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Effects of the free maternity health care programme on utilization of maternity services at Iten Referral County Hospital, Kenya

Authors:

Kinaro Wilfred Omari[1], Musyoki Stanslaus [2] ,John Kariuki[1]

Affiliations:

[1] School of Public Health of the Mount Kenya University, Mount Kenya University, P. 0 Box 948 Thika

[2] School of Health Sciences, Kisii University 408, Kisii- Kenya

*Corresponding author: Kinaro Wilfred Omari, Email; omarwilfred@gmail.com

Abstract

The Kenyan maternal care for free was acquainted in 2013. This program though has faced a few challenges, in a duration of one month of establishing free maternal health centres, expectant ladies looking for maternal free care had increased by almost 100%. This study aimed to evaluate effect of free maternity health care Programme on the utilization of maternal health services at Iten county referral hospital. It targeted mothers who had delivered at Iten hospital or visited the hospital for PNC services. The study employed a cross-sectional descriptive design based in a hospital set up. Systematic sampling was employed for postnatal mothers. A purposive sampling method was employed for key informants. Simple random sampling was employed for health care providers as well as the files from the period before and after the implementation of this programme. Questionnaires and interview schedules were used for data collection. Collected data were coded and entered into SPSS (Version 20) for analysis. The results were summarized as percentage responses and presented in tables and figures. A large proportion (57.3%) of the respondents was aged above 36 years. Based on education, the majority of the respondents (79.9%) had formal education. Unemployed respondents constituted the highest percentage (54.0%). The average number of attendants for antenatal care was 167. A majority (67.0%) of the respondents indicated they had delivered before the FMS programme ($\chi^2 = 11.56$, d.f=1, P=0.0007). In response to whether attending free maternity services programme was a problem, a majority (33.8%) of respondents agreed with the statement. A majority (65.9%) argued that they had never had a confrontation with caregivers ($\chi^2=10.24$, df=1, p=0.0014). There was a significant difference in responses pertaining to statements that ante and postnatal services caregivers were friendly ($\chi^2=89.77$, df=5, p=0.0001). All interviewed administration on free maternity care program reported it as a good program. As far as operational constraints was of concern, the majority of the respondents indicated that reaching the hospital especially at night was a big challenge ($\chi^2=25.2079$, d.f.=2, P-Value> 0.0001 Respondents also suggested that ambulances be provided to assist in transporting labouring women especially at night (45.3%), as well as more staff to be employed to attend to women seeking free maternal services (23.2%). The study conclude that the program is an excellent initiative and every effort should be made to sustain it and recommends that the National and County Governments establish clear monitoring and evaluation procedures to track results of the program and also establish a tracking system to ensure that free medical cover refunds are committed to improving maternal health services as advised.

Keywords: Free maternity care, Kenya, utilization, hospital

1.0 INTRODUCTION

Maternal health is the general health of pregnant women, women who have given birth and health during a woman's period of postpartum (WHO, 2014) to ensure no impairment of the health or death of the mother and that every pregnancy culminates in the delivery of a healthy baby (Say *et al*., 2014). According to Sari (2007), maternal health has been singled out as a worlds' priority due to the boundless break on the mother's status of wellbeing especially between the rich and the poor nations. There exists a great disparity in maternal mortality especially when cross-county comparison of lifetime risks are considered. For example in Ire land 1 in 47,600 and Niger 1 in 7 women die from pregnancy-related causes (Farah and Rasheed, 2009). About 9.5 million suffer from illnesses related to pregnancy (Gething *et al*, 2012).

Kenya has a very high mortality rate of about 362 deaths in every 100,000 births which is a very high ratio as compared to the millennium development goals target (KNBS, 2014). Any woman in Kenya who dies from childbirth complications provides an estimation that another 20-30 are suffering from a disability or maybe an injury that is caused during delivery (Bucagu *et al.,* 2012). Strategies aimed at reducing maternal mortality are well known, the strategies and interventions have been partly worked due to limited resources. Currently, attention is shifting to the confounding factors of maternal mortality; these factors include economic, education and cultural practices. Approximately 57% of all deliveries in Kenya occur away from the health centres largely under traditional birth care attendants who are ill-equipped to handle obstetric emergencies (Ronsmans & Graham, 2006). This is supported by Omollo, (2015) who contends that the fundamental explanation behind this situation is the way that such huge numbers of births were attended by inadequately qualified personnel who couldn't deal with entanglements amid pregnancy and the general absence of offices dealing with deliveries.

