FACTORS ASSOCIATED WITH UTILIZATION OF POST-PARTUM CARE IN DAGORETTI SUB-COUNTY, NAIROBI: A COMPARISON BETWEEN ADOLESCENTS AND OLDER WOMEN

THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE MASTER OF PUBLIC HEALTH DEGREE OF THE UNIVERSITY OF NAIROBI.

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REG.NO: H57/ 68944 /2011

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The Declaration

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Dedication

This work is dedicated to all the pregnant mothers and their families; may they find good health and experience the joy of motherhood.

Acknowledgements

First and foremost I would like to thank the almighty God who has given me the grace and good health to be resilient throughout the whole period when I worked on this dissertation.

Secondly I would like to thank my supervisors; Mr. Erastus K. Njeru and Dr Peter Kithuka most sincerely for your support and guidance without which this work would not have been possible. I have learnt a lot through you and I will continue to cherish the knowledge as I pursue higher academic and research opportunities.

To my lecturers who imparted knowledge and skills throughout my course work, I say thank you, your effort and contribution is not in vain, it shall be used to touch and improve lives especially those of women and children.

To my family; my husband Dr Simon Ndiritu and my children; Neema, Abby and Joe, am most grateful for standing with me and allowing me time to work on this, sometimes even at the expense of being with you. This will be cherished forever.

To my friends and colleagues who encouraged me and some who took time to give input to my work, my sincere gratitude to you.

The study was partly supported by the NIH grant - Linked: Strengthening Maternal, Newborn & Child Health (MNCH) Research Training in Kenya (R24TW008907). The support is highly appreciated.

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List of abbreviations /acronyms

ANC	Antenatal Care
DHIS	District Health Information System
DHS	Demographic and Health Survey
FGD	Focus Group Discussion
G A	General Assembly
HIV	Human Immunodeficiency Virus
KDHS	Kenya Demographic and Health Survey
MCH	Maternal and Child Health
MDG	Millennium Development Goals
MMR	Maternal Mortality Ratio
MNH	Maternal and Newborn Health
MoH	Ministry of Health
PNC	Postnatal care
PPC	Postpartum Care
SDGs	Sustainable Developed Goals
SSA	Sub-Saharan Africa
SPSS	Statistical Products and Service Solutions
TPB	Theory of Planned Behaviour
UN	United Nations
UNFPA	United Nations Fund for Population and Development
USAID	United States Agency for International Development
WHO	World Health Organization

Definition of terms

Adolescence: The transition between childhood and adulthood defined to include ages 10–19. The term "adolescence" is defined as people aged 10–19 years. A distinction is drawn between early adolescence (10–14 years) and late adolescence (15–19 years).

Health: A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1948).

Health facility: a structure/ building or institution where medicine is practiced.

Maternal Morbidity: Any departure, subjective or objective, from a state of physiological or psychological well-being, during pregnancy, childbirth and the postpartum period up to 42 days.

Maternal Death (Mortality): a death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes (WHO 1999).

Maternal mortality ratio (MMR): Number of maternal deaths during a given time period per 100 000 live births during the same time period (WHO 2012).

Postpartum period and Postnatal period: The terms "postpartum period" and "postnatal period" are often used interchangeably but sometimes separately, when "postpartum" refers to issues pertaining to the mother and "postnatal" refers to those concerning the baby. For clarity the WHO panel agreed that the term "postnatal" should be used for all issues pertaining to the mother and the baby after birth. The term post-partum care will be used in this study to refer to the care given specifically to the mother.

Postnatal period: The first 6 weeks after birth (WHO, 2010).

Immediate postnatal period –refers to the time just after birth and covers the first 24 hours. (WHO, 2010)

Skilled birth attendant: is an accredited health professional – such as a midwife, doctor or nurse – who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns.

Skilled birth attendance: Means being attended to by a skilled birth attendant in a safe environment (physical space, equipment, supplies, drugs and transport for referral of obstetric emergencies).

Unmet need for family planning: Women with unmet need are those who are fecund and sexually active but are not using any method of contraception, and report not wanting any more children or wanting to delay the birth of their next child.

Utilization: The measure of the population's use of the health care services available to them. Health care utilization and health status are used to examine how efficiently a health care system produces health in a population. For the purpose of this study, any mother who sought post-partum care at least once was considered to have utilized the service.

Abstract

Background: The high maternal mortality and morbidity continues to be an important public health concern internationally. Adolescents face even higher risk compared to older women. Quality postpartum care is a key intervention in reducing the mortality and improving mothers' health. Despite this, post-partum care appears to be neglected as evidenced by low utilization.

Objective: This study assessed the factors that are associated with utilization of postpartum care (PPC) among mothers attending maternal and child health clinics and compared the older women and the adolescents.

Methods: The study was done in Dagoretti Sub-county of Nairobi County. The study population was mothers of infants seeking MCH services for themselves or for their infants in the public facilities. This was a descriptive cross-sectional study applying both quantitative and qualitative approaches. Systematic random sampling was done and 420 mothers were interviewed. Five focus group discussions and five key informant interviews were carried out. Data were cleaned, coded and analyzed using SPSS for the quantitative data and N Vivo for the qualitative data. Stratification into adolescents and older women was done during the analysis of the quantitative data.

Results: The level of utilization of post-partum care was found to be low at 32%. The factors that were significantly associated with PPC utilization included health system factors; being given a return date (P =0.000) and having received health information from the health workers (p = 0.05), maternal clinical characteristics; having had a caesarian section (p=0.000) and having had complications at delivery (p =0.001). Having delivered in the facility or attended ANC and the distance to the facility were not significantly associated with seeking PPC, but having attended ANC 4 or more times was. The other factor that was associated with seeking PPC was having a college education. There was no significant difference statistically between adolescents and the older women in the factors that were associated with seeking PPC, p = 0.809. Both the mothers and health workers felt that the health system was not well equipped for offering quality postpartum care

Conclusion: The utilization of post-partum care within the study population is low. The health system factors found to be associated with utilization of PPC were being given a return date and having received health information from the health workers. The clinical characteristics that were associated with seeking PPC were having delivered by caesarian section and having had complications at delivery. There was no difference between the adolescents and older women in utilization of PPC.

Recommendations: There is need to enhance the health system factors that are associated positively with seeking PPC. It is important to reach out to the mothers whose clinical characteristics are not associated with seeking PPC to encourage them to seek care. More research needs to be done in the area of the factors associated with seeking PPC and more comparison between the adolescents and the older women done.

CHAPTER 1: INTRODUCTION

1.1 Background

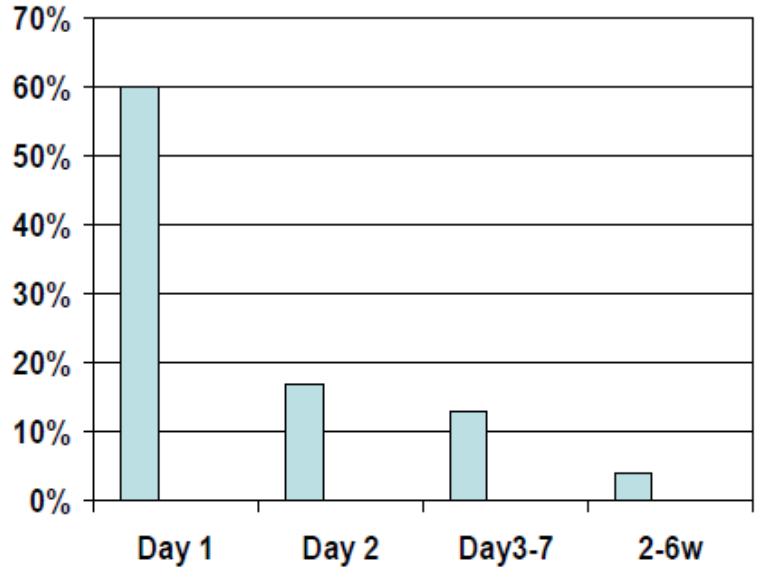
Reducing maternal morbidity and mortality continues to be recognized internationally as a public health priority. The Global Safe Motherhood Initiative launched in Nairobi in 1987 aimed at reducing the burden of maternal deaths and ill health in developing countries. However, many years later sufficient progress has not been made in the Sub-Saharan Africa (SSA)[1]. In September 2000, 149 heads of states and governments adopted the Millennium Declaration which outlined measures necessary to attain peace, security and development[2]. An agreement was reached on the key goals, targets and indicators collectively referred to as the Millennium Development Goals (MDGs)[3]. MDG 5 focused on improving maternal health and countries committed to reducing maternal mortality by three quarters between 1990 and 2015. The targets were reducing the maternal mortality ratio (MMR) by three quarters between 1990 and 2015, and achieving universal access to reproductive health by 2015. However, on this MDG, the SSA as a region recorded poor progress and lagged behind other developing regions[4]. As the MDG reporting date approached, new goals and targets under the framework of Sustainable Development Goals (SDGs) were discussed by the international community including governments and adopted during the United Nations Summit for the adoption of the Post-2015 Development Agenda. The third goal is "Ensure healthy lives and promote well-being for all at all ages"[5]. One of the targets for this goal is to reduce by 2030 the global maternal mortality ratio to less than 70 maternal deaths per 100,000 live births[6].

Globally, there was a fall in total maternal deaths from 543 000 in 1990 to 287 000 in 2010 with the global maternal mortality ratio falling from 400 maternal deaths per 100 000 live births in 1990 to 210 maternal deaths per 100 000 live births in 2010. This is a 3.1 per cent

annual fall on average. Indeed maternal mortality worldwide dropped by almost 50%[7]. While this is great news, unfortunately the reduction did not happen in some countries. It is reported that about 800 women are still dying daily globally majority of them in poor-resource settings and many of the deaths being preventable[8]. The situation is even worse for the adolescents (15 to 19 years old) among whom pregnancy related complications are the second cause of their death globally[9]. Globally adolescents account for 11% of the births, and yet they account for a larger proportion, 23%, of the overall pregnancy and childbirth related burden of disease (disability adjusted life years)[10].

Maternal mortality continues to be a huge public health challenge in Kenya. The Kenya Demographic and Health Survey (KDHS), 2008/09 indicated that maternal mortality ratio (MMR) was very high at 488 deaths per 100,000 live births, and some areas had MMRs of over 1000 /100 000 live births[11]. This was a slight increase from MMR of 414/100 000 live births in 2003[12]. The risk of complications is high in the postpartum period with most of the maternal deaths occurring during this period and hence the need for postpartum care.

