The relationship of socio-demographic, economic factors among postnatal women with status of Free Maternal Services Implementation in Public Hospitals in Nyanza, Kenya.

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DOI: 10.29322/IJSRP.9.10.2019.p9489
http://dx.doi.org/10.29322/IJSRP.9.10.2019.p9489

Abstract

Background: Globally about 600,000 maternal deaths occur with about 800 maternal deaths reported daily. Of these deaths, 90% are from *LMIC* and especially in Sub-Saharan Africa (SSA) and Asia continents. In Kenya alone, Maternal Mortality Rate (MMR) is 362 deaths per 100,000 live births with about 1300 to 2000 deaths per 100,000 live births occurring in Nyanza alone. These deaths result from direct causes that are preventable and manageable by skilled birth attendants. Socio-economic and cultural factors, patterns in health seeking behaviours, gender-based and other concurrent conditions are major bottle-necks for seeking essential healthcare services like maternal services. The aim of this study was establish the relationship of socio-demographic, economic factors among postnatal women with status of Free Maternal Services implementation in Public Hospitals in Nyanza, Kenya.

Methodology: The study was conducted among 1152 postnatal in selected Sub-County public hospitals in Nyamira, Homa-bay and Kisumu counties in Nyanza, Kenya. An analytic cross-sectional study design using quantitative method was utilized and data was collected by use of semi-structured exit interviews. Multi-stage and Simple Random Sampling were used to select counties, Sub-Counties, Sub-County public hospitals and postnatal women were selected purposively and proportionately as per the hospital population size. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 23.

Results: The study indicated that majority, 97% of the women were aged between 20 and 24 years of age; 77.7% were married; 39% had given birth to 1 child; 47.7% had secondary education and only 19.6%had tertiary education. Almost an equal proportion,49.9% of postnatal women were unemployed and 50.1% were employed yet a majority,48.5% still did not have any income and the most, 44.5%common mode of transport was motorcycle. Age Fisher's Exact = 16.557, p = 0.009; level of education, (χ^2 =19.324, df=3,p <0.001), employment status, (χ^2 =32.200, df=1,p<0.001), earnings per a month, (χ^2 =39.067, df=3,p<0.001) were significantly associated with status of FMS implementation.

Conclusion: There was a significant relationship of socio-demographic and economic factors with implementation of FMS services. This study observes socio-demographic and economic factors as barriers and facilitators of effective implementation of FMS services. They should be considered and contextualized for effective uptake and access of FMS services. Effective FMS implementation by the National government and County ministry of Health should consider the influence of socio-demographic and economic factors among postnatal women.

Key words: Implementation; Free Maternal Services; Postnatal women; Socio-demographic; and economic

Introduction

Approximately 600,000 maternal deaths occur worldwide with about 800 maternal deaths reported daily (Alkema,2016; Lang'at & Mwanri, 2015; WHO *et al*., 2012). Over 90% of these deaths occur in *LMIC* and especially in Sub-Saharan Africa (SSA) and Asia continents (WHO, 2012; Witter, 2010). Kenya's current Maternal Mortality Rate (MMR) is 362 deaths per 100,000 live births and about 1300 to 2000 deaths per 100,000 live births occur in Nyanza alone (KDHS,2014). Three quarters of these deaths result from direct causes, such as sepsis, obstructed labour, obstetric hemorrhage, hypertensive disorders of pregnancy and abortion. These causes are preventable and manageable by a skilled healthcare worker (Say *et al*., 2014; Stokes and Wilkinson,2018). In Africa, a woman is at a reasonably high risk of dying from pregnancy –related complications with a chance of 1 in 39 lifetime risk of dying compared to 1 in 4000 in the developed countries (WHO *et al*., 2012). Even with the alarming maternal mortality rates, gaps in the quality of maternal health services exist due to high costs, poor staffing and inaccessibility (Zureick-Brown,2013; Witter, 2012; Witter *et al*.,2010).