Kenya in an attempt to achieve the MDG4 and 5 targets of reducing maternal deaths by 75% have embraced different innovative mechanisms such as the abolishment of user fees for pregnant mothers attending ANC in her public health facilities, intensification of education on skilled deliveries, provision of subsidies to the vulnerable mothers in voucher forms in some sub-counties such as Kwale, Kisumu and Nairobi slums. However, pregnant mothers still do pay hidden charges before receiving services. The Kenyan maternal care for free was acquainted in 2013 with an increased quantity of healing centre baby deliveries as well as decreased mortality rates caused by maternal complications. This program though has faced few challenges, as per Rossettini *et al.,* (2013), in one month of establishing free maternal health centres, expectant ladies looking for maternal free care had increased by almost 100 per cent in our health facilities in Kenya. In a way to address maternal mortality at the community level a clear referral system, improved infrastructure, training manpower and availability of medical services are paramount (MOH). However maternal education is central to decision making as it enhances a woman's ability to access available health resources such as skilled deliveries, family planning among others that are aimed at reduction of maternal mortalities significantly. Accessibility, utilization and various challenges in implementing the free maternity Programme are some of the issues facing the policy since its inception. As a result of the lack of adequate and properly skilled manpower to handle deliveries has hampered

accessibility to healthcare and finally making Kenya experience the high maternal mortality rates to date.

Elgeyo-Marakwet is among the other counties that have recorded a low proportion of births assisted by qualified professionals at 64.7% low than the 90% target internationally (KDHS, 2012). Understanding the effect of the free maternity programme on the utilization of maternal health care has not been persuasively confirmed since maternal mortality in Kenya is still high (Chimankar & 2013). Despite the success in attracting more women to use maternity health care services the effects of this programme on the utilization of maternal health services in the low resource endowed countries, there is no study done yet to analyse the same. Therefore this study intends to investigate trends in antenatal and postnatal attendance as well as to determine the relationship between free maternity health programme and maternal mortality rate in the period of free maternity in the county of Elgeyo-Marakwet.

2.0 MATERIALS AND METHODS

2.1 Study site

This research study was undertaken at Iten county hospital situated at Iten town, 35.8 kilometres from Eldoret town. The county borders West Pokot, Baringo, Transzoia and Uasin Gishu counties as shown in figure 1. It covers a total of 3,049 square kilometres with a population of 432,271 people (KNBS, 2019).
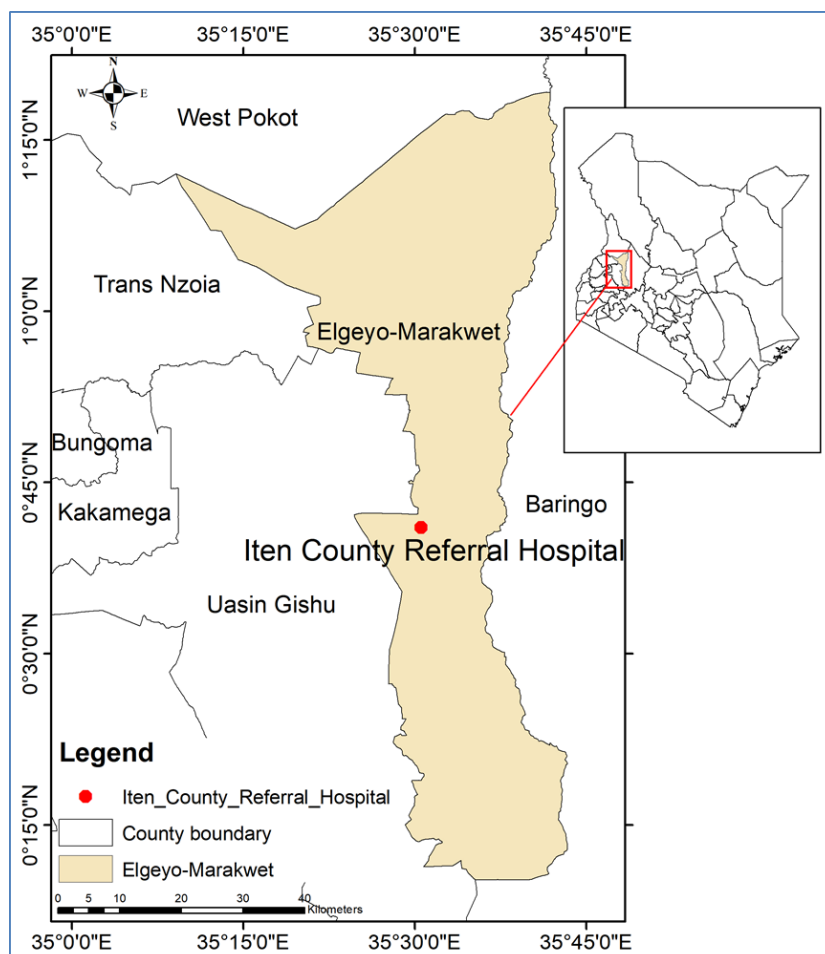

