

DEMOGRAPHIC AND ECONOMIC FACTORS ASSOCIATED WITH UPTAKE OF SKILLED DELIVERY SERVICES AMONG WOMEN OF REPRODUCTIVE AGE IN MANDERA COUNTY, KENYA

Asha Adan Farah
Great Lakes University of
Kisumu
KENYA

Leila Geteri
Great Lakes University of
Kisumu
KENYA

Careena Flora Otieno
Great Lakes University
of Kisumu
KENYA

Ronnie Midigo
University of Nairobi
KENYA

ABSTRACT

Skilled delivery at all births is considered to be the single most critical intervention for ensuring safe motherhood, because it hastens the timely delivery of emergency obstetric and newborn care when life-threatening complications arise. This study aimed at investigating demographic and economic factors associated with uptake of skilled delivery services among women of reproductive age living in Mandera central Division of Mandera County, Kenya. The study adopted multi stage random sampling technique where a list of all locations, respective sub locations and villages was compiled then simple random selection was applied to select participating units. Both quantitative and qualitative data was collected. Pretested and standardized structured questioner, key informant interview (KII) guides and focused group discussion (FGD) guide was used to collect the data. A research team was selected, recruited and trained on data collection protocol and etiquette. Data was analyzed using statistical computer package of social science (SPSS) version 17 and excel then presented descriptively. Analysis revealed that 34 % of the respondents sought skilled delivery services. The key factors are age of the mother, education, and number of deliveries ($p < 0.005$) were significant predictive factors for the use of skilled assistance. Economically, mother's occupation and income as well as the spouses' income predict the utilization of skilled delivery ($p < 0.005$). The study concludes that utilization of skilled delivery services remain vital in central division of Mandera East Sub County. The study recommends community sensitization and awareness on the consequences of utilization of unskilled delivery services by divisional public health team. The strong role of social norms and traditions calls for advocacy to demystify out dated beliefs by community leaders. Local NGOS and CBOS are encouraged to empower the girl child both academically and economically.

Keywords: Maternal Health, Skilled delivery, Obstetric care.

INTRODUCTION

Skilled delivery at all births is considered to be the single most critical intervention for ensuring safe motherhood, because it hastens the timely delivery of emergency obstetric and newborn care when life-threatening complications arise. Skilled attendance denotes not only the presence of Midwives and Others with Midwifery skills (MOMs) but also the enabling environment they need in order to be able to perform capably (Scott & Ronsmans, 2009). It also implied that access to a more comprehensive level of obstetric care in case of complications requiring surgery or blood transfusions. Historical as well as contemporary evidence from many countries, most notably China, Egypt and Tunisia, indicate that skilled midwives have a drastic impact on reduction of maternal and neonatal mortality. This is why the proportion of births attended by a skilled health provider is one of the two indicators for measuring progress toward the 5th MDG (WHO, 2004).

The World Health Organization (WHO) estimated that in 2008 there were 342,900 maternal deaths relating to pregnancy and childbirth, most of them occurred in developing countries (WHO cited in Hogan, et.al., 2010). The continuing substandard maternal health care and delivery situation in developing countries especially in Sub-Saharan Africa has been a cause of concern for public health researchers and policy makers, The low uptake of maternal services and facility delivery have been a topic of researchers in the field of medicine and sociology (Wanjira *et al*, 2011). World data showed that 60 per cent of births in developing world occur outside a health institution or at home and 47 per cent are assisted by unskilled birth attendant or without any assistance at all (WHO 2006). Home delivery and the utilization of unskilled attendant reduced between 1990 and 2000, from 58% to 48%, in developing world. The greatest improvement occurred in South- East Asia and North Africa while the least were observed in Sub- Saharan Africa, where rates have remained among the highest in the world (Filippi *et al*, 2009).

