

Determinants of Mode of Delivery Among Postnatal Mothers Admitted in Wajir County Referral Hospital, Kenya

Habiba Ali Maalim^{1*}, Blasio Osogo Omuga¹, Abednego Ongeso¹ and Okubatsion Tekeste Okube²

¹School of Nursing Sciences, University of Nairobi, Nairobi, Kenya

²Regina Pacis Institute of Health Sciences, The Catholic University of Eastern Africa, Nairobi, Kenya

*Corresponding Author: Habiba Ali Maalim, School of Nursing Sciences, University of Nairobi, Nairobi, Kenya.

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Abstract

Background: Globally, giving birth through the natural process, 'Vaginally' has been widely accepted as unquestioned mode of birth. On the other hand, use of caesarean Section (CS), which involves a surgical incision, has also been utilized as a mode of delivery especially among women with medical or obstetric indications. Delivery through CS is a life saving measure which plays a crucial role in reducing maternal morbidity and mortality from direct causes such as hemorrhage, infection, hypertensive disorders of pregnancy and obstructed labor [1]. In Kenya, the National maternal mortality rate was 362/100,000. However, in the study area, Wajir county, it was 1683/100,000 [2]. Advances in technology and its adoption in reproductive health have resulted in an increase in the number of Caesarean delivery in the recent years. This has increased options for preferred mode of delivery for mothers and plays a significant role in reduction of maternal and neonatal mortality and morbidity rates. However, in most African countries, mainly in rural and marginalized areas, use of caesarian section remains low even when there is clear indication. Despite this, limited studies to establish determinants of modes of delivery have been done especially in remote rural areas such as Wajir County.

Objective: The main objective of this study was to establish determinants of mode of delivery among postnatal mothers admitted in Wajir County referral Hospital.

Materials and Methods: A hospital based descriptive cross-sectional study design was used. Mixed method of quantitative and qualitative data was employed among 178 postnatal mothers who were systematically sampled from Wajir county Referral hospital. Quantitative data was collected using pre-tested semi-structured questionnaire and qualitative data was collected using Focus group discussion from the postnatal mothers. Descriptive analysis using means, frequency and proportions was computed. Chi-square test ($p < 0.05$) with corresponding 95% confidence interval was used to determine the association between the various variables.

Results: The prevalence of Caesarian Section delivery among the respondents was 32%. Analyses with Chi-Square test of independence revealed that maternal age ($p = 0.001$), marital status ($p = 0.016$), level of education ($p = 0.007$), parity ($p = 0.03$), FGM practice ($p = 0.001$) and belonging to the social health groups ($p = 0.001$) were the variables significantly associated with mode of delivery. A substantial number of women did not have sufficient knowledge on delivery options, benefits and risks to inform their decisions on delivery modes.

Conclusion: Vaginal Delivery is the most preferred mode of delivery even when CS is medically indicated. Caesarian section acceptance remains low due to lack of correct knowledge, poor attitude towards CS and lack of proper women counseling during ANC visits. Therefore, there is need for educational and economic empowerment of women and girls complemented with effective community sensitization and awareness campaigns on delivery-related complications, risks and alternative delivery options for emergency cases.

Keywords: Mode of Delivery; Postnatal Mothers; Wajir County Referral Hospital; Vaginal Delivery

Introduction

Maternal health is recognized as a fundamental right where every pregnancy is wanted, every birth is safe, every newborn is healthy and no mother should die while giving life. Every woman has a human right to the best possible care during pregnancy, delivery and post-partum periods to ensure her survival and her newborn without the distinction of race, religion and political belief, economic or social condition. The World Health Organization (WHO) has reported that the proportion of deliveries attended by skilled health providers rose from 58% in 1990 to 68% in 2008 worldwide, but remained at only about 50% in Africa [3]. Despite this fact, approximately eight million women suffer from pregnancy-related complications and over half a million die every year although these deaths can be prevented (WHO, 2013). Nearly, all these pregnancy-related deaths and obstetric complications occur in Sub-Saharan Africa and Asia [1] and are higher in rural areas in most low-income countries [4]. Each maternal death or long-term complications negatively affect her partner, her children, her family, society and the nation at large.

