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Original Research Article

Assessing individual factors associated with choice of place of delivery among postnatal women in Marsabit County, Kenya

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ABSTRACT

Background: Globally, about 295,000 maternal deaths occurred in 2017 with Sub-Saharan Africa and Asia accounting for 86%. Sub-Saharan Africa alone accounted for nearly two-thirds. The rate of skilled birth attendant in Sub-African region stood at 59%. Three quarters of neonatal and maternal deaths occur outside hospital settings. Currently, the rate of maternal mortality in Kenya stands at 362 per 100,000 live births. Despite the deliberate government interventions to increase hospital deliveries, still a significant number of women deliver at home. The objective of this study was to assess the individual actors associated with choice of place of delivery among postnatal women in Marsabit County, Kenya.
Methods: This was a cross-sectional descriptive study adopting both quantitative and qualitative data collection methods. A total of 416 postnatal women were systematically sampled from households at a predetermined interval of four. Key informants interviews and focused group discussions provided additional qualitative data.
Results: Approximately 56.7% of postnatal women in Marsabit County delivered in health facilities. Most individual factors such as decision maker (p=0.031), myths and misconceptions (p=0.025), reduction of complications (p=0.001), hospital delivery time consuming (p=0.023) and possession of medical insurance (p=0.001) were significantly associated with choice of place of delivery.
Conclusions: Approximately 6 out 10 deliveries occur at health facilities in Marsabit County. Individual factors significantly influenced choice of place of delivery. There is need for the ministry of health, County Government of Marsabit and relevant stakeholders to demystify myths and misconceptions about hospital deliveries, scale up awareness on availability of Linda Mama medical cover for pregnant women to ensure easy access of hospital delivery services.

Keywords: Utilization, Postnatal women, Individual factors, Skilled delivery

INTRODUCTION

Globally, about 295,000 maternal deaths occurred in 2017 with Sub-Saharan Africa and Asia accounting for 86%. Sub-Saharan Africa alone accounted for nearly two-thirds. The rate of Skilled Birth Attendant in Sub-African region stood at 59%.[1] A considerable number of women die from pregnancy or child birth related complications across the world.[2] The world health organization (WHO) introduced a strategy of universal skilled birth attendance to all deliveries. However, three-quarters of neonatal and

maternal deaths occur outside hospital settings due to associated higher risks.[3]

The government of Kenya has made progress towards reducing the rate of maternal mortality though insufficient to achieve the WHO target of 147 maternal deaths per 100,000 live births.[4] Currently, the rate of maternal mortality in Marsabit is 1127/100,000 which is more than 3 times the national average at 362/100,000.[5] The government has initiated many policies and interventions to ensure all deliveries occur in health facilities and attended by skilled attendants.[6] These include free maternal delivery at public hospitals through the Linda Mama Initiative, maternal shelter, beyond zero campaigns to prevent maternal deaths through well-equipped mobile clinics and output based approach (OBA) for subsidies to safe motherhood.[3]

Despite these deliberate government interventions, still there is evidence of home deliveries among mothers.[7] This probed into the establishment of community based referral systems (CBRS) by community-based referral agents, community health volunteers and provision of mother pack incentives to discourage home delivery by unskilled attendants. Strengthening community health care systems is essential to accessing skilled delivery services at health facilities through effective community referral systems.[8] Use of community based referral agents include identification of traditional birth attendants (TBAs) from each sub-location. They are trained on their role as referral agents by identifying pregnancy danger signs and risk factors associated with home deliveries.

METHODS

The study adopted a cross-sectional descriptive study design. Both quantitative and qualitative data was collected. Four hundred and sixteen (416) postnatal women were recruited for interview. The respondents were drawn from households using systematic random sampling at a predetermined interval of four. Additional information was also collected through focused group discussion (FGD) meetings held with postnatal women and key informant interviews (KII) with 20 community referral agents. Approval was sought from Kenyatta University graduate school. The study obtained an ethical clearance from Kenyatta University Ethics and Review Committee. The National commission for science technology and innovation (NACOSTI) authorized the study through provision of a research permit. The study was also authorized through permission from the County Government of Marsabit and local administrative authorities before actual filed-work for collection of data. Informed consent was sought from study participants and the researcher ensured collected data was treated with confidentiality and privacy it deserved. Data analysis was done by use of SPSS version 20.0. Chi-square was used to calculate inferential statistics which showed the association between individual factors and choice of place of delivery at a confidence interval of 95% and p value of 0.05. The presentation of results was done by use of charts, frequency tables and percentages. Qualitative results from FGDs and KIIs were triangulated with quantitative findings as direct narrations.