LITERATURE REVIEW

Pregnancy and child birth complication are a leading cause of death and disability among women of the reproductive age in developing countries. In these countries, unskilled birth attendant provide maternal and infant health services in the urban slum for women and families, they assist during delivery and give on-going community care and practices which are culturally accepted by the community members during delivery. However, there are other practices adopted by unskilled attendant such as delay in referral of excessive postpartum bleeding and engaging in unhygienic practices during delivery which can cause serious harm to both the mother and the baby, Proper medical attention and hygienic conditions during delivery can reduce the risk of serious illness among mothers and their babies both in the rural and urban slums (Paul, & Rumsey, 2002). Unskilled birth attendant consider themselves as private practitioners who respond to request for service and receive compensation in return (Izugbara *et al*, 2009,) As they receive compensation in cash or in kind from their client's family, they do not cost much and are generally accept whatever is offered to them (Wanjira *et al*, 2011). Given the cost involved in accessing the formal health care service in Kenya, unskilled attendant are much more affordable for the impoverished (Wanjira *et al*, 2011).

According to Sravanan (2008) unskilled attendants have been blamed for being incapable of providing adequate services due to their lower level of literacy and knowledge and causing maternal and infant health problem because of the harmful practices they adopt during home births. In sub-Saharan countries, home deliveries are over 60% taking place largely in rural and urban areas and almost 50% of women give birth with the assistance of unskilled attendants (WHO 2005). The implication is that every minute, at least a woman dies from pregnancy and childbirth in these regions (Wanjira, 2008).

Furthermore, Sub-Saharan Africa was the only region of the developing world in which the proportion of births attended by skilled health personnel remained essentially stagnant from 1990 to 2005 (WHO 2006). This indicator increased from 42% to 45% in this time period. In contrast, in North Africa, the percentage of births attended by a skilled health professional rose dramatically from 40% to 75% (Tinker, Finn & Epp, 2000) also observed that at present there is a serious shortage of professionally trained midwives in developing countries and therefore have cautioned that unskilled birth attendant will continue to exist despite changes in government policies. According to Kenya Demographic Health Survey (08-09). Kenya was among the sub-Saharan countries with high maternal mortality ratios ranging at 488 per 100,000 live births. The report further indicated that two out of five births (43 percent) are

delivered in a health facility, while 56 percent are delivered outside a health institution or at home with the assistance of unskilled birth attendant. Unskilled birth attendants continue to play a vital role in delivery, assisting with 28 percent of births, relatives and friends assist in 21 percent of births while 7 percent of mothers do not receive any form of assistance.

According to the Kenya demographic health (08-2009) survey, in Mandera 69.5% of women received ANC compared to 96.4% in Nairobi and 92.7% in central province. Utilization of delivery services has been too low. In the year 2011, 2340 mothers attended antenatal care with 779 (33%) completing the 4 ANC visits, while 514 (22%) delivered in the hospital (Mandera district HMIS 2014). Accordingly Mandera has the highest maternal mortality rate in the country with estimates from UNICEF/WHO suggesting more than 1200 deaths per 100,000 live births per year; This is twice the national maternal mortality ratio (Ochako, Fotso, Ikamari, & Khasakhala, 2011), majority of these deaths occurred as a result of complication during delivery which were assisted by unskilled attendant at home.

Moreover, in most rural areas of the Central Division Mandera East sub county women who deliver at home are assisted by Traditional Birth Attendants (TBA's), family members, friends or neighbours. Worse still, the deliveries are conducted in unhygienic environments predisposing the mothers and babies to postpartum and Neonatal sepsis (Mandera.go.ke, 2015).

METHODOLOGY

Sampling

Multi-stage random sampling technique was used in this study. The sampling frame consisted of all women of child bearing age, 18-49 years with children living in central division of Mandera East Sub County. List of all the locations, sub locations, villages was compiled then simple random selection was applied to select participating units. For quantitative methods, five locations to participate in the study were sampled randomly from the eight locations making the division (first stage) sub locations making selected locations were listed and randomly picked (second stage) Next villages were listed from each selected sub locations and then some of the villages were selected randomly (third stage). The number of respondents in the village was distributed in proportion to village population. The sampling procedure involved the tossing of a pen i.e. upon entry to the village boundary, a pen was tossed and the direction of the tip was the direction to take. The first household with a woman with children below two years was interviewed thereafter an interval of three households was applied. For qualitative methods, five focus group discussions were held in selected sub locations with nominated discussants from women of child bearing age. A team of between 6-12 women made one FGD and all FGD was facilitated by two moderators, one observer and two note takers. Once the FGD was complete a full report was produced to avoid recall bias. Women who participated in the survey interviews did not take part in the FGDs. The selections considered the issues of gender, age, experience and level of education so that the groups were as homogenous as possible In addition to FGD, five key informant interviews with community leaders including chiefs, religious leaders, community health workers, selected nurses in health centre, selected TBA was held. One key informant interview was held in each sub-location. Samples to each selected unit were proportional allocated according to its population size as illustrated the example below. The same principle was applied to all the geographical units.

