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Original Research Article

An evaluation of economic and education determinants on utilization of skilled delivery services by Maasai Women in Kiekonyokie sub location of Kajiado County in Kenya

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ABSTRACT

Background: Maternal health is one of the eight Millennium Development Goals,is central to poverty reduction and overall development efforts and it increased international attention for monitoring progress on maternal health and improving access to skilled attendants at deliveries. This research paper aimed to study economic and education determinants on the utilization of skilled delivery services by Maasai women, the study population belonging to a community of nomadic life style in North of Kajiado County in Kenya.
Methods: The study design was a cross sectional descriptive study adopting both quantitative and qualitative methodologies.
Results: Utilization of skilled delivery was higher among women who had a source of income (34%) compared to women who had no source of income (19%) indicating a statistical significance p=0.003. Women who had higher level of education were more likely to use skilled delivery 50% compared to 22% who had no education at all hence p=0.002. Education level had a statistical significance, (p-0.002). 69% of those who delivered in the hospital paid > 500 shillings compared to 8% of those who paid < 500 shillings. The amount paid for skilled delivery had a statistical significance, (p<0.001). 97.7% of the Maasai women in the Kajiado North study takes more than 1hour to reach to the nearest health facility while less than (1%) of them in this study takes less than 30minutes to reach to the health facility.
Conclusions: In conclusion this study shows that high level of illiteracy, low economic status, distance away, cost to pay for skilled delivery hindered skilled delivery service utilization among the Maasai women.

Keywords: Maasai women, Kajiado County in Kenya, Economic and education determinants, Utilization of skilled delivery services

INTRODUCTION

The identification of maternal health as one of the eight MDGs firmly situates it as central to poverty reduction and overall development efforts. Its inclusion has resulted in increased international attention for monitoring progress on maternal health and improving access to skilled attendants at deliveries as a key indicator for measuring progress for Goal 5.[1] The current estimates of maternal mortality ratios vary from more than 1000 per 100,000 live births in most African countries, to around 500 in some Asian countries, to between 200-400 in South America and fewer than 10 in developed countries. In developing countries, specifically in sub Saharan

countries, many women don't have the good fortune to be attended by skilled personnel during child birth, most childbirth occurs at home and is not assisted by skilled attendants, this lack of skilled attendance could be considered as one of the major factors in maternal and infantile mortality.[2] The Cairo International Conference on Population and Development placed a lot of emphasis on reproductive health of which safe motherhood is a component.[3] Kenya adopted the plan of action on reproductive health. The government recognized the right of access to appropriate health care services that will enable women to safely go through pregnancy and child birth and provide couples with best chance of having healthy infants. It is every woman's right to access high quality maternal health services that in turn must be accessible, affordable, effective, appropriate and acceptable to them in order to avoid preventable morbidity and mortality.[4] Many complications of pregnancy and child birth that lead to mortality can be prevented by providing quality care that involves early detection of problems and appropriate timely interventions.[5] Skilled attendants may perform deliveries either at home, in health centres or in hospitals, but it is argued that the most efficient strategy is to place them in health centres with referral capacity.[5]

In Kenya, 44 percent of births are delivered under the supervision of a health professional, mainly a nurse or midwife. Traditional birth attendants continue to play a vital role in delivery, assisting with 28 percent of births. The 2008-09 KDHS found that two out of five births, 43 percent are delivered in a health facility, while 56 percent are delivered at home. Relatives and friends assist in 21 percent of births. The proportion of births assisted by medically trained personnel increased slightly since 2003. Maternal mortality ratio for the 10-year period before the survey was estimated at 488 maternal deaths per 100,000 live births. This was statistically insignificantly different from the rate of 414 maternal deaths per 100,000 live births for the ten-year period prior to the 2003 KDHS.

