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Laban Lebahati Simel
Lecturer, School of Public Health, Asmara College of Health Science, Asmara, Eritrea

Dr. Lakshmi Nanduri
Associate Professor, School of Public Health, Asmara College of health Science, Asmara, Eritrea

Dr. Pamela A Juma
Director Great Lakes University of Kisumu-Nairobi Campus, Kenya

Dr. Blasio O Omuga
Lecturer, University of Nairobi, Kenya

Correspondence
Laban Lebahati Simel
Lecturer, School of Public Health, Asmara College of Health Science, Asmara, Eritrea

A study on the influence of sociocultural determinants on utilization of skilled delivery services by Maasai women in Kiekonyokie sub location of Kajiado County in Kenya

Laban Lebahati Simel, Dr. Lakshmi Nanduri, Dr. Pamela A Juma and Dr. Blasio O Omuga

Abstract
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. 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. This research paper aimed to study the influence of socio cultural 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 population. The study design was a cross sectional descriptive study adopting both quantitative and qualitative methodologies. The sample size was 264 women of reproductive age obtained by using Fisher *et al*. formula when the population is more than 10,000.The quantitative data has been analyzed using (SPSS) version 17.0 while the qualitative data was analyzed by summarizing of the themes. Results show that in Kajiado, preparation of the expectant mother for delivery did not have a statistical significant (p-0.046).The traditional rite of passage practices had no statistical significance (p-0.190) as indicated by the following findings, 38% of those who utilized the hospital were Christians while 11% were non-Christians. The study also indicated that husbands made most of the decisions (40.2%) on the place of delivery for the expectant mothers whereas as the relatives, made the least decisions 5.7%. Christian religion was 75% in the population when put together and had a statistical significant, (p<0.001), in the Kajiado study.

Keywords: Maasai women, sociocultural determinants, utilization of skilled delivery Services, Kajiado County, Kenya

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 [CDC Report 2005 [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 [Some *et al*. 2011] [2]. The Cairo International Conference on Population and Development [ICPD, 1994] [3] placed a lot of emphasis on reproductive health of which safe motherhood is a component. 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 [Lale S. *et al*. 2010] [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 [Campbell *et al*. 2006] [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 [Campbell *et al*. 2006] [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 [KDHS-2008-09] [6]

Kajiado County is within the Rift Valley Province and it is located in the Southern part of the Province. It borders the Republic of Tanzania to the Southwest, Taita Taveta County to the Southeast, Nairobi City to the Northeast, Kiambu County to the North and Narok County to the West. The county covers an area of approximately 21,902.9 Km^2 and is divided into 7 wards namely: Ngong, Magadi, Isinya, Central, Namanga, Mashuru and Loitokitok. It has five constituencies namely: Kajiado North, Kajiado East, Kajiado West, Kajiado Central and Kajiado South. Kajiado has two local authorities namely: Olkejuado county Council and Kajiado Town Council [District Strategic Plan 2005-2010] [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 [Kajiado District Strategic Plan, 2005-2010] [7].

The county has 3 county Hospitals, 19 health centers, 40 dispensaries, 26 private health institutions and the average distance to a health facility is 10 Kilometres. The most prevalent diseases are malaria, respiratory infections, diarrhoea, skin diseases and eye infections. The doctor/patient ratio is 1:66,412. Life expectancy level in the District is 43 years, which is below the national average of 53 years. The county has experienced difficulties in providing efficient health services for the fast growing population because it needs heavy investments to upgrade, modernize and construct new health facilities [District Strategic Plan, 2005-2010] [7].

The prevalence of home deliveries in some parts of Kajiado County is as high as 77.8% [AMREF, 2010] [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 [AMREF, 2010] [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 [KDSP, 2005-2010] [7]. The numbers of home deliveries at the National level are of 56% compared to 77.8% within the county despite the existence of public health facilities.

This study therefore aimed to evaluate the interplay of various social cultural determinants on the choice of place of delivery and utilization of skilled delivery services by Maasai women in Kiekonyokie ward of Kajiado County.