Fig 1 Proportion of maternal deaths by post-partum days in Kenya



Adopted from; MOPHS-DRH, 2011

There has been slow progress in the improvement of Maternal and Newborn health targets in Kenya. This is contributed to by various factors such as poor availability, limited accessibility and poor utilization of skilled attendance during pregnancy, child birth and postpartum period among other challenges. These challenges contributed to the country not meeting its MDG target of reducing MMR to 147/100 000 live Births[13]. Unless special attention is put in dealing with these challenges, appropriate progress may not be made.

CHAPTER 2: LITERATURE REVIEW

2.1 Post-partum Care

The postpartum or postnatal period is the time beginning immediately after the birth of a baby and extending for about six weeks thereafter[14]. The terms "postpartum care" (PPC) and "postnatal care" (PNC) are sometimes used interchangeably; however strictly, postnatal care is used to refer to the care of the newborn while postpartum care is used to refer to the care given to the mother[15]. Postpartum care is given by a skilled attendant to reduce the risk of morbidity and mortality as well as to promote the health and wellbeing of the mother.

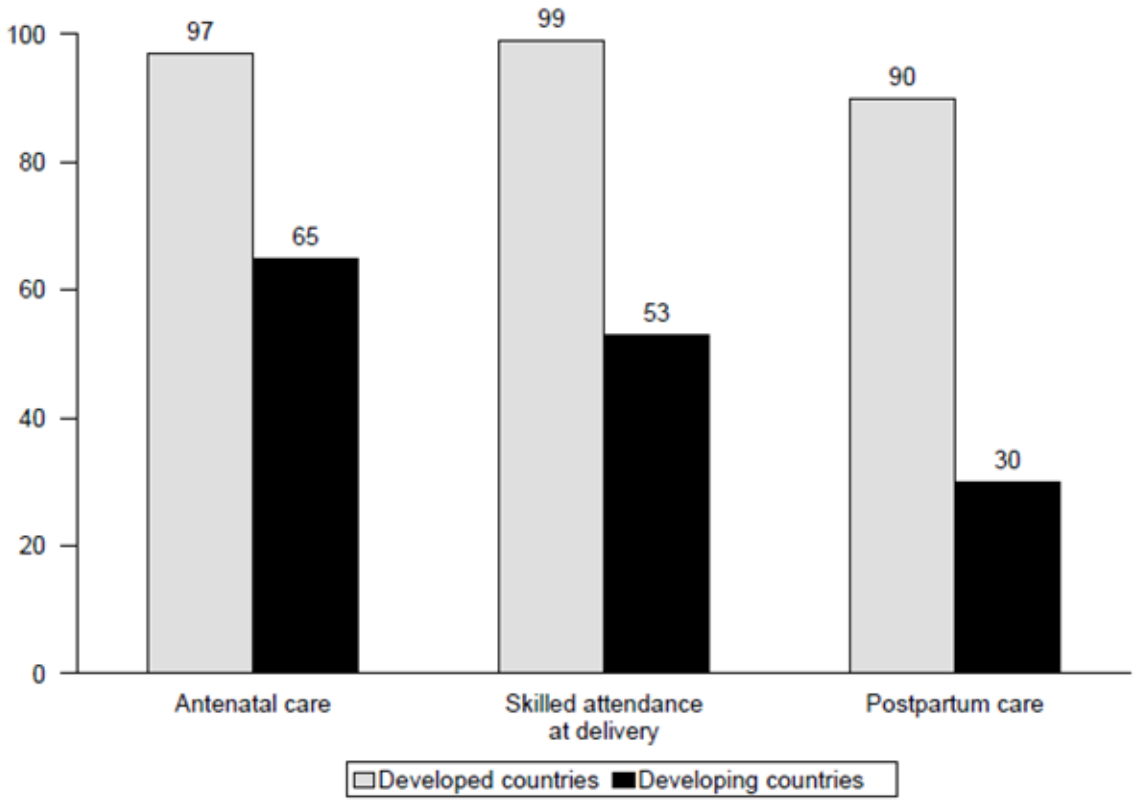
2.1.1 Importance of Post-partum Care

Although the birth of a baby is usually a joyful event, it is also a very important time for the health of the mother. Potentially many issues could arise that need to be treated promptly and effectively to avoid ill-health and even the loss of the mother. Many complications arise during the immediate postpartum period and this may explain the fact that up to 60% of maternal deaths have been reported to occur during this period[14, 16]. These complications include postpartum haemorrhage, complications related to high blood pressure and mismanaged labour among others. Some of these complications can occur even in women who seem to have had a normal delivery, hence the need for postpartum care for all women. Twenty five percent of maternal deaths occur during labour, child birth and within the first postpartum day, increasing to 60% by the end of the first week postpartum[17,18,19]. With good postpartum care these complications can be prevented, treated or minimized, hence quality PPC is an important strategy in reducing maternal deaths. Indeed evidence points to the fact that there is significant reduction in maternal mortality when women utilize quality skilled care during pregnancy, childbirth and the post-partum period[20, 21].

2.1.2 Utilization of Post-partum care

Despite the importance of post-partum care in reducing maternal morbidity and mortality, if the service is not utilized then the benefits of PPC will not be realized. While globally the utilization of antenatal care and even delivery services has been increasing, there is great disparity with much lower utilization of PPC[22]. This means that despite its importance, many mothers do not receive postpartum care. The situation is worse in the developing world where maternal health services are utilized less than in developed countries. Furthermore, the discrepancy between utilization of PPC with ANC and delivery services is even more pronounced in the developing world as illustrated below.

Fig 2 Coverage of maternal health services in developed and developing countries



Source; WHO

In Kenya, as many as 92% of pregnant women had attended ANC at least once, but only 47% had sought postpartum care within 6 weeks of delivery with only 28% of women having received postpartum care within 4 hours of delivery[11]. It is also notable that only 37% of the mothers had received the PPC from health care providers with 10% receiving it from traditional birth attendants who are not considered qualified (skilled) care givers. According to the KDHS 2003, among the 59% of women who delivered outside the health facility, 81% had not received postnatal care. Only a small proportion, 10%, of women who had not delivered in a health facility attended postnatal care within 2 days, with a further 2% getting care 3-6 days after delivery and 7% in 7-41 days after delivery[12]. This shows how poorly PPC is utilized.

2.1.3 The elements of Post-partum care

The main elements of post-partum care vary according to the time during which the care is given. Post-partum care should promote the health and wellbeing of the mothers. The women should receive haematinics and other relevant supplements. Haematinics reduce the risks associated with anaemia not only during this period but also in the subsequent pregnancy if any. The HIV status of the woman should be evaluated and the necessary care given. Discomforts and pains are common in the postpartum period and should be dealt with effectively. Other concerns of the mother such as how to care for herself and the baby and when to return to normal routine including sexual activity among others should be addressed during the post-partum care provision. Many discomforts and concerns can arise, as well as psychological changes during the postpartum period. With quality care these could be well controlled.

In addition family planning, being an effective strategy that reduces maternal, newborn and child mortality and morbidity as well as reducing HIV maternal to child transmission, should be a strong component of postpartum care[23]. Yet few women begin using family planning methods during this very critical postpartum period for birth spacing in Kenya. The unmet need for family planning for all women in Kenya stands at 26% which is quite high and it is even higher for the postpartum mothers.[11] Unmet need for family planning in the postpartum period means that the woman is at high risk of getting another pregnancy too soon. Evidence has shown that for good health of the mother and the baby, it is important to space the pregnancies by two to three years[23]. Ideal spacing gives time for the mother to recover from the effects of the previous pregnancy and breast feeding. During the postpartum period women should be given counseling and be offered contraception.

The national guidelines for quality obstetrics and perinatal care recommend the following schedule for PPC: Within 48 hours, 1 to 2 weeks, 4 to 6 weeks and 4 to 6 months[24]. These guidelines also outline the elements of care that the mother should be offered during PPC. These elements of targeted postnatal care include assisting the mother and family to develop their own postnatal care plan for the provision of care for the mother and the baby by a skilled attendant, emergency preparedness and complication readiness for the mother and baby, early detection and treatment of problems such as hemorrhage, eclampsia and TB. Other elements of PNC include referral as necessary, counseling for HIV and testing, family planning, breast feeding, personal hygiene and nutrition. Health promotion using health messages is also an important part of PPC. Cervical cancer is very common in Kenya and its screening has been added to PPC[11]. The reproductive health strategy advocates for the integration of maternal and neonatal services at all levels[25]. This means that when mothers take their infants for services, this opportunity should be utilized to offer them PPC.

Though the country has clear guidelines on targeted postpartum care including a training package for health workers, the utilization of PPC in regard to these guidelines is not well documented[22]. The Kenya Service provision assessment, 2010 considered in detail the quality of ANC and delivery services but not that of post-partum care[26]. The Kenya demographic and health survey 2008/09 examined the timing of PPC by mothers[11]. It found that 47% of women had received PPC, 28% received PPC within 4 hours, while 7% received PPC between 4 and 23 hours after delivery. A further 7 % the PPC within 2 days postpartum and 4% received care between 3 and 41 days after delivery.

Indeed postpartum care is one aspect of women's health care that has not received much attention. Some mothers who present for services in the MCH are eligible for postpartum care but do not receive it unless they ask for it. A good example is the mothers who present their infants for immunization, the babies may be attended to but the mother may be forgotten all together. The KDHS 2008/09 revealed that the coverage for the first pentavalent vaccine which is given at six weeks is at 96 % compared to only 47% coverage of postpartum care by six weeks. This presents a huge missed opportunity despite the Reproductive Health Strategy advocating for the integration of maternal and neonatal services at all levels [25].