Data collection

Data collection took place in December, 2014. The study used both qualitative and quantitative data collection methods. The quantitative data collection was collected using structured pre-tested questionnaires, which covered sections on demography, knowledge, attitudes and practice of the women towards utilization of skilled delivery services. At the end of each day completed copies of the questioners were checked for consistency of responses. The Focus Group Discussions (FGDs) were used to gather more information on women attitudes and practice towards utilization of skilled delivery services. A structured Key informant interviews was used to get more information from community resources persons, healthcare providers. Information on cultural and economic factors influencing utilization of skilled delivery service was generated. A total of four FGD"s were conducted. All the interviews were conducted in *Somali* and translated to English. The study employed qualitative and quantitative data collection methods (264 structured interviews, 5 FGDs and 5 IDIs).

Data analysis

The demographic, economic, socio-cultural, health factors, knowledge attitude and practice data was cleaned, coded and entered into (SPSS) version 20 Qualitative data were analyzed thematically. The results are presented descriptively in graphs, tables, and charts. After cleaning, qualitative data were analyzed by organizing into themes, subthemes specific patterns and trends from which conclusion and generalization are formulated. A P value of <0.05 deemed significant which a p value >0.05 was not significant. A total of 277 respondents' (women of child bearing) drawn from five randomly selected location participated in quantitative interview; this was response rate of 98% (277) .

RESULTS

Characteristics of sample

Of the 264 mothers interviewed, 76.5% were below the age 36 with about 87% indicating that they were married. A majority also indicated that they had between 1-3 children by the time of the study. Table 1 below represents the socio-demographic characteristics of the 264 mothers who participated in the study.

		Frequency	Percent
Respondent's age	18-24	65	24.6
	25-30	75	28.4
	31-36	62	23.5
	37-42	42	15.9
	43-49	20	7.6
Marital status	Single	1	0.4
	Married	230	87.1
	Divorced	15	5.7
	Widowed	18	6.8
Present number of children	3 and below	123	47
	4-6 children	87	33
	7-9 children	54	20

Table 1 demographic characteristics of respondents

Age, marital status, household head, age when married, number of pregnancies, number of live births, present number of children as well as the highest education attained were used in crosstabs with the place of delivery. Table .2 below represents the relationship between the demographic factors and the place of delivery.

Generally, 69.1% of the participants still use TBAs. However, most of the 25 to 30 year olds (52.0%) have used skilled birth attendants. (X^2 40.914, df 4, p value 0.000) there is also a weak negative correlation between skilled birth attendant and the age of the mother implying that as the age increases, the likelihood of delivering using a skilled attendant decreases. (Pearson's R -.311).

More than half of the women assessed were married. Of these, 67.7% still use TBAs. The associations for this variable were X^2 (9.153), df 3 at sig .027. This shows that marital status is significantly associated with who the respondent chose to help her deliver. A correlation of R (-.104) and a significance of .088 shows a weak negative correlation which is however not significant. The results also show that most women get married at age of between 18-24 years in this community. Women who got married younger than 24 years were the ones who delivered mostly using a TBA with 75% of the age group 25-30 delivering using a skilled attendant. There is significant association between age when married and the use of a skilled birth attendant as indicated by the chi square statistics. X^2 20,007, df 2, p value 0.000. A correlation coefficient of .267 shows a weak positive correlation indicating that the older one is when married, there is an increased chance of using a skilled attendant during delivery.