Consequently, globally, and now in the Low and Middle Income Countries, there has been a tremendous growth aiming to reduce financial barriers to health care, but with emphasis on maternal health services and vulnerable groups Alkema,2016; Hercot *et al*., 2011; Lang'at & Mwanri)

In Sub –Saharan Africa health outcomes are generally poor across all populations but worse in high risk groups and yet there is too much pressure to address the socio-determinants of health and decrease the existing inequalities of health. As a result, these bottlenecks exacerbate the effective implementation of socially, economically and culturally acceptable interventions of health (Arthur,2014; Gitonga & Muiruri, 2016; Owusu-Addo *et al*., 2016; Wanjira *et al*., 2011).

Maternal mortality and morbidity can be reduced by effective utilization of provided and recommended maternal services. Improving the uptake of maternal services require early initiation of Antenatal Care services (ANC) for all pregnant young women from resource constrained families, rural settings and with low levels of education (Ochako *et al*., 2011).

Socio-economic and cultural factors, patterns in health seeking behaviours, gender-based and concurrent conditions like HIV are among the bottle-necks of access and uptake of free health services (Mauch *et al.,* 2011; Otieno *et al*., 2010). In other related studies, Aluisio *et al*., (2011), male involvement in seeking and uptake of maternal and child health services increases knowledge hence

contribute to wellbeing and reductions in infections in HIV, TB and related mortality and morbidity. Further, in resource poor settings coupled with low-paying jobs for mothers who are not formally employed due to their level of education decreases utilization of health services even when they are free. However, mothers who are formally employed can afford health services and utilization of search related is enhanced due to formal engagements with their employers (Pandey and Karki,2014).

Reducing Maternal Mortality (MM) is a major bottleneck for Sub-Saharan Africa, including Kenya who is now also experimenting on the free maternal health policy and therefore adopted a policy of fees abolition for maternal services in 2013 (MoH, Kenya, 2013; Ridde & Morestin, 2011). There is a dearth in studies evaluating the implementation of FMS in Kenya. The aim of this study was to establish the relationship of socio-demographic, economic factors among postnatal women with status of FMS Implementation in Public Hospitals in Nyanza, Kenya.

Methodology

Study area: The study was conducted selected Sub-County public hospitals in Nyamira, Homa-bay and Kisumu counties in Nyanza, Kenya which has a population of approximately 5.442,711 persons as at 2009 (GOK/CBS, 2008/2009). The Maternal Mortality Rate (MMR) is significantly high (14.9%) than the national MMR and with the prevalence that has remained high. Nyanza is rated 2nd in fertility rates in Kenya and with low, 26% hospital deliveries (KNBS & ICF Macro 2010,2012).

Study design: This was an analytic cross-sectional study using both quantitative and qualitative methods. This design aid in analyzing and observing the situation and with qualitative methods the collected data is triangulated.

Table 1 Sample size from each study area

County	Sub-County	Su-County Hospitals	Total deliveries per month (average)	Total deliveries for three months	Proportional sample per sub-county hospital
Kisumu	Nyando	Ahero	100	300	205
	Kisumu West	Kombewa	90	270	185
Nyamira	Nyamira North	Ekerenyo	80	240	165
	Masaba North	Masaba	100	300	205
Homa-Bay	Ndhiwa	Ndhiwa	70	210	145
	Kaspul	Karachuonyo	120	360	247

Data Collection and analysis: Semi- structured exit interviews were used to collect data from a sample of 1152 postnatal women who were sampled proportionately according to the hospital population size of postnatal women seeking postnatal services. Multi-stage and Simple Random Sampling were used to select counties, Sub-Counties, Sub-County public hospitals and the interviewed postnatal women who had delivered in each hospital were purposively selected.

Ethical clearance: This study received ethical clearance from the Kenyatta University Ethical Review Committee, Kenya and the National Commission for Science, Technology and Innovation, Kenya provided the research permit to conduct the study in the selected Counties in Nyanza, Kenya, each County also provided an authorization letter and a written informed consent was obtained from each participant before conducting the interviews.

