.9%).

Table 1
Selected socio-demographic and economic characteristics

Variables	Descriptive Analysis		Bivariate Analysis							
	n = 334	%	Skilled delivery (n = 159)	Unskilled delivery (n = 175)	OR		95% CI		p-value	
			n	%	n	%	Lower	Upper		
Age in years										
15-20	29	8.7	18	62.1	11	37.9	5.13	2.11	12.5	<0.001
21-31	214	64.1	119	55.6	95	44.4	3.93	2.27	6.81	<0.001
32-42	86	25.7	22	24.2	69	75.8	1			
43-49	5	1.5								
Ethnicity										
Somali	315	94.3	146	46.3	169	53.7	1			
Non-Somali	19	5.7	13	68.4	6	31.6	2.51	0.93	6.77	0.061
Religion										
Muslim	321	96.1	146	45.5	175	54.5	1			
Non-Muslim	13	3.9	13	100	0	0	UD	UD	UD	<0.001

Where the last birth took place											
Public health facility	95	28.4									
Private health facility	64	19.2									
Home	175	52.4									
Who assisted the last birth											
Doctor	40	12									
Nurse	119	35.6									
TBA	171	51.2									
Friend/neighbor	4	1.2									
Had previous delivery complication											
Yes	125	37.4	98	78.4	27	21.6	8.81	5.24	14.81	<0.001	
No	209	62.6	61	29.2	148	70.8	1				
Type of complication											
Prolonged labour of over 12 hrs	38	30.4									
Excessive bleeding	61	48.8									
Abnormal baby position	23	18.4									
Convulsions	3	2.4									
Not applicable	209										

Table 3
Selected cultural related factors

Variables	Descriptive Analysis		Bivariate Analysis								
			Skilled delivery (n = 159)	Unskilled delivery (n = 175)	OR		95% CI		p-value		
	n = 334	%	n	%	n	%	Lower	Upper			
Whether TBAs should provide delivery services											
Yes	108	32.3	28	25.9	80	74.1	1				
No	135	40.4	104	77	31	23	9.59	5.32	17.26	<0.001	
Don't know	91	27.2	27	29.7	64	70.3	1.21	0.65	2.25	0.556	
Who makes decision on place of delivery											
Self	231	69.2	105	45.5	126	54.5	0.76	0.47	1.2	0.239	

Husband	92	27.5	54	52.4	49	47.6	1			
In-laws	11	3.3								
Preferred gender of delivery provider										
Female	271	81.1	115	42.4	156	57.6	1			
Male	17	5.1	7	41.2	10	58.8	0.95	0.35	2.57	0.919
Any	46	13.8	37	80.4	9	19.6	5.58	2.59	12.01	<0.001

Table 4
Selected service related factors

Variables	Descriptive Analysis		Bivariate Analysis							
	n=334	%	Skilled delivery (n=159)	Unskilled delivery (n=175)	OR		95% CI		p-value	
			n	%	n	%	Lower	Upper		
Cost										
Affordable	305	91.3	152	49.8	153	50.2	3.12	1.3	7.52	0.008
Not affordable	29	8.7	7	24.1	22	75.9	1			
Charges per delivery (Kshs.)										
<2500 Kshs.	67	20.1	28	41.8	39	58.2	0.66	0.31	1.4	0.278
2500 - 5000 Kshs.	220	66.1	107	48.6	113	51.4	0.87	0.46	1.64	0.663
>5000 Kshs.	46	13.8	24	52.2	22	47.8	1			
Missing	1									
Time to nearest health facility										
Less than one hour	227	68	118	52	109	48	1.74	1.09	2.78	0.02
one - two hours	100	29.9	41	38.3	66	61.7	1			
More than two hours	7	2.1								
Hygiene										
Hygienic	184	55.1	132	71.7	52	28.3	11.56	6.84	19.56	<0.001
Not hygienic	150	44.9	27	18	123	82	1			
Operation time										
Convenient	158	47.3	127	80.4	31	19.6	18.44	10.65	31.91	<0.001
Not convenient	176	52.7	32	18.2	144	81.8	1			
Means to enhance skilled delivery										
Radio	222	66.5	101	45.5	121	54.5	0.9	0.49	1.67	0.748
Poster	1	0.3	1	100	0	0	UD	UD	UD	1
Personal interaction with health provider	59	17.7	33	55.9	26	44.1	1.38	0.65	2.93	0.409
Don't know	2	0.6	0	0	2	100	UD	UD	UD	0.999
TV	50	15	24	48	26	52	1			

Who should provide this information										
Nurse	197	59	121	61.4	76	38.6	5.57	2.41	12.86	<0.001
Religious leader	68	20.4	22	32.4	46	67.6	1.67	0.66	4.27	0.281
Doctor	33	9.9	8	24.2	25	75.8	1.12	0.37	3.43	0.843
An educated woman	36	10.8	8	22.2	28	77.8	1			

Factors that were associated with skilled delivery services: Multivariate analysis was performed to identify independent predictor(s) of skilled delivery services among the participants as shown in Table 5.

