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DETERMINANTS OF UTILIZATION OF MATERNAL HEALTHCARE AMONG WOMEN OF REPRODUCTIVE AGE SEEKING CARE IN KAPKOI HEALTH CENTER, TRANS NZOIA COUNTY.

Adero Godfrey Ooko¹, Jane Owenga¹, Fredrick Okumu²,

Adero Godfrey Ooko

Email: aderogodfrey@gmail.com

Jane Owenga

Email: owengajane55@gmail.com

Fredrick Okumu

Email: frdookumu@gmail.com

Department of Public Health, School of Health Sciences, Jaramogi Oginga Odinga University of Science and Technology, Bondo Kenya.

*Corresponding Author

Adero Godfrey Ooko¹

Tel: +254 706 606 161

Email: aderogodfrey@gmail.com

Summary

Background: Utilization of maternal care is expected to improve both neonatal and maternal health outcomes. Low maternal utilization in Kenya has become a worrying trend despite government interventions to improve on maternal health indicators. Existing literature have established insufficient maternal care utilization to be as a result poor health seeking behavior. This has led to increased maternal and neonatal deaths. Trans-Nzoia County contributes to these statistics of high maternal deaths burden in the country. The overall objective is to establish determinants of utilization of maternal healthcare services among women of reproductive age seeking services within Kapkoi Health Center.

Materials and Method: The study adopted cross-sectional design. The study used simple random sampling technique to select respondents who visited the facility during the study period. A total of 266 participants consented to undertake the study. The data was collected by use of simple structured questionnaire and focused group discussion. The study used Chi-square test to determine associations between utilization of maternal services and demographic, client and health provider factors.

Results: The significant demographic determinants of maternal healthcare services were education ($p=0.037$), age ($p=0.016$), gravidity ($p=0.028$), while insignificant result were marital status ($p=0.084$) and occupation ($p=0.536$). The significant determinants of maternal healthcare services utilization for client factors were religious practices ($p=0.034$), cultural practices ($p=0.043$) and perception ($p=0.001$), while insignificant result were knowledge ($p=0.978$) and distance to the

facility ($p=0.177$). Results provided by the respondents regarding healthcare provider determinants with significant results were quality of skilled personnel ($p=0.046$) and attitude of healthcare provider ($p=0.026$) while insignificant determinants were availability of skilled personnel ($p=0.567$).

Conclusion: Age, education, marital status, gravidity, religious and cultural practices, quality of service offered and attitude of healthcare provider were some of the determinants of utilization of maternal healthcare.

Recommendation: There is need for adoption of newborn care maternal guideline to improve on client factors, follow-ups on maternal mothers to complete all the clinic visits and continuous refresher training to healthcare providers to improve on provider-client relationship.

Keyword: *Maternal, Neonatal, determinants*

BACKGROUND INFORMATION

Maternal care is described as regular clinical and nursing care recommended for women of reproductive age during and after pregnancy (Catling *et al.*,2015). Maternal care is a form of preventive with the aim of provision of routine check-up that permits healthcare workers and midwives to treat and prevent any potential medical conditions over a span of pregnancy and post-delivery period (Atuyambe *et al.*,2008). Antenatal offers women guidance and information on appropriate place to deliver, service to seek depending on condition of a woman. Likewise, it offers opportunity to inform women on possible danger that requires immediate attention from healthcare workers. ANC provides information which in turn assist in preventing severity of pregnancy related issues through follow ups, monitoring and treatment of illness and conditions during pregnancy such hypertension, malaria, anemia which put at risk lives of both mother and the unborn baby (Banda, 2013).

Complications associated with pregnancies and deliveries pose a major concern in the developing countries. It is also one of the major causes of death due to complication and disability among women of childbearing age in Kenya. The main cause of maternal mortality and disability are linked to puerperal sepsis, unsafe abortion, hemorrhage, and obstructed labor (WHO, 2013). Hospital service provision has therefore become key part in utilization of maternal services. The

WHO recommendation on women of reproductive age (WHO, 2016) to carry case note to help in improving continuity and quality of care.