Results

Table 2: Postnatal women' Socio-demographic and economic characteristics

Variable	Category	n	%
Age Category	<= 19	243	41%
	20 – 24	419	73%
	25 – 29	308	54.3%
	30 – 34	135	23.1%
	35 – 39	42	7.3%
	40 – 44	5	0.8%
	45+	2	0.3%
Marital status	Married	895	77.7%
	Unmarried	257	22.3%
Parity	1	450	39.0%
	2	289	25.1%
	3	200	17.4%
	4 and above	212	18.4%
Religion	Christian	1150	99.8%
	Muslim	2	0.2%
Level of education	None	16	1.4%
	Primary	361	31.3%
	Secondary	550	47.7%
	Tertiary	225	19.6%
	Total	1152	100.0%
Employment status	Unemployed	575	49.9%
	Employed	577	50.1%
Total earnings per a month	None	559	48.5%
	1 to 500	69	6.0%
	501-5000	371	32.2%
	Above 5001	154	13.3%

Key: n=frequency; %=percentage

Table 3: Association of socio-demographic, economic characteristics of postnatal women with status of FMS implementation

Characteristics		Status of implementation				Statistics
		Adequate		Inadequate		
		N	%	n	%	
Age	<= 19	84	16.9%	159	24.1%	$Fisher's\ Exact =$ 16.557, p = **0.009****
	20 – 24	186	37.5%	233	35.5%	
	25 – 29	153	30.8%	155	23.5%	
	30 – 34	52	10.5%	83	12.6%	
	35 – 39	20	4.0%	22	3.3%	
	40 – 44	1	0.2%	4	0.6%	
	45+	0	0.0%	2	0.3%	
Marital status	Married	507	56.6%	388	43.4%	$Fisher's\ Exact =$ 0.288, p = 0.618
	Unmarried	151	58.5%	107	41.5%	
Parity	1	267	59.4%	183	40.6%	$\chi^2 = 2.218$, df = 3, p = 0.52
	2	166	57.2%	124	42.8%	
	3	110	54.7%	91	45.3%	
	4 and above	115	54.0%	98	46.0%	
Religion	Christian	655	57.0%	495	43.0%	$\chi^2 = 1.509$, df = 1, Fisher's Exact = 0.509
	Muslim	2	100.0%	0	0.0%	
Education	None	12	75.0%	4	25.0%	$\chi^2 = 19.324$, df = 3, p = **0.000****
	Primary	198	55.0%	163	45.0%	
	Secondary	342	62.3%	207	37.7%	
	Tertiary	105	46.5%	121	53.5%	
Employment status	Unemployed	280	48.8%	294	51.2%	$\chi^2 = 32.200$, df = 1, p = **0.000****
	Employed	377	65.3%	200	34.7%	
Total earnings per a month	None	275	49.3%	283	50.7%	$\chi^2 = 39.067$, df = 3, p = **0.000****
	1 to 500	31	44.9%	38	55.1%	
	501-5000	252	68.0%	119	32.0%	
	Above 5001	99	64.3%	55	35.7%	