Advancement in delivery care including use of caesarian section (CS) has greatly improved outcome of births globally resulting into significant reduction in maternal and neonatal mortality and morbidity. The WHO suggests the ideal CS rate for a country to be 5% - 15% [1]. However, in the urban areas of China, caesarian section rate of 54.2% was observed in 2008 and 25% and above in many Asian, European and Latin American countries [5]. In Africa, the average frequency of CS is 9% [6]. A study done in Nigeria, CS accounted for 14% of all deliveries of which 90% were emergencies. About 22% of the CS deliveries were medically indicated while 4% were on maternal requests. In Kenya, the average CS rate is about 6%, ranging from 1.59% among the low income earners (poor) to 13.74% among the high income earners (rich), which is below the WHO recommended rate of 5 - 15% [1].

The preferences for mode of delivery are reported to be influenced by culture, knowledge of risk and benefits, and personal and social factors. Reasons for women's preferences range from perceived ease of recovery and need to return to family responsibilities to concerns about the safety of the baby [7]. Acceptances of CS is expected to be a more challenging issue in Wajir County, in which many mothers, due to their strong religious and cultural believes, are reported to incline towards home delivery. Wajir County is dominated by Moslims with the majority Somalis where decision making regarding mode of delivery is done by the spousal or close family relatives. For such communities, most husbands do not want CS deliveries as part of their cultural practices. Therefore, this study was aimed to investigate the determinants of mode of delivery among postnatal mothers at Wajir County referral hospital.

Methods and Materials

Study Setting

The study was conducted in the post natal ward of Wajir County Referral Hospital. This hospital was the only county referral hospital that served the entire county. The hospital offers both outpatient and inpatient services include preventive, curative and rehabilitative services. It had 6 inpatient wards and total bed capacity of 83 with an average annual inpatient turnover of 8,341 (Wajir Hospital Statistics, 2015). The obstetric department had three inpatient wards which included Antenatal/Labor ward, post-natal and newborn unit with bed capacity of 28 and average bed occupancy of 71%. The unit was manned by 15 nurse-midwives, two (2) medical officers. There was no obstetrician / gynecologists. In 2015, the unit handled 1,993 deliveries comprising; 1,800 Vaginal Delivery, 192 caesarian section of which 189 emergency (Wajir Hospital statistics, 2015).

Study Design and respondents

A hospital based cross-sectional study design was employed among postnatal mothers (N = 178) for two months (May-July, 2017). The study population comprised all postnatal mothers who gave birth at Wajir referral hospital during the study period. The sample size was determined by using Fischer's formula (Fischer, *et al.* 1998); $n = Z^2pq/d^2$ by considering 95% CI and degree of precision of 0.05. The proportion of postnatal mothers was taken at 50% resulted in 384 subjects. However, since the total population during the study period was below 10,000, sample adjusting was done using the below formula: $nf = n/(1+n/N)$ to get 178 study subjects.

According to the hospital register, monthly about 166 mothers give birth at the study area, Wajir Hospital. Accordingly, the study was designed to be performed for 2 months during which time an estimated 332 mothers give birth. Systematic random sampling method was used to select study participants. The estimated number 332 postnatal mothers in 2 months period was divided by the calculated sample size (178) to get the sampling interval = 2. A serialized list of women who had delivered was compiled each day using the postnatal admission register. The first postnatal mother from the register to be included in the sample was chosen randomly by picking one of two pieces of paper named for the first two participants. After that, every second mother who gave birth was recruited in the study until the desired sample size was attained. After the participants consented to participate in the study, they were interviewed using a pretested semi-structured questionnaire.

