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Original Research Article

Utilization of free maternity services among mothers aged 18-49 years in Nakuru County, Kenya

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ABSTRACT

Background: In Kenya, the hope of free maternity services (FMS) is to increase the demand for maternity health care services offered by certified health professionals. Thus, this study aimed to determine and understand the utilization level of FMS among mothers aged 18-49 years living in Naivasha Sub-County, Kenya.
Methods: A mixed-methods approach collected quantitative and qualitative data through structured questionnaires, health records reviews, focus group discussions, and key informant interviews. The quantitative and qualitative data were analyzed by use of Statistical package for social sciences (SPSS) 20 and content analysis, respectively. The quantitative data results were further subjected to multiple regression analysis.
Results: The findings showed that over 80% utilized antenatal care, facility deliveries and postnatal care, but 68% of respondents used family planning. The mothers were found active in their first, second and third pregnancies in utilizing FMS, followed by a sudden decline. The mothers preferred the public health facilities to the private, mission and Non-Governmental Organizations (NGOs). The significant findings influencing the utilization of FMS among the mothers were age (p=0.004), the number of children (p=0.000), age at first birth (p=0.025), household income (p=0.008) and residential area (p=000). The mothers' level of knowledge on FMS had an average score of 80%, obtained by use of the Linkert scale. The radio, television, health facility and community sources were significant with (p=0.000).
Conclusions: The decision-makers consider age, the number of children, age at first birth, household income and residential area in the formulation of FMS policies. Further, utilize relevant sources of information on FMS in the community.

Keywords: Free maternity services, Utilization, Mothers' level of knowledge

INTRODUCTION

The maternal mortality ratio (MMR), according to World Health Organization (WHO), was estimated at 216 per 100,000 live births globally, with most of these cases occurring in low-income countries and attributed to preventable causes.[24] The low-income countries accounted for 99% of global maternal deaths, with Sub-Saharan African registering 66% of these death.[22] Trends from 1990 to 2015 showed a decline of 44% in maternal

mortality with an improved skilled delivery attendance (SBA) recording a rating of 73%.[22]

The WHO strategies toward ending preventable maternal mortality (EPMM) were linked to Sustainable Development Goal (SDGs) 3 that focused on the reduction of maternal mortality and morbidity and improvement of care for women and children along the continuum of care.[22] These strategies and interventions were aimed at increasing access to timely needed care services and addressing issues on gender and equity, and attainment of community involvement in program planning and improvement of health services.[22]

According to SDG 3, all countries were expected, by 2030, to have improved MMR to 70 deaths per 100,000 live births, with skilled attendance to 70% at birth and child mortality to 25 deaths per 1000 live.[24] The neonatal mortality was to be reduced to at least as low as 12 deaths per 1000 live births.[19]

The WHO, with other partners, defines skilled health personnel or Skilled Birth Attendance (SBAs) as health personnel who are trained in maternal and neonatal health care and possess the competencies to provide care to an expectant mother during labour, delivery and the early postnatal period in a supportive environment.[24] These SBAs are the doctors, nurses and midwives who are guided by set standards of practice contributed by professional training and regulation.[24] The SBAs are expected to operate in an enabling environment with functional health systems that ensure adequate supplies and equipment, transportation and effective communication systems.[24]

Skilled birth attendance uptake has shown some improvement from 62% in 2000-2005 to about 80% in 2012-2017.[23] Despite this progress, there was a variation of these achievements across the regions globally.[23] Central and Southern Asia had improved from 40% to 77%, while Sub-Saharan Africa had over 50% coverage during the same period.[23] The gains may have contributed to the decline of MMR in 1990-2015.[23] The disparity in accessing the skilled personnel was majorly attributed to the socio-economic status of the regions.[23]