Figure 1: Map of the study area

2.2 Target population

The study targeted women who had delivered or came for PNC services at Iten county referral hospital. Health care providers, as well as facility administrators, were interviewed to get the challenges facing implementation and how these can be dealt with for effective service delivery.

2.3 Determination of the sample size

To assess the utilization of maternity services in the period before and after the program, the study used 30% of total data from the period four and half years before the implementation of the program (December 2007- May 2013) and the period four and a half years after the implementation of the program (June 2013- November 2017). Basing on the 30% of the total data as recommended by Mugenda, a total of 4,000 files, 2000 from each period were reviewed. The findings from file review were meant to establish an increase or decline in utilization of maternity services. This period helped to establish any changes in service utilization before and after (Kruk *et al.,* 2010). However, some studies also agree that the laggards could respond to the program late and therefore give a different scenario altogether. The study interrogated the policy since its inception. One hundred and forty postnatal mothers on exit after delivery in the facility at the time of the study were included to take part in the study. This was determined using Yamane's formula for sample size determination when the target population (N) is known.

$$n = N/1 + N (e)^2$$

Yamane's formula, where **N** is the known population of the mothers delivering in the hospital and it is 400 mothers per month and **e** is the standard of error which was at 95% confidence interval {0.05 (5%)}

One health care provider from those departments dealing with child health directly was sampled purposefully because they directly deal with mothers seeking maternity services and were, therefore, able to give an account of effects of free maternity care program. Three members from the hospital administration (medical superintendent, hospital secretary and nursing officer in charge of the hospital) were sampled purposively because they had the information that is required.

2.4 Sampling technique

Systematic sampling was employed for the postnatal mothers and the Kth factor which was 2, meaning that every second postnatal mother on exit was interviewed unless she falls in the exclusion criteria. Purposive sampling method was employed for key informants because they are believed to have the required information. Simple random sampling was employed for health care providers as well as the files from the period before and after the implementation of this programme.

2.5 Data collection instruments

Questionnaires and interview schedules were used as the main data collection tools. Data were collected through interviewer-administered questionnaires on client satisfaction. They provided information on client satisfaction and the challenges faced by the women and also suggest possible strategies that could be used to lessen the challenges and make the program serve them better. Data collection was conducted by the researcher assisted by trained research assistants in the field. An in-depth interview was done for health care providers and the key informants. The data from previous records before and after the policy were reviewed using a data extraction form. The findings helped to establish the relationship between free maternity care program and utilization of the services. This in turn was to be used to relate the challenges with the outcome of utilization.

