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ASSESSMENT OF UTILIZATION OF POSTPARTUM CARE SERVICES AMONG WOMEN IN WEBUYE WEST, BUNGOMA COUNTY, KENYA
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# ASSESSMENT OF UTILIZATION OF POSTPARTUM CARE SERVICES AMONG WOMEN IN WEBUYE WEST, BUNGOMA COUNTY, KENYA

C.L. OTUNGA, S.G. MATHENGE and F.A.O ONGECHA

## ABSTRACT

*Background*: **Postpartum care (PPC) is an important link in the continuum of care for maternal health. PPC services are essential, aim being to prevent any complications, poor outcomes like morbidity and mortality to ensure a healthy mother. The postpartum period is critical because most maternal deaths occur during this time, yet this is the most neglected period for quality care provision.**
*Objective*: **To assess utilization and factors influencing utilization of PPC services among women in Webuye West, Bungoma County, Kenya.**
*Design*: **A descriptive cross sectional study.**
*Setting*: **Webuye West, Bungoma County, Kenya.**
*Subjects:* **All women of reproductive age with living children aged 6-9 months.**
*Results*: **The study revealed that 33.6% utilized PPC services; poor attendance of mandatory visits at less than 40 %, and all visits being positively correlated (r p 0.000) to utilization. On socio cultural factors 85.8% reported staying indoors for specified period influenced use of PPC services and 57.3% stated that traditions demand them to do so. Cultural beliefs and practices are performed and seclusion of up to one month of this 55.7% attested to. Religious beliefs and practices was dependent on use of PPC by 59.4% (X2 p=0.011).On knowledge majority 70.6% knew the services during ANC and from HCWs, but less than 15.4% and 28.2 % knew the mandatory and targeted visits respectively. The 1st and 4th visits being dependent on utilization (X2, p<0.001). On health facility factors the mean distance to facilities is 1.78 km. Even though the majority of available service was basic, majority, 74.8% reported availability with 40.9% having received the services during all their visits. Majority 75.9% of HCWs were friendly and helpful. Half of the women paid for services and average waiting time was 31-60 minutes.**
*Conclusion:* **PPC service utilization is low marked by poor attendance of visits. Utilization of PPC is dependent on; religious beliefs and practices (X2=0.011), Knowledge on sources of information from MCH booklets and ANC visits (X2 p<0.001); knowledge on who to attend after birth (X2, p<0.001) and timings of PPC visits. Health facility related factors are availability of HCW, their helpfulness and friendliness and waiting time (X2p<0.001). Distance to the health facility and charges for services (X2 p=0.005).**

## INTRODUCTION

Postpartum care (PPC) is offered to a mother from the time of placental expulsion up to 6 weeks after delivery extending to six months. It involves health promotion, prevention, early detection, treatment of complications and disease and provision of advice, the Kenya Maternal and New-born Health

model (KMNH, 2009). Targeted postpartum care (TPPC) is an approach which defines a set of PPC services delivered to a mother in a minimum of four visits spread throughout the first six months following delivery as outlined in a package of a check-up within 48 hours, two weeks, six weeks and at four to six months respectively (WHO, 2013).

Globally, more than half a million women die each year from complications of pregnancy and childbirth, largely the first 48 hours after delivery with 99% being in developing countries (WHO, 2013). Sub-Saharan Africa averages to 640 deaths per 100,000 live births, majority of which occurs in the postpartum period (WHO, 2013).

In Kenya 510 maternal deaths per 100,000 live births occur (WHO, 2015).Kenya experiences a very slow progression in maternal health during this period and 51% of women receive PPC, 43% being from rural areas and 65% from urban, Kenya Demographic Health Survey, (KDHS, 2014). Complications related to delivery are among the leading causes of morbidity and mortality among Kenyan women (KNBS, 2010). Postpartum care therefore is an important link in the continuum of care for maternal health to prevent mortality and morbidity (Chen et al., 2014).

## MATERIALS AND METHODS

*Study Design:* A descriptive cross sectional design was adopted and used to collect both qualitative and quantitative data on utilization of postpartum care among women in Webuye West Sub County.

*Variables:* Independent variables: The socio cultural-related factors included cultural beliefs, practices/rituals, family support and religious beliefs/practices. The knowledge related factors included, women's understanding of PPC, where it's offered and by whom, when to go for PPC, risks associated with nonattendance of PPC and the importance of PPC. Health facility factors included: access/availability of services and commodities, health facilities offering PPC, attitude of HCW, their skills, support, and competency and waiting time.

*Dependent variable:* The dependent variable was utilization of postpartum care services by women. This was dependent on the use of the recommended visits i.e. attending the four visits of which three were targeted and mandatory.

*Location of the Study:* Webuye West Sub County is found in the eastern part of Bungoma County, located in the western part of Kenya. It covers an area of 242.6km2 with 2 divisions (Bokoli and Webuye), 3 locations and 12 sub locations with 20 community units and 210 villages (Bungoma County Development Profile, 2013, DHIS, 2014).It has a total population of 230, 253, women comprising of 117,876 of which 61,827 are women of reproductive age (KNBS, 2010).

*Study Population:* The target population was all women of reproductive age (15-49) years in Webuye West with living children aged between 6-9 months old.

*Inclusion criteria:* All women of reproductive age selected by purposive sampling. The sampling frame was at the community unit level whereby out of the 20 CUs in Webuye West, 10 were picked by simple random sampling after a generated list was made. A request for a list of women meeting the criteria from the10 CUs was generated by the CHVs (they serve specific CUs and villages so have vital information about the women and their children's ages). After this woman were randomly picked until the desired sample size was achieved.

The key informants were the HCWs working in the MCH departments in the three levels of the health facilities in Webuye West. They were selected by purposive sampling as they offer the PPC services. Two were randomly picked from each level during the period of data collection and interviewed.

*Sample Size Determination:* Sample size determination was by of Fisher's formula (Fisher, 1973) for finite population more than

10,000. Women of reproductive age in Webuye County is 61,827 (KNBS, 2010).

The formula: $n=\frac{Z^2pq}{d^2}$

Where n=minimum desired size for a population greater than 10,000

Z=standard normal deviation, normal distribution set at 1.96 corresponding to 95% confidence level.

p=proportion of target population estimated to have particular characteristics 50% (0.50). In Kenya women of reproductive age utilizing PPC is 51% (0.51) according to (KDHS, 2014).

q=1-p

d2=margin error or degree of accuracy required set at 5% (0.05)

Therefore, $n=\frac{1.962 \times 0.51(1-0.51)}{0.052}$

$=384.006$

$n=384$

For the HCWs, two from each level of health facility were selected therefore, 6 were interviewed.

*Data Collection Techniques*:

Data collection was done through administration of questionnaires by the research assistants in relation to the community units they serve.