The global maternal mortality ratio due to underutilization of maternal healthcare declined by 44 %, 385 deaths to 216 deaths per 100,000 live births (UNIFPA, 2015). This results to annual average reduction of 2.3 %. Analysis done globally indicates that each continent has advanced in improving maternal wellbeing of every mother seeking healthcare services, despite the fact that level of maternal utilization remains unsatisfactorily high in Sub-Saharan Africa. Any maternal death can be prevented as evidenced by huge gaps between the rich and the poor, lifetime hazard of maternal death in developed countries is 1 out of 3300 compared to 1 out of 41 in third world countries (UNICEF, 2015).

Report by UNICEF, 2015 indicates that the number of girls and women of reproductive age who die each year from maternal complications declined from 532,000 in 1990 to 303,000 in 2015. These deaths are associated with lack of utilization of maternal services. The report stated that for every woman who dies, estimated number of 20 suffer from serious maternal injuries, infection or other forms of maternal disabilities. Close to all maternal complications and death, occur in developing countries as a result of lack of quality maternal care (UNICEF, 2015).

Maternal death and complication can occur any time without any sign at any given time when women do not seek the services at the right time. Most of the maternal deaths and complications can be avoided if done by skilled health professionals or midwives. Complications require immediate access and utilization to quality obstetric services with fully equipped lifesaving drugs and oxygen, as well as the ability to provide blood transfusion needed to perform caesarean section and other surgical procedures (WHO, 2015).

Global report indicates that an estimated 287,000 maternal mortality occurred in 2010, out of which 99 % (284,000) were from developing countries (WHO, 2014). Executing and guaranteeing utilization of maternal care is one of the most effective maternal health intervention for preventing deaths as well as maternal morbidity (Birmetta & Woldeyohannes, 2013).

In Kenya, most maternal deaths are directly related to lack of utilization of maternal services during pregnancy and childbirth, unsafe abortions, obstetric complication like severe bleeding. If women

of childbearing age fail to utilize maternal healthcare in good time, they may risk developing complications. The third goal of Sustainability Development Goals is aimed at increasing life expectancy by reducing some of the commonly known killer associated with child and maternal mortality. This can be accomplished by making progress towards achieving the target of less than 70 maternal deaths per 100,000 live births by 2030 consequently this would require improved skilled delivery, ensure healthy lives and promote well-being for all age groups. The aim is to reduce the global maternal burden; end preventable deaths of newborns and children; end the epidemic AIDs, TBs and other communicable diseases as well as reduce mortality from non-communicable diseases.

The government of Kenya through Ministry of Health introduced free maternal services in 2013 through UHC in order to reduce high maternal mortality rate that was reported to be 488 deaths per every 100,000 pregnant mother, (KHDS, 2014). Despite this intervention, only 62 % of births in Kenya were reported to be through skilled providers (KHDS, 2014). Similarly, 61 % of the deliveries were done at the health facilities (KHDS, 2014). The overall loss of pregnant mothers negatively affects the entire economy of a country in the long-term. To ensure effective policies and realization of Kenya's vision 2030 of a healthy population with low maternal mortality, there is need to understand determinants of underutilization of maternal healthcare services.

In ensuring quality, utilization of maternal services Kenya made various commitments; Recruitment and deployment of 20,000 primary health care workers, establishment of 210 primary health facilities to provide maternal and child health services and expand community health systems.

In Kenya, western regions (West Pokot, Nyanza, Trans Nzoia & Western) have high maternal mortality burdens (KHDS, 2014). The 2018 KHDS report showed the region had 8.1 %. This shows that women are exposed to more risks that can be lead to death during pregnancy and delivery. Thus, this study seeks to find determinants of low maternal utilization of healthcare services among women of reproductive age in Kapkoi Health Center, trans-Nzoia County.

METHODOLOGY

Study design

Cross-sectional study design and sequential mixed method approach was applied to help in giving best measurement for population study as well as identifying best relationship between variables. The mixed method approached was applied by use of semi-structured questionnaire to collect data on the expertise of healthcare workers while FGD guide was used to conduct one focus group discussions. For quantitative approach, simple structured questionnaire was administered to the participants after receiving their usual services at the facility. While for qualitative approach, focused group discussion was used with semi-structured open-ended questions. The questions were non-directively designed for triangulation of responses obtained from the participants.

Study population

The study population comprised of all women of reproductive ages between 15 and 49 years of age seeking maternal services within Kapkoi Health Center. The study included both antenatal and postnatal women from Kapkoi Sub Location, who made their visits to the facility during the study period and consented to take part in the study. The study also considered all women of reproductive age and are visiting the facility at the time of the study.