Data Collection Tools

Data was collected using a pre-tested semi-structured questionnaire. The questionnaires were pre-tested among 18 postnatal mothers at Habaswein Sub-County Hospital in Wajir County Referral Hospital which has almost similar infrastructure and population/demographical features. The results of pretesting were analyzed and used to review the tool. A closed ended semi-structured questionnaire was used to capture the demographic characteristics, economic, cultural practices and hospital related factors.

Data Analyses

The data were organized, screened and checked for completeness. Then they were coded and entered into the computer, and cross checked with the original data for accuracy. The data were analyzed using computer software (SPSS V. 22). Specifically, data was descriptively analyzed into proportions and summarized in frequency tables and the Chi-square test was used to establish the association between the various variables. The cut-off point for the level of significance was set at P 0.05.

Ethical Consideration

The study was approved by the University of Nairobi-Kenyatta National Hospital Ethics and Research Committee. Permission to conduct the study at Wajir County Referral Hospital was obtained from the County Government of Wajir, Department of Medical Services. The details of the study were explained to each study participant. An informed consent was obtained from the subjects both verbally and in written before data collection was commenced. Participants retained the absolute right and freedom to decline from participating in the study at any time with no consequence to them.

Results

Demographic characteristics of the respondents

The mean age of the respondents was 28.8 years. Majority, 86%, were Muslims, married at 84.3% and house wives at 65.2%. Concerning educational level, almost half, 50.6% of the respondents had no formal education. Regarding income level, a good number (40.4%) of the women were earning below Ksh 20,000 (200 USD) and majority, 69.9%, of them did not belong to any social health group (Table 1).

Variables		N	Percent (%)
Age in years	15 - 19	37	20.8
	20 - 29	60	33.7
	30 - 39	52	29.2
	40 - 49	29	16.3
	The mean age = 28.8		
Marital Status	Married	150	84.3
	Single	15	8.4
	Divorced	11	6.2
	No response	2	1.1
Parity	Primigravida	45	25.3
	1 - 3 children	70	39.3
	4 - 5 children	36	20.2
	More than 5 children	27	15.2
Occupation	Self - employed	20	11.2
	Government or private employed	32	18
	Housewife	116	65.2
	No response	10	5.6
Religion	Christian	25	14
	Muslim	153	86
Level of Education	No formal education	90	50.6
	Primary	44	24.7
	Secondary	11	6.2
	Tertiary (University/college)	33	18.5
Monthly Income	Ksh 10,000 and Below	38	21.3
	Ksh 11,000 - 20,000	34	19.1
	Ksh 21,000 - 30,000	30	16.9
	Ksh 31,000 - 40,000	18	10.1
	Ksh 41,000 - 50,000	30	16.9
	Ksh 51,000 - 60,000	22	12.4
	No Response	6	3.4
Belonging to social Group	Yes	34	19.1
	No	119	66.9
	No Response	25	14.0

Table 1: Socio - demographic characteristics of the respondents (n = 178).

Influence of socio-demographic variables on mode of delivery

Majority, 71%, of the married women delivered through vaginal while most, 54.5%, of the single and divorced, 63.6%, women delivered by Caesarean Section. There was a statistically significant association between marital status and mode of delivery (p = 0.016). Analyses with Chi-Square test of independence revealed that the proportion of caesarean section delivery was higher among younger

women aged 15 - 19 at 54.1% (p = 0.001) and older women aged 40-49 years at 51.7% (p = 0.001) compared to women aged 20 - 39 years old. Regarding to parity, the proportion of caesarean section delivery was significantly higher among primigravida women at 55.3% (p = 0.03) compared to their counterparts. The number of women who delivered through Caesarean section increased with increase their level of education. Majority of the women, 72.9%, with primary or no formal education delivered through vaginal mode. While most, 55%, of the women with secondary or higher level of education delivered via Caesarian Section. There was a statistically significant association between education level and mode of delivery (p = 0.007). The odds of Caesarian Section delivery was higher among Christian (OR = 1.4), however the difference was not statistically significant. Mothers who had a health social group were also more likely to deliver via Caesarian Section at 61.8% (p = 0.001) compared their counterparts at 26.4% (Table 2).