Mode of Transportation

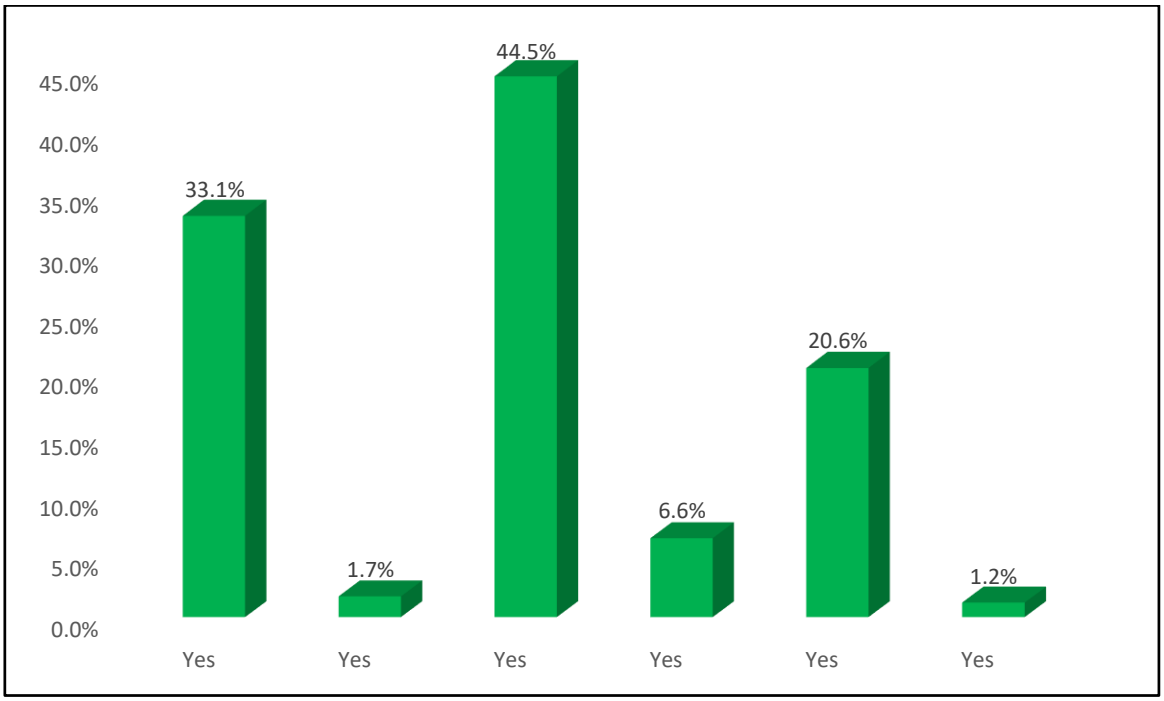

Figure 1: Modes of Transportation

4.2 Socio-demographic and economic characteristics of postnatal women

Data was collected from 1152 post-natal women who were seeking FMS in Sub-County hospitals in Nyanza. The average age of the respondents was 24.03 (SD ± 5.18) with the youngest being 15 years and the oldest 47 years.

Most, 419 (73%) postnatal women were aged between 20 to 24 years. Majority, 895 (77.7%) were married, with most, 450 (39%) of them having given birth to one child. Almost all, 1150 (99.8%) postnatal women were Christians with only 2 (0.2%) being Muslims. Majority of postnatal women 550 (47.7%) had secondary education. Only 225 (19.6%) had tertiary education. Almost an equal proportion, 575 (49.9%) of postnatal women were unemployed and 577 (50.1%) were employed. However, majority, 559 (48.5%) did not have any income and only 154 (13.3%) had income of 5001 and above as shown in Table 2. This indicated the dire need for FMS in these Counties and in Kenya as whole since most populations are not employed.

The relationship between dependent variables and characteristics of postnatal women were compared. Characteristics which were significantly associated with status of FMS implementation, were age Fisher's Exact = 16.557, p = 0.009; level of education, (χ^2 =19.324, df=3,p <0.001), employment status, (χ^2 =32.200, df=1,p<0.001), earnings per a month, (χ^2 =39.067, df=3,p<0.001) as shown in Table 3.

Mode of transportation

The study sought to find out the modes of transportation amongst the postnatal women. The most common mode was motorcycle 44.5%, followed by walking 33.1% and the least was own car 1.2%. However, some postnatal used a mix of the modes depending of the location of their homes to the hospital as shown in Figure 1.

Discussion

Almost all, 1047(90.9%) postnatal women were between 18 to 47 years and none of the respondents were below the age of 15 years and the mean age being 15 years while the maximum was 47 years. This is consistent with KDHS, (2008/2009 and 2014) findings which indicate that the reproductive age in Kenya is between 15 years to 49 years.