Sampling procedure

The identification of study subjects was done by systematic sampling technique through approaching all eligible maternal mothers seeking either antenatal or postnatal services at the health facility in MCH unit. The Research Assistant recruited the study participants with assistance from two Community Health Volunteers attached to the facility. Participants were both drawn from all antenatal women and all postnatal women who visited the facility between the month of June and July 2020 and were taken through consenting steps to enable them take part in the study. Sampling interval of one was applied whereby one in every two maternal women, who visited the facility one, was selected for the study. Postnatal respondents were recruited by identifying the number of days, weeks and months since conception. A total of 266 (160 ANCs and 106 PNCs) study participants were recruited to take part in the questionnaire. FGD participants were identified

and recruited by the Community Health Volunteers in the community; they included women who delivered at home through TBAs, self or assisted by unskilled member from the family.

Study Instruments

The study used semi-structured questionnaire and Focused Groups with the line of study objectives. The questions were organized in a logical sequence for easy flow to the participants. The questionnaire was divided into three sections namely demographic information, client's factors, health care provider related factors.

Data collection procedures

Informed consents were taken from all participants before the researcher and research assistants collected any data. Researcher assistants were trained individuals with at least Diploma qualification and sound mind. Questionnaires were administered to all eligible women who visited MCH and consented to take part in the study. Illiterate participants were assisted by the RAs upon giving verbal consenting. The questionnaire was administered to the 266 participants for a period of two months (between June 2020 and July 2021).

Data processing and analysis

The responses were edited coded and entered using SPSS version 25.0. The study used descriptive test such as percentages, mean and standard deviation to describe population characteristics in relation to socio-demographic variables. The results were then presented in frequencies, tables and percentages. The study used Chi-square test (χ^2) to assess associations between various demographic characteristics of women of reproductive age (15-49 years) accessing maternal healthcare services. Cross-tabulation was also used to show the nature of association between various study variables. P-value of less than 0.05 was considered to be statistically significant, while p-value greater than 0.05 was considered not statistically significant. For the qualitative study was done by use of thematic and context analysis.

RESULTS

Association between Socio-demographic factors and utilization of maternal services

The study result indicated significant association between education ($\chi^2=1.5343$; $df=3$; $p=0.037$), age ($\chi^2=18.143$; $df=2$; $p=0.016$) and gravidity ($\chi^2=48.553$; $df=4$; $p=0.028$) and utilization of maternal healthcare services. However, the finding of the study also indicated that no statistical association between maternal healthcare utilization marital status ($\chi^2=6.639$; $df=3$; $p=0.084$) and occupation ($\chi^2=3.010$; $df=4$; $p=0.536$) of women seeking maternal service at Kapkoi Health Center.

Table 1: Relationship between socio-demographic factors and maternal healthcare utilization. (n=266)

Variables	Attributes	Utilization of Maternal Service		Significance
		Antenatal Respondents N (%)	Postnatal Respondents N (%)	
Education	No formal	17 (11.2 %)	12 (10.6 %)	$\chi^2=1.5343$; $df=3$; $p=0.037$
	Primary	60 (37.9 %)	65 (61.1 %)	
	Secondary	68 (42.8 %)	19 (19.4 %)	
	Post-Secondary	15 (9.1 %)	10 (8.9 %)	
	N	160 (100 %)	106 (100 %)	
Age	11 - 19 years	60 (37.5 %)	26 (35 %)	$\chi^2=18.143$; $df=2$; $p=0.016$
	20 - 35 years	75 (47 %)	67 (63.5 %)	
	36 - 49 years	25 (17.5 %)	13 (11.5 %)	
	N	160 (100 %)	106 (100 %)	
Gravidity	0	17 (10.4 %)	40 (38.1 %)	$\chi^2=48.553$; $df=4$; $p=0.028$
	>1	143 (88.6 %)	66 (62.9 %)	
	N	160 (100 %)	106 (100 %)	
	Married	114 (70.7 %)	43 (40.6 %)	$\chi^2=6.639$; $df=3$; $p=0.084$
	Separated	4 (2.3 %)	6 (5.4 %)	
	Single	40 (25.1 %)	22 (21.8 %)	
	Widowed	2 (0.9 %)	5 (4.2 %)	
	N	160 (100 %)	106 (100 %)	