2.6 Data collection procedure

Research assistants were trained on the data collection procedures before the initiation of the study. Data collection was done from May 2020-August 2020. It was mainly done in the maternity unit where postnatal mothers were interviewed on exit and in the maternity records department where all the files for both pre and post free maternity care program periods are kept. Health care providers were interviewed in their departments. Interviews for key informants took place in their offices. Postnatal mothers were sampled systematically on exit and were taken to a separate room to ensure privacy and confidentiality. They were given information about the study and were required to sign an agreement to participate in the study. Thereafter, the researcher and the research assistants proceeded with the interview.

2.7 Data management and analysis

Collected data was cleaned, coded and entered into computer software, before coding and tabulating the questionnaires for analysis, all the items were checked for imprecisions. This helped the researcher to establish if instructions had been followed uniformly and whether all items had been responded to. It was later transferred to a computer package (SPSS Version 20) for processing. Simple linear regression was used to examine the trends in the antenatal and postnatal attendance at Iten county referral hospital while chi-square goodness of fit test was used to determine the relationship between free maternity health programme and maternal mortality rate in the period of free maternity, establish the level of client satisfaction on the provided services upon the implementation of the free maternity services programme as well as to establish the prospects and challenges of the free maternity healthcare programme in Elgeyo/ Marakwet County. The data were descriptively summarized and results tabulated in tables and represented in graphs whereas qualitative data were thematically analysed.

2.8 Ethical consideration

Mount Kenya University ERC issued approval to carry out the study. Aim of the study was disclosed to the participants before asking for their written informed consent. Permission was as well sought from Iten County Referral hospital administration. Participation in the study could be stopped without prior notice. Privacy of the interviewees was ensured by interviewing the mothers in a separate room and anonymity ensured by not having any form of identification on the questionnaires. Confidentiality was assured by storing all the questionnaires collected in lockable cabinets accessible only to the researcher and research team. Further, a password was used to protect electronic data in the computer.

3.0 RESULTS

3.1 Characteristics of the respondents

There were one hundred and forty (140) questionnaires administered to the respondents. Out of 140 administered, a total of 139 (99.29%) respondents filled and returned the questionnaires as shown in Table 4.1. A large proportion (57.3%) of the respondents was aged above 36 years while those below 36 years and above 18 years comprised only 42.7%. Based on education, the majority of the respondents (79.9%) had a formal education, with 42.4% having attained a certificate of secondary level education. In terms of the occupation category, unemployed respondents constituted the highest percentage (54.0%). The majority of the respondents (73.5%) were resident by birth. Those respondents who had stayed for more than 25 years in the study area were the majority (60.4%). Majority of the respondents (35.1%) were mixed farmers followed by those who practiced pure agriculture (29.1%). Few respondents (8.2%) practiced apiculture and other forms of land use (3.7%) as indicated in table 1.

Table 1 Respondent's socio-demographic profile

Variable	Frequency	Percentages (%)
Age		
18-25 yrs.	29	21
26-35 yrs.	30	21.7
36-45 yrs.	28	20.3
46-55 yrs.	31	22.5
Above 56 yrs.	20	14.5
Total	138	100
Education		
None	28	20.1
Primary	33	23.7
Secondary	59	42.4
Tertiary	10	7.2
University	9	6.5
Total	139	100
Occupation		
Employed	20	14.4
Self-employed	44	31.7
Unemployed	75	54
Total	139	100
Residence		
Birth	100	73.5
Immigrant	36	26.5
Total	136	100
Period of residency		
16-20 yrs.	17	12.2
5-10 yrs.	8	5.8
11-15 yrs.	14	10.1
16-20 yrs.	16	11.5
> 25 yrs.	84	60.4
Total	139	100
Forms of land use		
Agriculture	39	29.1
Livestock keeping	32	23.9