Births in urban areas and births to mothers who have more education, wealth are more likely to be assisted by medical personnel than those births to mothers who reside in rural areas or who have less education and no wealth. Regional variations in type of assistance at delivery are also pronounced, with Western province recording the 26 percent of births assisted by medical professionals, followed by North Eastern province, 32 percent. Nairobi has the highest proportion of births assisted by medical personnel 89 percent. 32 percent of births in North Eastern province are attended by a skilled provider, only 17 percent occur in a health facility and it is the only province in Kenya where a sizeable proportion of births are attended by skilled providers at home. The proportion of births assisted by medically trained personnel has increased marginally from 42 percent in 2003 to 44 percent in 2008.[6]

Kajiado County is within the Rift Valley Province and it is located in the Southern part, it covers an area of approximately 21,902.9 Km^2 and is divided into seven wards and five constituencies.[7]

The population of women of reproductive age (15-49 years) in Kajiado County in 2002, which is approximated to be 25% of the total population, was 110,548 in 2002 and was projected to rise to 218,547 by the year 2020. The challenge has therefore remained the provision of Maternal Child Health/Family Planning services to cater for the health needs of the expanding number of women of reproductive age. Nevertheless, in Kajiado county, different aspects of provision of reproductive health services are still found to want.[7]

The prevalence of home deliveries in some parts of Kajiado County is as high as 77.8%.[8] The proportion of mothers assisted by traditional birth attendants during delivery is equally high at 56.7%. This poses a high risk to both the mother and new born.[8] Despite Kajiado District having 145 health facilities, several problems affecting skilled delivery utilization exists. The county is predominantly Maasai pronounce for their strong culture and traditions including female genital mutilation which can pose grave danger to the women during childbirth and especially if unattended by a skilled attendant.

It is noted that Maasai's have unique economic, social, cultural and environmental characteristics which could play a role in that respect as well as the level of knowledge, attitude, practice and their perception towards modern health facilities. No substantive study has related these to utilization in delivery services in Kajiado North.[7]

This study therefore aimed to evaluate the interplay of economic and education and other determinants on the choice of place of delivery and utilization of skilled delivery services by Maasai women in Kiekonyokie ward of Kajiado county.

METHODS

Study design

This was a descriptive cross-sectional study that applied quantitative and qualitative research methods of data collection to evaluate the economic and educational determinants on skilled delivery services utilization among the Maasai women in Kiekonyokie ward in Kajiado North.

Study population

The study population were women of child bearing age 15-49 years in Kiekonyokie sub location of Kajiado North district. Target populations were all women who had had a baby in the past 5 years prior to the research.

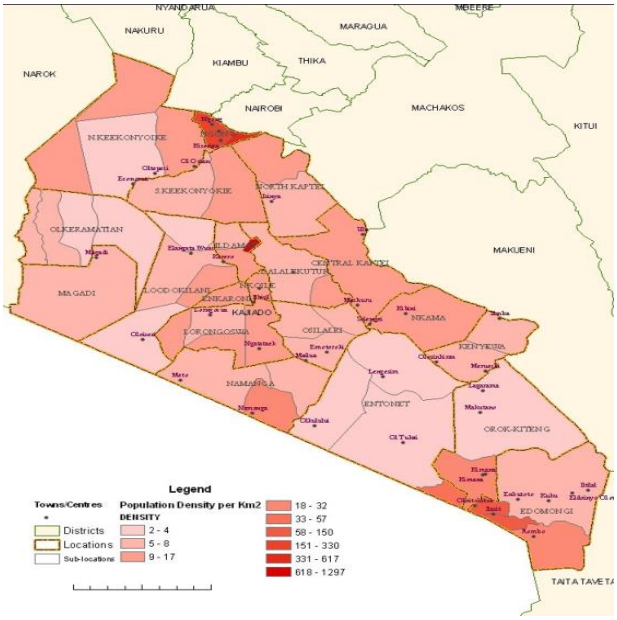

Figure 1: Map of Kajiado County by Courtesy of Central Bureau of statistics 2010.