*Data Analysis:*

After data collection, quantitative data was coded and analyzed using Statistical Package of Social Sciences (SPSS) version 20. Statistical testing for association was done using Pearson's Chi-Square test and correlation coefficient. Qualitative data from FGD and interviews were transcribed, entered into Microsoft word, and thematic content analysis done. Descriptive statistics like means, frequencies and percentages were used.

*Ethical Considerations:*

Authority to carry out the study was sought from Kenyatta University Graduate School. Ethical approval and clearance was obtained from Kenyatta University Ethics Review Committee. Research permit was obtained from National Commission of Science, Technology and Innovation. Authority was then sought from Bungoma County through the County Commissioner; the Director Ministry of Education and Director Ministry of Health. Permission was then sought and granted by area chiefs and village heads. Informed consent was sought from the participants.

## RESULTS

The respondents were from 3 main locations with Webuye CU having nearly half of the respondents 45.7% (163) Kakimanyi had 30.5% (109) and Bokoli majority 49.9% (178) were aged between 25-34 years and 3.1% (11) minority at less than 18 years. Only 6.8% (24) had no formal education with majority 35.9% (126) having secondary level of education, and22.8% (80) completed primary.

On the number of children, 51.8% had 1 or 2 with the rest 3 and more, majority 81.5% (291) were married, and 94.1% (336) being Christians (Table 1).

*Attendance of ANC*:

As shown in Table 2, on the attendance of ANC, majority, 99.1% (354) had attended with a mean of 4 visits totalling to 68.6%, with majority of the women 77.0% (275) having delivered in a health facility. Utilization of PPC services: The study wanted to understand whether women have ever utilized.

**Table 1**

*Respondents Demographics*

| Item | Response | Freq. n=357 | Percentage | Place of current (this) de- livery |
|---|---|---|---|---|
| Region | Bokoli | 85 | 23.8% | |
| | Webuye | 163 | 45.7% | |
| | Kakimanyi | 109 | 30.5% | |
| Age | < 18 Years | 11 | 3.1% | |
| | 18-24 Years | 129 | 36.1% | |
| | 25-34 Years | 178 | 49.9% | |
| | 35-44 Years | 39 | 10.9% | |
| Education | No Formal Education | 24 | 6.8% | |
| | Primary (Incomplete) | 86 | 24.5% | |
| | Primary (Complete) | 80 | 22.8% | |
| | Secondary | 126 | 35.9% | |
| | Tertiary | 33 | 9.4% | |
| | Others | 8 | 2.2% | |
| Number of | 1 Child | 97 | 27.1% | |
| | 2 Children | 88 | 24.7% | |
| | 3 Children | 72 | 20.3% | |
| | 4 Children | 41 | 11.5% | |
| | 5 or more Children | 59 | 16.5% | |
| Marital status | Married | 291 | 81.5% | |
| | Single | 56 | 15.5% | |
| | Widowed | 6 | 1.7% | |
| | Divorced | 4 | 1.1% | |
| Religion | Christian | 336 | 94.1% | |
| | Muslim | 19 | 5.3% | |
| | Others | 2 | 0.6% | |

**Table 2**

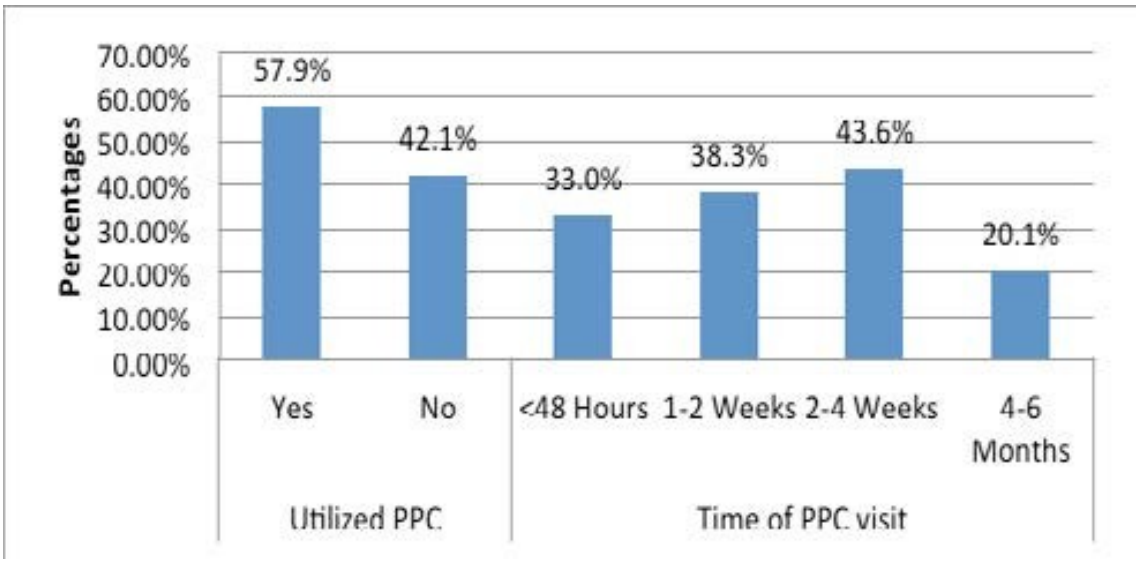
*ANC attendance, No. of ANC visit & place of delivery*

| | | Frequency | Percentage | Mean |
|---|---|---|---|---|
| ANC attendance | Yes | 354 | 99.1% | |
| | No | 3 | 0.9% | |
| Number of ANC visits | 1 | 7 | 2.0% | |
| | 2 | 18 | 5.0% | |
| | 3 | 56 | 15.7% | |
| | 4 | 164 | 45.9% | |
| | 5 | 53 | 14.8% | 4 |
| | 6 | 36 | 10.1% | |
| | 7 | 6 | 1.7% | |
| | 8 | 3 | 0.8% | |
| | 9 | 2 | 0.6% | |
| | 10 | 1 | 0.3% | |
| | 14 | 1 | 0.3% | |
| | Don't know | 10 | 2.8% | |
| Place of current (this) delivery | Health facility | 275 | 77.0% | |
| | Home | 77 | 21.6% | |
| | Others (TBA) | 3 | 0.8% | |
| | Prefer not to say | 2 | 0.6% | |

PPC. As shown in figure 1 below, majority 57.9% utilized PPC less than 40.0% utilized in the most crucial periods which were 33.0% did in less than 48 hours and 38.3% between 1 to 2 weeks.

**Figure 1**

*Respondents Utilization & Timing of Postpartum Care*




*Number of visits and full utilization of PPC:* On the number of visits, the study established that out of the women who reported to have attended PPC, those who attended 4 PPC visits were 14.8% (72), 33.6% (120) attended 3 times, 35.7% (138) attended 2 times and 44.0% (157) attended PPC only once. From the FGDs majority of the women said they were not aware/not sure of the visits and service therein, one group said, "We have not known how many visits as we have never been told about these specifically," (FGD, Bokoli). In another group, on the number of visits, women concurred "you come to clinic a number times but don't know the frequency and why," (FGD, Webuye).