Marital Status				
Occupation	Employed	5 (3.9 %)	2 (2.1 %)	$\chi^2=3.010$; df=4; p=0.536
	Not Employed	108 (67.1 %)	69 (64.9 %)	
	Self Employed	39 (24.4 %)	24 (22.9 %)	
	Student	13 (7.6 %)	10 (10.1 %)	
	N	160 (100 %)	106 (100 %)	

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Association between client factors and maternal healthcare utilization

The study findings indicated a significant association between religious practices ($\chi^2 = 10.423$, $df= 4$, $p=0.034$), cultural practices ($\chi^2 = 2.786$, $df= 4$, $p=0.043$) and perception of women on quality service delivery ($\chi^2 = 2.446$, $df= 4$, $p=0.001$) and maternal healthcare utilization among women of reproductive age (15-49 years) seeking service within Kapkoi Health Centre. However, the study indicated insignificant association between knowledge ($\chi^2 = 0.198$, $df= 3$, $p=0.978$) and distance ($\chi^2 = 6.315$, $df=4$, $p=0.177$). The table below shows clients factors that were related to maternal healthcare utilization among women of reproductive age seeking services at Kapkoi Health Centre.

Table 2: Relationship between clients’ factors and utilization of maternal healthcare services. (n=266)

Variables	Attributes	Utilization of maternal services		Significance
		Antenatal Resp. N (%) (%)	Postnatal Resp. N	
I am aware of the free maternal services offered at the facility. – Knowledge	Strongly Agree	34 (21.3 %)	14 (13.2 %)	$\chi^2 = 0.198$, $df= 3$, $p=0.978$
	Agree	32 (20 %)	21 (19.8 %)	
	Neutral	19 (11.9 %)	18 (17 %)	
	Disagree	35 (21.9 %)	28 (26.4 %)	
	Strongly Disagree	40 (25 %)	25 (23.6 %)	
My religion does not allow me to access maternal services – Religious practice	Strongly Agree	28 (17.5 %)	22 (13.8 %)	$\chi^2 = 10.423$, $df= 4$, $p=0.034$
	Agree	33 (20.6 %)	17 (10.6 %)	
	Neutral	40 (25 %)	24 (15 %)	
	Disagree	33 (20.6 %)	21 (13.1 %)	

	Strongly Disagree	26 (16.3 %)	22 (13.8 %)	
My culture does not allow me to access and utilize the maternal health care – Cultural practice	Strongly Agree	25 (15.6 %)	23 (21.7 %)	$\chi^2 = 2.786$, df= 4, p=0.043
	Agree	28 (17.5 %)	25 (23.4 %)	
	Neutral	35 (21.9 %)	20 (18.9 %)	
	Disagree	38 (23.8 %)	18 (17 %)	
	Strongly Disagree	34 (21.3 %)	20 (18.9 %)	
I do not like coming to the facility because of long distance – Distance	Strongly Agree	18 (11.3 %)	15(14.2 %)	$\chi^2 = 6.315$, df= 4, p=0.177
	Agree	31 (19.4 %)	14 (13.2 %)	
	Neutral	44 (27.5 %)	26 (24.5 %)	
	Disagree	30 (18.8 %)	27 (25.5%)	
	Strongly Disagree	37 (23.1 %)	24 (22.6 %)	
The maternal services offered in the hospital are of high quality and I would recommend other women to seek services - Perception	Strongly Agree	33 (20.6 %)	18 (17 %)	$\chi^2 = 2.446$, df= 4, p=0.001
	Agree	32 (20 %)	24 (22.6 %)	
	Neutral	42 (26.3%)	23 (21.7 %)	
	Disagree	27 (16.9 %)	19 (18 %)	
	Strongly Disagree	26 (16.3 %)	22 (20.8 %)	

Association between Health Care providers' factors and maternal healthcare utilization

The results of the study indicated a significant association between quality of services being offered at the facility ($\chi^2 = 17.897$, df= 4, p=0.046) and attitude of the Healthcare workers ($\chi^2 = 6.345$, df= 4, p=0.026) and maternal healthcare utilization. However, the study finding did

not any significant association between availability of facility personnel ($\chi^2 = 14.567$, $df= 4$, $p=0.567$) and utilization of maternal services.