Sample size determination

To compute the required sample size, Fisher et al, 1991 formula with a confidence interval of 95% and a degree of accuracy 0.05 were used. 264 women were included in the study.[9]

The sampling strategy

Systematic random sampling was used.

Research tool

The survey tools are semi-structured questionnaires and focus group discussions.

Ethical considerations

The field work was conducted after obtaining clearance from The Great Lakes University and the National council for Science & Technology (NTSC). Informed consent was also obtained from relevant authorities and the community in which the study was to be carried. A preparatory meeting was also held with chiefs, assistant chiefs and village elders within the broad cluster where the study took place. During the meeting with local leaders the objectives of the research were explained and community guides identified. The principal investigator clarified the role of the community guides during data collection.

Qualitative methods

The tools for qualitative data collection comprised of focus group discussion tool, key informant interview tool and a manual note taking at the time of the discussions.

Data collection

Quantitative data was collected using semi-structured questionnaires administered by a team of trained enumerators and supervisors.

Qualitative data was collected using focus group discussions and key informant interviews. 3 FGDs were held i.e. one in each of the cluster areas through *barazas* forum. The FGD participants were selected using similar criteria to the one for quantitative data collection. In each FGD there were 6 to 9 discussants who were women aged between 15 and 49 years.

Data analysis

Quantitative data was entered into Statistical Package for Social Sciences (SPSS) software version 17.0. Bivariate and univariate analysis was used to describe the correlations. Qualitative data were analysed through content and thematic analysis. The main themes included are education, economic factors, time to reach health facility, cost paid to delivery.

RESULTS

This study on determinants of education, economic factors, time to reach on utilization of skilled delivery services by Maasai women shows the following results.

From Table 1 below shows that 40.9% of the women in this study practiced livestock keeping as their main source of income; those whose main source of income was salary were 3.8% while 1.1% had no main source of income.

Table 1: Main source of income.

Main source of income	Frequency	Percent (%)
None	3	1.1
Farming	108	40.9
Self Employed	44	16.7
Salaried	10	3.8
Others	99	37.5
Total	264	100

The Table 2 shows that 50% of those who delivered in the hospital had education level up to primary and above compared to 22% of those who had no education. Education level had a statistical significance, (p=0.002).

The Table 3 shows that 34% of those who delivered in the hospital had farming as source of income compared to 19% of those who had others as a source of income. Main source of income had a statistical significance, (p=0.003).

From an FGD session, some of the women made the following remarks on the cost of delivery,

(".…….an expectant woman has no money; men have money because they sell livestock……")

(".……at times it is expensive depending on the woman condition and sometimes it is cheap……")

Table 2: Education level.

Determinant of skilled delivery		Hospital births		Total (%)	P value
		No utilization (%)	Utilization (%)		
Education Level	None	184 (78)	52 (22)	236 (100)	0.002
	≥Primary	14 (50)	14 (50)	28 (100)	

Table 3: Determinant of main source of income on skilled delivery.

Determinant of skilled delivery		Hospital births		Total (%)	p-value
		No utilization (%)	Utilization (%)		
Main source of income	Farming	71 (66)	37 (34)	108 (100)	0.003
	Others	127 (81)	29 (19)	156 (100)	

Table 4: Cost of skilled delivey.

Cost(K.Shillings)	Frequency	Percent	P-value
No cost	84	31.8	0.000
Less than 100	7	2.7	
100-500	23	8.7	
501-1000	40	15.2	
Over 1000	34	12.9	
Don't know	61	23.1	
Others	15	5.7	
Total	264	100	

Table 5: Amount paid for skilled delivery.

Determinant of skilled delivery		Hospital births		Total (%)	P value
		No utilization (%)	Utilization (%)		
Amount in Kenyan shillings paid for skilled delivery services	<500 shillings	175 (92)	15 (8)	190 (100)	<0.001
	>500 shillings	23 (31)	51 (69)	74 (100)	

Table 6: Covariate analysis.