On various timings, utilization of PPC was more positively correlated with period 4-6 weeks (r 0.657, p 0.000) and 1-2 weeks (r 0.601, p 0.000), followed by >48 hours (0.457p 0.000) and 4-6 months (r 0.455p 0.000).

*Reason for Attendance of PPC:* As from the findings 40.5% attended PPC while taking their baby for immunization and for general check-up. 38.0% attended PPC while they were attending family planning, 23.5% were advised by HCW, 21.2% were counselled to attend PPC, 20.4% attended PPC for check-up for their health after delivery and 16.2% were advised by family members. 14.0% became sick and thus attended PPC, 12.0% wanted nutritional education, 10.3% were conscious of attending PPC based on their previous deliveries and 7.3% went due to complications after delivery.

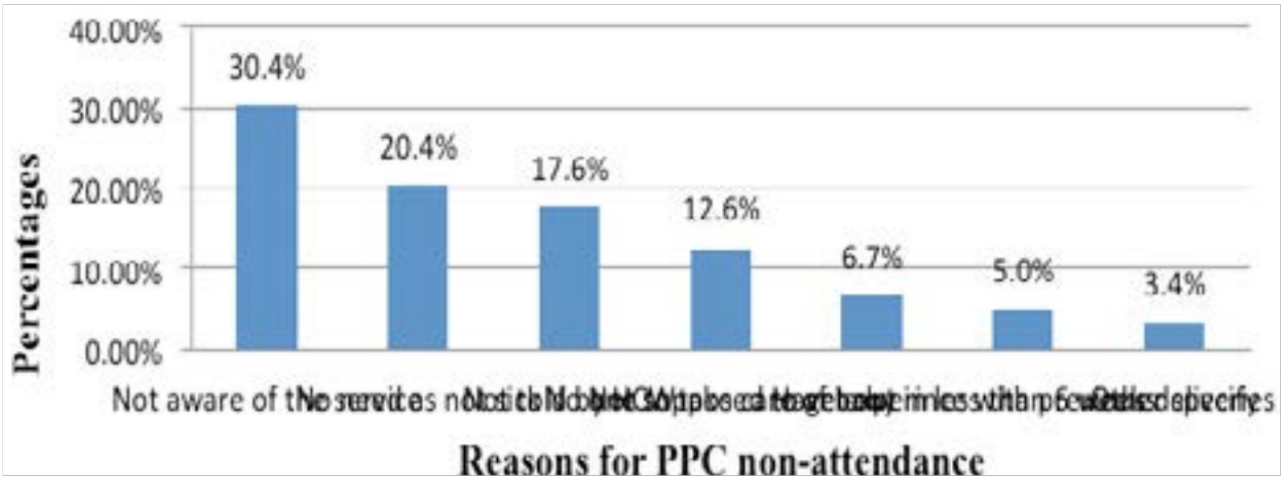
Majority of the women in the FGDs said they were not aware/not sure a woman is supposed to attend clinic after delivery as no one had told them and those who were coming came because they were unwell or brought their babies, this concurred with findings narrative above in visits,(FGD, Bokoli).

The most common factors significantly influencing utilization of PPC includes: Well baby visit and immunization (X2p 0.000),

family advice (X2p 0.000), health check-up after delivery (X2p 0.000), having more than one drugs (X2p 0.000), complications after delivery (p 0.000), demand for counseling (p 0.000) and demand for health education on nutrition care for baby (p 0.000).

*Reason for Non-Attendance of PPC:* From Figure 2 below these were reasons for non-attendance child (X2p 0.000), demand for Family planning (X2p 0.000), wanted some and one of the FGD women attested that they did not come as they were not aware of the service. "All we know is to come back for family planning after six weeks as we bring children for immunization," (FGD, Webuye).

**Figure 2**
Reasons for non-attendance for PPC




The statistical analysis using Pearson correlation and chi-square established that attendance of PPC was dependent on advices received from CHW, family members and counselling (P 0.000). Need for some children services such as immunizations, medicines and nutritional advices made women attend PPC (p0.000).

Also complications after delivery and need for check-up made women attend PPC (p0.000). Finally, previous experiences such as giving birth for the second time influenced women utilization of PPC (p 0.000), so all above are significant.

**Socio-Cultural factors influencing PPC service Utilization**

*Cultural beliefs and practices:* The study findings established that majority of the women, 55.7% (199) agreed that there were cultural beliefs related to PPC and 39.5% (141) disagreed with 5.0% (17) not sure.

*Various types of beliefs and practices:* The study wanted to establish if they suffered any health problems associated with their staying indoors, action taken and cultural beliefs or rituals on PPC. This is presented on Table 4.3 below. From one (FGD, Webuye) on beliefs and rituals women said "After you are allowed to go out, you rise up early before others wake so as no one sees you as there are other birds in the air if they defecate on you your baby's fontanel will not close and as mother you may develop some bad illnesses. Also your father in-law is the first person to hold the baby, smear it with ashes so as nothing bad happens to both of you.

**Table 3**
*Cultural beliefs/rituals and practices*

| Item | Responses | Freq.(n=357) | Percentage |
|---|---|---|---|
| | Remain indoors to avoid people of bad omen/witchcraft | 97 | 42.5% |
| | Child naming/shaving/burying placenta/washing child | 43 | 18.8% |
| | Eat traditional herbs/food | 39 | 17.0% |
| | Avoid sex due to uncleanness & not harm child | 23 | 10.0% |
| | Bath with traditional drugs/Herbs | 14 | 6.1% |
| | Eat meat/soda | 6 | 2.6% |
| | Be attended by family member | 4 | 1.8% |
| Total | | 357 | 100% |

**Table 4**
*Health problem and action taken*

| Item | Responses | Frequency (n=357) | percentage |
|---|---|---|---|
| Any health problems when indoors | No | 247 | 69.2.0% |
| | Yes | 85 | 23.8% |
| | Can't remember | 25 | 7.0% |
| Action taken when faced with health problems | Attended health Facility | 45 | 52.9% |
| | Sought help from TBA/Herbalist | 16 | 18.9% |
| | Bought drugs | 11 | 12.9% |
| | Self-treatment using hot water | 4 | 4.7% |
| | None/Done nothing | 9 | 10.6% |

Staying indoors after delivery and reasons: The study established some cultural practices affecting PPC and included; staying indoors immediately after delivery for varied periods of time, 43.0% said for 7 days, 23.5% between 7 and 30 days, 19.3% for more than 30 days totalling to 85.8%.

In one of the FGD this was evident as all women had stayed indoors for a specified period. "I was told you stay indoors for 3 days, 7 or even a month", they echoed (FGD, Webuye).There were several reasons for staying indoors, 57.3% indicated that traditions require a woman stay indoors for recovery and keep the baby warm, 19.3% reported that staying indoors helped women seclude from non-family members with bad intentions like witchcraft and bad omen, both for self and for the baby, 4.3% said that women are unclean and should not mix with other members of society and 0.8% reported it was necessary for purposes of naming and initiation ceremonies. As such these factors limited women from attending PPC.

