Determinants of Utilization of Postnatal Services among Postnatal Women in Selected Hospitals in Kakamega County

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Abstract: **Postnatal care is the care provided to the mother immediately after delivery of baby and placenta. The care is spread across a minimum of four postnatal visits packaged as focused postnatal care. During this period the health worker takes the opportunity to provide essential services geared towards offering promotive, preventive and curative services to both mother and baby. Approximately 800 mothers die daily globally due to pregnant related causes, some are direct and others are indirect causes. This translates to about 600, 000 maternal deaths annually in the global arena.**

Objective: **We set to carry out a research to establish determinants of utilization of postnatal services among postnatal mothers in Kakamega County.**

Study design: **This was a descriptive cross-section study involving 215 participants recruited from three sub-county hospitals.**

Sampling technique: **We used a simple random sampling followed by systematic sampling to select study subjects who were consented. Data was collected using a questionnaire and entered into a data base and analyzed using SPSS version 21.**

Results: **Variables that were significantly associated with utilization of services included: occupation, health facility, time taken to hospital, number of antenatal clinic attendance and number of postnatal clinic attendance. There was a significant association of services offered and utilization (p<0.05). We concluded that majority of participants utilized postnatal services with the number of ANC, PNC and occupation were significantly associated with utilization of postnatal services. The uptake of cancer of cervix screening was low compared to other services and therefore the study recommends the county government of Kakamega to introduce strategies that may accelerate the uptake of this service.**

Key words: **postnatal care, postnatal mothers, postnatal visits, maternal health, maternal mortality.**

I.INTRODUCTION

Maternal mortality is the death of a woman due to causes that are related to pregnancy either before birth, during delivery or after delivery within 42 days. The maternal morbidity and mortality are high during the first 14 days due to poor postnatal care during that period [1]. Globally it is estimated that 70% of postnatal mothers don't receive postnatal care during this critical period [2]. Focused postnatal care (FPNC) is essential to mothers and their babies as it gives health care workers an opportunity to detect neonatal and maternal health problems early and implement interventions appropriately. FPNC is spread in minimum of four scheduled visits in which a mother and baby receives essential services from health care providers. In Kenya it is estimated that only 53% of postnatal mothers attend second postnatal clinic [3].

In 2015 about 303,000 women died due to pregnancy related factors [1]. Many reports have indicated that approximate 600, 000 mothers die annually globally with a possible daily death of 800 mothers [4]. Majority of these deaths are found in the Sub Saharan Africa with a global maternal mortality at 216:100,000 [5]. According to Wilkinson [6] about 75% of these deaths are due to abortion, hypertensive disorders of pregnancy, obstetric haemorrhage, obstructed labour and sepsis. Many countries in the Sub Saharan Africa have relatively high maternal mortalities [5]. Countries such as Ethiopia have a maternal mortality of 412 deaths per 100,000 live births. Many countries globally are working on a plan to increase postnatal visits by postnatal mothers and eventually improve on maternal and neonatal health [5]. In Kenya the maternal mortality ratio is 362:100,000 [3]. This is a high incidence as per the WHO guidelines which states a rate more than 300 maternal deaths is high. The WHO recommends that no country should have a maternal mortality higher than 140 deaths per 100, 000 live births [5]. The SDG 3 is expected reduce the maternal mortality 70 deaths per 100,000 live births by 2030 [2]. Most of the deaths occur due to complications that can be easily avoidable [7]. In low income countries maternal and neonatal deaths remains a grave challenge [8]. The developed countries have low maternal mortality rates at 27 deaths at 100 000 live births [1]. Global neonatal mortality is at 2.7 million annually. The new Sustainable Development Goals targets to reduce maternal mortality to 70 per 100,000 by 2030 and there should be no country with MMR more than 140 per 100, 000 live births [9].