RESULTS

Distribution of socio-demographic characteristics among respondents

The results showed that about a third 154 (37.5%) of the respondents were aged between 30-39 years. Approximately less than a half 183 (44.5%) of them had attained primary education as their highest level of education. Majority 342 (83.2%) were married. Muslim was the pre-dominant religion as reported by 273 (66.4%) respondents. More than half 214 (52.1%) were not employed. Most 238 (57.9%) had an average monthly family income ranging Kenya shillings 10,001-20,000. Finally, 154 (37.5%) had six or more children (Table 1).

Table 1: Socio-demographic characteristics among respondents (n=411).

Variable	Respondent response	N	%
Age in years	≤ 19	64	15.6
	20-29	136	33.1
	30-39	154	37.5
	40-49	57	13.9
Highest level of education attained	No formal education	137	33.3
	Primary	183	44.5
	Secondary	72	17.5
	Post-secondary	19	4.6
Marital status	Married	342	83.2
	Single	47	11.4
	Divorced/widowed	22	5.4
Religion	Christians	138	33.6
	Muslims	273	66.4
Occupation	Employed	65	15.8
	Self-employed	132	32.1
	Not employed	214	52.1
Monthly family income in KShs	≤ 10,000	238	57.9
	10,001-20,000	100	24.3
	20,001-30,000	49	11.9
	≥ 30,001	24	5.8
Number of children	1	88	21.4
	2-3	75	18.2
	4-5	94	22.9
	≥ 6	154	37.5

Choice of place of delivery

From the study findings, it was revealed that more than half 233 (56.7%) of the respondents delivered at health facilities with the rest178 (43.3%) delivering at home

(Figure 1). However, qualitative results established that women preferred delivering at home through the help of traditional birth attendants due to their familiarity. One focused group discussant said, "you know these women helping us in delivery are the people from our community who have been with us for long and they have the experience and respect from all of us. So that's why I prefer them to the hospital where I don't know the doctors or nurses and thus, I will not be free with them. I have heard from my neighbor that at the hospital you are shouted at and sometimes insulted by those medics" (postnatal woman).

Figure 1: Choice of place of delivery among respondents.

Distribution of individual factors

In this study, most 277 (67.4%) of the respondents made their own decisions regarding the place of delivery. Majority 280 (68.1%) did not believe in myths and misconceptions about hospital delivery. More than average 236 (57.4%) thought it was not better to deliver in the hands of someone they knew. Most 337 (82.0%) viewed health facility delivery could help avoid complications. Approximately, 271 (65.9%) were not in possession of a medical insurance. Most 297 (72.3%) were indeed aware of the risks associated with home deliveries. Majority 268 (65.2%) indicated that hospital delivery was not time consuming (Table 2).

Individual factors associated with choice of place of delivery

The study sought to establish the association between individual factors and choice of place of delivery. Results revealed that most 164 (70.4%) of those who made their own decisions delivered at the hospital. There was a significant statistical association between decision making (p=0.031) and choice of place of delivery. Majority 158 (68.2%) of those with hospital deliveries reported no myths and misconceptions about hospital delivery. Myths and misconception about hospital delivery (p=0.025) was significantly associated with choice of place of delivery. Most 151 (64.8%) who delivered at the hospital were not of the opinion that it was better to deliver in the hands of someone they knew. This did not have a significant statistical association with choice of place of delivery (p=0.211).

Table 2: Distribution of individual factors among respondents (n=411).