In the FGD some mothers argued, "You stay at home until the child starts smiling/laughing this is culture from the forefather's reason unknown." The days of staying indoors vary, for a boy mothers stay indoors for 3 days if it's a girl 2 days; this has been there from time immemorial so not allowed to question."(FGD, Webuye, Bokoli). "After the last day of staying indoors, father in-law is the first person to hold the baby, smeared ash so as nothing bad happens and it's a cultural practice, " (FGD,Webuye).

Health problems at time of staying indoors and action taken. Majority 69.2 %( 247) did not experience any health problems at this time and those who had majority 52.9% (45) reported to have sought help from a health facility.

Beliefs on caretaker during this period: On whether women had any cultural beliefs linked to who is supposed to take care of them during this period more than half 52.7% (164) reported so. For those who had the reasons were linked to trust by majority 69.6% (131), experience 11.7% (22), recovery 10.6% (20), cleanliness 6.9 % (13) and others did not know 1.1% (2). Those who held cultural belief relating to trust reported that women in–laws were recommended as they cannot bewitch the child and mother and they cannot be bad omen to them.On relationship between cultural and utilization of PPC services, Pearson chi-square test results indicated the Pearson chi-square statistic is 4.848 with a p-value of 0.0849.

Since the P>0.05, the study accepts the null hypothesis and concludes there is no dependent relationship between cultural beliefs on PPC and the utilization of PPC.Religious beliefs and practices during PPC from the findings on table 4.5, majority 59.4% (212) of respondents attested that religious beliefs or practices during this period contributed to them not utilize PPC. Majority, 77.4% (164) believed a woman is supposed to remain indoors for one month and wait for pastors or church leader's prayers that served for cleansing women and blessing child among others.

**Table 5**

*Religious beliefs and practices during PPC*

| Item | Response | Frequency | Percentage |
|---|---|---|---|
| Is there any religious believe or practice after delivery | Yes | 212 | 59.4% |
| | No | 144 | 40.3% |
| | Don't know | 1 | 0.3% |
| Specific religious beliefs or practice after delivery | Cleansing women & blessing child | 164 | 77.4% |
| | Shaving, naming & praying for the child | 14 | 6.6% |
| | Remain indoors while being attended by family member | 24 | 11.3% |
| | Eat well and rest for recovery and healing | 5 | 2.4% |
| | Don't know | 5 | 2.3% |

In the FGD religious beliefs and practices hindered utilization of PPC this was evident as the women said these were the reasons, "you stay at home for 3 months without going to church as if you go early when you pray to God He may not answer your prayers or listen ," (FGD ,Webuye).

Another woman reported "you stay at home for 14 days before going to church/anywhere, wait for pastor to come and pray for you before allowed to move around/set free as you are still unclean before God. However, the church members come after 8 days post-delivery to restrain you at home and come back after 32 days they come to set you free to move around. This is so as you are still dirty and not allowed even to have sexual intercourse if you don't follow this something bad happens to you or God can curse you,"(FGD, Bokoli).

From the interviews it was evident the "women had restrictions of movement as they were secluded for periods ranging from 3 days to 4 weeks to avoid bad eyes, to heal faster and wait for church elders to come home pray and

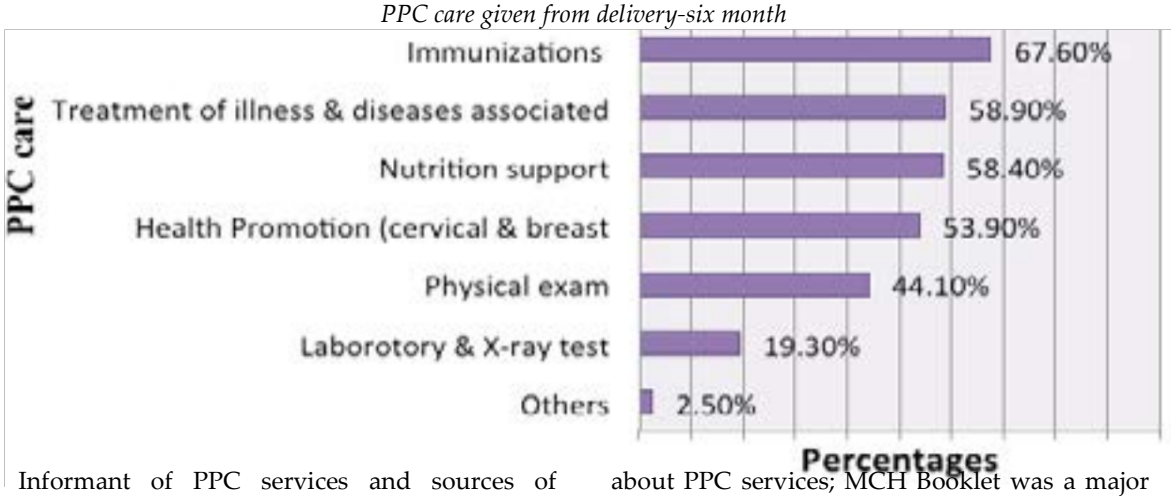
release them,''(Interviewees, Webuye, Bokoli & Kakimanyi).On relationship between religious beliefs and practices and utilization of PPC services, Pearson chi- square statistic is 14.904 with a p-value of 0.011.

Since the P <0.05, the study rejects the null hypothesis and concludes there is a dependent relationship between religious beliefs on PPC and the utilization of PPC at 95% confidence interval. Knowledge related factors influencing PPC utilization: The study established that 76.0% (271) of women were aware of PPC attendance after delivery while 24.0% (86) were not.

From the findings on figure 4.3, 90.2% (323) reported family planning as part of care given to women, 74.0% (265) mentioned health education pertaining to breast examination, safe sex and hygiene, 67.6% (242) mentioned immunizations, among others.