Many studies done have reported that several factors are associated with uptake of postnatal services. Reference [10] observed that education level is significantly associated with utilization of postnatal services. Occupation, parity, social support, culture, age and accessibility have been reported to influence utilization of postnatal services [11,12,13]. Yunus *et al.* [14] reported low socio-economic status and being a

resident of rural area affect the utilization of postnatal services.

III. METHODS AND MATERIALS

This was a descriptive cross-sectional study executed in Kakamega County, Kenya. It was aimed to establish the determinants of utilization of postnatal services among postnatal mothers in three Sub-County hospitals: Malava, Butere and Navokholo Sub County hospitals. Sample size was calculated using Fisher's *et al*. formula: $n = z^2pq/d^2$ which resulted to 215 participants. Those recruited included participants who consented, delivered their babies at the study sites and mentally sound to comprehend the study questions. A simple random sampling followed by Systematic sampling was used. Data collection was collected by the principal researcher and researcher assistants using questionnaires which were entered into a data base for analysis using the SPSS Version 21. Chi-square was used to determine association between variables and utilization of postnatal services. The level of significance was set at $p<0.05$. The study had been reviewed and cleared by Kenyatta University Ethical Committee. National Commission of Science, Technology and Innovation permitted the study and the County health department. Informed consent was sought from the participants.

III. RESULTS

Socio demographic characteristics of study participants

Table I presents a summary of socio demographic characteristics of participants. Majority of participants (31%) were aged between 26 to 30 years whereas 86% were married. A higher proportion of 45% had completed primary education with 39% having acquired secondary education and a further 10% had college/university education. Many of the participants (95%) were Christians.

Table I: Socio demographic characteristics of study participants.

Variables		Frequency	Percentage
Age (years)	<20	14	6.5%
	21-25	54	25%
	26-30	67	31%
	31-35	59	27%
	36-40	18	8%
	>40	4	2%
Marital status	Married	185	86%
	Unmarried	22	10%
	Separated	9	4%
Education	No formal education	11	5%
	Primary	97	45%
	Secondary	89	41%
	College/university	19	9%
Religion	Christian	206	95%

	Muslim	10	5%
No of children	<3	153	71%
	4-6	60	28%
	>7	3	1%
	10001-20000	16	7%
	20001-30000	4	2%
	>30000	2	9%
Years since of previous delivery(years)	<2	34	23%
	3-5	79	54%
	6-8	21	14%
	>8	11	8%
ANC VISITS	One	9	5%
	Two	26	14%
	Three	29	15%
	Four	128	68%
Mode of delivery	Vaginal delivery	195	90%
	Caesarean section	21	10%
Total		215	100%

Economic characteristics of study participants

Table II lists a summary of economic characteristics of participants. Majority of participants (62%) were not employed whereas 90% earned less than Kshs 10, 0000. Majority of mothers (69%) used motor cycle to reach hospital with few (17%) of them using matatu. A proportion of 38% of participants took 21-40 minutes to reach the hospital with few (6%) taking more than 60 minutes. Most of the participants (71%) had less than 3 children whereas 2% had more than 7 children. Most participants (54%) had 3-5 years since last delivery with 8% had more than 8 years from time of last delivery.

Table II: Economic characteristics among study participants.

Variables		Frequency	Percentage
Occupation	Unemployed	135	62%
	Self employed	66	31%
	Formally employed	15	7%
Transport	Matatu	35	16%
	Motor cycle	150	69%
	Bicycle	8	4%
	Walking	21	10%
	Taxi	2	9%
Time taken to facility (min)	<20	97	45%
	21-40	81	38%
	41-60	31	14%
	>60	7	3%
Income (Kshs)	>10000	194	90%

	10001-20000	16	7%
	20001-30000	4	2%
	>30000	2	9%
Total		215	100%

Utilization of services among study participants

Table III shows the association of services offered in the health facilities and the utilization of those services among the participants. Majority (67%) of the participants who sought treatment services utilized postnatal services whereas 74% of them who went for screening of cervical cancer utilized the services. There was a significant association of services offered and utilization.