In a case study conducted in Kenya about primary health care systems, the out-of-pocket payment proportion of health expenditure in Kenya was found to be at 26%, and the proportion of households experiencing catastrophic health expenditure was at 12.7%.[9] These figures show that most people in Kenya are faced with the possibility of sliding to poverty because they spend huge amounts of income on health care. The government of Kenya thus passed a policy in 2013 through a presidential declaration on free maternity services (FMS).[3] The implementation of this policy was to be operational at all levels of public health facilities, from primary to tertiary.[3] This strategy aimed to improve access to maternal health care services and SBA to reduce maternal and neonatal mortality, alleviate poverty, and achieve the millennium development goals.[11] However, the implementation of FMS has faced challenges such as lack of clarity, inadequate involvement of stakeholders, and overstretched health facilities due to increased clientele seeking services.[15] In addition, staff shortage was identified as an issue according to research conducted in Pondeni Maternity, Nakuru County, Kenya.[20]

The global agenda on the adoption and implementation of SDG 3 took into account the economic and social gap in the world.[23] According to this strategy, all countries were expected to reduce MMR, neonatal mortality and increase skilled birth attendance (SBA) to at least as low as 70/100,000 live births,12/1000 live births and SBA at 70%, respectively.[23]

In Kenya, MMR was at 362/100,000, and Nakuru County had 374/100,000 live births.[4] Nationally, the neonatal deaths were 22/1000 live births, while Nakuru county registered 20/1000 live births.[4] Nationally, utilization of skilled birth attendance (SBA) was rated at 62%, while Nakuru County was at 51%.[4,18] The utilization of family planning in Nakuru County was 53.5% against a target of 70% with a low level of family planning uptake.[4] These glaring gaps in the utilization of skilled birth attendance in Nakuru County could be contributing to poor maternal health indicators. In this study, we assessed the utilization of free maternity services among mothers aged 18-49 years in Naivasha Sub-county, Nakuru County, by determining the utilization level of free maternity, socio-demographic factors influencing the utilization and the mothers' level of knowledge on free maternity services.

METHODS

Study design

The study adopted a descriptive cross-sectional research design and used both qualitative and quantitative research methods. Quantitative data were collected using online household questionnaires administered among community members by use of android phones. The enumerators administered the questionnaires from 8 am to 5 pm for the days allocated for exercise.

The qualitative data were obtained from the focussed group discussion (FGD) derived from homogeneous members of the community who had a deep understanding of health care service delivery at the sub-county. The FGD respondents consisted of a local administrator, two women representatives, two village elders, and two religious leaders. We conducted an interview that included the Medical officer of health, Naivasha Sub-county.

Location of the study

The study was conducted in Naivasha Sub-County, Kenya, focusing on the community living within the eight

(8) wards. The sub-county covers an area of 1685.8 KM2 with a population of 253,224 and among these, 62,804 were mothers aged 18-49 years. The sub-county covers a large area with a high population as compared to other sub-counties in Nakuru County. Naivasha Sub-County has 21 public health facilities, including one referral sub-county hospital, four health centres and 16 dispensaries that offer maternal health care services.

Study population

The study target population were mothers aged 18- 49 living in the Naivasha sub-county. Inclusion criteria were mothers aged 18-49 years who had used free maternity services in 2018 and 2019 and consented to participate in the study. We excluded those of ill-health during the study period.

The independent variables were the socio-demographic factors and the mother's level of knowledge. The intervening variables were policy and advocacy while the utilization of free maternity services was the dependent variable.

Sample size determination

The sample size was determined by the use of Fischer's et al.[7] The formula was adopted because the population used was more than 10,000 people where n=363 and a 10% non-response rate was applied to a total of approximately N=400.

Table 1: Sample size.

Wards	Type	Mothers Aged 15-49	The proportion of sample size
Biashara	Rural	4,797	30
Hells gate	Peri-urban	10,986	70
Lakeview	Peri-urban	5,627	35
Maimahiu	Peri-urban	8,349	53
Maella	Rural	7,713	49
Olkaria	Rural	7,128	45
Naivasha East	Rural	5,852	37
Viwandani	Urban	12,752	81
Total		62,804	400

Sampling technique

A multistage sampling technique was used to recruit the 400 study participants. All the eight wards of Naivasha sub-county were identified purposefully, to ensure the whole sub-county was represented. Systematic sampling was then employed to get the proportionate sample from the eight wards. The sample size from each ward was calculated and determined as per the population of mothers within childbearing age. Simple random sampling was then applied to get a representation of villages, households and eventually the individual participants.