2.2 Factors associated with utilisation of post-partum care

2.2.1 Association of socio-demographic and clinical characteristics with utilization of post-partum care

Various socio-demographic factors have been shown to have a bearing in the utilization of PPC. In a study done in Nepal, the occupation of the woman and their ethnicity, the parity

and socio-economic status of the partner, the partners' occupation and education were found to be positive associations with the utilization of postnatal care. Wealth as reflected in occupation has been associated with seeking PNC[27]. The women awareness of their health, physical location of the health facilities, level of education and occupation as well as the partners' occupation were positively associated with uptake of postnatal care in Uganda[28]. Studies have also shown that mothers who attend ANC and had delivered in a facility are more likely to seek PPC. This is most likely because they attach importance to maternal health services; they may have positive attitudes towards seeking care and are hence motivated to seek PPC[27, 29,30].

Women who suffer health problems are more likely to seek postnatal care [27, 30]. Thus maternal complications as well as those of the baby during delivery or soon after may be associated with a higher likelihood of seeking PPC. When there is a health problem there is clear outcome from PPC; this points to the theory of planned behavior.

2.2.1.1 Adolescents and utilization of PPC

Age has been shown to be an important socio-demographic factor as far as the seeking of maternal health services is concerned, including PPC is concerned. An age group of special interest is the adolescents. This is a period when one transits from childhood to adulthood and represents a special opportunity to positively impact their life, including both the current and future health state. During this period many adolescents experiment sexually putting themselves at the risk of early usually unintended pregnancies and sexually transmitted infections. In Kenya for example, 12% of women between ages 20-49 had sex before they were 15 years old, and about 50% had their sexual debut by 18 years of age[11].

The problem of adolescent pregnancies is especially common in the developing world with close to 90% of adolescent births (12.8 million) occurring in developing countries each year.[32] By 18 years of age, 28 to 29% of women have given birth in sub Saharan Africa and southern Asia.[33] Repeat pregnancy is common among adolescents. In the United States, 70% of adolescent women are sexually active by age 19, with 8-10% on average becoming pregnant each year. Significant proportions, 17-35%, of the adolescents who get pregnant get a repeat pregnancy within a year of delivery[34]. The KDHS 2008/09 showed that 16% of the respondents who had delivered during the period covered were adolescents while the KDHS 2014 showed that 15% of the respondents who had delivered, were less than 20 years old [11,12]. Postpartum care gives an opportunity to counsel adolescents on safer sex and to provide contraception thus reducing the risk of sexually transmitted infections and repeat pregnancies

Pregnancy in this age group has been associated with a higher risk of poor pregnancy outcome than in older women. Adolescents between 15 and 19 years of age have a double risk of death during pregnancy or child birth compared to girls over the age of 20 while girls below the age of 15 years are 5 times more likely to die [32, 34]. Pregnancy among adolescents does not only increase the risk of dying but also has higher risk of other complications. In some studies adolescent mothers suffered depression more than adult mothers, in pregnancy and at 2–3 months postpartum[35]. Other challenges faced by the adolescents include alcohol and drug abuse. Studies indicate postpartum teenage mothers are prone to use alcohol and other drugs as they experience more peer pressure. They are also more likely to suffer depression, and stress, and therefor need higher levels of support[36]. Postpartum care provides a good opportunity to give attention to these concerns.

Despite the fact that pregnancies among the adolescents pose special risks, the adolescents may not easily seek or receive maternal health services including PPC[37]. Various reasons have been cited as contributing to adolescents' inability to use maternal health services. Such reasons include facilities being physically far, cost, unfriendly operational hours, poor attitude of health care providers, and lack of confidentiality[32]. The Kenyan Adolescent Reproductive health and Development Policy indicates that in many cases health care providers are not well equipped to effectively deal with adolescents' reproductive health issues. The range of services provided tends not to be comprehensive. As such many of adolescents are hesitant to seek the services[38].

2.2.2 Association of health system factors with utilization of post-partum care

The health system is the engine through which the health services are delivered. Its various components need to be in place for successful health services delivery. The WHO has described six building blocks that include; service delivery, health workforce, health information system, access to essential medicines, financing and leadership/governance[39].

This study focuses on health worker practices that may influence the utilisation of PPC as well as the mothers' perceptions of the experience as they receive services. The mothers form their perceptions on interacting with the health system as they seek services. This is an indirect measure of how responsive the health system is. The perceptions may influence the willingness of the mothers to seek future services.

2.2.2.1 Health workers' practices association with post-partum care utilization

Health workers form a critical component of the health system. The mothers' experiences and perception of care depend on their interaction with the health workers largely as well as other factors such as the waiting time and availability of drugs and supplies. The mothers experience during these interactions may therefore point indirectly to the health care workers practices.

The perception of the importance of issues around the postpartum care period may be different between mothers and health workers. Despite the wide range of issues facing mothers in the postpartum period, most attention is dedicated towards averting medical complications by the health workers. In most cases globally, routine postpartum check-up focuses on physical examinations and family education. A national survey in the United States found that a significant number of clients who received a postpartum check-up felt their concerns were not addressed. Common problems faced by new mothers were ignored during the routine postpartum check-up[40]. If women feel their concerns are not addressed; they might not be motivated to return for care. This is consistent with the theory of planned behavior.

Many mothers may not be given adequate information on the postpartum period by the health workers. In a qualitative study, mothers felt they were not well prepared for the consequences of pregnancy and childbirth. The information they had received from the health workers was not satisfactory[41]. Another study revealed that new mothers desired to get advice on mothering from health-care providers instead of getting information from non-professionals

such as family or friends. It has been found that new mothers mostly want to learn how to take care of themselves, the right exercises, the appropriate diet and nutrition and when to resume normal activities. They also want to know how to take care of their babies, recognition of illnesses, and how to deal with irritable infants. Despite this, postpartum care usually focuses on the physical changes to prevent medical complications. Needs such as emotional care, resuming daily routine and taking care of the babies are not prioritized and can easily be ignored[42]. In Ruchala's study, it was found that the service care providers concentrated on passing on information on contraception, danger signs, and the infant's nutritional needs[43]. Differences in perception on the needs of the mothers between themselves and the nurses can lead to the mothers feeling their needs are not being met thus discouraging mothers from seeking further PPC.

According to work done by Population Council in collaboration with Ministry of Health to improve post-partum care in Kenya, several challenges were identified [44]. The health service providers had inadequate knowledge of the national policies as well as the guidelines on postpartum care including the schedule. They had negative attitude towards postpartum care and did not advocate for it. In central province rudeness by health workers and long waiting hours were found to hamper utilization of care[45]. Negative provider attitude may make it more difficult for mothers to utilize the service hence discourage them from seeking the services; this points to the theory of planned behavior. There were inadequate numbers of providers as well as shortage of the postpartum registers. These challenges, coupled with heavy workload for providers may not encourage mothers to utilize post-partum care.

2.2.2.2 Mothers' perception on the maternal health services and utilization of post-partum care

As the mothers interact with the health workers and other aspects of health system, they will perceive the experiences to be pleasant or not and this results to various levels of satisfaction. These perceptions may affect their willingness to seek other services in the future. Since in most cases mothers will have sought ANC and delivery services during their pregnancy and delivery, there is likelihood that their experiences may affect their utilization of PPC services. The mothers' perceptions and experiences while seeking care are an indirect way of inferring if the health system is responsive to their needs or not.

Various factors such as poor staff attitude, out of pocket expenditure, long waiting periods and how the health care providers communication with the clients are important in determining the clients' perception and satisfaction with the services[46, 47]. The attitude of health personnel has been cited as the most significant determinant of the perceptions and satisfaction[48, 49, 50].

If clients feel satisfied with the services they are likely to not only go back for the same or related services but also recommend services to others. Positive association between the clients' satisfaction and uptake of health services exists [51, 52, 53]. In this study the mothers' perceptions considered are feeling comfortable or feeling discriminated against while seeking ANC and delivery services.

2.2.3 The Theory of Planned Behaviour (TPB)

Seeking health services is a human behaviour and like other behaviours it is determined by various factors. Understanding those factors and how they affect utilisation of PPC provides

an opportunity of improving uptake of the services. Exploring theories that may explain behaviour improves the understanding of these factors and their influence on seeking PPC.

Theories are used to determine why, what and how best to deal with health problems. They help answer questions why communities and individuals behave as they do. This knowledge helps the planners to develop appropriate health programs and strategies that best reach and serve the target population. Program planning and implementation informed by the theories are more likely to succeed than those that do not take such information into consideration.