Most women in this community have had less than 3 pregnancies. Of these, the ones who opted for TBAs were 45.8%. Among all the respondents, the group that had 3 or less children were mostly delivering using skilled attendants. It indicates that the lesser the number of children the higher the chance of delivering using a skilled attendant. X^2 54.418, df 2, p value 0.000. The correlation statistics were -.424 at a significance of .023 indicating a moderately strong positive correlation. This means that as the number of pregnancies increased, the likelihood of delivering using a skilled attendant decreases. All the demographic factors assessed had significant associations with who assisted during the delivery apart from the household head variable and marital status. There is also a very strong positive correlation between education and skilled attendant indicating that as education increases, the more likely a mother will deliver using a skilled attendant as shown in the table below.

Table 2 Demographic factors associated with skilled delivery

	Who assisted you during delivery			X^2	df	Sig.	Pearson's r	Sig.
	Unskilled attendant	Skilled attendant	Total					
Respondents age group								
18-24 years	37(56.9%)	28(43.1%)	65 (100%)	40.914	4	.000	-0.311	.000
25-30 years	36(48%)	39(52%)	75(100%)					
31-36 years	54(87.1%)	8(12.9%)	62 (100%)					
37-42 years	40 (88.9%)	5 (11.1%)	45 (100%)					
43-49 years	19 (86.4%)	3 (13.6%)	22 (100%)					
Marital Status								
Single	2 (100%)	0(0%)	2(100%)	9.153a	3	0.027	-0.104	0.088
Married	157 (67.7%)	75 (32.3%)	232(100%)					
Divorced	8 (53.3%)	7(46.7%)	15(100%)					

	Widowed	19(95%)	1(5%)	20(100%)					
Age group									
when married	<18 years	92(82.1%)	20(17.9%)	112(100%)					
	18-24 years	92(61.7%)	57(38.3%)	149(100%)					
	25-30 years	2(25%)	6(75%)	8(100%)	20.001	2	.000	0.267	0.035
Number of pregnancies	<=3	54(45.8%)	64(54.2%)	118(100%)					
	4-6	53(84.1%)	10(15.9%)	63(100%)					
	>7	79(89.8%)	9(10.2%)	88(100%)	54.418	2	.000	-0.424	0.023
Live births	<=3 births	58(47.2%)	65(52.8%)	123(100%)					
	4-6 births	76(87.4%)	11(12.6%)	87(100%)					
	>7 births	50(84.1%)	9(14.9%)	59(100%)	50.378	2	.000	-0.378	.000
Present number of children	<=3	56(45.5%)	67(54.5%)	123(100%)					
	4-6	74(87.4%)	13(12.6%)	87(100%)					
	7-9	52(88.1%)	7(11.9%)	59(100%)	51.378	2	.000	-0.391	.000
Household head	Husband	183(69.1%)	82(30.9%)	265(100%)					
	Mother	3(75%)	1(25%)	4(100%)	3.581	2	0.167		
	None	154(92.2%)	13(7.8%)	167(100%)					
	Madras	10(90.9%)	1(9.1%)	11(100%)					
	Primary'	18(72%)	7(28%)	25(100%)					
	Secondary	0(0%)	40(100%)	40(100%)					
	College	3(12%)	22(88%)	25(100%)	1.717E2a	4	.000	0.748	.000

Participant's occupation and income

Out of the 264 mothers who participated in the study, 68.4% indicated that they were housewives, 11.2% were small scale business persons and 20.4% were in some sort of formal employment. Most of the respondents earned less than 10000 shillings. Chart 1 (a) and (b) below represents average earnings and the occupation of the respondents.