**Figure 3**

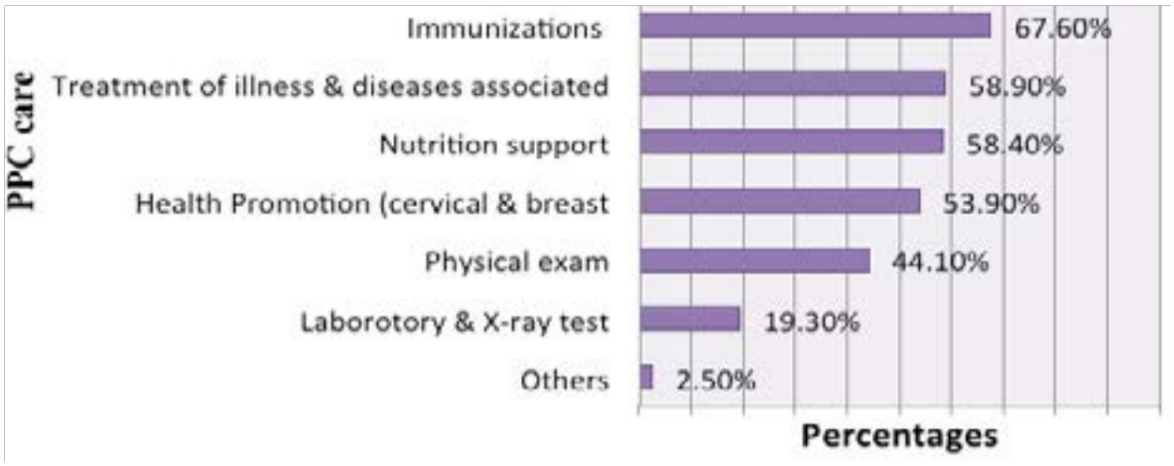
*PPC care given from delivery-six month*




Informant of PPC services and sources of information on required PPC: On this majority of the women 79.8% (285) reported to have received the information from health care workers, 45.9% (164) received such information from friends, 36.4% (130) from husbands and family members and 26.3% (94) from relatives. The study also established that women had varied sources of information about PPC services; MCH Booklet was a major source of information 60.2% (215) and others like relatives or spouses as the least 10.4% (37). As shown in figure 4.4 below.

**Figure 4**

*Major sources of knowledge regarding PPC*



*Knowledge on Period for source, when, who and periods of PPC care:* Majority 70.6% (252) of women agreed to have been informed PPC during ANC. Those who were informed of PPC during ANC a significant number was the 1st visit at 30.4%. On who is supposed to get PPC majority 78.4% (280) knew women after delivery, in summary 21.6% are not aware they were supposed to get PPC after delivery. For timings they had multiple responses and majority 59.1% knew at 4-6 months after delivery, with half knowing the critical periods, the rest areas shown in table 4.6 below

**Table 6**

*Knowledge on ANC source, when, who and timings of PPC care*

| Item | Periods |
|---|---|
| | |
| | Yes |
| | Can't remember |
| Which Visit of ANC was PPC introduced | Visit 1 |
| | Visit 2 |
| | Visit 3 |
| | Visit 4 |
| Who is supposed to get PPC | After delivery |
| | Women before delivery |
| | Women after delivery |
| | Don't know |
| Timings of PPC services | <48 Hours |
| | 1-2 weeks |
| | 4-6 weeks |

*Health Facility related factors influencing PPC service utilization:* Majority of women 98.3% (351) had health facility near place of residence, and 40.6 % (145) sought primary healthcare at a hospital, the rest as shown below. The farthest distance they travelled to seek PPC services is estimated 4 km as by 4.5% (16) women, and shortest 0.3% (1) few meters with mean of 1.78km as shown in table 4.9 below.

*Frequency of Receiving PPC services sought:* The women reported having received PPC services that they went for as 40.8% (146) said they always got and 18.2% (65) did not receive PPC at all and 1.1% (4) were not sure.

**Table 9**

*Health Facility Availability and distance*

| Item | Response | Freq. | Percentage | Mean |
|---|---|---|---|---|
| Health facility near place of residence | Yes | 351 | 98.3% | |
| | No | 6 | 1.7% | |
| Place of primary PPC services | Hospital | 145 | 40.6% | |
| | Health Centre | 133 | 37.3% | |
| | Dispensary | 81 | 22.7% | |
| | Private hospital | 13 | 3.6% | |
| | Others | 1 | 0.3% | |
| Distance to the nearest health facility | 1 km | 174 | 48.6% | 1.78 km |
| | 2 km | 104 | 29.1% | |
| | 3 km | 63 | 17.6% | |
| | 4 km | 16 | 4.5% | |
| | Few metres | 1 | 0.3% | |

*Knowledge on required number of PPC visits:* On awareness of visits, those who reported to know 4 visits and less were majority 55.9 % (200); however, more than 5, 22.7% (81) and 21.5% (76) were not sure on how many PPC visits they were supposed to attend. In one of the FGDs they reported that, "you come to clinic 4 times but I don't know the frequency and why," (FGD, Bokoli),

In Webuye, "majority of the women affirmed they have never known there is a clinic for mothers after delivery but just come not knowing the frequency nor the number as they bring their children to the clinic," (FGD, Webuye).

*Knowledge on importance of PPC, complications and what to do:* This is presented in table 4.7 below as each woman had multiple responses to this; majority of women 73.4% (262) indicated that PPC was important for their health status among others.

Among the mentioned complications after delivery majority 85.4 %( 305) mentioned heavy bleeding among others. On the action to be taken in case of the below complications majority 93.3 %( 334) reported one should seek medical care in the nearest health facility.

**Table 7**

*Importance of PPC and complications associated with delivery*

| **Item** | **Reason** | **Frequency** | **Percentage** |
|---|---|---|---|
| Importance of post-partum care | Know health status | 262 | 73.4% |
| | For treatment of complications and diseases | 235 | 65.8% |
| | For health education | 236 | 66.1% |
| | Important for my baby | 234 | 65.4% |
| | Others | 27 | 7.6% |
| Complications associated with after delivery | Heavy bleeding | 305 | 85.4% |
| | Fever | 231 | 64.7% |
| | Severe headache | 252 | 70.6% |
| | Foul smelling vaginal discharge | 202 | 56.6% |
| | Fits | 115 | 32.2% |
| | Engorged breast | 159 | 44.5% |
| | Death | 182 | 51.0% |
| | Others | 23 | 6.4% |
| What to do in case of complications | Seek medical care in health facility | 334 | 93.3% |
| | Talk to close family member/neighbour | 13 | 3.6% |
| | Self-medication | 2 | 0.6% |
| | Don't know | 8 | 2.2% |

*Relationship between knowledge factors and utilization of PPC services:* On relationship between knowledge factors and utilization of PPC services, Pearson chi-square results on. Table 4.8 below shows, on knowledge of attending PPC is 27.269 with a p-value of 0.000. Regarding informing mothers of PPC during ANC, Pearson chi-square statistic is 33.029 with a p-value of 0.000. On awareness of number of visits required number. On various timings, utilization of PPC was highly dependent on first 48 hours after delivery (X2, p 0.024) and 4-6 months (X2, p 0.015). Since the P <0.05, the study rejects the null hypothesis and asserts that knowledge on attendance, period in the timings (48 hours and 4-6months) and prior information at ANC and utilization are dependent on each other.