Table 3: Relationship between Healthcare provider factors and maternal healthcare utilization. (n=266)

Variables	Attributes	Utilization of maternal services		Significance
		Antenatal N (%)	Postnatal N (%)	
Availability of skilled Personnel	Very adequate	64 (40 %)	63 (59.4 %)	$\chi^2 = 14.567$, $df= 4$, $p=0.567$
	Adequate	56 (35 %)	23 (21.7 %)	
	Not adequate	25 (15.6 %)	15 (14.1 %)	
	Don't know	15 (9.4 %)	5 (4.7 %)	
Quality of service offered at the facility	Very adequate	58 (36.3 %)	52 (49 %)	$\chi^2 = 17.897$, $df= 4$, $p=0.046$
	Adequate	53 (33.1 %)	47 (44.3 %)	
	Not adequate	40 (25 %)	4 (3.8 %)	
	Don't know	9 (5.6 %)	3 (2.8 %)	
Healthcare provider attitude	Excellent	36 (22.5 %)	23 (21.7 %)	$\chi^2 = 6.345$, $df= 4$, $p=0.026$
	Very Good	29 (18.1 %)	20 (18.9 %)	
	Good	32 (20 %)	25 (23.6 %)	
	Poor	33 (20.6 %)	19 (17.9 %)	
	Very Poor	30 (18.8 %)	19 (17.9 %)	

Relationship between time taken at the facility and maternal healthcare utilization.

The study findings indicated that majority of women 194 (72.9 %) seeking services at Kapkoi Health Center spend less than 30 minutes from the time they arrive at the facility, while 45 (16.9 %) spend less than 1 hour and only 27 (10.2 %) of the respondents spend more than one hour at the facility

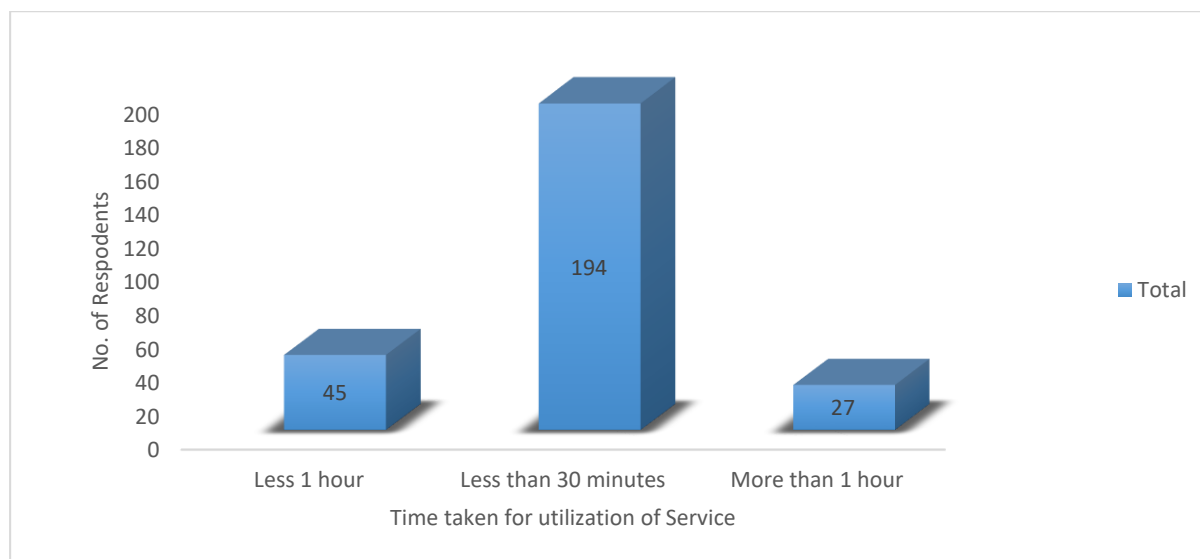


Fig 1 : Chart showing time duration spent at the facility

Expertise of Health Care Workers on maternal healthcare utilization

In regards to the expertise of the Healthcare workers affect utilization of maternal services, the FGD participants equally agreed expertise of the healthcare workers affect their utilization of maternal services. Three participants commented that most of the health workers were skilled, Participant 1 aged 19 years not married and parity 1 suggested that *“They are highly skilled and competent”*, Participant 5 said that *“I believe they are competent since I rarely interact with them”* while Participant 8 also agreed that the healthcare workers are adequately skilled by saying that *“They are skilled and can handle emergencies”*.