Mixed farming	52	38.9
Others	11	8.2
Total	134	100

3.2 Trends in the antenatal and postnatal attendance at Iten county referral hospital

The average number of attendants for antenatal care was 167.17 with a standard deviation of 113.62 while the average number of attendant for postnatal care was 321.17 with a standard deviation of 105.08 as per the year 2018/2019. The number of both ante (y=24.671x+160.8, R^2=0.7164) and post (y=30.119x-28.606, R^2 = 0.9134) attendants have been increasing at Iten county referral hospital as portrayed in figure 2.
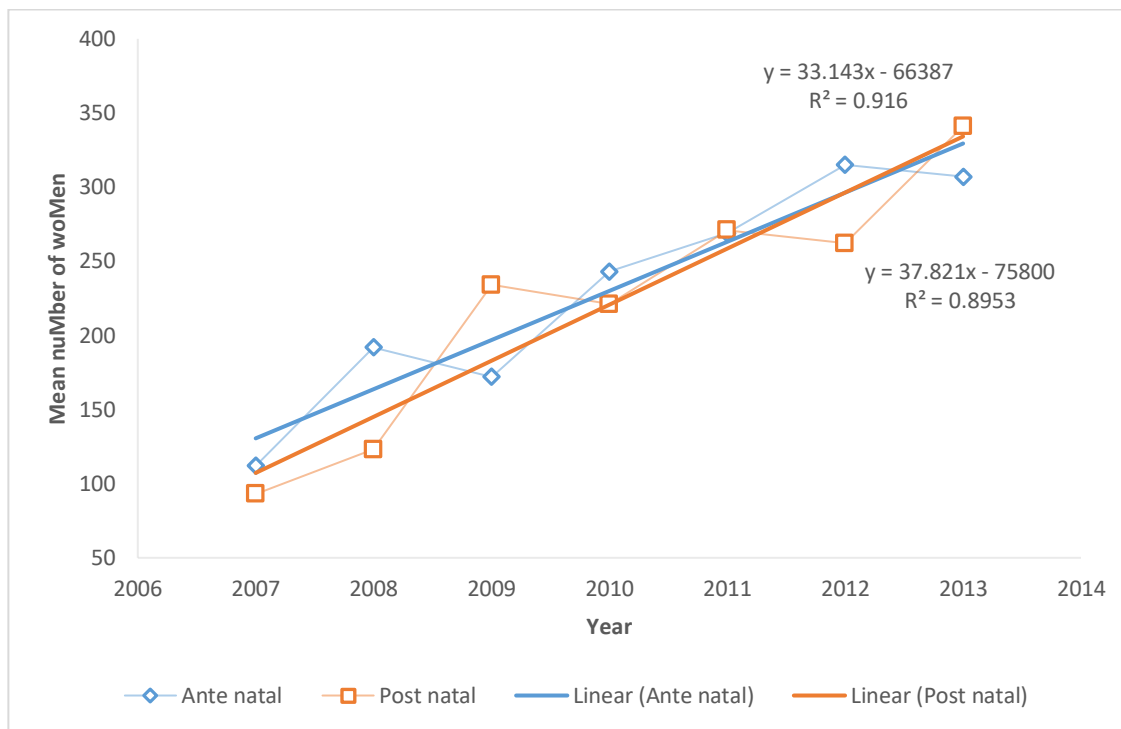