**Table 8**

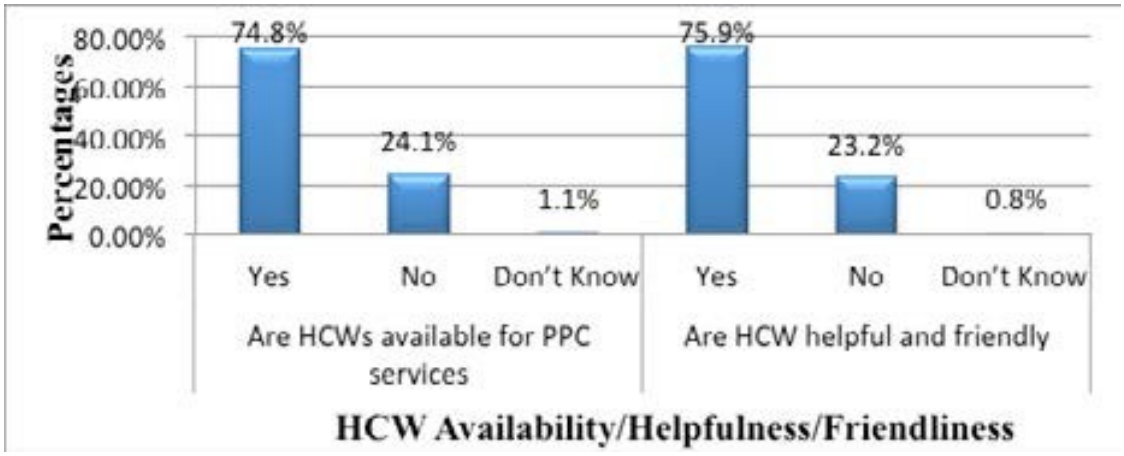
*Relationship between knowledge factors and utilization of PPC*

| Item | Utilisation of Postpartum care | Value | Asymp. Sig. |
|---|---|---|---|
| Knowledge of attending PPC | Pearson Correlation | 0.284 | 0.000** |
| | Chi-Sq | 27.269 | 0.000** |
| | N | 357 | |
| Informed of PPC during ANC | Pearson Correlation | 0.311 | 0.000** |
| | Chi-Sq | 33.029 | 0.000** |
| | N | 357 | |
| <48 hrs | Pearson Chi-Square | 5.09 | .024** |
| 1-2 Weeks | Pearson Chi-Square | 0.778 | .378 |
| 4-6 Weeks | Pearson Chi-Square | 1.233 | .267 |
| | Pearson Chi-Square | 5.908 | .010** |
| 4-6 Months | Pearson Chi-Square | 0.129 | .015** |

Pearson Correlation analysis on relationship between knowledge factors and utilization of PPC showed that the Pearson correlation coefficient is 0.284 with a p value of 0.000 for knowledge for attendance. On informing mothers regarding PPC during ANC, at 0.311 with a p value of 0.000. The P value is less than 0.05 (P<0.05) indicating that the correlation is significant. This suggests that there is a significant relationship between knowledge of attending PPC, prior information at ANC and utilization of PPC. Availability of HCWs to offer PPC services & helpfulness: The results as shown in figure 4.5 below showed majority 74.8% (267) HCWs were available, 75.9% (271) termed them helpful and friendly but 23.2% (83) regarded them otherwise.

**Figure 5**

*HCW availability & helpfulness*



In the FGDs some women said, "HCWs talk to them with harsh tone and make them move up and down for services and at the end of the day they don't get what they went for as they tell them they are going off duty so the women go home unsatisfied and this makes them not to come back," (FGD, Webuye). On availability too they said, "even if the nurses are there, most of the time they are few like one nurse to over 20 mothers. If you are unwell you go back home unattended and this makes you not come back again," (FGD, Webuye & Bokoli).From the interviews the HCWs said, they cover the MCH clinic as a whole 1 or 2 each day for variety of services to include FP, ANC, Postnatal, Immunization, regular booked maternal clinics making them overstretched," (HCWs, Webuye & Bokoli).PPC services available: From the findings majority 81% (290) received important/basic PPC services even though 19% (68) did not receive such services. On the services received by women each mentioned the various types, majority 79% (282) received FP and, 78.7% (281) were taught how to observe danger signs, least 38.9% (139) treatment of complications/ danger signs such as heavy bleeding, fever, severe headache, foul smelling vaginal discharge, fits and engorged breasts among others as shown on table below.

**Table 10**

*Frequency of Receiving PPC services sought*

| PPC received | Frequency | Percentage | Cumulative Percent |
|---|---|---|---|
| Not at all | 65 | 18.2% | 18.2 |
| Once | 51 | 14.3% | 32.5 |
| Sometimes | 92 | 25.8% | 58.3 |
| Always | 146 | 40.9% | 99.2 |
| Not sure | 3 | 0.8% | 100 |
| Total | 357 | 100% | |

From the FGD women in both groups reported FP as the main PPC service received. Others "asserted they were not aware they are supposed to attend PPC clinic but knew some services a woman receives during PPC such as FP and expressed their interest in understanding PPC," (FGD Webuye and Bokoli). In (FGD, Webuye), majority of women however said that "though we get, we don't get all PPC services and we did not know we are entitled to."

Interviews from the HCWs revealed basic services were available and included counselling, HIV testing, weighing, vital signs, health education on nutrition, breastfeeding and personal care, referrals to higher level care hospitals, Family planning, cancer screening and treatment of complications, ailments and diseases,"(HCWs, Webuye, Bokoli, Kakimanyi). Also services were available and dependent on the level of health facility, "at each health facility level services were available but differ to type of health facility as at dispensary, health center and hospital.

The HCWs had the basic qualifications from diploma, certificate and registered nurses and no special trainings in postpartum care apart from one who had Family planning and another Immunization course,"(HCWs, Webuye, Bokoli, Kakimanyi).

*Cost of PPC services:* It was established that 51.0% (182) of women reported that PPC services were being charged in the facilities and 49.0% (175) not. On how much they spent roughly mean charge was Ksh 130. Among the services charged were 36.4% (94) for FP, and

least 10.0% (26) MCH booklet and opening file in medical facilities registers as shown below.

*Additional services received other than PPC services:* From the findings several services were given other than PPC and majority, 63.6 % (227) reported so. On the content of additional services, majority 85.5% (194) appointments for next visit were among the least service and 5.7% (13) could not remember the report as shown on the table below.

This was evident too in one of the groups as majority said, "When we sought help or care the nurses gave extra information & health education on other services, minority mentioning hygiene, breast feeding and nutritional advice. Vital signs were also taken and check hemoglobin level for those who had anemia. On return date they said HCWs rarely do it" (FGD, Webuye).