DISCUSSION

Socio-Demographic factors affecting utilization of maternal services

The socio-demographic characteristics linked to maternal healthcare utilization in this study include; education, age, gravidity, marital status and occupation. The results from this study revealed significant relationship between education and maternal healthcare service utilization ($\chi^2 = 1.5343$; $df=3$; $p=.037$). This indicates that educated women have knowledge on maternal access and utilization while uneducated women are less likely to utilize maternal service. In addition, education makes women value the value being offered and they thus see the benefits for the wellbeing of themselves and their babies. Lack of education contributes to low utilization of maternal uptake, as women with knowledge gap do not see any reason why they should seek maternal services. This agrees with Buruwa *et al.*, (2019) who studied

accessing and utilizing of maternal healthcare in a rural district in Ghana and established that education contributes to increased knowledge level on accessibility and utilizing of maternal healthcare.

Apart from education, the study also revealed age to be statistically significant with maternal healthcare utilization ($\chi^2=18.143$; $df=2$; $p=0.016$). Young women (11- 19 years) are considered to be underutilizing maternal services because they are either shy or they fear being stigmatized by the elderly as to why they have given birth at an early age or having pregnancy at young age or seeking some services like family planning and antenatal services. This was made clear during the focused group discussion when Participant 6 said *“I do not want to mix with old women at the facility, that’s why I come late or sometimes fail to come, old women mock young girls”*. In addition to this, women aged 36 – 49 years are too experienced and therefore do not fear visiting the facility seek services. This agrees with Buruwa *et al.*, (2019) whose study established that young women (15 – 24 years) were 0.369 times less likely to access and utilize maternal healthcare as compared to the elderly women aged (36 – 49 years).

The study findings indicated that gravidity influence utilization of maternal services ($\chi^2=48.553$; $df=4$; $p=0.028$). Women with higher pregnancies are much more experience, therefore they feel the need and importance of seeking maternal services at the facility. This is attributed to their degree of awareness on maternal and newborn wellbeing and taking care of themselves during and after pregnancy. While women of lower gravidae have limited experience to such needs therefore feel there is no need to utilize maternal services. This agrees with the study conducted in Jordan (Walker, 2014) that established the use of maternal healthcare services to be significantly associated with women of higher gravidae compared to those of lower gravidae. The study results indicated insignificant relationship between marital status and maternal healthcare utilization ($\chi^2=6.639$; $df=3$; $p=0.084$), married women have increased chances of visiting the health facility as they are being encouraged and escorted by their husbands to the facility. This motivated them to continue making various maternal appointments hence increasing utilization of maternal service, while single women lack the husbandry support and are prone to making decisions on their own and this result to underutilization, the study agrees with Buruwa *et al.*, (2019) that established married women to be more actively involved in accessing and utilizing of maternal healthcare services because of their husbands concerns and knowledge on utilization of maternal services. This

study finding also agrees with the study conducted in Addis Ababa, Ethiopia. The study indicated risk of non-attendance was much higher in households where husband's negative attitude (Birmeta, 2013). It is reasonable enough to state that having husband who approves ANC attendance significantly increases the likelihood of women having safer and convenient maternal healthcare.

Lastly, the study result did not find any significant relationship occupation and utilization of maternal services ($\chi^2=3.010$; $df= 4$; $p=0.536$). Any form of employment does not affect utilization of maternal services. Since maternal mothers could still go to their work places and make it back to seek maternal services just like unemployed ad students. This concurs with the findings in Jimma Town (Woldegohannes, 2013) that indicated no significant association between various forms of employment and utilization of maternal services.

Client Factors influencing utilization of maternal healthcare

Based on the study findings there are numerous client factors such affecting utilization of maternal services. These include religious practices, cultural norms, distance to the facility and perception on maternal services.