Figure 1: Trends in the antenatal and postnatal attendance at Iten county referral hospital before the free maternity programme
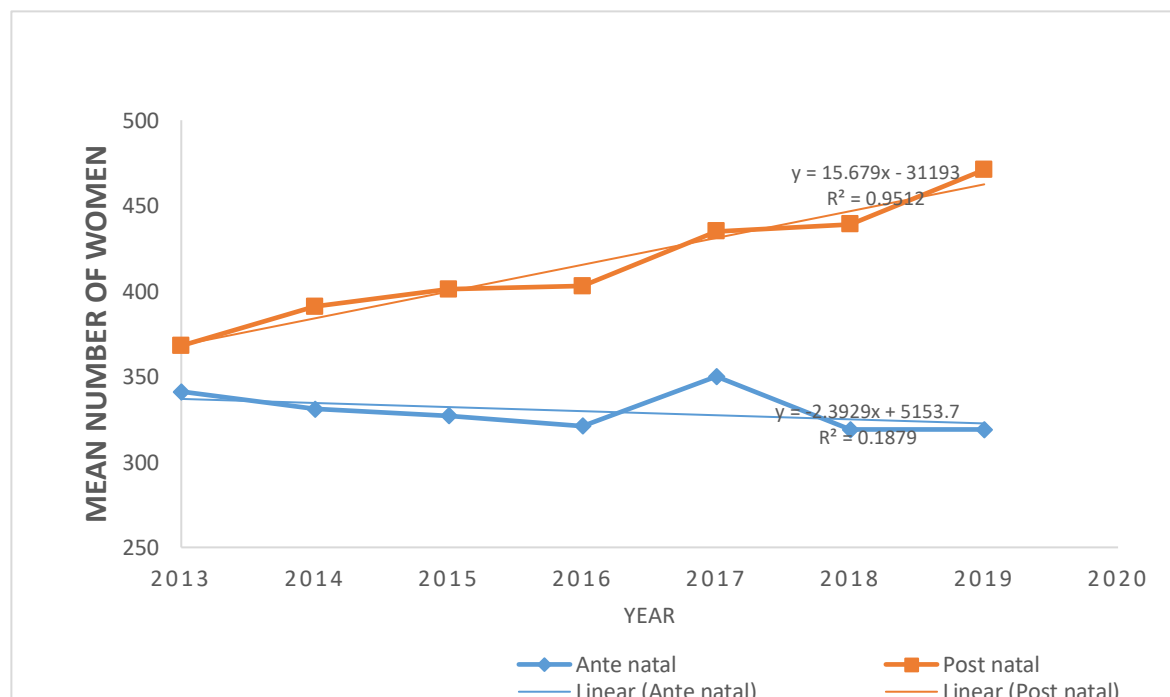
Figure 2: **Trends in the ante natal and post natal attendance at Iten county referral hospital after implementation of free maternity program**

3.3 Relationship between free maternity health programme and maternal mortality rate in the period of free maternity

Respondents were asked whether they had delivered before. Majority (67.0%) indicated yes with a significant difference from those who had not ($\chi^2 = 11.56$, d.f=1, P= 0.0007). for those who had delivered, a large proportion of them had delivered in the hospital (58.33%) followed by those who had delivered in the health centres (21.87%) while the lowest percentage of the respondents had delivered in the hands of traditional birth attendants (4.16%) as well as in the maternity (3.12%) with a statistically significant difference ($\chi^2 = 111.24$, d.f.=4, P= 0.0001 as illustrated in table 4.2. respondents were also asked about how many times they had given birth with the majority indicating between 3- 5 times (55.4%) with a significant difference from those who had given birth to between 1-3 times (22.8%)5-7 times (18.5%), 7-9 times (2.2%) and above 9 times ($\chi^2 = 96.0$, d.f.=4, P = 0.0001).

Respondents were asked why they used (or were using) the free maternal service. The majority answered by indicating that with the FMS, there was no cost incurred (47.7%) followed by those who indicated that they did so for their safety (22.5 as well as for child safety (29.8%) with a significant difference ($\chi^2 = 9.99$, d.f.=2, P = 0.0068).

The majority (89.1%) of the respondents indicated that they were not asked to make any payments when seeking services significantly different ($\chi^2 = 60.84$, d.f.=1, P = 0.0000) from those who indicated that they were asked (10.9%). For those who did so, they added that the payments were for drugs (94.5%) citing that the reason was due to drug being out of stock (81.5%).

The majority of the respondents indicated that they accessed the healthcare through Health Insurance (55.4%) significantly different ($\chi^2 = 51.12$, d.f. =3, P = 0.0000) from those who accessed through Private Insurance, Co-payment, as well as other means as illustrated in table 4.2. For those who accessed health care through NHIF they registered in Scheme office (80.4%) significantly different ($\chi^2 = 163.197$, d.f.=3, P = 0.0001) from those who indicated they registered from Hospital (11.8%), Clinic (2.0%), and Maternity home (5.9%) which was not for free. The waiting period was three months as majority of the respondents indicated (96.0%).