**Table 11**

*PPC services available*

| Item | Response | Freq. | Percentage |
|---|---|---|---|
| Received any of PPC services | Yes | 290 | 81.0% |
| | No | 68 | 19.0% |
| Services received by women during PPC | Family planning | 282 | 79.0% |
| | Danger signs | 281 | 78.7% |
| | Counselling | 214 | 59.9% |
| | Laboratory tests | 192 | 53.8% |
| | Physical examination | 178 | 49.9% |
| | Nutrition care | 174 | 48.7% |
| | Drugs & commodities | 144 | 40.3% |
| | Treat complications/danger signs above | 139 | 38.9% |
| | Others | 4 | 1.1% |

**Table 12**

*Cost of services*

| Item | Frequency | Percent | Mean |
|---|---|---|---|
| Did not pay | 186 | 52.2% | |
| Ksh 0 -50 | 66 | 18.4% | |
| Ksh 50 – 100 | 18 | 5.0% | |
| Ksh 101 – 200 | 57 | 15.9% | 130 |
| Ksh 201 – 300 | 22 | 6.1% | |
| Ksh 301 – 400 | 7 | 2.0% | |
| >500 | 1 | 0.3% | |
| Drugs | 54 | 15.1% | |
| Lab services | 84 | 32.5% | |
| Family planning services | 94 | 36.4% | |
| MCH Book and file | 26 | 10.0% | |

**Table 13**
*Additional services received*

| Item | Service | Frequency | Percent |
|---|---|---|---|
| Additional services from what they sought | Yes | 227 | 63.6% |
| | No | 117 | 32.8% |
| | Don't know | 13 | 3.6% |
| Content of report | Health education | 194 | 85.5% |
| | Other available services | 8 | 3.5% |
| | Self-examination | 4 | 1.8% |
| | Appointments | 8 | 3.5% |
| | Can't remember | 13 | 5.7% |

Relationship between health facility factors and utilization of PPC services: Pearson chi-square results as shown below, for facility near place of residence is 2.209 with a p-value of 0.192. Since the P > 0.05, the study accepts the null hypothesis and concludes there is an independent relationship between health facility near place of residence and the utilization of PPC.

On the availability of HCW for PPC services, Pearson chi-square is at 22.575 with a p-value of 0.000. HCWs perceived helpfulness and friendliness, Pearson chi- square is 18.126 with a p-value of 0. 000.Waiting time is 23.87 p value 0.000. Since the P <0.05, the study rejects the null hypothesis and concludes availability of HCW for PPC services, HCWs friendliness and helpfulness, waiting time determines whether women will utilize PPC services. Pearson correlation analysis results on table 4.14 below shows r is -0.08 with a p value of 0.138 for facility being near place of residence. The P value is greater than 0.05 (P>0.05) indicating that the correlation is not significant. This suggests that there is no significant relationship between utilization of PPC and health facility being near place of residence. HCWs availability for PPC coefficient is 0.256 with a p value of 0.000.

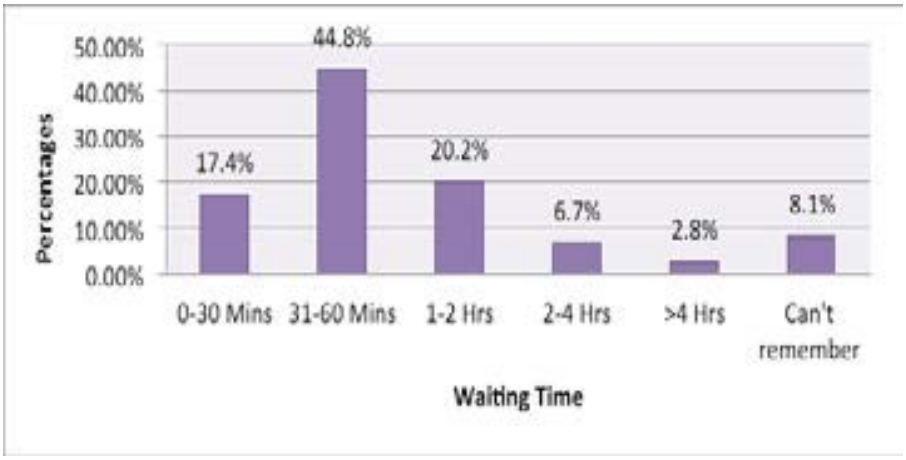
On the perceived helpfulness and friendliness of HCWs, Pearson correlation coefficient is 0.229 with a p value of 0.000. The P value is less than 0.05 (P<0.05) indicating that there is a positive correlation between perceived helpfulness and friendliness of HCWs, availability of HCWs and utilization of PPC care. This suggests that there is a significant positive relationship between the two and utilization of PPC.

**Table 14**
*Relationship between health facility factors and utilization of PPC*

| Item | Have you utilised postpartum care | | |
|---|---|---|---|
| Health facility near place of residence | Pearson Correlation | -0.08 | 0.138 |
| | Chi-Sq | 2.209 | 0.192 |
| | N | 357 | |
| HCWs available for PPC services | Pearson Correlation | 0.256 | 0.000** |
| | Chi-Sq | 22.58 | 0.000** |
| | N | 357 | |
| HCW helpful and friendly | Pearson Correlation | 0.229 | 0.000** |
| | Chi-Sq | 18.13 | 0.000** |
| | N | 357 | |
| Waiting time | Chi-Sq | 23.87 | 0.000** |
| | Pearson Chi-Sq | 7.893 | 0.005 |
| Charging the services | Pearson's R | -0.154 | 0.05 |
| Distance to nearest facility | Pearson's R | -0.093 | 0.05 |

Pearson chi square on waiting time, utilization and waiting time are dependent on each other P 0.000<0.05. On correlation, utilization and charging of services, they are negatively correlated while distance to the facility and utilization are also negatively correlated at p 0.005. It follows that, the more the charges and the more the distance to the facility the less the utilization rate P 0.005 <0.05.

**Figure 6**
*Waiting time*




## DISCUSSION

On proportion of women utilizing PPC services the study findings established that majority of the respondents 57.9% had ever utilized PPC service/s. For who had utilized 33% and 38.3% did in most crucial periods of 48 and 1-2 weeks respectively and43.6% 4-6 weeks. In the FGD they said, you come to clinic a number times but don't know the frequency and why.

This is in agreement with Tesfahunet al., (2014) who found out that though utilization generally was high by mothers, the most crucial elements especially in the first 2 weeks was very low and majority of them utilized only immunization services.

In this study majority of the women did not know the frequency of the visits and full utilization of PPC. They underutilized the crucial periods where mortality is reported to be highest and this poses a greater risk to their health. Further these periods are positively correlated to utilization at all periods (r0.001) and especially the first two weeks.On the number of visits each attended, 4 PPC visits were 14.8% 33.6% attended 3 times, 35.7% attended 2 times and 43.9% attended PPC only once in the 6 months.

This agrees with Xiang & Xiong (2014) who found out that more than half who had the visits did not receive standard postpartum visits of at least 3 times during this period. This was poor utilization as WHO recommends 4 visits spread over 6 months (WHO, 2013).

This poses vulnerability to other illnesses, complications and mortality to women. On socio cultural factors the study established that after delivery nearly half, 43% of the women said they are supposed to stay indoors for a period ranging from a few days to 30 days and even more. In one of the FGD all women stayed indoors, "I was told you stay indoors for 3 days, 7 or even a month, they echoed." This isin agreement with Qureshi&Pacquiao (2013) who found out that mothers are expected to rest and be pampered for a period of 40 days lactating

for the same period and does not go out of the house. Staying indoors in this study was passed from generation to generation and is culturally embraced. Cultural beliefs and practices included remaining indoors to avoid bad eyes as nearly half did this, child naming and shaving, eating traditional foods and bathing with herbs. Staying indoors was majority 85.8% for a period ranging from days to 4 weeks.