Methodology

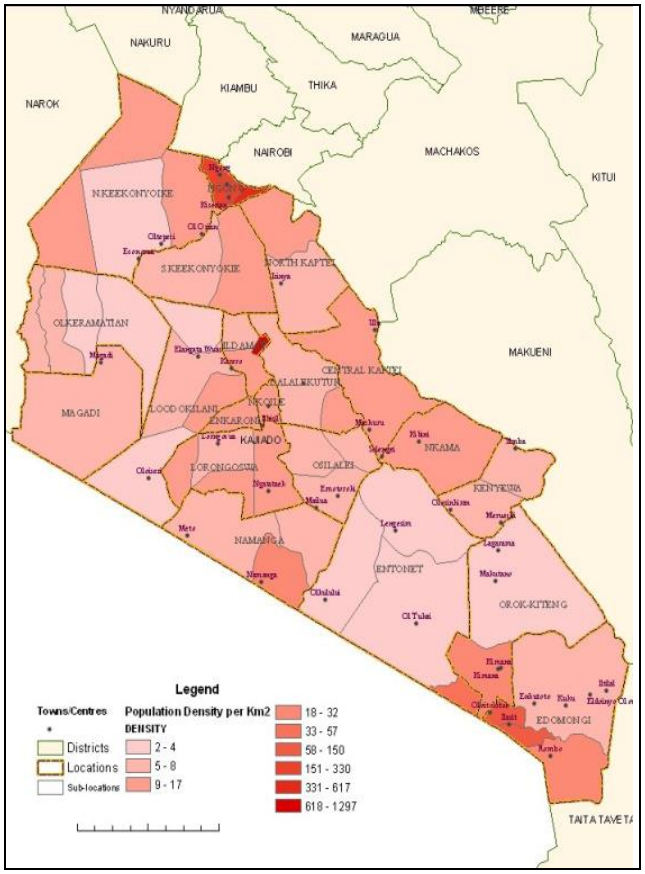
Study Design

This was a descriptive cross-sectional study that applied quantitative and qualitative research methods of data collection to evaluate the role of social cultural determinants on skilled delivery services utilization among the Maasai women in Kiekonyokie ward in Kajiado North. The quantitative data was captured through an individual questionnaire while the qualitative data was through focused group discussions and the key informant interviews.

Study Population

The study population were women of child bearing age 15-49 years in Kiekonyokie ward of Kajiado County. Target populations were all women who had had a baby in the past 5 years prior to the research. The study targeted a population of women of child bearing age (15-49) years and delivered a child in the last 5 years.

Map of Kajiado County by Courtesy of Central Bureau of statistics 2010.



Sample size determination

To compute the required sample size, Fisher's *et al*, 2003 formula with a confidence interval of 95% and a degree of accuracy 0.05 were used. The probability of finding a woman who has had delivery of a child in the last 5 years was not known therefore a probability of 50% shall be used. The population of Maasai women of reproductive age (15-49) years in Kajiado County was more than 10,000.

$N=\frac{Z^2pq}{d^2}$

N=desired sample size (pop >10,000)

Z=normal standard deviation (1.96)

p=proportion of population with target characteristics/observations

q=proportion without the attribute of interest (1-p)

d=degree of accuracy (0.05)

N-sample size for population above 15,636 and households of 3133

Z= 1.96 (Standard deviation at 95% significance interval)

p- Prevalence of assisted deliveries 22.2%

d^2- 0.05^2 Standard error at 95% confidence interval)

Therefore;

$N= \frac{1.96^2 x 0.78 x 0.22}{0.05^2} = \frac{0.6592}{0.0025^2} = 6592 = 264$

264 women were included in the study.

The Sampling strategy

Systematic random sampling was used whereby the total number of women listed (n) were then divided by the total number of the proportionate allocation (N) which gave the interval of the interviews. The number obtained usually known as the K^{th} unit was added to the random number obtained and created the interval. The village elder assisted in identifying all women numbered from 1-K^{th} within the village who had had a baby in the past five years. Proportionate allocation was applied in distributing sample size over the villages.The community guides helped to ensure that the women were interviewed after obtaining their verbal or written consent. In case a household selected didn't have the targeted respondent; it was substituted by the nearest household's cconsidering women in the pastoralist community are out their houses most of day, enumerators collected data for 3 consecutive days starting early morning, the teachers, community health workers and the local chief assisted to create awareness in advance in most of the villages. The households were selected based on a sampling interval calculated as follows;

To obtain the sampling interval, SI = $\frac{\text{Total population}}{\text{Sample size (n)}}$

The data collection team comprised of the enumerators, a supervisor, note-takers and a co-moderator had a 2 days training on use of the tools. The training was organized and conducted in English at the sub location. They familiarized themselves with the data collection tools. Pretesting of the tools was done in the neighbouring sub location.

Research tool

The survey tools were adopted from those developed by Great Lakes University of Kisumu (GLUK) normally used for conducting baseline surveys in various Counties. The questionnaire had sections divided into the number of subsections i. e. demographic determinants, economic determinants, cultural determinants, health systems determinants, knowledge, attitude and practices. Quantitative data, semi-structured questionnaires with closed ended questions derived from the operational framework were administered. The questionnaires had a few open-ended questions. The questionnaire was pretested with the qualitative tools which are Focused Group discussion guide and Key informant interview guide in a neighbouring sub location with similar characteristics.