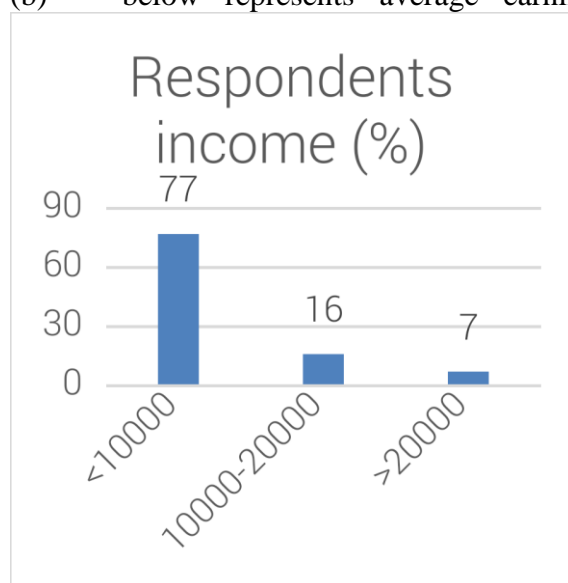


Figure 1 (a) Average income

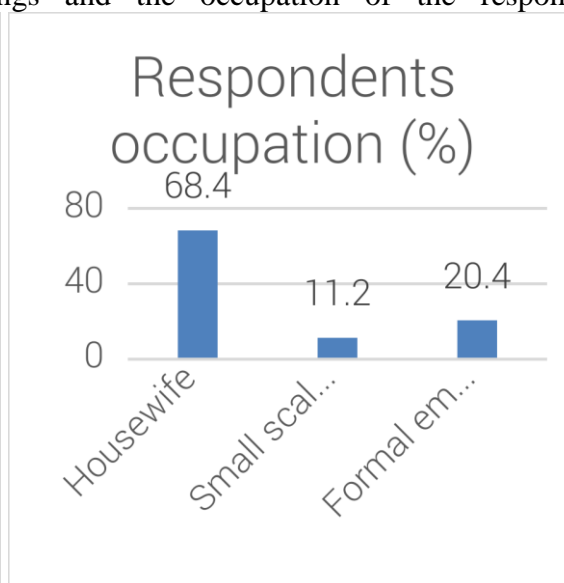


Figure 1 (b) occupation

Other sources of income

A small proportion of the respondents (3%) also indicated that they had other sources of income which they could not necessarily classify as occupation. Chart 2 below represents the respondents who indicated that they had other sources of income

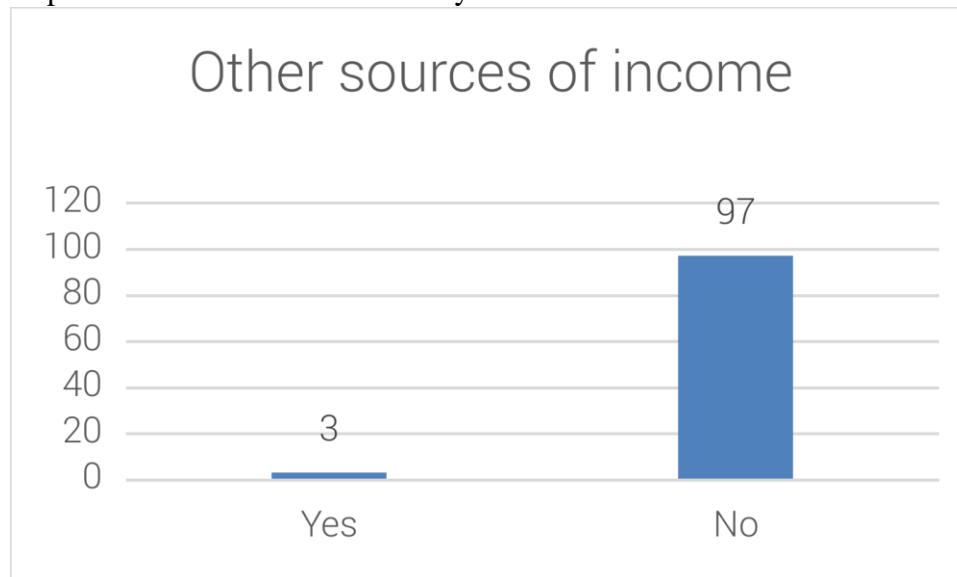


Figure 2 other sources of income

Partner's occupation

A majority of the respondents (43.5%) indicated that their partners were business men. Casual labourers and farmers were 34.6% and 19.3% respectively. Chart 3 below represents a summary of the respondents' partner occupation.