Variable	Respondent response	N	%
Decision maker on where to deliver	Myself	277	67.4
	Spouse	109	26.5
	Parent/guardian	25	6.1
Myths and misconception about hospital delivery	Yes	131	31.9
	No	280	68.1
Better to deliver in the hands of some you know	Yes	175	42.6
	No	236	57.4
Delivering at the hospital helps avoiding complications	Yes	337	82.0
	No	41	10.0
	Cannot tell	33	8.0
Delivery at the hospital is time consuming	Yes	143	34.8
	No	268	65.2
Possession of a medical insurance cover	Yes	140	34.1
	No	271	65.9
Risky delivering at home	Yes	297	72.3
	No	80	19.5
	Cannot tell	34	8.3

Most 215 (92.3%) of the respondents who delivered at the hospital felt that it was a safe place of delivery as it would help reduce complications. There was a significant statistical association (p=0.001) between reduction of complications and choice of place of delivery. This was supported by qualitative data as it was confirmed that most women who delivered at the hospital faced less complications. During a key informant interview session, a community-based referral agent revealed, "it is true the cases of complications associated with delivery has reduced compared to last year because you can see woman are seeing the sense of delivering under the watch of a trained health provider. In the past we had a lot of cases of maternal and new born deaths arising from excessive bleeding and obstructed labor. That is why as the community referral agents we have been given this responsibility of educating and encouraging women not only to attend antenatal care but also deliver at the hospitals" (key informant).

The findings showed that majority 176 (75.5%) of those who delivered at the hospital did not feel it was time consuming. There was a statistical association between delivery at the hospital being time consuming (p=0.023) and choice of place of delivery. Majority 148 (83.1%) of those with no medical insurance cover delivered at home. There was a significant statistical association (p=0.001) between possessing a medical insurance cover and choice of place delivery. Most 200 (85.8%) of those who

reported that it was risky to deliver at home delivered at the hospital. This had a significant statistical association (p=0.001) with choice of place of delivery (Table 3).

Table 3: Association of individual factors with choice of delivery among respondents (n=411).

Independent variable	Respondent response	Choice of place of delivery		Statistical significance
		Home (N=178) Frequency (%)	Hospital (N=233) Frequency (%)	
Decision maker on where to deliver	Myself	113 (63.5)	164 (70.4)	χ^2=6.945, df=2, p=0.031
	Spouse	48 (27.0)	61 (26.2)	
	Parent/guardian	17 (9.6)	8 (3.4)	
Myths and misconception about hospital delivery	Yes	57 (32.0)	74 (31.8)	χ^2=0.003, df=1, p=0.025
	No	121 (68.0)	159 (68.2)	
Better to deliver in the hands of some you know	Yes	93 (52.2)	82 (35.2)	χ^2=1.563, df=1, p=0.211
	No	85 (47.8)	151 (64.8)	
Delivery at facilities help reduce complications	Yes	122 (68.5)	215 (92.3)	χ^2=39.423, df=2, p=0.001
	No	29 (16.3)	12 (5.1)	
	Cannot tell	27 (15.2)	6 (2.6)	
Delivery at the hospital is time consuming	Yes	86 (48.3)	57 (24.5)	χ^2=25.302, df=1, p=0.023
	No	92 (51.7)	176 (75.5)	
Possession of a medical insurance cover	Yes	30 (16.9)	110 (47.2)	χ^2=41.402, df=1, p=0.001
	No	148 (83.1)	123 (52.8)	
Risk to deliver at home	Yes	97 (54.5)	200 (85.8)	χ^2=58.203, df=2, p=0.001
	No	64 (36.0)	16 (6.9)	
	Cannot tell	17 (9.6)	17 (7.3)	

DISCUSSION

The study sought to determine the nature of attitude of the respondents towards family planning services. The study results revealed that most of the respondents reported that they made their own decisions on where to deliver. This may be attributed to the fact that in a true African community, matters to do with pregnancy and child care are seen as women affairs while men are tasked with role of providing for the family. The results were contrary to a study done in Ethiopia which reported that decisions on where to deliver were done on a partner agreement basis.[9] In another study, it was concluded that men take sole control on family decisions including place of delivery.[10] There was a significant statistical association between making decision and choice of place of delivery. In another study done in Southeastern Ethiopia, it was noted that making joint family decisions influenced choice of place of delivery.[11]