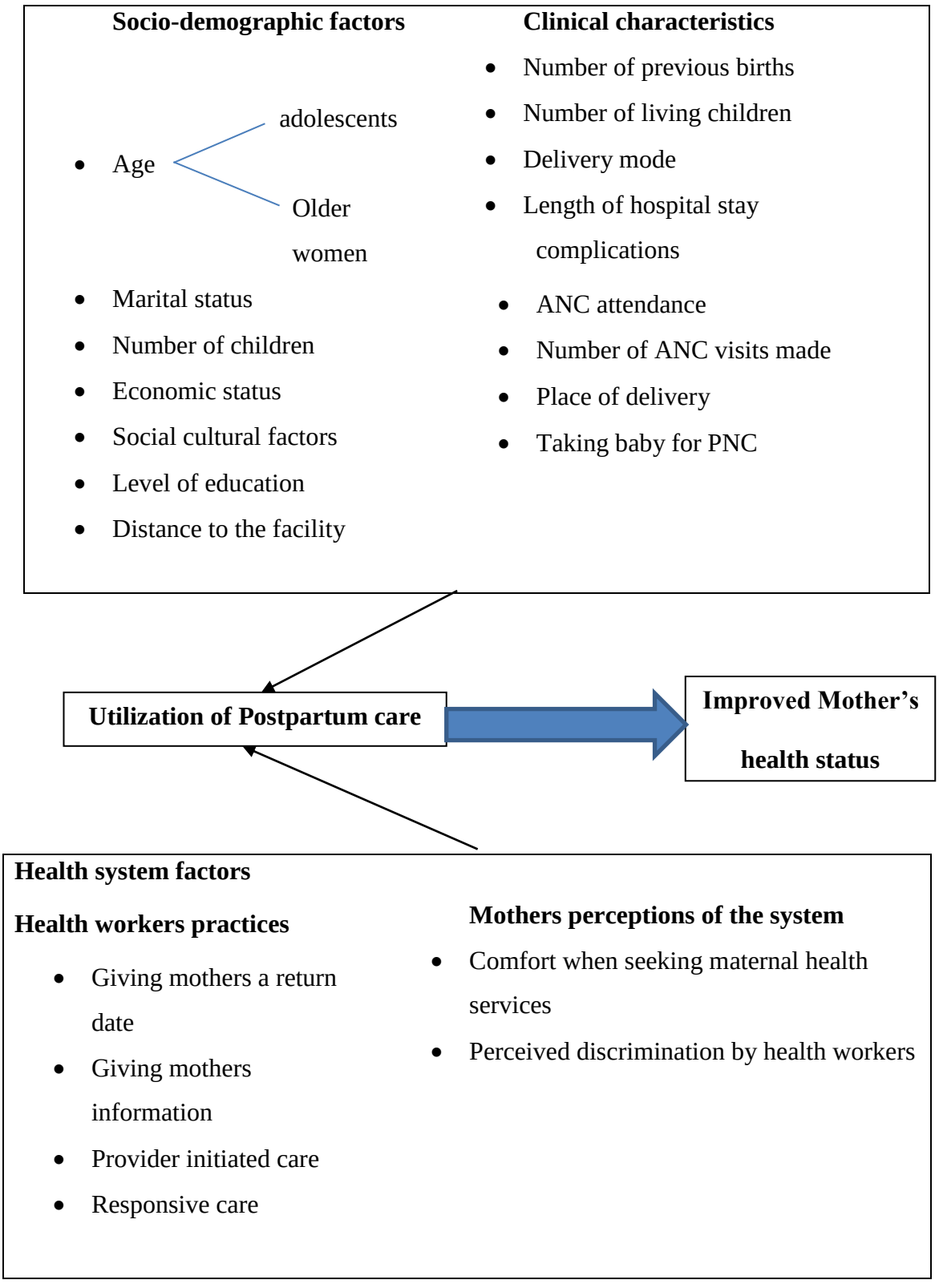
Explanatory theories describe the basis of particular problems. They help shed light on the root causes of the problems such as inadequate knowledge, lack of social support and lack of resources. Since these factors can be manipulated, by changing them, the problem can be resolved. "**The Theory of Planned Behaviour"** is an example of an explanatory theory. The TPB seeks to find the relationship between behavior and beliefs, attitudes and intentions. This theory is based on the theory of reasoned action (TRA) which presupposes behavior is actually predicted by the intention[54]. The two theories assume that intention is the most important predictor of behavior and behavioral intentions are influenced by a person's attitude toward the behavior as well as by the belief on whether persons important to the individual do approve or disapprove of the particular behavior. Attitudes towards a behavior depend on the expected outcomes. The TPB includes one additional aspect, perceived control; this has to do with one's belief that that they can control a certain behavior as well as the perceived ease or difficulty of performing the behavior[55, 56].

2.2.3.1 The "Theory of Planned Behaviour" and utilization of postpartum care

The woman as well as the community beliefs and practices affect the utilization of services. In a study done in Kenya in the western region, majority of community members' both males and females reported that it was not necessary for mothers who had no complications during deliveries to seek postpartum care[42]. Many mothers deliver outside of the health facilities and they may not deem it necessary to seek postpartum care especially if no obvious complication occurs. The benefit of PPC may not be clear to them. This corresponds to the theory of planned behavior which supposes that the expected outcome determines the behavior. If not much benefit is expected then there is no motivation for the behavior. This study will explore if the factors associated with utilization of postpartum care support the theory of planned behavior.

2.3 Conceptual Framework

Fig. 3: Conceptual Framework: Factors associated with utilization of postpartum care



CHAPTER THREE: STATEMENT OF THE RESEARCH PROBLEM

3.1 Problem statement

Maternal mortality has remained very high in Kenya for a long time at 488 deaths per 100 000 live births[11, 12]. This is much higher than the national MDG target of 147 deaths per 100 000 live births. Most of these deaths occur during the post-partum period. Despite this grim picture many women in Kenya do not receive postpartum care at all while others receive some care but not optimally. Only about half of the women (47% according to KDHS 2008/09 and 51% according to KDHS 2014) had received postpartum care at least once within six weeks.

Another point of concern is that adolescents' pregnancies, which are at an increased risk of complications, are relatively high in Kenya, yet the adolescents are less likely to seek care[9, 10, 12]. It therefore follows that the likelihood of an adolescent dying in the postpartum period is even higher.

The health system appears not to have placed sufficient focus on PPC and this may be contributing to the poor utilisation of PPC. The mothers might not be receiving enough motivation to seek the care that they so much need. Similarly the community seems not to appreciate the importance of the PPC. Insufficient data exists to understand the factors that contribute to this poor utilisation of PPC within the different contexts.

3.2 Justification of the Study

Postpartum care is an important strategy in reducing maternal mortality and morbidity, given that majority of maternal deaths occur during the postpartum period with 60% of the deaths occurring within the first week [17,18,19]. With quality post-partum care, most of the complications that lead to death can be addressed. Improving utilization of this important service is one of the country's priorities identified in National Maternal and Newborn Health Roadmap[13].

Adolescent mothers are at an increased risk of poor outcomes and hence post-partum care is of great importance in this age group. Despite this importance, adolescents may be less likely to seek care[37]. It is therefore important to have specific attention on adolescents postpartum care utilization, compare it to the older women and determine if there are any differences.

It seems that mothers are more likely to seek care for their infants than they are likely to seek care for themselves. Only 47% of the women received postpartum care within six weeks compared to the high coverage for the first pentavalent vaccine at six weeks at 96%[11]. This represents a missed opportunity considering that both the PPC and immunization services are supposed to be offered in most public facilities at no cost. It is therefore important to establish the factors influencing mothers to utilize PPC.

Not much has been done to document the various factors that are associated with utilization of postpartum care in Kenya and little emphasis has been put on the adolescent mother. This research sought to establish the various factors that affect the utilization of postpartum care as

well as to determine if there are any significant differences among the adolescents as compared to the older women.

The findings of this study will be used to increase the knowledge base of postpartum care services in the country and will be useful in informing the maternal health program on how utilization of postpartum care could be improved. This will contribute to the reduction of maternal mortality and morbidity.

3.3 Research Questions

1. What are the socio-demographic factors associated with utilization of post-partum care?
2. What are the maternal clinical characteristics that are associated with utilization of post-partum care?
3. What are the health system factors that are associated with utilization of post-partum care?
4. What are the differences in the factors associated with utilization of post-partum care between the adolescents and the older women?

3.4 Objectives

3.4.0 Broad Objective

To determine and compare the factors associated with utilization of Postpartum Care among adolescents and older women attending MCH clinics in public health facilities in Dagoretti District, Nairobi County.

3.4.1 Specific Objectives

1. To determine the socio-demographic factors that are associated with utilization of postpartum care
2. To determine the maternal clinical characteristics that are associated with utilization of postpartum care.
3. To determine the health system factors that are associated with utilization of postpartum care

4. To compare the factors that are associated with utilization of postpartum care among the adolescents and older women.

3.5 Hypotheses

1. There is no association between socio-demographic factors and utilization of post-partum care.
2. There is no association between maternal clinical characteristics and utilization of post-partum care.
3. There is no association between health system factors and utilization of post-partum care the factors.
4. There is no difference in the factors associated with utilization of post-partum care between the adolescents and the older women.

CHAPTER 4: STUDY METHODOLOGY

4.1 Study Design

This was a cross-sectional study that employed both qualitative and quantitative approaches. The quantitative aspect investigated the level of utilization of postpartum care and the various factors that are associated with utilization. The qualitative aspect investigated the perceptions of the mothers as well as health workers towards the various aspects of postpartum care and its utilization.

4.2 Study Area

The study was undertaken in public health facilities in Dagoretti Sub-county, Nairobi County. Nairobi is the metropolitan capital of Kenya. It constitutes of 9 Sub-counties including; Njiru, Langata, Starehe, Kamukunji, Makadara, Dagoretti, Kasarani , Embakasi, and Westlands.

Fig. 4: Map of Nairobi County by Sub-Counties

Source: Kenya Bureau of Statistics

Dagoretti Sub-county has an estimated population of 400 000 people with 74 000 households. The women of reproductive age are estimated at 100 000 with 19 000 estimated number of deliveries per year, and a population of under 1 year is estimated at 11, 000. Various forms of public transport are available. They include; "matatus" and buses (Kenya Bus Service, City Hoppa, City Shuttle and Connection Bus among others) that offer short distance trips to the City Centre. Many motor bikes are now available for individual or a few individuals per trip. Bicycles are also used mainly for personal needs The Dagoretti railway station which is part of the national railway system offers an alternative mode of transportation.

The population is mainly semi-urban, with some urban middle class population scattered across the District. The District is also home to some informal settlements such as the Kawangware and Ngando slums. The population engages in various income generating activities such as offering labour in industries and construction firms, small scale trading on groceries is also common as well as small scale carpentry, masonry and tailoring. The middle class are mainly in formal employment or self-employment through businesses.

Dagoretti Sub-county is served by various health facilities of which 9 are owned by the government (public), 7 are faith based organizations and 44 are privately owned. Most clients are served by the public facilities where by the maternal and child health services' fees are subsidized significantly. The public facilities that offer maternal and child health clinics include the Kenyatta National referral hospital (level 6), Mbagathi District Hospital (level 5) and several level 3 and level 2 facilities. Level 2 and 3 facilities include the following; Chandaria Health Centre, Dagoretti Approved Dispensary, Gatina United Clinic, Mutuini Sub-District Hospital, Ngong Road Health Centre, Riruta Health Centre, Waithaka Health Centre and Woodley Clinic.

4.3 Study Population

The maternal and child health care clinics within selected public health facilities in Dagoretti sub-county were the source of the study population; these were the mothers seeking services such as postpartum care and vaccination for their infants from the MCH. These facilities mainly serve clients of the middle to low socio-economic status. Key informants interviews were conducted among the MCH in-charges in the selected facilities.

4.4 Inclusion Criteria

The study was done in the public facilities in Dagoretti Sub-county in Nairobi County. Mothers who had come to seek services in the MCH who had delivered within one year during the time of study were included. Only those who gave written informed and voluntary consent were included.

4.5 Exclusion Criteria

The women who were not the biological mothers of the infants they were taking care of were excluded.