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. The qualitative methods included 3 focused group discussions of women; each group had 8-12 members. The key informant interviews included the chief, facility midwives and elders. The key informant interviews were also conducted targeting opinion health resource persons from the County.

Pre-testing of research tools

After the training on the research tools, the questionnaire, the focus group discussion (FDG) guide and the key informant interview guide were pre-tested in a neighbouring sub-location. Prior the actual data collection, the questionnaires were pre-tested in Kiekonyokie south location area (outside the cluster areas under study) and each enumerator had a chance to interview at least one woman who has had a child in the last 5 years. Pre-testing was done to check on the validity, consistency, time taken, and completeness of the tool by comparing the data obtained by principal investigator versus the enumerators data and also to have enumerators familiarize themselves with the tool and also to check the ability of the interviewers and the quality of the tools. Based on the result corrections were done and harmonized.

Data collection

Quantitative data was collected using semi-structured questionnaires administered by a team of trained enumerators and supervisors. The questionnaire was segmented into sections to capture information on the specific target objectives. Questionnaires for each cluster were coded differently for easy monitoring during data collection and the enumerators were required to write their names for follow-up in case of need for a clarification.

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 49years.The invitations were conducted through the village elders who had acted as community guides during quantitative data collection. There were 2 note-takers during the discussion. One co-moderator was engaged to take note of any non-verbal expressions that can be propped at the end of the discussion.

Data Analysis

Quantitative Data was entered into Statistical Package for Social Sciences (SPSS) software version 17.0 and further analysed using descriptive statistics including narration. Data was then presented using frequencies, graphical techniques, ratios, rates and percentages Bivariate and Univariate analysis was used to describe the correlations. Qualitative data were analysed through content and thematic analysis. The main themes included are social-cultural determinants i. e. religion, decision making capacity on place of delivery, preparation of expectant mothers on utilization of skilled delivery services.

Results

The following results depict the influence of social-cultural determinants on utilization of skilled delivery services in Maasai women in Kiekonyokie area of Kajiado County of Kenya.

The table 1 below shows that 38% the hospital utilization were Christians while 11% were the none Christians, religion had a statistical significance $p<0.001$.

Table 1: Religion

		Hospital Births				Total	p-value
		No Utilization		Utilization			
Religion	None	56	89%	7	11%	63(100%)	<0.001
	Christians	69	62%	43	38%	112(100%)	
	Others	73	82%	16	18%	89(100%)	

Figure 1 below shows the various denominations affiliated to the studied group of Maasai women of reproductive ages between 15-49 years. 33.8% of the women were in the group of others which was later clarified by a session with KII to be the Global church. Christians religion was 75% in the population when put together and had a statistical significant, $p<0.001$.

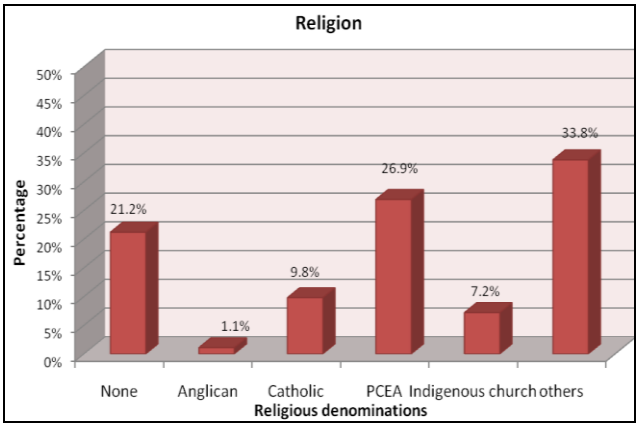


Fig1: Religion

From an FGD session that was supported by similar findings of the KII,s the women had the following remarks on the place of delivery, *"……Ilpayani oolimu enepuo. ingituak tenesaisai....." ("*.....Men are the ones who direct women where to go during labour.....") *"……Tanaabaeki engolong naisho etaana engaputany niaa naakaatoiiu ashu ariik sipitali teneyeeu....."* ("……..When that day comes for me to deliver, my mother in law will assist or take me to hospital if she wants.....").

Figure 2 below shows that husbands made most of the decisions (40.2%) on the place of delivery on the expectant mothers whereas as the relatives, made the least decisions 5.7%.