Majority of the respondents did not believe in myths and misconceptions about hospital delivery. Existence certain cultural and religious beliefs especially among the Muslims have been found to play a key role in choice of place of delivery. There was a significant statistical association between myths and misconception and choice of place of delivery. According to a study done in rural Ethiopia, myths and misconceptions surrounding institutional delivery affected facility-based deliveries.[12] In southeastern Nigeria, people belief that there are some foods which when taken may lead to prolonged and difficult labor thus preferring delivering at home.[13]

Most of the respondents believed that it was not better to deliver in the hands of someone they knew. Sexual and reproductive health including child delivery is a sensitive issue and people always shy off from exposing their nakedness to people they know. In Indian, pregnant women did not mind on who assisted them during delivery so long as they have successful delivery.[14] However, there was no statistical association between delivery in the hands of someone they knew and choice of place of delivery. The results were contrary to a qualitative study done among the pastoralist women in Kenya, where it was reported that many women delivered at home because they felt comfortable with delivering in the hands of the people they knew.[15]

Majority of the respondents revealed that delivering at the hospital helps in avoiding complications. In the United States of America, study findings showed that women chose hospital instead of home delivery because they feared suffering COVID-19 related complications during delivery.[16] Home delivery is a risky exercise that has been discouraged due to poor management under unskilled birth attendants in the communities. There was a significant statistical association between delivery at facilities reduce complications and choice of place of delivery. Fear of labor pain and lower complication rates attracted women to hospital deliveries in Bushehr city.[17]

Most of the respondents revealed that delivery at the hospital were not time consuming. This is due to health facilities being distant apart and access to such

institutions was not easy. The results concur with a study done in India which revealed that it was not time consuming to deliver at the facilities.[18] There was a significant statistical association between delivery at the hospital being time consuming and choice of place of delivery. A study done in rural Maasai in Kenya, it was showed that time consuming was one of the hindrances to hospital delivery as they thought travelling to distant hospitals wastes their time as they would still get the services from traditional birth attendants.[19]

Further the results revealed that most of the respondents did not have an insurance. According to a study done in peri-urban settings in Nairobi, Kenya, about seventy-nine percent of the interviewed women did not have a health insurance.[20] There was a significant statistical association between possessing a medical insurance cover and choice of place delivery. This is explained by the fact that majority of the respondents who did not possess a medical insurance cover delivered at home as they probably lacked adequate finances to cover hospital charges. In Ghana pregnant women were given free medical insurance to help them deliver in healthcare facilities.[21] Possession of a valid national health insurance significantly influences health facility delivery.[22]

CONCLUSION

The study concludes that approximately 6 out 10 deliveries occur at health facilities in Marsabit County. Individual factors significantly influenced choice of place of delivery. There is need for the ministry of health, County Government of Marsabit and relevant stakeholders to demystify myths and misconceptions about hospital deliveries, scale up awareness on availability of Linda Mama medical cover for pregnant women to ensure easy access of hospital delivery services.