Table III utilization of services among study participants

Services		Uptake	No uptake	Chi-square
Treatments	Y	76 (67%)	37 (33%)	$x^2=21$, df =1, p=0.000
	N	37 (36%)	66 (64%)	
Cancer of cervix screening	Y	43 (74%)	15 (26%)	$x^2=15.2$, df=1, p=0.000
	N	70 (44%)	88 (56%)	
Received Vit A	Y	51 (70%)	22 (30%)	$x^2=14.4$, df 2, p=0.001
	N	62 (44%)	80 (56%)	
Family planning	Y	80 (62%)	48 (38%)	$x^2=13.1$, df=1, p=0.000
	N	33 (38%)	65 (62%)	
Baby vaccinated	Y	113 (52%)	103 (48%)	
	N	0 (0%)	0 (0%)	
Baby weight taken	Y	113 (53%)	102 (0%)	$x^2=11.2$, df=1, p=0.294
	N	0 (0%)	1 (100%)	
Mother Checked BP	Y	98 (65%)	53 (35%)	$x^2=33.7$, df 1, p=0.000
	N	14 (22%)	50 (78%)	
Mother taken weight		49 (64%)	28 (36%)	$x^2=6.2$, df=1, p=0.013
		64 (46%)	75 (54%)	
Received ITN		84 (68%)	39 (32%)	$x^2=29.2$, df=1, p=0.000
		29 (31%)	64 (69%)	
PMCT	Y	47 (86%)	8 (14%)	$x^2=32.4$, df= 1, p=0.000
	N	66 (41%)	95 (59%)	

Socio demographic variables associated with utilization of services among the participants

Table IV presents a summary of variables associated with utilization of services among the study participants. None of the socio demographic variables was significantly associated with utilization of services.

Table IV: Socio demographic variables associated with utilization of services among study participants

Variables	Category	Utilization		Chi-squire
		Upatake	No uptake	
Age (years)	<20	7 (50%)	7 (50%)	$x^2=6.25$, df=5, p=0.282
	21-25	35 (65%)	19 (35%)	
	26-30	31 (46%)	36 (54%)	
	31-35	26 (45%)	32 (55%)	
	36-40	11 (61%)	7 (39%)	
	>40	2 (50%)	2 (50%)	
Marital status	married	96 (51%)	89 (48%)	$x^2=047$, df=2, p=0.977
	unmarried	11 (52%)	10 (48%)	
	separated	5 (56%)	4 (44%)	
Education	no formal education	6 (55%)	5 (45%)	$x^2=1.53$, df=3, p=0.674
	primary	47 (49%)	41 (47%)	
	secondary	47 (53%)	41 47%)	
	college/university	12 (63%)	7 (37%)	
Religion	christian	108 (51%)	100 (49%)	$x^2=13.4$, df=1, p=0.246
	muslim	7 (70%)	3 (30%)	
No. of children	<3	83 (54%)	69 (45%)	$x^2=1.51$, df=2, p=0.469
	4-6	28 (47%)	32 (53%)	
	>7	1 (33%)	103 (48%)	
Total		215	100%	

Economic and facility related variables associated with utilization of services among the participants

Table V presents a summary of variables associated with utilization of services among the study participants. Occupation, number of antenatal visits and number of postnatal visits were significantly associated with utilization of services (p<0.05).