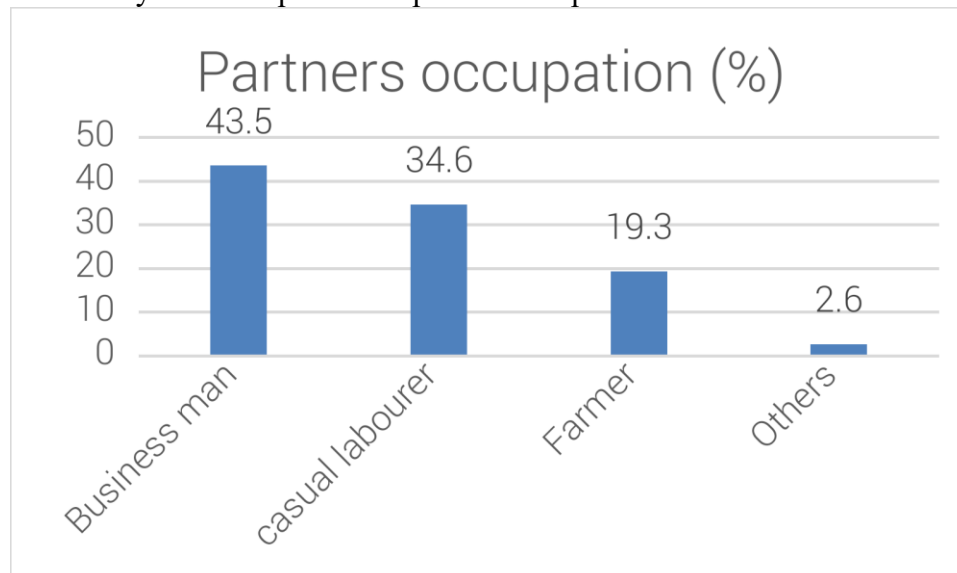


Figure 3 Partners occupation

During a focus group discussion with the men, a majority indicated that they were the economic custodians of their households and therefore made the decisions concerning its expenditure.

I think you are the one to choose because you are the husband [and] you are the owner of the money, so when you are looking for a health facility you are the one to choose according to your money...”(FGD 2, P1).

Economic characteristics associated with the uptake of skilled delivery.

From the findings, women who earned below 10,000 shillings were more likely to deliver through a TBA than women earning more than 10,000 shillings. This association was significant at X^2 1.6050E2, df 2, and significance 0.000. a correlation of .711 shows a strong positive relationship. This implies that as the earnings increase, the likelihood of delivering using a skilled attendant also increases. Likewise, respondents who were either business persons or had formal employment were more likely to deliver through a midwife as opposed to housewives who mostly delivered through TBAs. Women who are married to either businessmen or casual labourers were more likely to deliver through a midwife compared to women married to farmers who mostly deliver through TBAs as shown in the table below. All the variables assessed had significant associations between them and the outcome variable.

		Who assisted you during delivery		X^2	df	Sig.	Pearson's R	Sig.
		Unskilled attendant	Skilled attendant					
Respondents earnings	< 10000	184(88.5%)	24(11.5%)					
	10000 – 20000	1(2.3%)	42(97.7%)					
	> 20000	1(5.6%)	17(94.4%)					
	Total	186(69.1%)	83(30.9%)	160.5	2	0	0.711	0
Partners occupation	Business man	64(55.2%)	52(44.8%)					
	casual laborer	67(72%)	26(28%)					
	Farmer	50(96.2%)	2(3.8%)					
	Others	4(57.1%)	3(42.9%)					
	Total	185(69%)	83(31%)	29.172	3	0	-0.276	0
Respondents occupation	Housewife	174(94.6%)	10(5.4%)					
	Small scale business person	12(40%)	18(60%)					
	Formal employment	0(0%)	55(100%)					
	Total	186(69.1%)	83(30.9%)	190.9	2	0	0.841	0

Table 3: Economic characteristics associated with the uptake of skilled delivery

DISCUSSION

Demographic factors associated with skilled delivery

The study identified a number of demographic factors associated with skilled delivery. The factors include, age of mother from birth and at the time of delivery, level of education, religion, marital status number of children and live births.