4.6 Variables

The main outcome variable is utilization of post-partum care. Utilization was determined on the basis of whether the mother reported having received post-partum care within 6 weeks after delivery. The mothers were asked if they received post-partum care and at what stage of the post-partum period. For the purpose of this study, those who had gone to the facility for

post-partum care at least once were considered to have utilized PPC. Their socio-demographic characteristics were sought as well as their clinical characteristics. The reasons for receiving or not receiving care were also sought.

The predictor variables were the various socio-demographic factors, maternal clinical characteristics and health system factors. The socio-demographic factors included age, level of education, employment status, marital status and economic status. The maternal clinical characteristics were whether the mother had any antenatal care during pregnancy, the number of ANC visits made, the place, mode and the outcome of delivery, length of hospital stay, whether they had complications or not, number of previous births, number of living children and whether they took their baby for PNC or not. The health system factors included the health workers practices and the experience of the mothers while seeking various services was considered as a proxy to the health workers practices. These factors included giving mothers a return date, giving mothers information, distance to the facility, mothers comfort when seeking maternal health services and perceived discrimination by health workers. Other predictor variables included the perspective of the mothers on post-partum care which was sought especially during the focus group discussions. The health workers perspectives were also sought through the key informants interviews.

4.7 Sampling and Sample Size Calculations

4.7.1 Sample Size Calculations

The sample size was calculated using the following formula

$$n = \frac{Z^2_{1-a/2}\ (p)\ (1-p)}{d^2}$$

n = the sample size

p* = the estimated prevalence of mothers seeking PNC

d^2 = level of precision

$Z^2_{1-a/2}$ = the standard normal deviation, corresponding to a 95% confidence interval in the table of the standard normal distribution = 1.96

$$\text{Therefore } n = \frac{Z^2\ (p)\ (1-p)}{d^2} = \frac{(1.96)^2\ (0.47)(\ 0.53)}{0.05} = \frac{3.8416 \times 0.2491}{0.0025}$$

$$n = 382.77$$

$$n = 383$$

*In the KDHS 2008/09 the proportion of mothers who had received postpartum care by six weeks postpartum was 47%

10% will be added to take care of non-response.

Therefore the sample size will be 383 + (10/100 x 383)

= 383 + 38.3 = 421.3

Thus 421 mothers were interviewed

4.7.2 Sampling

Systematic random sampling method was employed. This study was conducted in public level 3 and 4 facilities with the highest workload. The 5 facilities with the highest number of clients receiving immunizations were selected. The workload determination was from the records of the District Health Information System (DHIS) which is the national reporting system for all health facilities regardless of ownership. Data from DHIS for the last quarter of previous year before the study was used. The facilities satisfying this criteria included the following; Mbagathi Hospital, Waithaka Health Centre, Riruta Health Centre, Chandaria Health Centre and Ngong Road Health Centre.

Systematic random sampling was done to identify the clients in the selected facilities to be interviewed. The sampling frame was the expected number of mothers coming to the MCH for services within the month during which the data was to be collected.

Estimated number of clients served in the 5 facilities was as follows;

Mbagathi Hospital 150 clients

Waithaka Health Centre 400 clients

Riruta Health Centre 900 clients

Chandaria Health Centre 250 clients

Ngong road Health Centre 300 clients

Total 2,000 clients

The number of clients to be interviewed in every facility was proportionate to the expected workload. Thus;

Mbagathi Health Centre; 150/2000 x 421 = 31.575 = 32

Riruta Health Centre; 900/2000 x 421 = 189.45 = 190

Waithaka Health Centre; 400/2000 x 421= 84

Chandaria Health Centre; 250/2000 x 421= 52.625 =53

Ngong Road Health Centre; 300/2000 x 421 = 63

To get the interval of mothers to be interviewed, the total estimated number of mothers was divided by the sample needed. Thus; 2000/ 421 = 4.7

Therefore in all the facilities, every 5^{th} mother coming to the MCH for post-partum care or for her infant to be immunized was interviewed.

For the FGDs a group of 8 to 10 mothers were interviewed in each health facility. The groups included both the adolescent and the older women and care was taken to have both groups represented with 3 to 4 adolescents in each group.

4.8 Data Collection

Different tools were used for data collection. Questionnaires developed on the basis of the literature review to meet the study objectives were used. They included closed as well as open ended questions. A copy of the questionnaires is attached; appendix 1. Pretesting was done at the Kenyatta national Hospital, to ensure clarity and the questionnaires were revised accordingly. Focus group discussions were held with the mothers using a guide that is attached; appendix 4. Key informant interviews were carried out with the MCH in-charges using the attached guide; appendix 5.

Data collection was done by the principal researcher assisted by 5 assistants. The research assistants were trained prior to the data collection. The objectives of the study were explained to them and then they were taken through the questions one by one explaining to them the meaning and the objective of each.

After obtaining permission from the facility in charge and the clinic in charge, the Principal investigator carried out the interviews with the research assistants. As the women were served in the clinic, the investigators talked to every fifth mother. The purpose of the study and the procedures were explained to them. They were then requested to participate. All those who agreed gave written consent, attached as appendix 2 and were directed to the interview area. The Principal investigator carried out some of the interviews, while other interviews were carried out by the research assistants.

To avoid disruption of services, the mothers were talked to individually after receiving the services to explain to them the purpose of the study and how it would be conducted. The interviews were then conducted after they had given consent. The health workers in those facilities were not used as research assistants.

The focus group discussions (FGDs) were conducted by the principal investigator assisted by a recorder. A group of 8 to 10 mothers who had come to seek services in the MCH and who had delivered within one year but who had not been interviewed using the individual's questionnaires were recruited for the group discussion in each facility. An interview guide was used. One FGD was carried in each of the 5 facilities.

4.9 Data Processing and Analysis

In the field, the data were checked to ensure that all the information had been properly collected and recorded. The data were checked for completeness and internal consistency. The answers to open-ended questions were pre-categorized. The data were then coded and

entered into SPSS computer program. Verification was done to ensure that the coding and computer entry was properly done. The data were categorized into various categories such as those who received postpartum care and those who did not receive, and adolescents and older mothers.

The quantitative aspect of the study was analysed using univariate, bivariate and multivariable analysis. The univariate analysis was done for the various characteristics (socio-demographic and clinical characteristics) of the respondents, whether they had sought post-partum care, the reasons for their action as well their experience in seeking services. The bivariate level analysis was done to establish the association of the various independent variables and the utilization of postpartum services. It was also done to compare the characteristics of the adolescents and the older women. The multivariable analysis was done using the regression model, focusing on various variables as independent predictors of utilization of post-partum care.

The level of utilization of post-partum care was determined by getting the proportion of mothers who had received any post-partum care at least once within six weeks of delivery. The proportions that had received PPC within the various recommended timings; thus 24 to 48 hours, 1 to 2 weeks and 4 to 6 weeks were calculated. The various characteristics (variables) such as age, social economic status, ANC attendance, place and mode and delivery among others were cross tabulated against seeking postpartum care. The reasons given for seeking or not seeking care as well as the various experiences of the mothers were cross tabulated against seeking post-partum care. The association of these factors with seeking (utilization) of post-partum care was tested using the Chi Square test of the Fischer's

Exact test to determine if it was significant or not. Multivariable analysis was done using the logistic regression model.

The qualitative data were transcribed and based on this, summary notes were developed capturing overview of each transcript. Themes were developed from the responses; nodes were developed in QSR N vivo and Coding of themes was done. Correlation of themes was done and the report written, presenting the selected relevant data.

4.10 Minimization of Errors and Biases

In order to minimize bias, an appropriate sample size was used, as calculated and systematic random sampling was done. This was to ensure that the findings were not due to chance but were representative of the population. The data analyses were stratified according to various characteristics to avoid confounding.

4.11 Study Limitations

Limitations of this study include possible sampling restriction as all participants were recruited through Maternal and Child Care Clinics. Women who do not seek maternal and child health care were less likely to visit these clinics hence could not be included in this study. However, given the very high vaccination coverage in Kenya (96 percent for the first pentavalent dose given at six weeks post-partum), then most mothers do visit these clinics, at least for their infants vaccination.

There could have been some over reporting or under reporting. For example they could over-report their perceived importance of postnatal care. This was minimized by explaining to them the reason for the study and that there was not going to be any victimization whatsoever on the bases of the answers.

The study did random systematic sampling without purposefully looking out for adolescents to increase their numbers for the comparison sake. This resulted in low numbers of adolescents. To mitigate this stratification was done during the analysis.

4.12 Ethical Considerations

The purpose of the study was explained to the study subjects and they were asked to give written consent, consent forms are attached appendix 2 and 3. There was no coercion or victimization on the bases of the information given. There was privacy during the interview and the information was kept confidential. The research questionnaires did not have names. The questionnaires were stored by the Principal investigator in a locked drawer. Ethical clearance was obtained from KNH/UON Ethical review committee and permission from the County and facility in charges was also obtained.

CHAPTER 5: RESULTS

5.1 Introduction

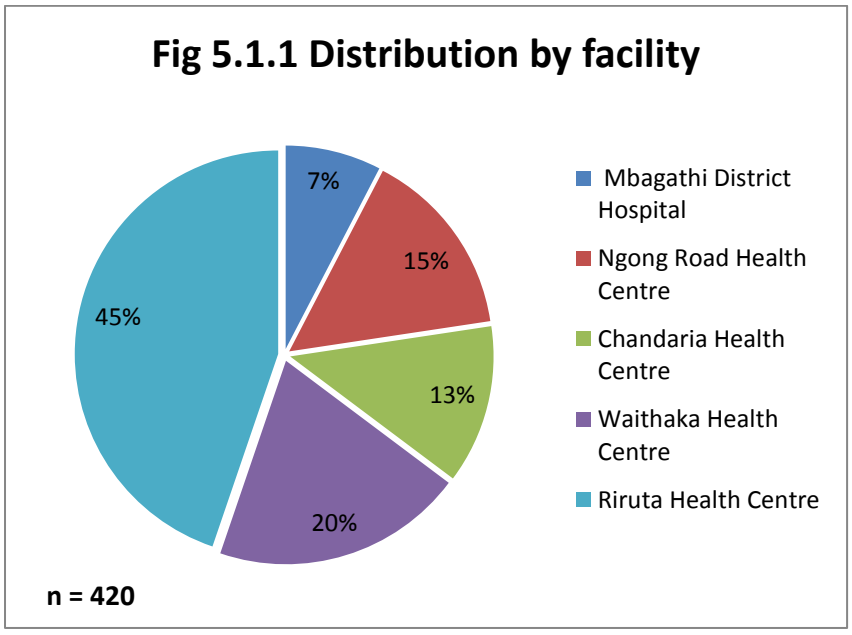
This chapter presents both the quantitative and qualitative findings of the study. The quantitative data were analyzed using univariate, bivariate and multivariable analysis and have been presented in pie charts, bar graphs and tables. The results of the qualitative data have been analyzed, summarized and presented in the relevant sections.