Table 2: Reliability test by use of Cronbach alpha.

Variables	Sections	Cronbach's Alpha	*N* of Items	Comments
Utilization level of free maternity services	Sec B: Q12A to Q14E	0.727	11	Reliable
Mother's knowledge level	Sec C: Q15 to Q19	0.714	5	Reliable
Institutional factors	Sec D: Q20 to Q25	0.866	6	Reliable
Health system factors	Sec E: Q26 to Q32	0.816	7	Reliable
Combined variables of the study	Sec B: Q12A to Sec E: Q32	0.781	28	Reliable

At the household level, where a woman had delivered more than one child in the last 2 years, data from the last delivery was used. In cases where there were two or more women who qualified for the study, balloting was used to identify the participant.

For additional information, FGDs and key informant interviews (KIIs) were applied in this study. Purposive sampling was used to identify the FDGS and KIIs. Focus group representatives were drawn from the community and the health volunteers while the KII were the health administrators. These were key persons who were consumers or stakeholders who were knowledgeable about maternal and child care services at the sub-county.

Pretesting

This was done by administrating the study tools on a small group with similar characteristics of the population where there was also a free maternity services policy. Five per cent (5%) of the sample size of 400 that translates to 20 questionnaires, were pretested. This was to test the instrument's comprehensiveness, relevance, acceptance and facilitate its improvement before the study commences. For this study, the London ward in Nakuru west sub-county has been used to pretest the study tools.

Validity

For content validity, the questionnaire was evaluated by two randomly selected health officials from the Naivasha

sub-county to assist in establishing whether the questions posed were clear, meaningful and concise. The contribution by the experts was incorporated into the final questionnaire for data collection.

Reliability

The reliability was tested by assessing the internal consistency of the data collected by using Cronbach's Alpha. Cronbach's alpha was computed by correlating the score for each scale item with the total score for each observation (usually individual survey respondents) and then compared it to the variance for all individual item scores.

The results in Table 2 indicated that for all the sections in the questionnaire, the Cronbach's alpha values for the constructs under investigation possessed high-reliability standards ranging from 0.714 to 0.866, the tool was considered to be very reliable. The tool was deemed to be reliable because all sections of the pilot questionnaire had Cronbach's Alpha higher than 0.7 2.

Data analysis methods

The quantitative data was prepared, coded and entered into a data analysis tool, Statistical package for social sciences (SPSS) version 20, to facilitate data analysis. The results were subjected to regression analysis to establish the extent of relationships between variables. Qualitative data were analyzed by use of established themes. The summarised reports were generated using descriptive statistics and presented in tables, charts and graphs.

Logistical and ethical considerations

The study sought to maintain the high ethical considerations, in line with National Commission for Science, Technology and Innovation (NACOSTI) guidelines, approval reference number 449316 together with obtaining required approvals from the postgraduate school, Kenyatta University, obtaining formal consent from the respondents. The participants were briefed on the importance and purpose of the study and assured of privacy.

The respondents were at liberty to withdraw from the research at any point for various reasons. Follow-up contact details were given to them upon request.

RESULTS

We administered 400 questionnaires with a response rate of 98%, conducted a focus group discussion involving eight people and one key informant interview.

Socio-demographic characteristics of the respondents

The summary results are as illustrated in table 3, with the majority of the respondents aged 18-29 years. 49% of the respondents had attained a secondary level of education, 37% of them had two children, and 74 % had their birth between 18-25 years of age.