Maternal Age

The age of the mother both from birth and time of marriage influences greatly her whether she would go for skilled delivery or not. This study indicates that older women tend to prefer

TBA assisted births while the lower age brackets preferred SBA. On the other, mothers married at a younger age (below 18) also tended to prefer TBA assisted births. This indicates a trend that mothers' ability to make informed choices regarding delivery plays a role in decisions regarding skilled delivery. This is similar to the findings in the report of the Ghana Demographic Health Survey 2008, where the percentage of births assisted by a skilled provider shows that mothers within the age bracket of 20-34 use more skilled delivery (GSS, 2009) The older women tends to prefer TBA this may also due to facts that women in this age group are more likely to have more children to care for, more competing roles, past delivery experience and negative attitude of not interacting with young women of their daughters age in the corridors of maternity wards. This findings is similar with previous studies in developing countries (KDHS, 2008; Izugbara, 2008) but in contrast with Reynolds et al., (2006) who reported that there was no significant age difference in the use of delivery care in Africa. Majority of the women had their first pregnancy before the age of twenty; this could be attributed to cultural expectations which regard childbearing as enhanced women status in the society and circumcision rites which facilitated entry to adulthood. On the other hand low economic status, education and women idleness may be other confounding factors.

Mother's education and religion

The study finds that mothers who did not have any formal education while those with primary school level education had 4.2% more likelihood of delivering at the health facility as opposed to having a TBA assisted delivery. This indicates a trend that educated lower levels of education contributes to low uptake of skilled deliveries. A study conducted in Ghana by Elena et, al (2013) indicated that 66.3% of mothers who attained primary education delivered in a health facility. While most of the participants in study were Muslim faithful, a majority of them also showed preference for TBA (96%). This preference was also indicated by participants in the focus group discussions. This finding shows a trend that Islamic religious affiliation tends encourages TBA assisted deliveries as compared to the Christian faith. This finding is in agreement with a study conducted in Bangladesh (Bashar, 2012) which concluded that women from other religions had 42% higher odds of delivering with assistance from SBAs at delivery compared to the women from Muslim religion.

Number of pregnancies and births

The study finds that mothers who had less than three pregnancies tended to prefer SBA deliveries while those with more than three children tended to seek TBA deliveries. Similarly, mothers who had had three and below number of live births (80%) also tended to prefer SBA. Higher gravidity increased the likelihood of using unskilled delivery assistant conversely majority of the respondents with more three pregnancies delivered with unskilled attendant. Higher utilization of unskilled delivery services among women with higher gravidity may be due to busy schedule, limited resource and greater experience of childbirth. This conforms to alternative possible explanation that women pregnant with their first child are careful about pregnancies and therefore are sceptical to seek unskilled delivery attendant. On the other hand, due to experiences and accumulated knowledge from previous births, old women tend to take child birth as routine and therefore utilize unskilled attendant. This findings agreed with other previous studies (Navaneetham and Dharma lingam 2003)

Economic characteristics associated with the uptake of skilled delivery

As identified by the study, the economic factors associated with the uptake of skilled delivery include mother's occupation, income as well as partner's occupation.

Mother's occupation and income

A majority of mothers do not have definite occupation. They are often without economic activity. In this study, most women indicated that they were housewives with less than 20% indicating that they were formally employed. The focus group discussions indicated that men are often the economic custodians of the household and therefore made financial decisions in the household. The study points to the fact that regular source of income in the participating households is provided by the husband. This trend indicates that mothers do not have the authority to decide when financial spending is to be made. In this case, they rely on their husbands who are reluctant to commit money to a mother's delivery. The focus group discussions also revealed that TBA fees could be paid in flexible terms and therefore more convenient for the majority poor in the light of the finding that a majority of those employed earned between Ksh. 10,000 and 20,000. To compliment this, WHO (2009) reports that women's desire to work in developing countries is often poverty induced and tailored to meet basic needs. This may be the reason why the unemployed respondents use unskilled delivery services.