A total of 420 mothers responded to the individual questionnaires, five key informants were interviewed; one from each facility and five focus group discussions were held; one in each facility, each consisting of a group of 8 to 10 mothers.

Distribution by facility

The study was carried out in 5 public facilities; the distribution of respondents is shown in figure 5.1.

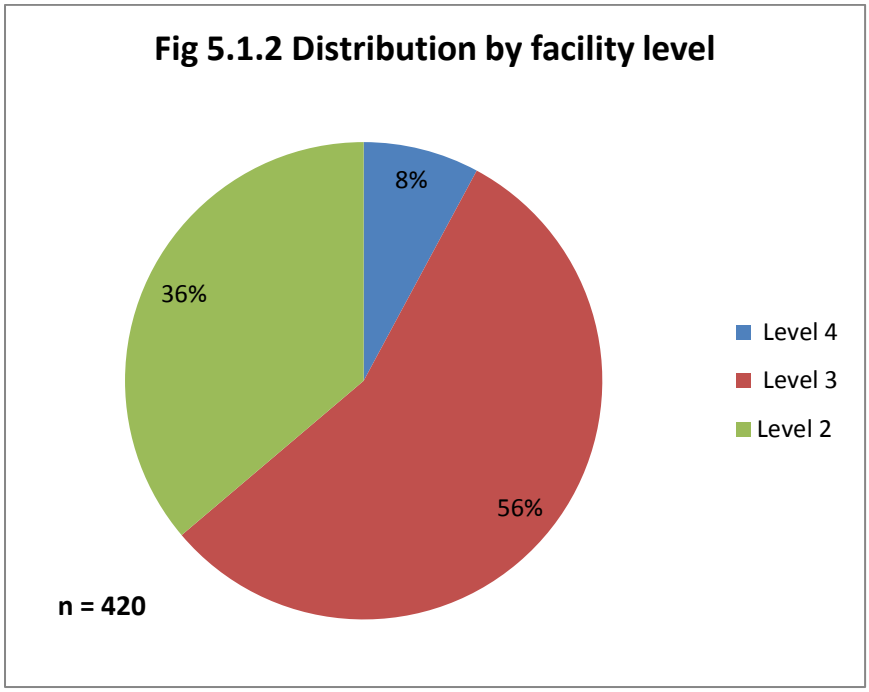
Fig 5.1.1 Distribution by facility



Distribution by facility level

The facilities were from level 2 to 4. Most of the respondents (more than half) were from level 3 followed by level 2 as shown in figure 5.1.2.

Fig 5.1.2 Distribution by facility level



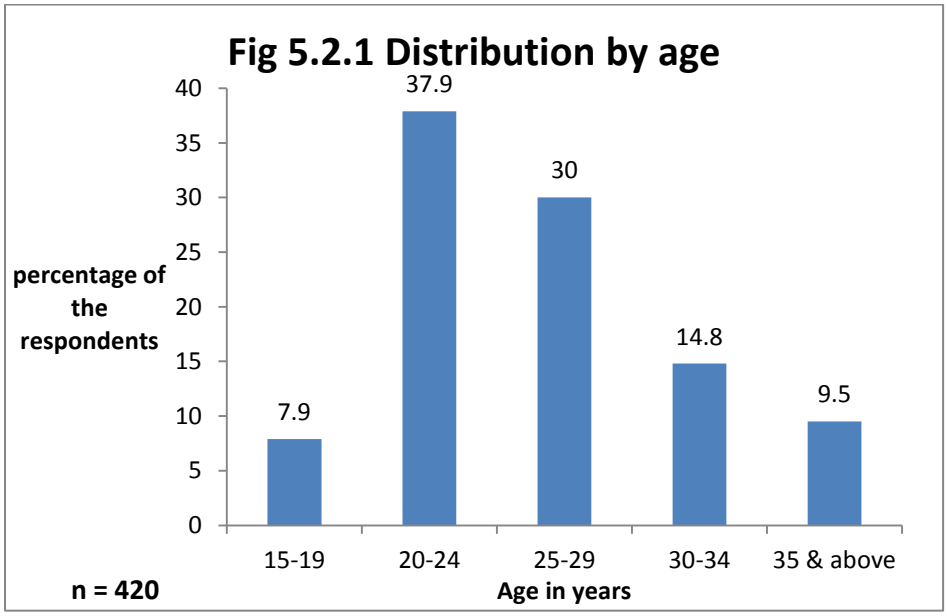
5.2 The socio-demographic characteristics of the respondents

Distribution by age

The total number of respondents was 420, with only 33 of them being adolescents (7.9%).

The median age of all the respondents was 25 years with a range of 15 to 46 years of age. The majority (38%) were between 20 to 24 years followed by age 25 to 29 years as shown in fig 5.2.1

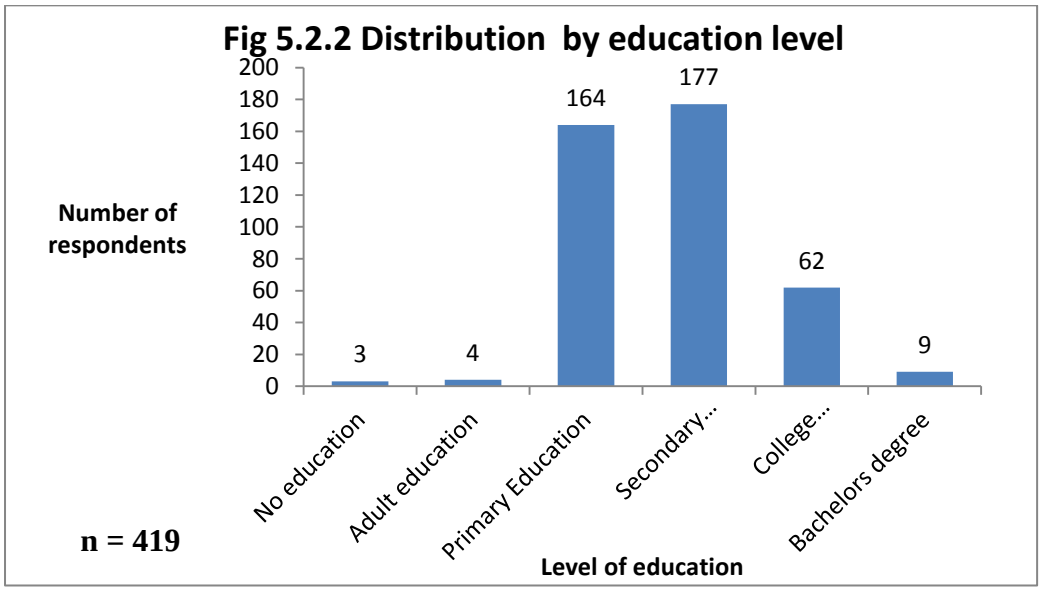
Fig 5.2.1 Distribution by age



Distribution by education level

Majority, 42.2% had secondary school education followed by primary school education (39.1%). Less than 2% either had no education or had adult education, while 16.9% had college education as shown in fig 5.2.2.

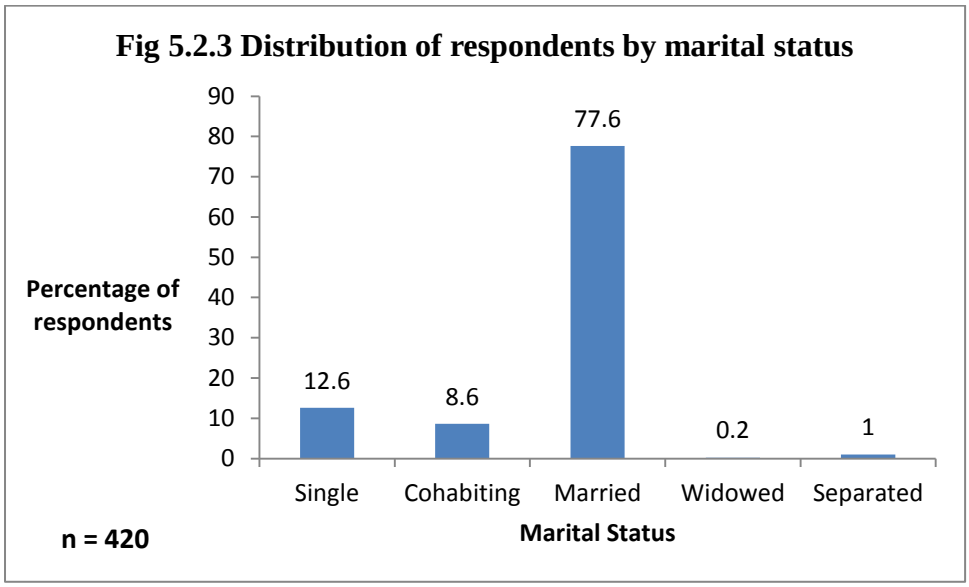
Fig 5.2.2 Distribution by education



Distribution by marital status

Seventy eight per cent were married and 8.6% cohabiting. Thus 86.2% were living with their partners with only 12.6% being single as shown in fig 5.2.3. Further analysis revealed that only 15 % of the adolescents were single.