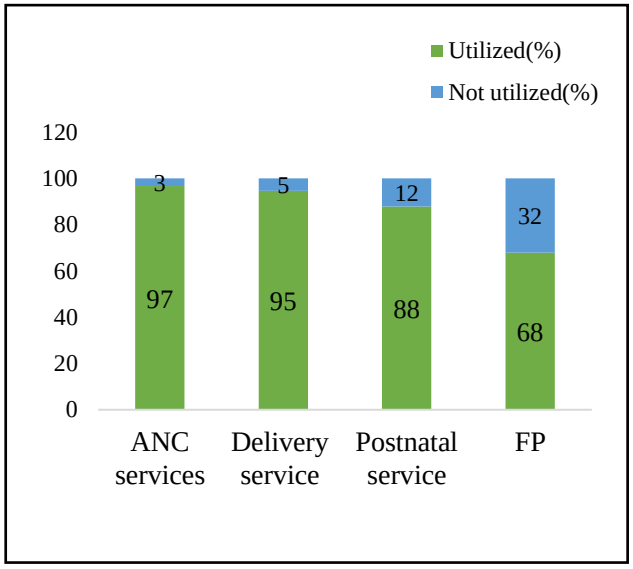

Figure 1: Utilization of free maternity services in the last pregnancy.

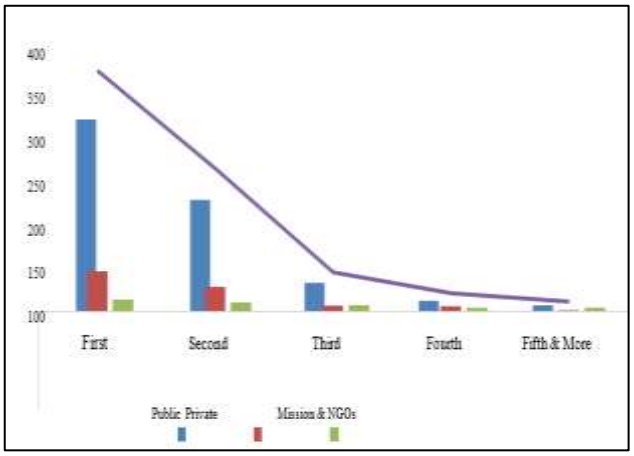

Figure 2: Facility based utilization of free maternity services as per parity.

Regarding the marital status of the respondents,75% of the respondents were married. 51% of the respondents were self-employed, with 76% earning below 10,000 Kenyan shillings (about 100 USD). Most (74%) of the respondents said their husbands were the breadwinners. Most (41%) lived in a rural area, followed closely by peri-urban at 39%, while 56% of these respondents had lived in the community for ten years and above. 95% of the respondents in this study were Christians.

Utilization level of free maternity services

Figure 1 show that 97% of respondents had utilized antenatal care (ANC) service, 95% utilized delivery services, and 68% used family planning services. According to the responses of the FGDs and KII, all the respondents agreed to the fact that the maternity care services utilization had increased.

Table 3: Socio-demographic characteristics of the respondents.

Variable	Frequency (%)
Age (years)	
18 to 25	98 (24)
26 to 30	90 (23)
31to 35	90 (23)
36 to 40	82 (21)
41 to 45	24 (6)
> 45	8 (2)
Level of education	
None	8 (2)
Primary	149 (38)
Secondary	192 (49)
College	43 (11)
Number of children	
One	86 (22)
Two	145 (37)
Three	90 (23)
Four	32 (8)
Five and above	39 (10)
Age at first birth (Years)	
< 18	62 (16)
18 to 29	290 (74)
26 to 30	32 (8)
31 to 35	8 (2)
Marital status	
Single	55 (14)
Separated	31 (8)
Widowed	8 (2)
Married	294 (75)
Occupation	
Employed	59 (15)
Self-employed	200 (51)
Housewife	106 (27)
None	27 (7)
Monthly income (Ksh.)	
< 10,000	298 (76)
10 ,000 to 20,0000	63 (16)
20,001 to 30,000	16 (4.2)
30,001 to 40,000	6 (1.5)
40 ,001 to 50,000	8 (2)
50,001 to 601	1 (0.3)
Bread winner	
Self	87 (22)
Husband	290 (74)
Others	15 (4)
Residential area	
Urban	78 (20)
Peri-Urban	153 (39)

Continued.