Table 5
Factors associated with uptake of skilled delivery among mothers

Variables	AOR	95% CI		p-value
		Lower	Upper	
Knowledge of skilled delivery				
Knows	17.20	1.05	281.12	0.046
Does not know	1.00			
How many times have you ever given birth				
1-3	116.95	26.68	512.64	<0.001
4-6	16.70	4.44	62.87	<0.001
7 and above	1.00			
Had previous delivery complication				
Yes	11.71	3.96	34.60	<0.001
No	1.00			
Whether TBAs should provide delivery services				
Yes	1.00			
No	27.19	6.67	110.76	<0.001
Don't know	3.06	0.90	10.47	0.074
Preferred gender of delivery provider				
Female	1.00			
Male	0.43	0.10	1.96	0.278
Any	6.51	1.08	39.37	0.041
Distance				
Less than one hour	3.91	1.24	12.34	0.020
One or more hours	1.00			
Hygiene				
Hygienic	5.03	1.49	17.05	0.009
Not hygienic	1.00			
Operation time				
Convenient	4.67	1.59	13.76	0.005
Not convenient	1.00			

DISCUSSIONS

Considering the most recent delivery a mother had, the findings of this study showed that utilisation of skilled delivery service among the women was (47.6%). This is comparable to and slightly above the national estimate of births attended by skilled attendants (44%) (6). The results of this study are similar to those of other developing countries, where attendance of deliveries by skilled health care workers is still low. Although many countries have reported notable increase in the proportion of births attended by skilled birth attendants, the slowest change has been noted in sub-Saharan Africa, where the proportion of deliveries attended by skilled birth attendants went up from 40% in 1990 to 43% in 2000 showing a progress rate of 0.1% which is far below the 5.1% required to achieve MDG 5. In South East Asian and Northern African countries there has been increased coverage in births attended by skilled health care workers from 55% in 1995 to 81% in the period 2000-2007 (2).

In Kenya, utilisation of health facilities for labor and delivery services has been on the decline. According to Kenya Demographic Health Survey 2008-09, the percentage of medically assisted deliveries has fallen consistently from 50% in the 1993 survey to 44% in 2008 even though the proportion has increased marginally from 42% in 2003 to 44% in the 2008-09 (6). From the findings of this study, it was surprising to find that none of the skilled delivery services took place at home as compared to the 2008/9 KDHS result for NEP where 15% of the skilled delivery had taken place at home.

In earlier studies a number of factors have been found to influence utilisation of skilled delivery services in Kenya (8). The findings of this study equally showed that, social cultural, maternal and access factors have influenced women's utilisation of skilled delivery services.

The strongest predictor of uptake of delivery service was found to be parity according to this study. Lower parity was predictive of safe delivery practice where women who had one to six deliveries were more likely to practice skilled delivery as compared to those who had seven or more deliveries. Other studies have also shown significance of parity in utilisation of modern maternity services where younger, lower parity women tended to use health facility more than older, higher parity women (9). In a qualitative discussion with the women, low parity women were opting for skilled service because most of them were younger women who were not well experienced in terms of child delivery and thus did not know how to handle any possible complication. High parity women were said to be experienced and knew how to handle any possible complication better, thus can take the chance of delivering "at the comfort" of their

home

Availability of knowledge on the skilled delivery service providers was also found to be a predictor. Those women who knew where and who to get skilled delivery services from, were 17.2 times more likely to utilise skilled delivery as compared to those who did not know. Knowledge on any issues enhances decision making and thus it is possible that these group of women, by the fact that they had knowledge on service providers, were also well informed of the various complications that are associated with unskilled delivery service which prompted them to go for skilled service. This finding was in agreement with that of a study carried out in South Africa where lack of awareness of maternity waiting homes was one of the reasons for non utilisation of obstetric services (10).