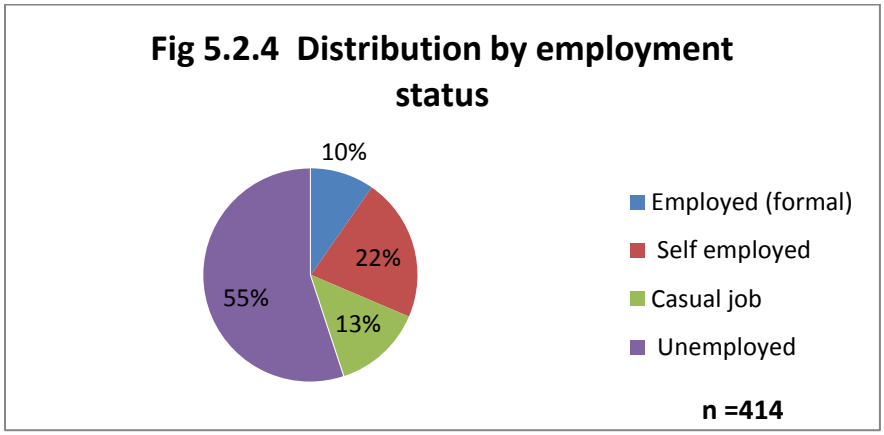
Fig 5.2.3 Distribution by marital status



Distribution by employment status

More than half of the participants (55.1%) reported to be unemployed, of the employed, 9.7% were formally employed, 21.7% self-employed and 13.5% in casual employment as shown I fig 5.2.4. Deeper analysis showed that among the adolescents, 88% were unemployed with an additional 6% being students.

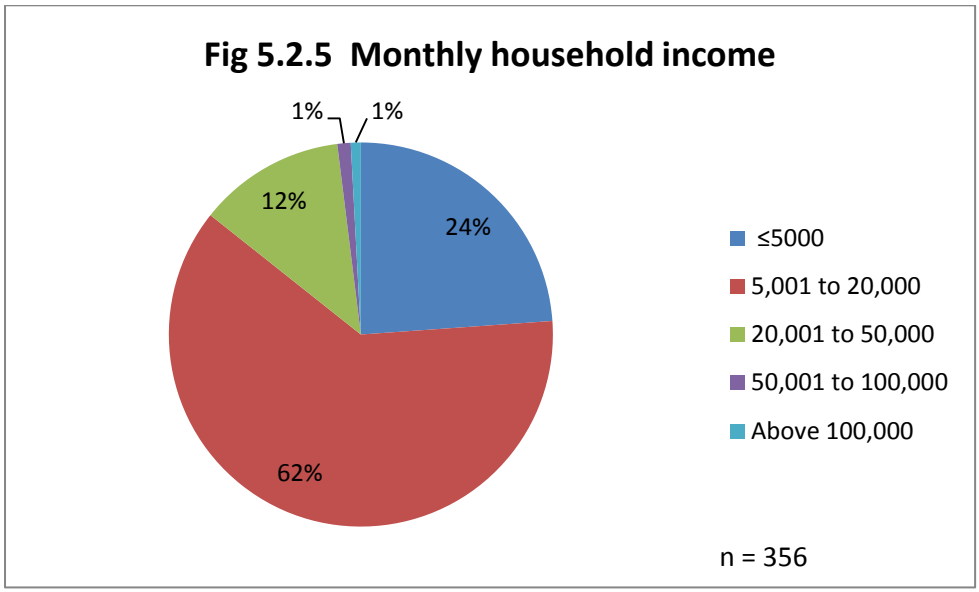
Fig 5.2.4 Distribution by employment status



Distribution by monthly household income

Majority (61.8%) reported to have a monthly income of more than 5,000 Kenya shillings (Ksh) but less than 20 000 Ksh with 23.9% reporting an income of less than Ksh 5000. Less than 1% reported an income of over 100 000 Ksh as shown in fig 5.2.5.

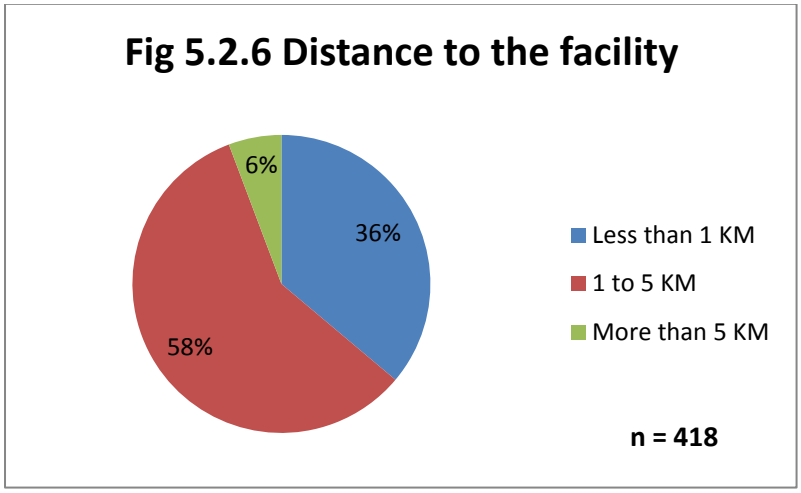
Fig 5.2.5 Monthly household income



Distance to the facility

Most of the mothers, 58.1% covered a distance of between 1 and 5 kilometers to the facility with 36.1% being less than a kilometer from the facility. Only 5.7% lived more than 5 kilometers from the facility as shown in figure 4.26. During the focus group discussions mothers reported that all the areas where they were coming from, public transport was available.

Fig 5.2.6 Distance to the facility



5.3 Clinical characteristics of the respondents

Number of previous births

Most of the respondents (44.8%) had no previous deliveries meaning they had delivered once (the current baby), with the highest number of deliveries being 6 by only one mother. The number of deliveries per respondent is shown in table 5.3.1. Among the adolescents one had had 2 previous births and 6 (18% of the adolescents interviewed) had had a previous births.

Table 5.3.1 Number of previous births

Number of previous births	**Frequency**	**Percent**
None	188	44.8
One	122	29.0
Two	70	16.7
Three	28	6.7
Four	11	2.6
Five	1	0.2
Total	420	100.0

Number of living children

Majority of the respondents (46.7) had only one living child, followed by 28.0% who had 2 living children and 15.8% had 3 living children. The number of living children per respondent is shown in table 5.3.2

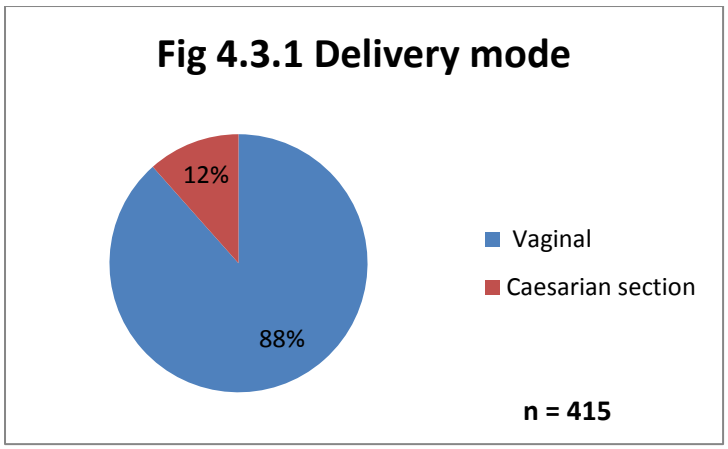
Table 5.3.2 Number of living children

Number of living children	**Frequency**	**Percent**
1	195	46.7
2	117	28.0
3	66	15.8
4	28	6.7
5	11	2.6
6	1	0.2
Total	418	100.0

Delivery mode

Majority of the respondents (88%) had delivered vaginally with 12% having undergone caesarian section as shown in fig 5.3.1.

Fig 5.3.1 Delivery mode



Length of hospital stay

Majority of the respondents had stayed in hospital for only one day, followed by 30.2% who stayed for 2 days and 20.3% had stayed for 3 to 5 days as shown in table 5.3.3.

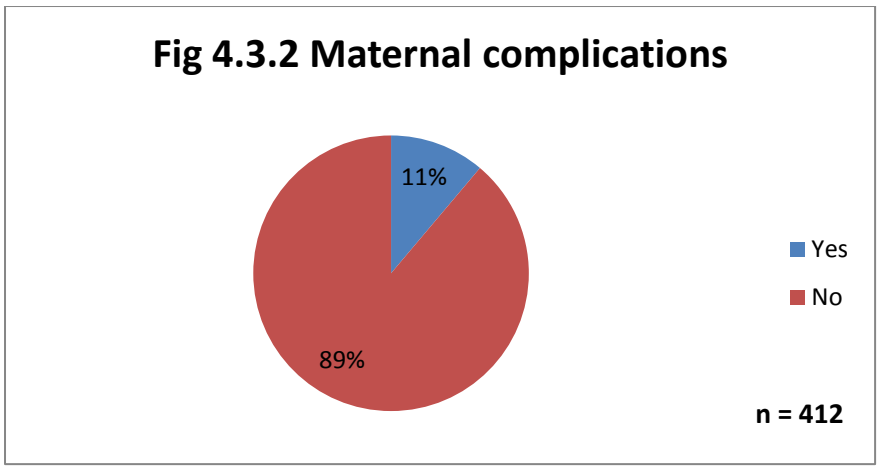
Table 5.3.3 Length of hospital stay

Hospital stay	**Frequency**	**Percent**
1 day	166	43.2
2 days	116	30.2
3 to 5 days	78	20.3
More than 5 days	24	6.3
Total	384	100.0

Maternal complications

Only 11.2% of the respondents had a complication around delivery of the current baby as shown in fig 5.3.2.

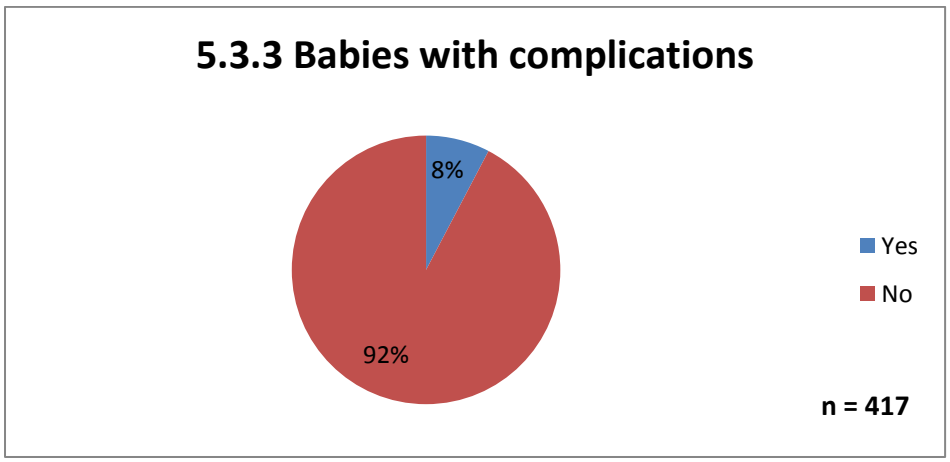
Fig 5.3.2 Maternal complications



Babies who had complications

Majority of the babies (92%) had no complications; the babies reported to have had complications during birth or soon after were 7.7% as shown in fig 5.3.3.