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REFERENCES

1. Trends in Maternal Mortality: 2000 to 2017. Available at: https://www.who.int/reproductive health/publications/maternal-mortality-2000-2017/en/. Accessed on 20 October 2021.
2. Njuguna J, Kamau N, Muruka C. Impact of free delivery policy on utilization of maternal health services in county referral hospitals in Kenya. BMC Health Serv Res. 2017;14:51-9.
3. Moindi R, Ngari M, Nyambati V, Mbakaya C. Why mothers still deliver at home: understanding factors associated with home deliveries and cultural practices in rural coastal Kenya, a cross-section study. BMC Public Health. 2016;16:114.
4. Status of implementation of free maternity services (FMS) program in the devolved health system in Kenya. Available at: http://publications.universal health2030.org/uploads/free_maternal_health_services_report_feb_2015_final1_doc_.pdf. Accessed on 20 October 2021.
5. Kenya demographic and health survey 2014. Available at: https://dhsprogram.com/pubs/pdf/fr308/fr308.pdf. Accessed on 20 October 2021.
6. Njuki R, Abuya T, Kimani J, Kanya L, Korongo A, Mukanya C, Bracke P, Bellows B, Warren CE. Does a voucher program improve reproductive health service delivery and access in Kenya? BMC Health Serv Res. 2015;15:206.
7. Mutinda M. Factors influencing unskilled delivery in Kenya. Available at: http://erepository.uonbi.ac.ke/bitstream/handle/11295/103036/Mulinge_Factors%20Influencing%20Unskilled%20Delivery%20In%20Kenya.pdf?sequence=1&isAllowed=y. Accessed on 20 October 2021.
8. Orit A, Erika L, Halima M, Fetene N, Bradley EA. patient-centred understanding of the referral system in Ethiopian primary healthcare units. PLoS One. 2015;10(10):1-10.
9. Nigatu AM, Gelaye KA. Factors associated with the preference of institutional delivery after antenatal care attendance in Northwest Ethiopia. BMC Health Serv Res. 2019;19(1):1-9.
10. Dickson KS, Adde KS, Amu H. What Influences Where They Give Birth? Determinants of Place of Delivery among Women in Rural Ghana. Int J Reprod Med. 2016;2016:7203980.
11. Belda SS, Gebremariam MB. Birth preparedness, complication readiness and other determinants of place of delivery among mothers in Goba District, Bale Zone, South East Ethiopia. BMC Pregan Childbirth. 2016;16(1):1-12.
12. Kelel, HU, Dasa TT. Factors influencing women's choice of place of child delivery in rural Wondo Genet District, Southern Ethiopia. BMC Pregan Childbirth. 2019;17(1):1-10.
13. Ekwochi U, Osuorah CD, Ndu IK, Ifediora C, Asinobi IN, Eke CB. Food taboos and myths in South Eastern Nigeria: The belief and practice of mothers in the region. J Ethnobiol Ethnomed. 2016;12:7.
14. Sahoo J, Singh SV, Gupta VK, Garg S, Kishore J. Do socio-demographic factors still predict the choice of place of delivery: A cross-sectional study in rural North India. J Epidemiol Global Health. 2015;5(4):S27-34.
15. Caulfield T, Kitui J, Lewis S, Davey G. Factors influencing place of delivery for women in Kenya: an

analysis of the Kenya demographic and health survey, 2008/2009. BMC Pregnancy Childbirth. 2013;13:40.
16. Gildner TE, Thayer ZM. Birth plan alterations among American women in response to COVID-19. Health Expect. 2020;23(4):969-71.
17. Najafi-Sharjabad F, Keshavarz P, Moradian Z. Survey on the prevalence and influencing factors for choosing Normal vaginal delivery among pregnant women in Bushehr City, 2015. Commu Health J. 2018;11(1):20-9.
18. Bhattacharyya S, Srivastava A, Roy R, Avan BI. Factors influencing women's preference for health facility deliveries in Jharkhand state, India: a cross sectional analysis. BMC Pregn Childbirth. 2016; 16(1):1-9.
19. Karanja S, Gichuki R, Igunza P, Muhula S, Ofware P, Lesiamon J, Ojakaa D. Factors influencing deliveries at health facilities in a rural Maasai Community in Magadi sub-County, Kenya. BMC Pregn Childbirth. 2019;18(1):1-11.
20. Oluoch-Aridi J, Adam MB, Wafula F, K'okwaro G. Eliciting women's preferences for place of child birth at a peri-urban setting in Nairobi, Kenya: A discrete choice experiment. PLoS One. 2020;15(12):e0242149.
21. Nesbitt RC, Lohela TJ, Soremekun S, Vesel L, Manu A, Okyere E, Grundy C, Amenga-Etego S, Owusu-Agyei S, Kirkwood BR, Gabrysch S. The influence of distance and quality of care on place of delivery in rural Ghana. Sci Rep. 2016;6:30291.
22. Gudu W, Addo B. Factors associated with utilization of skilled service delivery among women in rural Northern Ghana: a cross sectional study. BMC Pregn Childbirth. 2017;7(1):1-10.

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