Table 2: Relationship between free maternity health programme and maternal mortality rate in the period of free maternity

Research questions	Research responses	Frequency (F)	Percentage frequency (%F)	Chi-square value (χ^2)
Have you delivered before?	yes	92	66.7	$\chi^2 = 11.56$ d.f.=1 P = 0.0007
	no	46	33.3	
	Total	138	100.0	
If yes, where did you deliver?	Hospital	56	60.9	$\chi^2 = 117.8$ d.f.=4 P = 0.0000
	Health Centre	21	22.8	
	Clinic	8	8.7	
	Maternity Home	3	3.3	
	TBA	4	4.3	
	Total	92	100.0	
How many times have you given birth?	1-3 times	21	22.8	$\chi^2 = 96.0$ d.f.=4 P = 0.0000
	3- 5 times	51	55.4	
	5-7 times	17	18.5	
	7-9 times	2	2.2	
	above 9 times	1	1.1	
	Total	92	100.0	
Why did you use (or are using) the free maternal service?	No cost incurred	72	47.7	$\chi^2 = 9.99$ d.f.=2 P = 0.0068
	For own safety	34	22.5	
	For child safety	45	29.8	
	Total	151	100.0	
When seeking for services were you asked to make any payments?	yes	10	10.9	$\chi^2 = 60.84$ d.f.=1 P = 0.0001
	no	82	89.1	
	Total	92	100.0	
If yes, what kind of service(s) did you pay out-of-pocket?	OPD Card	1	1.1	$\chi^2 = 351.6$ d.f.=4 P = 0.0001
	Drug	86	94.5	
	Laboratory Service	2	2.2	
	X-ray Service	1	1.1	
	Labor Ward	1	1.1	
	Total	91	100.0	
If it is Drug, What were you told?	NHIF doesn't cover	1	1.1	$\chi^2 = 110.42$ d.f.=2 P = 0.0001
	doesn't have such drug at the facility	16	17.4	
	Drug is out of stock	75	81.5	
How did you access healthcare?	Health Insurance	51	55.4	$\chi^2 = 51.12$ d.f. =3 P = 0.0001
	Private Insurance	7	7.6	

	Co-payment	16	17.4	
	others	18	19.6	
	Total	92	100.0	
If NHIF, where did you register?	Scheme office	41	80.4	χ^2 = 163.197 d.f.=3 P = 0.0001
	Hospital	6	11.8	
	Clinic	1	2.0	
	Maternity home	3	5.9	
	Total	51	100.0	
Was it for free?	yes	50	98.0	χ^2 = 92.16 d.f.=1 P = 0.0001
	no	1	2.0	
	Total	51	100.0	
Did you get any waiting period?	One month	1	2.0	χ^2 = 176.72 d.f.=2 P = 0.0001
	Two month	1	2.0	
	Three month	48	96.0	
	Total	50	100.0	
Were you served in this facility for antenatal, prenatal and postnatal care?	yes	51	87.9	χ^2 = 57.76 d.f.=1 P = 0.0001
	no	7	12.1	
	Total	58	100.0	
Did you make any co-payment?	yes	7	30.4	χ^2 = 16.0 d.f.=1 P = 0.0001
	no	16	69.6	
	Total	23	100.0	

4.0 DISCUSSION

4.1 Trends in the antenatal and postnatal attendance

The average number of attendants for antenatal care was low compared with an average attendant for postnatal care. The research established that all respondents had attended both antenatal and postnatal attendance at Iten county referral hospital giving reasons that it was near the area of residence. Respondents attended both antenatal and postnatal to reduce maternal morbidity and mortality. This has been facilitated largely by adequate antenatal and postnatal, skilled deliveries and good quality of other maternal health services. Antenatal, delivery and postnatal care services are amongst the recommended interventions aimed at preventing maternal and new-born deaths worldwide (Titaley, Hunter, Heywood, & Dibley, 2010). According to the Kenya National Bureau of Statistics in Kenya Demographic and Health Survey Report of 2013-2014, Kenya is still struggling to reduce the maternal mortality rate in the country which stands at 362 deaths for every 100,000 live births. This high maternal mortality rate has been partially attributed to unskilled deliveries in the country (38%) which are conducted outside health facilities.