Variable	Frequency (%)
Rural	161 (41)
Years lived in the community	
< 10	172 (44)
11 to 20	90 (23)
21 to 30	67 (17)
31 to 40	31 (8)
41 to 50	12 (3)
>50	20 (5)
Religious affiliation	
Christian	372 (95)
Islam	20 (5)

Table 4: Socio-demographic factors influencing the utilization of free maternity services.

Coefficients [a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig. P value**
		B	Std. Error	Beta		
1	**(Constant)**	3.400	0.186		18.280	0.000
	Age	0.053	0.019	0.177	2.878	0.004
	Level of education	0.012	0.029	0.021	0.422	0.673
	How many children do you have? Kindly indicate	-0.165	0.021	-0.503	-7.963	0.000
	What age were you at first birth? Kindly indicate	-0.083	0.037	-0.117	-2.247	0.025
	What is your marital status?	0.025	0.022	0.059	1.102	0.271
	What is your present occupation?	0.002	0.019	0.004	0.083	0.934
	What is your household total monthly income, specify in Kenyan shillings	0.061	0.023	0.130	2.670	0.008
	Who is the breadwinner in the family?	0.019	0.035	0.029	0.555	0.580
	Which ward is your residential place located?	-0.035	0.008	-0.204	-4.111	0.000
	How long have you lived in this community (months)? Kindly indicate	0.008	0.013	0.029	0.624	0.533
	What is your religious affiliation?	0.044	0.084	0.025	0.528	0.598

a. Dependent Variable: Utilization of free maternity services

Table 5: Sources of information on free maternity services.

Coefficients [a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig. P value**
		B	**Std. Error**	**Beta**		
1	(Constant)	0.498	0.060		8.328	0.000
	Radio	0.197	0.010	0.478	20.282	0.000
	Television	0.055	0.013	0.097	4.108	0.000
	Health facility	0.187	0.006	0.541	29.212	0.000
	Community (Community volunteer, Leaders, relative)	0.339	0.015	0.422	22.741	0.000

a. Dependent Variable: Utilization of free maternity services .

The respondents were further asked to indicate the parity and the type of facility they utilized in their last pregnancy.

As depicted in Figure 2, the respondents in their last pregnancy had the majority of them in their first, second and third pregnancies. The mothers utilized the public health facilities compared to the Private and Mission and NGO facilities. The public health facilities were preferred by the mothers, indicating that these facilities ensured access to certified professionals and safe delivery.

Socio-demographic factors influencing utilization of free maternity services

The respondents' feedback on socio-demographic factors were further subjected to logistical regression to establish any relationship between the independent variables and dependent variable as indicated in Table 4.

The sociodemographic factors that were significant to the utilization of FMS among the mothers were age (p=0.004), the number of children (p=0.000), age at first birth (p=0.025), household income (p=0.008) and residential area (p=000).

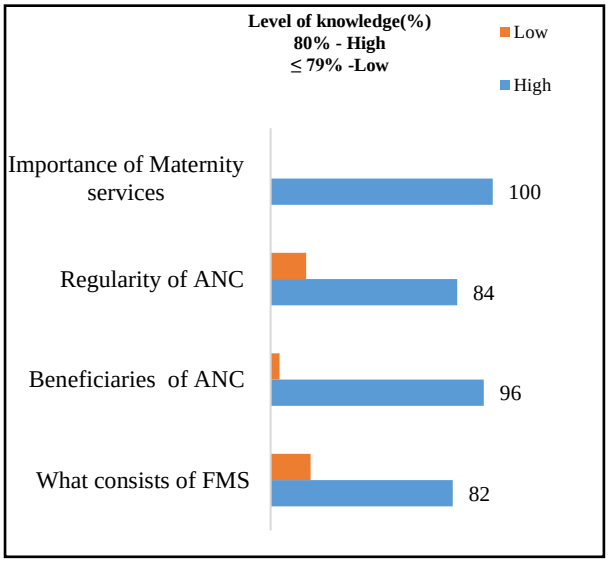

Figure 3: Mother's level of knowledge on free utilization of maternity services.