Table V: Economic and facility related variables associated with utilization of services among study participants

Variables	Category	Utilization		Chi-squire
		Upatake	Non-uptake	
	Primary	47 (49%)	41 (47%)	
	Secondary	47 (53%)	41 47%)	
	College/university	12 (63%)	7 (37%)	
Occupation	Unemployed	67 (50%)	68 (50%)	$x^2=31.5$, df=2, p=0.003
	Self employed	37 (57%)	28 (43%)	
	Formally employed	8 (53%)	7 (47%)	
Facility	Butere hospital	19 (27%)	52 (73%)	$x^2=28.9$, df=2, p=0.000
	Malava hospital	42 (59%)	29 (41%)	
	Navokholo hospital	51 (70%)	22 (30%)	
Transport	Motor cycle Bicycle	81 (54%) 5 (62%)	69 (46%) 3 (37%)	$x^2=4.39$, df=4,

	Motor cycle Bicycle	81(54%) 5(62%)	69(46%) 3(37%)	p=0.355
	Walking	8(38%)	13(62%)	
	Taxi	0(0%)	2(100%)	
Time taken to facility (min)	<20	49(51%)	47(49%)	x^2=13.7, df=1, p=0.007
	21-40	42(52%)	39(48%)	
	41-60	19(61%)	39(48%)	
	>60	2(29%)	5(71%)	
Income (Kshs)	>10000	102(53%)	91(47%)	x^2=3.50, df=3, p=0.320
	10001-20000	7(43%)	9(56%)	
	20001-30000	1(25%)	3(75%)	
	>30000	2 (100%)	0(0%)	
Number of ANC visits	One	3(37%)	5(63%)	x^2=15.2, df=1, p=0.004
	Two	9(35%)	17(65%)	
	Three	14(48%)	15(51%)	
	Four	74(48%)	15(52%)	
Mode of delivery	Vaginal delivery	100(52%)	93(48%)	x^2=1.30, df=2, p=0.520
	Caesarean section	12(57%)	9(43%)	
Number of PN visit	None	11(24%	34(76%)	
	One	42(57%)	32(43%)	
	Two	31(55%)	25(45%)	x^2=19.8, df=4, p=0.001
	Three	25(70%)	11(31%)	
	Four and above	3(75%)	1(25%)	
Total		215	100%	

IV. DISCUSSION

A higher proportion of 45% had completed primary education. This agrees with the KNBS [3] which found similar findings of high proportion of those who had completed primary education. a proportion of 5% of mothers had no formal education. This is contrary to Tesfahun *et al.* [15] in a study done in Ethiopia where a proportion of 80% were illiterate. Majority of mothers (86%) were married. This is consistent with a report by [16] who also found high proportion among the women. Sixty two percent of postnatal mothers were not employed. This finding is consistent with the national proportion of 61% [3]. A proportion of 60% of mothers was aged between 21 to 30 years. This is consistent to a study done by Kikuchi *et al.* [17] in Cambodia who found almost a similar proportion in the same age group. Thirty eight percent took less than 20 minutes which proves that they lived not far away from the hospital. This finding is consistent [18] who had observed less distance for mothers to cover to the hospital. Time taken to the hospital was significantly associated to the health facility (p<0.05). This means that the mothers took a short time because they had to equally cover a short distance. This finding was consistent with Kikuchi *et al.* [17] in study done in Cambodia where he observed that distance was associated with visit to health facility.

Health facility was significantly associated with utilization of PN services, a finding that agrees with [13]. Numbers of PNC visits were significantly associated with utilization of postnatal services, a finding that is in line with [11]. Khaki and Loniezo [19] found that timely number of ANC visit was significantly associated with uptake of PN services which agrees with our finding. Occupation was significantly associated with uptake of PN services which agrees with Chaka *et al.* [20*]* who observed that mothers with a source of income utilized PN services, similarly Mayieka [13] concurs with that finding. This study disagrees with Sagawa [21] who observed that education of the participants was significantly associated with utilization of PN services

V. CONCLUSION

We concluded that majority of participants' utilized postnatal services with the number of ANC, PNC and occupation being significantly associated with utilization of postnatal services. However, it was observed that uptake of cancer of cervix screening was low compared to other services.

VI. RECOMMENDATION

The county health department should explore strategies of increasing screening cancer of cervix.

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Conflict of interest

There is no conflict of interest.

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