Alike, experience of previous delivery complication was associated with service uptake. Those women who had experienced previous delivery complications were 3.96 times more likely to utilize skilled delivery service as compared to those who had not experienced such complications. Obstetric complications experienced by these women included: Prolonged labor of over 12 hours (30.4%), excessive bleeding (48.8%), abnormal baby position (18.4%) and Convulsions (2.4%). Majority of these women confirmed they delivered in hospital because they did not want to risk delivering at home in case complications recurred. Other studies have reported similar findings (11).

The view that TBAs should not provide delivery services was associated with skilled delivery service (AOR=27.19). The main reason given as to why TBAs should not provide delivery services was that they are likely to attend to deliveries in unhygienic conditions putting both the mother and the newborn at risk of delivery related complications and this may lead to maternal and neonatal morbidity and mortality as lack of skilled attendance makes it difficult to seek assistance in the event of complications. Other studies have shown a similar outcome (12). All (47.6%) of the unskilled delivery providers in this study were found to be TBAs. This estimate was quite high as compared to the nationally observed rate of 28% (6) attendance by TBAs. In other parts of the country however, higher estimates were found especially in Mwingi and Kwale districts, where TBAs attend to over 70% of the deliveries (13).

Whereas some previous studies had reported a significant relationship between gender of service providers and maternal services utilisation (14), others have shown no such association (15). In this study, lack of preference for any gender of service provider was associated with skilled delivery. Those who had no preference for any gender of service provider were 6.51 times more likely to utilise skilled delivery than those who preferred female. The Somali community

has cultural practices related to pregnancy and childbirth which influence maternal health seeking behavior and selection of place of child delivery where cultural beliefs have actually been found to prohibit male assisted deliveries in order to preserve women's chastity (16). In this study, a similar outcome was found where 81.1% preferred female, 5.1% male and 13.8% had no preference for any of the genders.

Distance and time to the nearest health facilities were found to influence health services utilisation (17). A qualitative study from West Java Province in Haiti found that in rural areas, a long travel time worsened by poor road conditions prevented communities from using skilled delivery (4). In this study, distance of less than one hour long from the residence of the women was significantly associated with skilled delivery service (AOR=3.91). Service delivery in various maternity services is an important factor that can predict the utilization of those services as found in different studies (18). The parameters considered under service-related factors in this study were; cost of health services, timings and hygiene of the facility. There was a significant association between skilled delivery service and those who viewed the health facility to be hygienic and its operation time convenient. The result of the study therefore enhanced the thinking that improvement of service at health facility is a factor that should be used to encourage women to go for safer delivery services.

An interesting finding of the study that came out in the qualitative study is that the in-laws especially the mother in-law is the person who normally advocates for use of TBA services. The main reason given was that if their daughter in-law were to go to hospital frequently, she will be advised to use family planning which they are against. This view was also shared by the TBAs themselves who said *"mothers normally approach us to assist their daughters in-law and not their own daughters because they want their sons to have many children and would make sure the young girls are not misadvised by doctors on family planning"*. Somalis are patriarchal society and it is the sons that carry the name of the family and this is why parent have to make sure that their sons get many children (19).

This study did not find age, marital status and religious affiliation to be predictors in the choice of delivery service, but other studies have revealed the age group below 35 years has a higher utilization of health facilities for both ANC and delivery than older women and that age and marital status are significant predictors of place of childbirth (6).

CONCLUSIONS

The study showed that utilization of skilled delivery service among the women in Garissa was low (47.6%) but was slightly above the national average (44%) of births attended by skilled attendants as reported by the Kenya Demographic Health Survey 2008/2008.

The major determinant of uptake of skilled attendant's services was found to be parity whereby lower parity women perceived a need to seek skilled delivery service as compared to higher parity women who increasingly deliver their subsequent children at home.

A number of other factors were found to enhance uptake of skilled delivery services among the women. The study found that, possession of knowledge on skilled delivery service providers, experience of previous delivery complication, the view that TBAs should not provide delivery services as well as lack of preference for gender of service provider enhanced skilled delivery services. In addition a positive view on the quality of services at the health facility enhance utilisation of skilled delivery services.

Similarly, lack of knowledge on skilled delivery service providers, lack of experience of previous delivery complication, the view that TBAs should provide delivery services as well as preference for female service provider and a negative view on the quality of services at the health facility inhibit uptake of skilled delivery services.

It is therefore clear from the findings that cultural and maternal factors as well as quality of services at health facilities play major role in determining uptake of skilled services during delivery among women in Garissa as compared to social demographic and economic factors.

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