The main reason women attend antenatal and postnatal care services is to ensure the safe health of both mother and infant. According to Omollo (2015) free maternity care has a direct relationship to maternal mortality rate; the rate of deaths due to pregnancy-related causes have reduced significantly in Kenya since the introduction of this program. The results are in line with findings from a systematic review of user fee impacts which concluded that removing or reducing fees charged for the services increased utilization of antenatal and postnatal care services, usually in the form of one sharp rise (Lagarde & Palmer, 2008 and WHO, 2010).

4.2 Relationship between free maternity health programme and maternal mortality rate in the period of free maternity

The report noted that with the introduction of free medical cover and NHIF services, there was an increase in the proportion of health facility deliveries as well as antenatal and postnatal care services. This is attributed to the fact that the high cost of skilled delivery hinders access to skilled deliveries greatly contributing to an increase in maternal and child mortalities, especially among the resource strained countries. This was also supported by Mukong (2012), which noted an increase in health facility antenatal and postnatal care services. This increase is arising from the reduction in the financial barriers to accessing maternal health services. According to Gitobu *et al. (*2018), the impact of user fees on facility delivery and noted that with the introduction of fees facility antenatal and postnatal care services increased and they decreased following the removal of fees.

Availability of delivery supplies is an important intervention in increasing facility-based deliveries (McKinnon, Harper, Kaufman & Bergevin, 2015). Globally, it is estimated that 342 900 maternal deaths occurred worldwide in 2008 (Ngandu, Lehtisalo, Solomon, Levälahti, Ahtiluoto, Antikainen & Kivipelto (2015). In order to address both the demand and quality of antenatal and postnatal care and skilled deliveries, various developing countries like Kenya and Uganda have introduced community mobilization and health facility capacity strengthening

interventions. From the Health Care Professional Association Writing Group (2009), skilled delivery care is crucial in saving the lives of mothers and their infants. Provision of delivery supplies has a significant and fairly sustained impact in terms of increasing health facility deliveries. Okafor, Obi and Ugwu (2011) adds that Low utilization of maternal healthcare services in Sub-Saharan Africa has for long been linked to the high cost of the services while in Kenya, the cost of maternal and child health services has also been cited as one of the obstacles to service utilization (WHO, 2010).

Utilization of health services is a multifaceted behavioural phenomenon and the use of health services is related to availability, quality and cost of services as well as to health beliefs, personal characteristics of the users and social structure (Hogan *et al.,* 2010). According to the KDHS (2010), education is a major factor that contributes to the utilization of ante natal care among pregnant women with the number of women receiving ANC services declining with increasing education level. Consequently women from wealthier status show a high tendency of using ANC from skilled attendants. However with the introduction of the free maternity health programme the trend has slightly been changed (Murima, 2016).

5.0 CONCLUSION

In conclusion, findings established that an average number of attendants for antenatal care was 167.17 was lower as compared to attendants of postnatal care at Iten county referral hospital. The research concludes that the program is an excellent initiative and every effort should be made to sustain it. It has helped to reduce cost as a barrier to maternity services that many persons in Kenya were facing. As it is, there are already a number of mothers who are benefiting from it as it has been shown from the study that free health care affect the utilization of maternity health care services, particularly on childbirths occurring in the facilities. Free maternal service has seen a number of mothers reduce cost as a barrier to maternity services that many in Kenya have been facing. However, the program is still faced with a number of operationalization challenges which should be addressed by the policymakers which include inadequate drugs for which the clients are asked to pay for. As far as looking at the problems associated with caregivers to attendants of both ante and postnatal, a large proportion of respondents indicated there was a long waiting time before being served followed by the use of arrogant and abusive language by caregivers to the ante and post attendants?

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