Covariates		Std. Error	Odd Ratio	P value	Confidence Interval	
					Lower bound	Upper bound
Education level	None	0.551	2.877	0.055	0.976	8.481
	≥Primary	Reference				
Main source of income	Farming	0.377	0.567	0.133	0.271	1.188
	Others	Reference				
Amount paid for skilled delivery services	<500 shillings	0.373	22.720	<0.001	10.921	47.266
	>500 shillings	Reference				

The Table 4 shows that among the 264 women 23.1% didn't know how much was paid for skilled delivery utilization however it came out clear during an FGD session that relative accompanying the women was responsible for payments, it also emerged that women paid for the service, independent of the place of delivery even though there was cost variation. The cost of skilled delivery was statistically significant whereby p=0.000.

From Table 5, 69% of those who delivered in the hospital paid >500 shillings compared to 8% of those who paid <500 shillings. A mount paid for skilled delivery had a statistical significance, (p<0.001).

From an FGD session the women comments concurred with that of the KII findings on the issue of time taken to the nearest health facility,

("……we don't have many hospitals; only one exists even though it is far away…")

("……it takes an expectant woman 3 hours to reach the hospital…..")

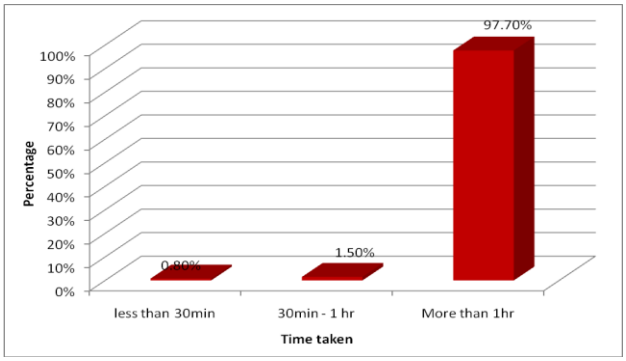

Figure 2: Time taken to the nearest health facility.

The Figure 2 above indicates that (97.7%) of the Maasai women in the Kajiado North study takes more than 1hour to reach to the nearest health facility. Less than (1%) of them in this study takes less than 30 minutes to reach to the health facility.

From Table 6, women with no formal education had Odd Ratio (OR) 2.877, CI of lower limit 0.976 and upper limit 8.481 with a (p=0.055) hence education level was significant.

Women who had main source of income OR 0.567 for farming (p<0.133) therefore the main source of income was significant. Amount that was paid for skilled delivery service was statistically significant (p<0.001).