The study results indicated that religious practice have a significant association with utilization maternal healthcare ($\chi^2 = 10.423$, $df= 4$, $p=0.034$). This means that religion poses greater risk on maternal services, most women would prefer not to visit the facility but rather pray the issue affecting their maternal health. A number of women do not seek maternal services since their churches are strongly against the use of facility services such as drugs and injection. This was supported during the focused group discussion when Participant 2 stated *"At some point when my condition worsened I had to sneak to the facility during morning hours or late in the evening to seek service Antenatal care because I feared being seen by my church elder"*. The findings are consistent with the result in North Nigeria, a study sought to evaluate religious influence on utilization of maternal healthcare believe in some religious laws (Hadiza, 2019). The study in Nigeria further revealed that religious norms could be connected to poor maternal service uptake. Likewise, cultural practices have direct influence on utilization of maternal services ($\chi^2 = 2.786$, $df= 4$, $p=0.043$), women are barred from seeking maternal services because it's against the culture and practices of some groups living within the community. They thus, seek services from Traditional Birth Attendant, this concurs with Vilder *et al.*, (2016), whose study on access to maternal service

and their determinants in Karnataka State, India revealed that cultural practice has 1.2 times likely to influence maternal utilization compared to knowledge. This applies to women perception on the type of service offered at the facility ($\chi^2 = 2.446$, $df = 4$, $p = 0.001$). Women believe on the type of services offered can influence their next attendance and this can further have influence on other women who they interact with at the community. Maternal women can make decisions based on their believe about facility. This result concurs with the findings of Karnataka State, India, Vdler *et al.*, (2019) that established women perception to have 1.4 times influence on maternal utilization compared to knowledge.

Though there is limited literature on studies pertaining to logistics on maternal healthcare utilization, the study failed to indicate any significant relationship between distance to the nearby facility and maternal service uptake. This implies that most women would travel however far distance to seek maternal services without considering the distance to the facility. This was supported during the focused group discussion thematic analysis result “*We still come to the facility even if it’s far, we only fear coming at night, because we are scared of recent insecurity cases*”. Participant 3.

Health care provider determinants of maternal healthcare service utilization

Based on the findings of the study, there exist healthcare providers’ factors such as availability of personnel, quality of services offered and attitude of healthcare providers.

The quality of maternal healthcare service offered at the facility the chances of a woman’s next visit ($\chi^2 = 17.897$, $df = 4$, $p = 0.046$). Incompetent healthcare provider will offer poor quality service and this will influence the women not to seek subsequent visits at the facility. Quality is a major factor in maternal healthcare program and can result to the chances of women facing obstetric emergencies in health facilities. Good quality facilities are a strong determinant to utilization of maternal services.

In addition, maternal women can opt not to utilize a specific type of service based on how satisfied they are with healthcare provider ($\chi^2 = 6.345$, $df = 4$, $p = 0.026$). Negative attitude of healthcare worker toward women seeking maternal service contributes to underutilization of maternal services. Attitude of healthcare provider is therefore a greater inhibitor to utilization of maternal services. During focused group discussion a participant in her opinion, stated “I had to stop attending my ANC services, after a staff arrogantly mistreated me” Participant 8. This agrees with the study conducted in Addis Ababa on factors contributing to low maternal

uptake in Holeta. Almaki *et al.*, (2016) that established the risk of maternal non-attendance was as a result of healthcare provider negative attitude towards client visiting the facilities and thus leading to missed appointment and low maternal uptake.

Time taken to seek maternal services, also contributes to maternal healthcare service uptake. The findings of the study indicated that most women would prefer to seek service at the shortest time possible 194 (72.9 %). Young mothers of ages 11-19 years, and especially students are fearful, shy and feel stigmatized whenever they meet the elderly at the facility, therefore preferring to spend the least time at the facility, for fear of meeting older women. Older women also prefer spending shorter time so that they can go back and do other house chores. Women who wait for longer time would make their minds to attend their next subsequent visit or seek an alternative means by visiting the Traditional Birth Attendant. This finding concurs with the finding of study on access and utilization of free maternal service in Kenya among women in Kibera slums, Owiti *et al.*, (2018). The finding indicated that time and quality of service is a key factor contributing to maternal utilization uptake.

Based on the study finding its evident that expertise of healthcare workers has got great impact on maternal healthcare utilization skilled workers have various capacities that attract more maternal visits. These capacities include, ways of handling customers that had been discussed previously, offering of post care services such as follow-ups for women which in turn enhance safe pregnancies, safe deliveries and safe postnatal care. This was also supported during the focused group discussion thematic analysis result, “*The staffs are competent and skilled, they can easily handle emergencies any time there is need*”. Participant 1. This contributes positively to maternal service uptake among women of reproductive age (15 -49 years).