Mother's level of knowledge on free utilization of maternity services

The mothers' level of knowledge was assessed by asking questions such as the importance and benefits of maternal health care services. Further, they were asked what constituted the free maternity services and how frequently they attended the antenatal services during their last pregnancy. The mothers' responses' total scores on respective questions were subjected to a Likert scale rating of either high or low. Those who scored 80% and above were rated high while those who scored 79% or less were rated low as captured in Figure 3.

The respondents were found to be highly knowledgeable on free maternity services with a score of 80% and above in all categories of the questions asked. On the importance of maternal health care services, the mothers indicated that they accessed certified professionals and services that ensured the safety of the mother and child. For this reason, the majority of the mothers attended the four ANC visits in their last pregnancy. The mothers also explained that antenatal care, deliveries, postnatal care and family planning were what constituted the free maternity services.

The study, further explored how the mothers accessed information on the availability of free maternity services at the sub-county. This was to determine what could have informed the mothers' level of knowledge. The results are illustrated in Table 4.

The radio, television and community level were observed as significant sources of information to mothers on FMS according to results in Table 4. The FGDs and KII expounded on the community level sources as community health volunteers, community leaders and relatives. Further, the FGD and KII indicated that the mothers in the sub-county had been sensitized to free maternity services in forums such as chief's meetings and social gatherings organized in the community.

DISCUSSION

The study findings revealed that ANC uptake was 97%, facility deliveries 95%, postnatal care 88%, and family planning 68%. Comparing these findings with the Kenya Demographic Survey of 2014 with 95.6% utilization of ANC services, and 53.4% of FP services, 51% of SBA 18, there is improved utilization of these services.[18] In both instances, utilization of family planning is low as compared to other services. The mothers in this study were active in their first, second and third pregnancies in utilizing the free maternity services, followed by a sudden decline. This could be because most of the mothers in the study had one to three children.

The findings of this research study established that the mothers aged 18 to 49 years go to health facilities for maternity services, ranging from antenatal care services, delivery services, postnatal care services to family planning services supported by the implementation of the free maternity policy of 2013. The findings of this study are mirrored in the results 5 from studies conducted in Turkana, Wajir and Garissa that ANC and facility deliveries had improved by 89% and 97%, respectively.

Improved utilization of free maternity services also agrees with the findings, that the removal of user fee from health facilities enhance access to maternity services thereby increasing facility deliveries by 40%, and thus reducing

neonatal mortality rates.[14] According to the Health Policy of 2013, the government of Kenya instituted and implemented free maternity services to help reduce the mortality rate of mothers and infants. Further, the policy prevents financial constraints as the main component of ensuring healthy lives and promoting the wellbeing of humanity.[21]

The study also established that the Public Health facilities were utilized more than the private and NGO facilities, despite the fact all of them had been accredited by the National Insurance Health Fund (NHIF) to offer free maternity services. These results are supported by the study on uptake of free maternity services in the slum area of Kibera, stating that the mothers preferred seeking services at the public health facilities.[9]

Socio-demographic factors influencing utilization of free maternity services

The study determined the socio-demographic factors that influence the utilization of free maternity services among mothers aged between 18 to 49 in the Naivasha sub-county. Among the socio-demographic factors that influenced the utilization of free maternity services were age, the number of children, age at first birth, household income and residential location.