Majority 895 (77.7%) of the respondents were married and a small proportion, 257 (23.3%) were unmarried. The sample is a representation of the population ‘s marital status in Nyanza. For parity, majority, 450 (39%) had delivered one child and almost same portion, 289 (25.1%), 200 (17.4%) and 212 (18.4%) had delivered two, three and four children respectively. This is consistent with KDHS, 2008/2009 and 2014 findings which show that more women had given birth to at least two children. The level of education of postnatal women varied with a majority, 550 (47.7%) having secondary education, none or primary accounted for 377 (32.7%) and the least, 225 (19.6%) had tertiary. This is an indication of the education status of women in Nyanza. This is consistent with (KDHS, 2008/2009 and 2014) findings which indicate that in Nyanza more women have secondary education and above. Concerning religion, almost all 1150 (99.8%) were Christians therefore a representation of the religious profile of Nyanza. This is consistent with KDHS 2008/2009 and 2014 findings which show that in every ten respondents nine were Christians in Nyanza.

For employment status, half 577 (50.1%) of the postnatal women, were employed, closely followed by the unemployed, 575 (49.9%). This is consistent with KDHS (2008/2009 and 2014) which documents that the highest proportions of the employed women are from Nyanza and Central regions. As it regards to income, majority, 559 (48.5%) had no income, those who had an income of up to Ksh.5000 were 440 (38.2%) and only 154 (13.3%) had an income of above Ksh.5000.

The distance covered to the health facility was categorized into six groups i.e, travel by walking, bicycle, motorcycle, taxi, matatu and own car. According to this study, majority, 44.5% used a motorcycle, others either walked, 33.1% or used both. This could be attributed to some hospitals not being easily accessible. Therefore, this is consistent with other studies Ettarh and Kimani., (2016) and

Mwaliko *et al.,* (2014) which have documented that at least hospitals should be within reach with a distance of 5kms and below in order for health services to be more accessible and hence reduce mortality and morbidity that is related to distance.

There was a relationship in socio-demographic and economic factors of postnatal women with status of FMS implementation. Effective FMS implementation by the National government and County ministry of Health should consider the influence of socio-demographic and economic factors among women

Conflict of interest

The authors declare that they have no conflict of interest.

References

Alkema, L., Chou, D., Hogan, D., Zhang, S., Moller AB, Gemmill,A., Fat, DM., Boerma, T., Temmerman, M., Mathers, C., Say, L., on behalf of the United Nations Maternal Mortality Estimation Inter-Agency Group collaborators and technical advisory group. (2016). Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenario-based projections to 2030: a systematic analysis by the UN Maternal Mortality Estimation Inter-Agency Group.; *Lancet*,387 (10017): 462-74.

Aluisio, A., Richardson, B. A., Bosire, R., John-Stewart, G., Mbori-Ngacha, D. & Farquahar, C. (2011). Male antenatal attendance and HIV testing are associated with decreased infant infection and increased HIV survival. *Journal of Acquired Immune-Deficiency Syndrome*.1:56(1).

Arthur, E., (2014). Wealth and antenatal care use: implications for maternal health care utilization in Ghana. Arthur Health Economics Review, 2012, 2:14. Access, http://www.healtheconomicsreview.com/content/2/1/14

Ettarh, RR. & Kimani J. (2016). Influence of Distance to Health Facilities on the Use of Skilled Attendants at Birth in Kenya. *Health Care for Women International Journal* 37(2).

GOK/CBS (2008/2009), Kenya population census. Ministry of Planning and Development. Nairobi, Kenya.

Gitonga, E. & Muiruri, F. (2016). Determinants of health facility delivery among women in Tharaka Nithi County, Kenya. Pan African medical journal,25 (9).

Hercot, D. Meessen, B. Ridde, V. Gilson, L. (2011). Removing user fees for health services in low-income countries: A multi-country review framework for assessing the process of policy change. *Health policy and planning journal*, 26,5-15.