Variables Vaginal Delivery		Delivery Mode		Chi - square Statistics
		Caesarian Section	Vaginal Delivery	
Age	15 - 19 years	17 (45.9%)	20 (54.1%)	$\chi^2 = 18.976$, df = 3, p = 0.001
	20 - 29 years	41 (74.5%)	14 (25.5%)	
	30 - 39 years	40 (83.3%)	8 (16.7%)	
	40 - 49 years	14 (48.3%)	15 (51.7%)	
Education Level	No formal education	65 (72.2%)	25 (27.8%)	$\chi^2 = 13.866$ df = 4, p = 0.007
	Primary Level	29 (74.4%)	10 (25.6%)	
	Secondary Level	5 (45.5%)	6 (54.5%)	
	College Level	4 (28.6%)	10 (71.4%)	
	University Level	9 (60.0%)	6 (40%)	
Marital Status	Single	5 (45.5%)	6 (54.5%)	$\chi^2 = 8.054$ df = 2, p = 0.016
	Married	103 (71.0%)	42 (29.0%)	
	Divorced	4 (36.4%)	7 (63.6%)	
Parity	Primigravida	17 (44.7%)	21 (55.3%)	$\chi^2 = 14.452$, df = 3, p = 0.003
	2 - 3 Children	26 (66.7%)	13 (33.3%)	
	4 - 5 Children	28 (87.5%)	4 (12.5%)	
	Over 5 Children	41 (68.3%)	19 (31.7%)	
Religion	Muslim	102 (66.7%)	51 (33.3%)	$\chi^2 = .399$, df = 1, p = .616
	Christian	15 (60.0%)	10 (40.0%)	
Occupation	Self employed	12 (60.0%)	8 (40.0%)	$\chi^2 = 4.031$, df = 2, p = .132
	Formal employment	15 (53.6%)	13 (46.4%)	
	Not employed	80 (72.1%)	31 (27.9%)	
Average Monthly Income (Ksh)	10,000 and Below	9 (60.0%)	6 (40.0%)	$\chi^2 = 1.690$, df = 5, p = .631
	11,000 - 20,000	13 (36.1%)	23 (63.9%)	
	21,000 - 30,000	21 (61.8%)	13 (38.2%)	
	31,000 - 40,000	22 (73.3%)	8 (26.7%)	
	41,000 - 50,000	25 (89.3%)	3 (10.7%)	
	51,000 - 60,000	16 (80.0%)	4 (20.0%)	
Belonging to a health social group	Yes	13 (38.2%)	21 (61.8%)	$\chi^2 = 14.360$, df = 1, p = 0.001
	No	81 (73.6%)	29 (26.4%)	

Table 2: Influence of socio - demographic characteristics on mode of delivery.

Ethnicity and Cultural factors and their influence on mode of delivery

Most of the women, 51%, were Somalis. Regarding FGM practice, majority, 83.1%, of the women practiced FGM. Out of the 83% who practiced FGM, 69.6% delivered vaginally. Hence, there was an association between FGM practice and delivery mode ($p = 0.001$). In all the tribes, most of the women gave birth vaginally, however, Somali women comprised majority at 87.5%. The rate of delivery through Caesarian Section was lower among Somali women at 14.5% compared to Kamba, Kikuyu and Meru at 37.5%, 37% and 37.8% respectively and this finding is statistically significant ($p = 0.018$) (Table 3).