CONCLUSION

In conclusion, this study reported that utilization maternal healthcare services among women of reproductive age (15-49 years) within Kapkoi Health Centre is still inadequate due to the factors discussed.

The study results highlighted major determinants of maternal healthcare utilization were socio-demographic and client factors in nature. There were also major detractors from the other related factors including facility and care provider factors. The socio-demographic, client factors and healthcare provider determinants were education, age, marital status,

gravidity and occupation. While client factors included religious practice, cultural practice distance to the facility and perception on quality services provided at the facility. Healthcare provider factors were expertise of the staffs and attitude.

First, the situation was worst in young girls of ages 11-19 years who are majorly students, single maternal women and stayed with their family or members. Majority of these age groups risked missing their clinic appointments for fear of being stigmatized by their fellow elder women. Level of education was also found to have a bigger impact on utilization of maternal healthcare services. Suggestions that by improving education opportunity for girls and women may result in larger outcome on improving utilization of maternal healthcare services since it is evident that women with higher education level have greater chances of seeking maternal services than primary level and no formal of education. As an option to this, health facility needs to focus on persuade and attract women with little or no education by conducting continuous health education in the facility during clinic visits and at the community levels so as to reach women who do not make clinic visits. Young women aged 11-19 years with low gravidae were found to be less likely to have low maternal utilization in postnatal care as compared to older women with higher gravidae, this implied that gravidity is among the criteria for enhancing education campaigns on importance of maternal healthcare service. Married women were also found to be utilizing maternal services more than the unmarried, this has been attributed to the fact that most of them receive support from their husbands. However, occupation not found to have any impact on utilization of maternal healthcare services.

Cultural, religious practices and women perception were also found to pose greater risk in utilization of maternal services, this implied that there is need for dialogue sessions with health management teams, community local leaders, administrative leaders, church leaders to sensitize and create awareness on hindrance and effort to balance between maternal utilization, religion, cultural practices and perception. The negative impact of religion on utilization of maternal healthcare points to the necessity for research into aspects of religion and cultural practices that discourages proper utilization of maternal services.

Based on the discussion in chapter five, maternal mothers would prefer to seek maternal services where they are handled well by the healthcare providers. Attitude of healthcare providers greatly influence women's decision to make their subsequent appointments. It's evident that this could as well contribute to other women attendance. Likewise, to the

expertise of the healthcare workers, skilled contribute to increased attendance among women seeking services at the facility. These skilled and competent healthcare workers also offer post care services, which contributes to safe pregnancy, safe deliveries and safe postnatal care for both the baby and the mother.

Recommendation

- a) The Health Management team need to conduct continuous refresher trainings on good communication techniques to the clients to improve client-provider relationship that has been identified as some of the determinants of maternal healthcare utilization.
- b) Healthcare providers should encourage mothers to complete monthly clinic visit, with key services provided at 6 weeks, 10 weeks, 14 weeks , 6 months , 9 months , 12 months , 18 months and 24 months for both mothers and their babies. While offering these services, the facility should ensure availability of drugs and vaccines before issuing next appointment dates.
- c) There was also need for the County Health Management team to promote the adoption of New-born care guideline to the facility. Introduction of New-born care register will improve follow up on deliveries in the community and follow up on missed appointments. There was also need to support the facility through mentorship and capacity building.
- d) The facility should also introduce child health care desk to help in handling complains and feedback for the maternal mothers.
- e) All mothers and their babies must be encouraged by the health care workers to start and complete their clinic visits regardless of the socio-demographic, client, facility and health care provider factors that can be hindrance to full access of maternal healthcare services.
- f) There is need to strategize on intervention targeting young women of low parity to improve their ANC uptake.
- g) There is need for proactive community follow-up of mothers 34 weeks' gestation as well mother and their babies by the community health volunteers.

DECLARATION

Ethics

University of East Africa, Baraton Ethics Review Committee, approved the study.

Consent for publication

Not applicable

Availability of data

The study data set used and analysed in this study are available on reasonable request from corresponding author.

Competing interests

All authors have declared no competing interest in this submitted work.

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Authors' contributions

Adero Godfrey Ooko and Jane Owenga conceived and drafted the manuscript. Fredrick Okumu critically revised the manuscript. All authors read and approved the final manuscript before submission.

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