DISCUSSION

In this study 50% of those who delivered in the hospital had education level up to primary and above compared to 22% of those who had no education. Education level had a statistical significance (p=0.002), this shows that education level influences the skilled delivery utilization. These findings agreed with of a study done in Ethiopia whereby it was asserted that maternal education was a strong predictor of preference to place of delivery.[10] Mothers whose educational status was secondary high school and above were about 11 times more likely to give birth at health institutions than women with other levels of education (OR= 10.6, 95% CI: 6.7, 16.7) continued to assert that, education showed the strongest relationship with none use of institutional delivery.[11] That was, the women with no education were less likely to use maternal services. The study further found that in Kajiado, 34% of those who delivered in the hospital had farming as a source of income compared to 19% of those who had others as a source of income. Maasai women in the Kajiado North study took more than 1hour to reach to the nearest health facility. Less than (1%) of them in this study took less than 30 minutes to reach to the health facilities. Main source of income had a statistical significance, (p=0.003) this indicates that the source of income influences skill delivery service utilization. This finding concurred with those of studies in Burkina Faso and Botswana on women perceptions of homebirths in Burkina Faso asserted that the main factors affecting use of health facilities are lack of money, transportation, road conditions that are bad all these are barriers for use of health facilities.[2] In a study carried on factors associated with non-use of maternal health services in Botswana showed that women with higher socio economic status more often had resources and the ability to buy health, hence access to health care.[10] The majority of women who did not use maternal services were of low socioeconomic status. For instance, 23% of women with low socioeconomic status did not seek a postnatal check-up compared to 13% of women with a high socioeconomic profile. Another notable observation was that 22% of women with low socioeconomic status had non-institutional delivery compared to only 2% of women in the high socioeconomic stratum. In addition to this, the Kajiado study found out that, 69% of those who delivered in the hospital paid >500 shillings compared to 8% of those who paid <500 shillings. The amount paid for skilled delivery had a statistical significance, (p<0.001). In a qualitative study on women's perception of Ante Natal Care and delivery care services, it was mentioned that the costs involved in meeting hospital requirements and paying user fees and informal fees as well as meeting personal requirements, was too high, the cost of transportation.[12] The Present study is in line with a report which reveals use of antenatal care from a skilled health provider is positively associated with household wealth. In all countries across regions, the level of use of skilled antenatal care is highest among women in the richest households, wealth-related differences are larger in countries with a low level of antenatal care than those with a high level. For example, in Guinea, Mali, Niger, Nigeria, Senegal, Bangladesh, Nepal and Pakistan, where no more than half of women report use of antenatal care from a skilled provider, the disparity between rich and poor is substantial. Also in the same countries, wealth status does not seem to have an impact on skilled antenatal care use until the fourth wealth quintile. The level of use remains low for women in the bottom 60 percent of households, starts to increase for women in the fourth wealth quintile, and is highest for the richest 20 percent. Similarly, countries with a higher overall level of skilled provider use have the least variance across wealth groups—namely Namibia, Nigeria, Zimbabwe, Uganda and most notably Jordan, Rwanda and the Dominican Republic, where the difference in use between the poorest and the richest is less than 4 percentage points. The same report shows that in developing countries as a whole the likelihood of using a skilled provider is positively associated with women's level of educational attainment, over 95 percent of women with education higher than the secondary level receive antenatal care from a skilled provider, while the percentage of women with no

education receiving skilled care varies across countries, from 22 percent in Bangladesh to over 90 percent in the Dominican Republic, Zimbabwe and Rwanda, nearly all women in the highest education group use skilled providers for antenatal care, the overall low level of skilled antenatal care use found in certain countries can be explained by the fact that less educated women, who receive very low levels of antenatal care, are a much greater share of all women needing antenatal care. As a result, there is also a greater gap by education status in countries with lower overall level of use. This observed barrier of education status is most pronounced in all countries in South/Southeast Asia and most countries in West Africa and North Africa.[13]

CONCLUSION

In conclusion this study shows that high level of illiteracy, low economic status, distance away, cost to pay for skilled delivery hindered skilled delivery service utilization among the Maasai women. 34% of those who delivered in the hospital had farming as source of income compared to 19% of those who had others as a source of income. Main source of income had a statistical significance, (p=0.003). 50% of those who delivered in the hospital had education level up to primary and above compared to 22% of those who had no education. Education level had a statistical significance, (p=0.002). 69% of those who delivered in the hospital paid >500 shillings compared to 8% of those who paid <500 shillings. The amount paid for skilled delivery had a statistical significance, (p<0.001). (97.7%) of the Maasai women in the Kajiado North study takes more than 1hour to reach to the nearest health facility while less than (1%) of them in this study takes less than 30minutes to reach to the health facility.

Recommendations

There is need to use the community strategies to curb high levels of illiteracy in Kajiado North District and enlightening the community on the dangers of unskilled delivery service. Training of the spouses and mothers in law on the importance of facility delivery through ante natal visits and community health care workers. Develop economic programs that empower women to enable them access skilled delivery utilization.

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