Variable Vaginal Delivery		Delivery Mode		Chi-square Statistics
		Caesarian Section		
Ethnicity	Kamba	15 (62.5%)	9 (37.5%)	$\chi^2 = 17.547$, $df = 4$, $p = 0.018$
	Kikuyu	17 (63.0%)	10 (37.0%)	
	Meru	23 (62.2%)	14 (37.8%)	
	Somali	76 (85.4%)	13 (14.6%)	
Practice of FGM	Yes	103 (69.6%)	45 (30.4%)	$\chi^2 = 14.139$, $df = 1$, $p = 0.001$
	No	12 (54.5%)	10 (45.5.0%)	

Table 3: Influence of Cultural Factors on Mode of Delivery.

Knowledge, attitude and practices of respondents on mode of delivery

Knowledge of Post-natal Mothers on Mode of Delivery and Associated Risks

Of the respondents, majorities, 73%, were aware of free maternity services. Most of the study subjects, 55.6%, were not advised on appropriate mode of delivery during pregnancy. Majority, 92.1%, of the respondents preferred vaginal delivery. Choice of mode of delivery was mainly based on past delivery experiences and advice from close family relatives (Table 4). Most of the women prefer to deliver vaginally due to their strong cultural values and lack of correct information on available delivery options.

Variables		N	Percent (%)
Advice given on the safe mode of delivery	Yes	51	28.7
	No	99	55.6
	I can't remember	28	15.7
Advice providers	Midwives	51	28.7
	Family members and relatives	123	69.1
Awareness of free maternal services	Yes	130	73.0
	No	37	20.8
	I can't tell	11	6.2
Preferred Mode of Delivery	Normal delivery	164	92.1
	Caesarian delivery	8	4.5
	No Response	6	4.5
Reasons for preferred mode of delivery	Nurses advice	22	13.6%
	previous experience	96	59.3%
	Advice from friends	13	8.0%
	Advice from family members	31	19.1%

Table 4: Knowledge of respondents on delivery modes.

Attitude of Respondents towards Delivery Mode options

Majority of the women, 86%, perceived vaginal delivery to be natural and the most preferred delivery mode. Most of the respondents, 72%, perceived CS to be a painful mode of delivery. Only 27% of the respondents said they can make a decision for CS without involving their immediate family members (Table 5). Qualitative results from focus group discussion showed that women associate CS delivery with deaths, pain, inability to work and lack of woman’s worth in the community.

Attitude	Agree	Disagree	Neutral
VD is the natural and the most acceptable mode of delivery	145 (86%)	19 (11%)	4 (2%)
CS is a painful mode of delivery	119 (72%)	33 (20%)	13 (8%)
Midwives respect mothers right for a mode of delivery	100 (61%)	51 (31%)	14 (8%)
A mother will regain her health status sooner after vaginal delivery than caesarean delivery	149 (90%)	14 (8%)	3 (2%)
I can decide on mode of delivery alone without my relatives involvement	46 (27%)	122 (73%)	0 (0%)
I trust midwives/doctors’ advice on the mode of delivery	119 (71%)	34 (20%)	15 (9%)
Doctors’ are adequately skilled to perform CS	138 (82%)	12 (7%)	18 (11%)
The hospital is well equipped to perform any mode of delivery safely	137 (82%)	22 (13%)	9 (5%)

Table 5: Attitude of post-natal mothers towards delivery mode options.

Respondents practices and experiences related to delivery modes

Majority of the women, 121(68%) had attended ANC. Among those who had attended ANC, only 37% had attended at least four visits. Majority, 61%, of the women who attended ANC, said that the ANC was not useful in determining their delivery modes. Of the respondents, majority, 68%, delivered by normal vaginal delivery while 32% via CS (Table 6). The main indications for CS delivery were obstructed labour and ruptured uterus. Qualitative results from focus group discussion revealed that women lack proper pregnancy and delivery plans advice and support during ANC. Lack of good information and knowledge on delivery plans has reinforced negative myths and believes related to CS delivery.