This concurs with this study to some extend as it was important that new mothers adhere to the norm for at least a month staying indoors and excluded from some tasks, rest, social seclusion as they were viewed as being extremely fragile and vulnerable (Juyeon, 2014).This is done to ensure healthy mother and baby and as a community social requirement, normally the women themselves cannot oppose as they found the practice being observed.

In one FGD they said "the days vary, for a boy mothers stay indoors for 3 days if it's a girl 2 days, smearing them with ash until they are allowed out." This is in agrees with this study whereby the first month postpartum women engage in practices such as limiting maternal roles, activity to restore future health and prevent disease. Physical activity was limited to remaining in bed the entire month to restore the imbalance between cold and hot before assuming her roles (Liu et al., 2014).

On religion majority 59.4% supported the opinion that religious beliefs or practices during this period contributed to women remaining indoors. Majority, 77.3% believed a woman is supposed to remain indoors for one month and wait for pastors or church leader's prayers that served for cleansing women and blessing child. In one of the FGD they said, "You stay at home for 3 months without going to church, if you go early when you pray to God He may not answer your prayers." This is in agreement with Qureshi & Pacquiao (2013), who found out that during this time there were some religious and magical practices, which are performed to protect mothers and their babies against dangers likely to be caused by supernatural powers. In this study majority were Christians as many people tend to strongly uphold their supreme beliefs because of consequences that accompany disobedience supernatural powers.

Knowledge related factors influencing PPC service utilization, majority 76.0% women were aware they are supposed to go for PPC services. It contrasts with Chen et al., (2014) who found out that there was lack of awareness on the availability of free services, but strongly willing to receive postpartum care. This may have been so because in this study majority of the women attended ANC clinic, delivered in health facilities and were told by the HCWs thereby increasing awareness.

On awareness of the specific services from the findings, 90.2% reported family planning, 74.2% health education pertaining to breast examination, safe sex and hygiene, 67.8% immunizations among others. On source of information 79.8% reported to have received the information from HCWs. This concurs with Tesfahunet al., (2014), where the women cited the following reasons for attending clinic; vaccinations, counseling on FP, to prevent and treat delivery related problems, nutritional &breastfeeding advice.

Sources of information being from health extension workers by majority followed by nurses, family and least from doctors. Many women while attending ANC are normally given health education on the various services they are entitled to after delivery. The study also established that MCH Booklet is a major source of information on PPC services at60.2%. On usage, it agrees with Yamashita et al., (2014) more than half of the participants had not received the handbook (MCH). This shows that documented information with them especially at home it's likely to act as a reference to remind them to utilize services therein. Majority 70.6% of women agreed to have been informed of PPC during ANC and knew it was for women after delivery. This concurs with Neupane & Doku, (2013) who found out that majority of women who attended ANC and delivered in hospital had more than two PPC check- ups compared with those who did not.

In this study knowledge of service utilization prior to service increased awareness. Knowledge on the timing in relation to the spread period of 6 months, majority 59.1% were aware of the 4-6 months. This was in contrary to the MOH expectations, in Kenya, which increased the number of visits recommended in the postpartum period to four and expect 100% attendance (KMNH, 2009 & MOH 2008). The women in this study seemed unaware /uncertain of the specific timings.

On knowledge on total number of mandatory visits below 4 was majority 55.9 % however, 21.5% were not sure. This agrees with Shah & Pariyar (2016) who found out that, majority of the mothers knew a mother is supposed to go for postnatal checks up to 3 visits or more for her care .The women in this study were generally aware of the care but not sure of mandatory and recommended visits. The women knew some of the common after delivery, and these were: majority 85.5% heavy bleeding, 64.7% mentioned fever, 70.6% severe headache among others.

This disagrees with Limenihet al., (2016) who found out that those mothers who were aware of maternal complications during postpartum period were more likely to use the services. Since majority of the mothers knew of PPC in HCWs and MCH booklets most of these complications are in it.

On health facility related factors influencing PPC service utilization, the results indicated majority 74.8% indicated HCW are available. On whether HCW are helpful and friendly 75.9% termed HCW as helpful and friendly. In one of the FGD, "Some women argued that HCW who talk to us with harsh tone and make us move up and down for services and at the end of the day we don't get what we went for." This concurred with Mia et al., (2015) who found out that mothers were happy with the support they received from nurses, but missed follow-up contact, as there was insufficient support on continuity of care. In this study women attributed presence of HCW to service but when their expectations are not met they are unhappy

.On availability of HCWs and services, from the interviews the HCWs said, they cover the MCH clinic as a whole 1 or 2 each day to cover various services though all services are available. This is in agreement Chen et al., (2014) agreed that, staff shortages, inadequate in-service training and transportation limited MCH workers in providing postnatal visits as required.

This may be so because sufficient human resources improve efficiency in services delivery. It was established that 51.0% of women paid for PPC services and mean charges were Ksh.130. Among the major services were family planning services, laboratory services, drugs and MCH book. This agrees with Gabrysch & Campbell, (2009) whose findings were that formal and informal fees for provision of services during this period contributed to financial barrier for poor women in accessing care. Majority of these women are unemployed so a barrier to service use

.Finally, on waiting time 44.8% of the respondents waited 31-60 minutes before being attended to. Information from the interviews the HCWs echoed that they had to wait sometimes for longer hours. This agrees with DiBariet al., (2014) who found out that inaccessible transportation, long waits and others limited the likelihood of a woman to come for PPC visit. In this study area there is no integration of MNCH in these facilities whereby all services are supposed to be in one place, therefore affecting waiting time.

## CONCLUSIONS

On conclusion PPC service utilization was poor. The socio-cultural factors influencing utilization included religious and cultural beliefs($X^2$ 14.904, p=0.011) and main practices were seclusion, stay indoors for a period ranging from 2 days to 30 days. The knowledge related factors are number of mandatory visits and their timings, sources of information (the MCH booklet and ANC clinic) and knowing complications. Utilization is also dependent on knowledge of attending PPC, ANC awareness

and timings and the utilization of PPC at p=0.001.On health facility- related factors, availability of health facility near residence, distance to health facility, availability of PPC services, HCWs friendliness, availability and helpfulness, service charges, waiting time and additional services other than PPC influenced PPC services. This being dependent on HCWs friendliness, availability and helpfulness service charges, waiting time (p=0.001).

## RECOMMENDATIONS

increase awareness through reinforcement of HCWs frequent health talks during ANC and postpartum, MCH booklets availed to all pregnant women and bookings done even post-delivery. HCWs involvement in follow ups in every CU, all teams HCWs, Church, elders to discuss and agree on need for this service, integration of MNCH comprehensive RH package for all services and policy makers and implementers through the MOH Bungoma County facilitate and implement HCWs refresher trainings to reduce MMR.

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