CONCLUSIONS

The study found out that age of the mother, education, religion, household head and number of deliveries are significant predictive factors for the use of skilled assistance at delivery. Economically, mother's occupation and income as well as the spouses' income predicts the utilization of skilled delivery.

Since utilization of skilled delivery services is still paramount in central division of Mandera East sub-county, there is need for the community through CDF and local partners (NGOs and CBOs) need to invest in educating the girl child beyond the primary level. Similarly, there should be special education campaigns on the benefits of safe motherhood programs and ANC services targeting this group need to be developed as a matter of priority. There is also a need for government to come up with women empowerment projects to facilitate microfinance loans e.g. FUNZO and grants to women groups. The Divisional Health Management Committees through the county government should train unskilled delivery attendant on appropriate delivery skills, Recognize pregnancy danger signs, complications, and post-delivery complications and act as a linkage between the health facility and the community to facilitate referral at time of danger.

We recommend further research on the magnitude of the contribution of the various factors to the outcome variable be investigated. The direction of the relationship between the various factors and the outcome variable also to be investigated for this community.

LIMITATIONS

The study covered only factors associated with utilization of skilled delivery services among women of child bearing age in central division of Mandera east Sub County. This was cross sectional survey based on self-report from the respondents therefore social desirability was an issue because respondents may respond in away expected of them rather than their delivery practices.

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REFERENCES

- Filippi, V., Ronsmans, C., Campbell, O. M., Graham, W. J., Mills, A., Borghi, J., ... & Osrin, D. (2006). Maternal health in poor countries: the broader context and a call for action. *The Lancet*, 368(9546), 1535-1541.
- Hogan, M. C., Foreman, K. J., Naghavi, M., Ahn, S. Y., Wang, M., Makela, S. M., ... & Murray, C. J. (2010). Maternal mortality for 181 countries, 1980–2008: a systematic analysis of progress towards Millennium Development Goal 5. *The lancet*, 375(9726), 1609-1623.
- Izugbara, C., Ezeh, A., & Fotso, J. C. (2009). The persistence and challenges of homebirths: perspectives of traditional birth attendants in urban Kenya. *Health Policy and Planning*, 24(1), 36-45.
- Kenya. Central Bureau of Statistics, Kenya. Ministry of Health, ORC Macro, & ORC Macro. MEASURE/DHS+ (Programme). (2004). *Kenya: demographic and health survey 2003*. Central Bureau of Statistics.
- Mandera.go.ke,. (2015). *Mandera County Government*. Retrieved 17 November 2015, from <http://www.mandera.go.ke/>
- Ochako, R., Fotso, J. C., Ikamari, L., & Khasakhala, A. (2011). Utilization of maternal health services among young women in Kenya: insights from the Kenya Demographic and Health Survey, 2003. *BMC Pregnancy and Childbirth*, 11(1), 1
- Paul, B. K., & Rumsey, D. J. (2002). Utilization of health facilities and trained birth attendants for childbirth in rural Bangladesh: an empirical study. *Social science & medicine*, 54(12), 1755-1765.
- Saravanan, S. (2008). Training of traditional birth attendants: an examination of the influence of biomedical frameworks of knowledge on local birthing practices in India.
- Scott, S., & Ronsmans, C. (2009). The relationship between birth with a health professional and maternal mortality in observational studies: a review of the literature. *Tropical Medicine & International Health*, 14(12), 1523-1533.
- Tinker, A., Finn, K., & Epp, J. (2000). *Improving women's health: issues and interventions*. World Bank.
- Wanjira, C., Mwangi, M., Mathenge, E., & Mbugua, G. Z. Ng'ang'a. 2011. "Delivery Practices and Associated Factors among Mothers Seeking Child Welfare Services in Selected Health Facilities in Nyandarua South District, Kenya." *BMC Public Health*, 11(1), 360.
- WHO (2004). Making the pregnancy safer: the critical role of skilled attendant; a joint statement by WHO, ICM and FIGO. Geneva: Department of Reproductive Health and Research, World Health Organization.
- World Health Organization (2006). *World health statistics 2006*. World Health Organization.