Variable		N	Percent
Delivery Mode	Vaginal Delivery	121	68%
	Caesarian Section	57	32%
Acceptance to CS	Yes	2	3.5%
	No	55	96.5%
Previous Place of Delivery	This is my first delivery	32	18%
	Home	81	46%
	Hospital	65	37%
Satisfaction with Delivery Mode	Dissatisfied	60	34%
	Satisfied	118	66%

Table 6: Mode of deliveries, previous delivery place and satisfaction with delivery mode (n = 178).

Discussion

Of the respondents, majority, 68%, delivered vaginally while 32% via Caesarian Section (CS). Analyses with Chi-Square test of independence revealed that the proportion of caesarean section delivery was significantly higher among younger women aged 15 - 19 at 54.1% and older women aged 40 - 49 years at 51.7% compared to women aged 20 - 39 years old at 21.4% (p = 0.001). This finding is similar to a

study done in Nigeria which found that the rates of CS delivery were higher among younger women [8]. The high prevalence of CS among younger women could be due to Emergency indications associated with teenage pregnancies related complications as teenage pregnancy is common among such communities particularly among the Somalis. On the other hand, the high rate of CS delivery among older women can be associated with general body weakness due to multiple deliveries which can complicate the birth outcomes. However, this finding is contrary with a study done in Ethiopia [9] in which older women were reluctant to use caesarian section as a mode of delivery.

Marital status was significantly associated with delivery mode ($p = 0.016$). The study revealed that single and divorced women had higher rates of CS than married women. Majority, 71%, of the married women delivered vaginally, while most of the single at 54.5% and divorced at 63.6% mothers delivered by Caesarean Section. This finding was not unexpected as the decision making regarding mode of delivery particularly among Muslim communities is done by the spousal or close family relatives. For such communities, most husbands do not want CS deliveries as part of their cultural practices. Therefore, single and divorced women have better freedom of decision making regarding their mode of delivery compared to married women. However, this is contrary to a study done in western Uganda [10] in which married mothers were found to have greater likelihood of delivering through CS.

Concerning level of education, there was a statistically significant ($p = 0.007$) association between education level and mode of delivery. Respondents with higher level of education had higher rates of delivery through CS compared to respondents with no or lower level of education. Majority of the women, 72.9%, with primary or no formal education delivered vaginally. While majority, 55%, of the women with secondary or higher level of education delivered via Caesarian Section. This finding is in line with a study done by Klemetti, *et al.* [11] who revealed that acceptance rate of CS was higher among women with higher level of education. This could be due to the fact that, educated mothers have the ability to easily access, analyze and use of appropriate information to inform their delivery decisions. Education was found to be important in demystification of negative delivery- related beliefs. Somali women however, have no formal education which remains a barrier for making informed decisions.

Regarding to parity, the proportion of caesarean section delivery was significantly ($p = 0.03$) higher among primigravida women at 55.3% compared to multigravida mothers at 27.5%. This result is in agreement with a study carried out in Ethiopia [12] in which parity was linked to higher likelihood for vaginal delivery. Women with higher parity, especially those with successful vaginal deliveries, have greater confidence with home and vaginal deliveries than primigravida. The reason why primigravida women had higher rate of CS deliveries can be explained by the fact that they fear of pain and risky of pregnancy outcomes associated with vaginal deliveries since they did not have previous experiences.

Influence of ethnicity and cultural factors on mode of delivery

Of the respondents, most, 51%, were Somalis. The rate of delivery through Caesarian Section was significantly ($p = 0.018$) lower among Somali women at 14.5% compared to Kamba, Kikuyu and Meru at 37.5%, 37% and 37.8% respectively. This finding was similar to a study done in Kenyan by [13] in which some cultural values labeling women who are unable to give birth normally as 'failed' women which increases CS refusal rate leading to high maternal and newborn mortality and morbidity rates. It is also consistent with an Ethiopian study conducted by Regassa [9] in which women perceived vaginal delivery (VD) as a signs of strength and femininity and hence encouraged by many cultural values particularly among Muslim religions. This finding concurs with the perception of Somali women who perceived VD as the main culturally acceptable rite of passage. Giving birth naturally is regarded as important for woman acceptance in the family and community hence limiting acceptance of CS. In such cultures, women struggle to maintain their societal and cultural status at the expense of their and the newborn lives. This is supported by Ochako, *et al.* [14] who agreed that beliefs and perceptions on women health choices are greatly pegged on prevailing social and culturally acceptable norms and values.