From the study, it was revealed that the majority of mothers below 40 years old visit health facilities for maternal care more than mothers above 40 years old. This finding agrees on age as a significant factor with a study conducted on determinants of utilization of ANC services in Rwanda.[12] According to study, the older women were not able to attend the recommended ANC visits for they lacked social support.[12] This study results disagree the marital status of women was a determinant to the utilization of maternity services.[12]

The research findings concur with the findings 12 that income, accessibility to health care services and residential location influences the utilization of FMS. In addition, the findings of this study agree with a study conducted in NCheu District, Malawi on barriers that prevent women from starting antenatal visits in the first trimester.[1] One of the barriers that were identified in the study was socio-economic factors.

This study findings contradict the study conducted in Ethiopia on the utilization of ANC care.[16] According to its finding, it was established that there was no significant relationship between mothers' level of education and the use of ANC services.

Mothers' level of knowledge on free maternity services

The study purposed to assess the mothers' level of knowledge on free maternity services. The findings of the study showed that mothers' level of knowledge was rated 80% and above on assessment on their responses on what constitutes free maternity services and the importance of seeking these services. The mothers' responses on what entails antenatal care service, the importance of regular ANC and the beneficiaries of maternity services were also rated above 80%. With this level of knowledge, the mothers would seek these services with an understanding of what the services entailed and their quality. The study's findings agree with, that the perceptions of women about quality care influence their future healthcare-seeking behaviour.[10] The study found that women would seek maternity services depending on how they were attended to previously.[10]

The findings indicated that utilization of free maternity services was higher among mothers who lived in the rural areas and followed closely with peri-urban areas especially those who accessed a stand by ambulance. The findings support, that the environment in which one resides, economic incentives, and free ambulance services contributed immensely to whether a mother will go for free maternity services or not.[8]

The findings of the study showed that women understand that free maternity services are mostly offered in public health facilities. The results from the study revealed that most mothers knew about free maternity services from different media ranging from radio, television, health worker, community health volunteer, relatives, chiefs and assistant chiefs, religious leaders among others. The findings contradict that awareness of the FMS programme was not associated with the utilization of FMS in public health facilities.[9]

The study also found out that mothers know the importance of visiting health facilities for maternity services. They know that the services offered during maternity visits help them secure their lives and those of unborn children. The study findings would support that the mothers be sensitized to free maternal health services through different channels like community health workers, chief's meetings, community health volunteers and other media that allows eased interaction.

Limitations

The administration of household questionnaires was conducted during the day and there was a possibility that some mothers who were at work may have been omitted from participating in this study. Recall biases may have been a challenge among the participants of the study, considering that they needed to have utilized free maternity services in the last two years. The gatekeepers and research assistants from the community were also used to enhance support and cooperation during this study. This could also be considered as a limitation to participants giving favourable responses.

CONCLUSION

The first specific objective was to determine the utilization level of free maternity services among mothers aged 18-49 in Naivasha Sub-county of Nakuru County.

Mothers preferred to utilize free maternity services in public health facilities. All free maternity services (FMS) uptake was above 70%, except family planning that was at 68%. The study determined socio-demographic factors influencing the utilization of free maternity services among mothers aged 18-49 in Naivasha Sub-county. The Mothers' age, number of children, age at first birth, household income and residential area were significant and influenced utilization of free maternity services. The study determined the mothers' level of knowledge on free maternity services among mothers aged 18-49 in Naivasha Sub-county. A majority of mothers were knowledgeable. They learnt about free maternal care services through various media, including radios, televisions, health workers, community health volunteers, relatives, local administrators, religious leaders among others.

Recommendations

In the implementation of free maternity policy, the health department of Nakuru county considers conducting sensitization to improve the family planning uptake to 70%, Consider age, number of children, age at first birth, household income and residential area when formulating free maternity services policy and preferably utilize radio, television and community approaches in the dissemination of information

Recommendations for further research

The authors recommend future studies on the health workers' perspective on the implementation of free maternity services policy; the correlational study should investigate the factors that influence the utilization of free maternity services, further, establish a comparative study of access and use of free maternity services in rural counties and city counties and investigate institutional and health system factors that would influence utilization of free maternity service.

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