Kenya National Bureau of Statistics, (2013). Nyanza Province Multiple Indicator Cluster Survey 2011, Final Report. Nairobi, Kenya: Kenya National Bureau of Statistics.

Kenya Demographic Health Survey, (2008/9). Nairobi, Kenya.

Kenya Demographic Health Survey (2014), Nairobi, Kenya.

Lang'at, E. & Mwanri, L. (2015). Healthcare service provider's and facility administrators' perspectives of the free maternal healthcare services policy in Malindi District, Kenya: a qualitative study. *Journal of Reproductive Health,12 (59).*

Ministry of Health, Kenya, (2013). The proposal for removal of user fees in primary level facilities and maternity fees in public health facilities in Kenya.

Mwaliko, *et al.* (2014). "Not too far to walk": the influence of distance on place of delivery in a western Kenya health demographic surveillance system. *BioMedical Central Health Services Journal* 14 (212).

Mauch, V., Woods, N., Kirubi, B., Kipruto, H., Sitienei, J. and Klinkenberg, E., (2011). Assessing access barriers to tuberculosis care with the tool to estimate patient's costs:pilot results from two districts in Kenya. *BMC Public Health*, 11:43.

Ochako, R., Fotso, JC., Ikamari, L., and Khasakhala, A., (2011). Utilization of maternal health services among young women in Kenya: Insights from the Kenya Demographic and Health Survey. *BMC Pregnancy and Child Birth*, 11:1.

Otieno, PA., Kohler,PK., Bosire RK., Brown, ER., Macharia, SW. & & John-Stewart, GC. (2010). Determinants of failure to access care in mothers referred to HIV treatment programs in Nairobi, Kenya AIDS Care Vol. 22: 6.

Owusu-Addo, E., Renzaho, AMN., Mahal, AS. A & Smith, BJ. (2016). The impact of cash transfers on social determinants of health and health inequalities in Sub-Saharan Africa: a systematic review protocol. *BMC Journal*, 5:114.

Ridde, V. & Morestin, F. (2011). A scoping review of literature of the abolition of user fees in healthcare services in Africa. *Health Policy Planning Journal*, 26,1-11.

Pandey, S., and Karki, S., (2014). Socio-economic and Demographic Determinants of Antenatal Care Services Utilization in Central Nepal. *International Journal of MCH and AIDS*, Volume 2, Issue 2, 212-219. **Available online at** www.mchandaids.org

Say L, Chou D, Gemmill A, Tunçalp Ö, Moller AB, Daniels JD, Gülmezoglu, M.,

Temmerman, M., Alkema, l., (2014). Global Causes of Maternal Death: A WHO

Systematic Analysis. *Lancet Global Health*. 2014;2(6): e323-e333.

Stokes. MJ., and Wilkinson. JP., (2018). The causes of maternal mortality are changing

and preventable. International journal of obstetrics and gynecology,1254–1261.

Access: https://doi.org/10.1111/1471-0528.15154

Wanjira, C., Mwangi, M., Mathenge, E., Mbugua, G. & Nganga Z, (2011). Delivery Practices and Associated Factors among Mothers Seeking Child Welfare Services in Selected Health Facilities in Nyandarua South District, Kenya. *Public health* journal, 1 1.

Witter, S., (2012). Health financing in fragile and post-conflict states: what do we know and what are the gaps? *Social Science Medical Journal*. 75(12):2370-7.

Witter, S., Dieng, T., Mbegue, D., Moreira, I. & De Brouwere V. (2010). The national free delivery and caesarean policy in Senegal: evaluating process and outcomes. *Health policy plan journal*, 25,384-392.

WHO, (2012). Trends in maternal mortality: 1990-2010. WHO, UNICEF, UNFPA & the World Bank estimates. Geveva, WHO, p59.

Zureick-Brown,S., Newby,H., Chou,D., Mizoguchi,N., Say,L., SuzukiE., and Wilmoth., J (2013). Understanding Global Trends in Maternal Mortality. *International Perspectives on Sexual and Reproductive Health*, 39 (1).