The study also showed that mothers who practiced FGM had significantly ($p = 0.001$) higher likelihood of delivery vaginally at 69.6% compared to mothers who did not practice FGM at 45.5%. This result is in agreement with previous studies [15,16] which found FGM

values to promote culturally acceptable behaviors such as delivery through vagina. Where practiced, FGM is perceived as a rite of passage in which women are encouraged to prove their femininity through actions such as enduring pain and delivering vaginally. This practice is particularly common among Somali cultures which explains persistent high rate of VD deliveries, mainly at home.

The study also revealed that there was a significant association between social health groups of the respondents and mode of delivery. Acceptance rate of CS deliveries was significantly ($p = 0.001$) higher among women enrolled in a social health group at 61.8% compared to those who didn't belong to any health group at 26.4%. Belonging to the social health groups was reported to provide an effective learning, sensitization and educative platform for empowering women on delivery-related issues such as demystifying use of CS on medical indications. The health social groups advocated for health practices and choices within the community such as benefit of ANC, hospital delivery and anti-FGM practices resulted in accessing relevant information which is key in making informed decisions on health related issues.

Knowledge, Attitude and Practice of respondents on mode of delivery

The study found that the respondents had no adequate knowledge on delivery care, risk and related issues which undermines their ability to make informed and sound decisions. In the current study, women associated CS with potential for infertility and limited chances of giving birth normally for future deliveries. This finding is similar to that of Fatemeh., *et al.* [17] in which women associated CS with risk of infertility. This explains the increasing rate of CS refusal even for life-saving interventions where risk to the mother or baby is indicated. Lack of awareness and misperceptions about the benefit and risks of mode of delivery by the respondents limits the choices of CS deliveries where VD is risky or not medically suggestive.

A substantial proportion of women, 26%, did not attend ANC. This result is lower than the 43% of women who did not attend ANC in KDHS, 2013-14. This difference is mainly because this study was a hospital based study means that a significant proportion of women who delivered at home and have higher likelihood of did not attend ANC were not included in the study. Additionally, many women who attended ANC, did not receive sufficient advice about choices of mode of delivery. Inadequate knowledge has been linked to negative attitudes and poor practices towards choice of delivery methods especially use of CS. This finding was similar to that of Yazdizadeh., *et al.*[18] in which women attitude and practices were reported to influence individual beliefs and perceptions towards delivery options.

Moreover, the study found that women perceived VD as the most natural, physiologic process and a sign of femininity. Use of CS was mainly associated with undeveloped reproductive organs for young women and weakness for older women. This finding concurs with that of Yuen., *et al.* [19] in which VD was perceived as the preferred natural delivery mode and a sign of womanhood. Although acceptance and delivery by CS is increasing, however among Somali women remained low, including maternal requests which increases risks of maternal and child mortality [20].

Conclusion

Acceptance rate of CS was very low, only two (3.5%) mothers accept immediately. The study found that the determinants of mode of delivery are multifactorial including maternal age, marital status, education level, parity, belonging to a social health group and FGM practice. The respondents associated CS with potential for infertility and limited chances of giving birth normally for future deliveries. Among such communities, vaginal delivery was perceived as the preferred natural delivery mode and a sign of strength, femininity and womanhood which adversely affect choice of mode of delivery. This was especially true among Somali women where decision making concerning mode of deliveries is absolutely done by their spouses. Consequently, there was high CS refusal rate even when medically indicated. A substantial number of women lack correct knowledge on delivery options and risks to inform their decisions on delivery options. Educational empowerment is important for women in accessing and comprehending relevant information on options, benefits and risks of mode of delivery for informed decision making.