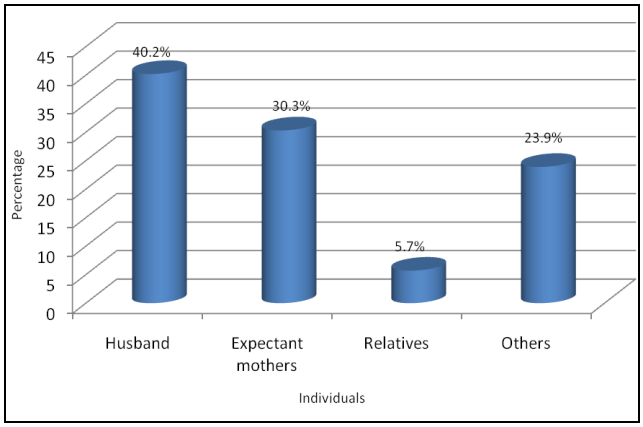


Fig 2: Decision making on the place of delivery

The table 2 below shows that preparation of the expectant mother for delivery did not have a statistical significant p-0.046.The traditional rite of passage practices had no statistical significance p-0.190.

Table 2: Preparation of the expectant mother for delivery.

		Hospital Births				p-value
		No Utilization		Utilization		
Preparation of the expectant mother for delivery	Mother in law	98	71%	40	29%	0.046
	Husband	61	86%	10	14%	
	Others	39	71%	16	29%	
The traditional rite of passage for the expectant mother	None	33	87%	5	13%	0.190
	Female Genital Mutilation	151	73%	56	27%	
	Other	14	74%	5	26%	

From an FGD session the women had the following response on skilled delivery, *"…….ore eishoi tesipitali naasidai kake meepooki ng'ai nayeu…."* ("…….delivering at the hospital is good but not everybody wants…")

The table 3 below shows that 56.1%, of the women had delivered at home while 11.4% were assisted by health personnel at the facility.

Table 3: Assistance during delivery

Assistance during delivery	Frequency	Percent
Self (Home)	24	9.1
Home(Assisted by relatives/Neighbours)	148	56.1
TBA/CHW	61	23.1
Health facility (Health personnel)	30	11.4
Others	1	0.4
Totals	264	100

Discussion

The findings in the Kajiado study showed that 56.1%, of the women had delivered at home while 11.4% were assisted by health personnel at the facility which emphasised the findings by (Ankunda *et al*, 2009) who concluded that the use of traditional birth attendants as alternative maternal health service providers was a strong norm in the community as they were more accessible, and were perceived to be competent because they received training from the formal health sector. In addition, their payments are flexible, and they are willing to deliver mothers at home.

In Kajiado, preparation of the expectant mother for delivery did not have a statistical significant (p-0.046).The traditional rite of passage practices had no statistical significance (p-0.190) as indicated by the following findings, 38% of those who utilized the hospital were Christians while 11% were non-Christians. The study also indicated that husbands made most of the decisions 40.2% on the place of delivery for the expectant mothers whereas as the relatives, made the least decisions 5.7%.This was another finding which was similar to those of the studies in Kenya and Bangladesh done by (Moore *et al*, 2002) asserted that, intercultural differences in caring beliefs, values and practices were identifiable in practices observed among maternal care providers. Strong emphasises were also expressed by (Some *et al*, 2011) traditional practices were seen in opposition to modern practices. The use of health facilities was perceived as modernity. (Trans Africa Forum, 2009) stated that cultural and legal factors largely determine health realities for expectant mothers in Africa.

Christian religion was 75% in the population when put together and had a statistical significant, (p<0.001), in the Kajiado study.

A study by *Wang et al*. 2011 report that in all countries, women who live in urban areas are more likely to make four or more antenatal care visits than women in rural areas. Urban-rural differentials are relatively larger in South/Southeast Asia than other regions. In five Asian countries-Bangladesh, India, Nepal, Pakistan and Vietnam urban women are at least twice as likely as rural women to report four or more antenatal care visits. The differentials are less marked in Latin America and the Caribbean. In the Dominican Republic, levels of use of four or more antenatal care visits are similar in urban and rural areas. Countries with overall low use of antenatal care generally have large urban-rural differences. For example, in Burkina Faso, Chad, Ethiopia and Niger, where less than 20 percent of women report four or more visits, women living in urban areas are two to six times more likely to have the recommended number of visits than women in rural areas.

Conclusions & Recommendations

The Maasai culture gives the husbands more power to decide the place of delivery for their expectant wives than any other community members. Mothers in law and husbands play a great role in the preparation of the expectant women for delivery even though they did not show any statistical significance. Christian religion had a statistical significance of, (p<0.001) since many of women who had skilled delivery are in the Christian faith. For purposes of improving attendance to skill delivery services in Kajiado, all faith based organisations and their leadership, mothers in laws, husbands and opinion leaders of this community should be involved in discussions aimed at providing understanding of the importance of skilled delivery service utilization at the facility levels. It should be important to involve these stakeholders at the initial stages of Antenatal care up to delivery time as opposed to only at some stages which might result to the required response.

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.

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