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Conflict of Interest

The authors have no conflict of interest.

Bibliography

1. World Health Organization. "Count-down to 2015 decade report (2000-2010): Taking stock of maternal, newborn and child survival". World Health Organization: Unicef (2010).
2. Kenya Demographic and Health Survey (KDHS). "Kenya National Bureau of Statistics (KNBS, ICF Macro)". The DHS Program, ICF International Rockville, Maryland, USA (2008-2009).
3. World Health Organization. "Trends in caesarean delivery by country and wealth quintile: cross-sectional surveys in southern Asia and sub-Saharan Africa" (2013).
4. T Ganchimeg, *et al.* "Mode and timing of twin delivery and perinatal outcomes in low- and middle-income countries: a secondary analysis of the WHO Multicountry Survey on Maternal and Newborn Health". *BJOG: An International Journal of Obstetrics and Gynaecology* 121.1 (2014): 89-100.
5. Menacker F, *et al.* "Recent Trends in Cesarean Delivery in the United States". *NCHS Data Brief* 35 (2010): 1-8.
6. Shah A, *et al.* "Cesarean delivery out- comes from the WHO global survey on maternal and perinatal health in Africa". *International Journal of Gynaecology and Obstetrics* 107.3 (2009): 191-197.
7. Lumbiganon P, *et al.* "Method of delivery and pregnancy outcomes in Asia: The WHO global survey on maternal and perinatal health 2007-2008". *Lancet* 375.9713 (2010): 490-499.
8. Envuladu A, *et al.* "Factors determining the choice of a place of delivery among pregnant women in Russia village of Jos North, Nigeria: achieving the MDGs 4 and 5". *International Journal of Medicine and Biomedical Research* 2.1 (2013): 23-27.
9. Regassa N. "Antenatal and postnatal care service utilization in southern Ethiopia: a population-based study". *African Health Sciences* 11.3 (2011): 390-397.
10. Asiiimwe K. "Utilization of antenatal services among adolescents in western Uganda" (2007).
11. Klemetti R, *et al.* "Cesarean section delivery among primiparous women in rural China: an emerging epidemic". *American Journal of Obstetrics and Gynecology* 202.1 (2010): 65.e1-e5.
12. Tsegay Y, *et al.* "Determinants of antenatal and delivery care utilization in Tigray region, Ethiopia: a cross-sectional study". *International Journal for Equity in Health* 12.1 (2013): 30.
13. Mokuja J. "Factors Influencing Delivery Practices among Pregnant Women in Kenya: A Case of Wareng' District in Uasin Gishu County, Kenya". *International Journal of Innovation and Scientific Research* 10.1 (2014): 50-58.
14. Ochako R, *et al.* "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 (2011): 1-15.

15. Liu NH., *et al.* "Preferences for mode of delivery in nulliparous Argentinean women: a qualitative study". *Reproductive Health* 10.1 (2013): 2.
16. Abebe F., *et al.* "Factors associated with home delivery in Bahirdar, Ethiopia: a case control study". *BMC Research Notes* 5.1 (2012): 653.
17. Fatemeh G., *et al.* "Women's knowledge and attitude towards mode of delivery and frequency of cesarean section on mother's request in six public and private hospitals in Tehran, Iran". *Journal of Obstetrics and Gynaecology Research* 40.5 (2014): 1257-1266.
18. Yazdizadeh B., *et al.* "Cesarean section rate in Iran, multidimensional approaches for behavioral change of providers: A qualitative study". *BMC Health Services Research* 11 (2011): 159-171.
19. Yuen J., *et al.* "A comparison of trends in cesarean delivery in Paraguay between 1995 and 2008". *International Journal of Gynecology and Obstetrics* 126.3 (2014): 265-271.
20. Shiferaw S., *et al.* "Why do women prefer home births in Ethiopia?" *BMC Pregnancy and Childbirth* 13.1 (2013): 5.

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