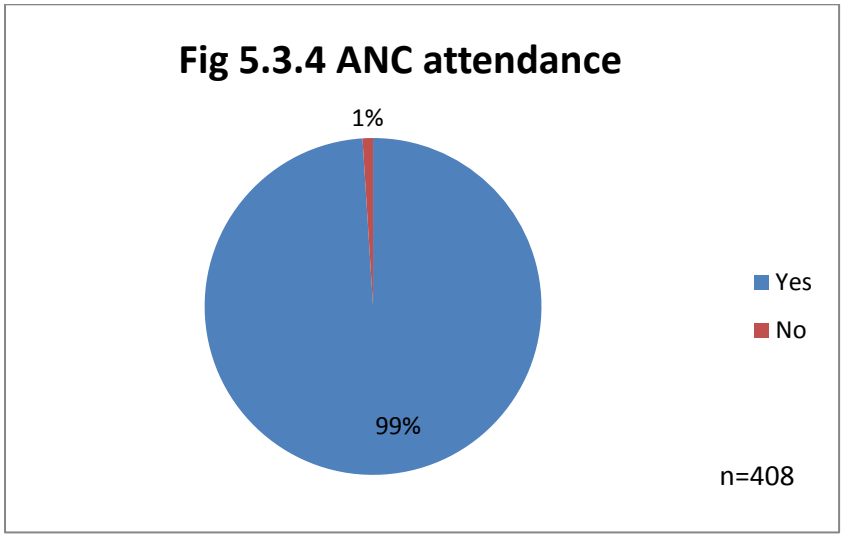
Fig 5.3.3 Babies with complications



ANC attendance

Almost all the mothers had received some ANC during their last pregnancy with 99% of the respondents reporting having attended ANC at least once as shown in fig 5.3.4.

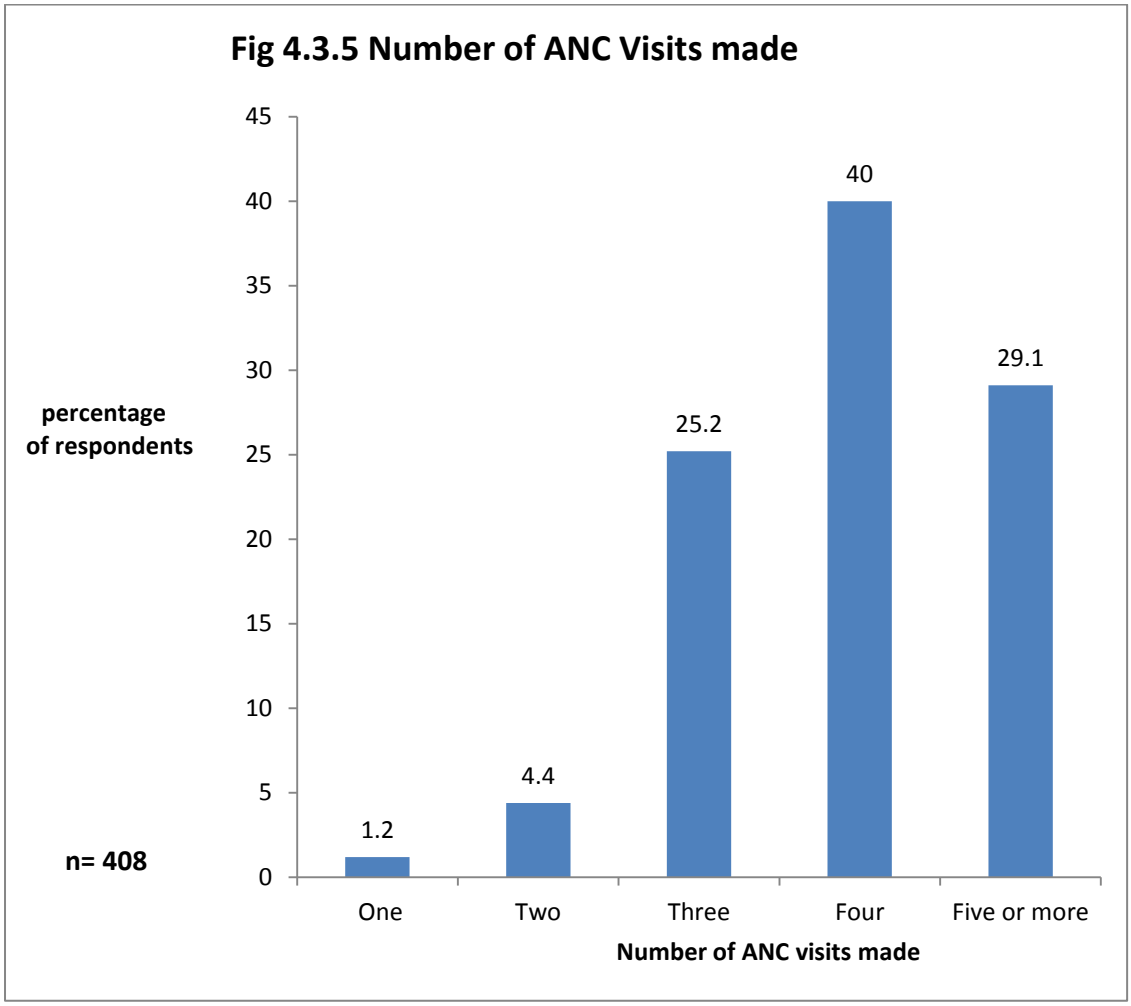
Fig 5.3.4 ANC attendance



Number of ANC Visits made

Majority of the mothers (40%) had attended ANC 4 times followed by 29.1% who had 5 or more times with a further 25.2% having attended 3 times. The number of ANC visits made by the respondents is shown in fig 5.3.5.

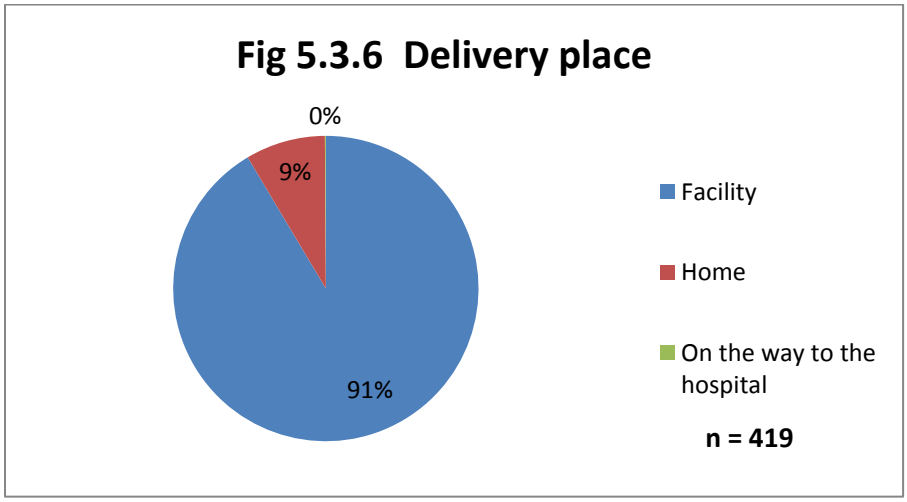
Fig 5.3.5 Number of ANC visits made



Place of delivery

Majority of the interviewed clients (90.9%) had delivered in a facility, only 9% delivered at home with a further 0.7% reporting to have delivered on the way to the hospital as shown in fig 5.3.6.

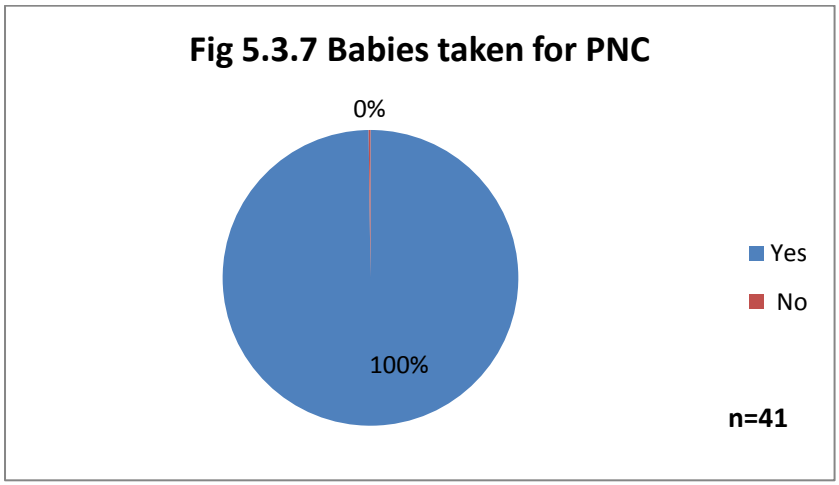
Fig 5.3.6 Delivery place



Babies taken for PNC

Almost all the babies (99.8%) were taken for PNC; only one (0.2%) was not taken as shown in fig 5.3.7 below. From the focus group discussions with the mothers, generally most women indicated that though they did not seek post-partum care services (PPC) for their own benefit they were keen to seek post natal care (PNC) for their infants.

Fig 5.3.7 Babies taken for PNC



Most babies 60.7% were taken for PNC at 6 weeks followed by at 1-2 weeks (47.4%) then at 10 weeks (27.6%) as shown in table 5.3.4.

Table 5.3.4 Periods when babies were taken for PNC

Babies taken at 1 to 2 weeks	**Frequency**	**Percent**
No	**221**	**52.6**
Yes	**199**	**47.4**
Total	**420**	**100.0**
Babies taken at 6 weeks	**Frequency**	**Percent**
No	165	39.3
Yes	255	60.7
Total	420	100.0
Babies taken at 10 weeks	**Frequency**	**Percent**
No	304	72.4
Yes	116	27.6
Total	420	100.0
Babies taken at 14 weeks	**Frequency**	**Percent**
No	368	87.6
Yes	52	12.4
Total	420	100.0

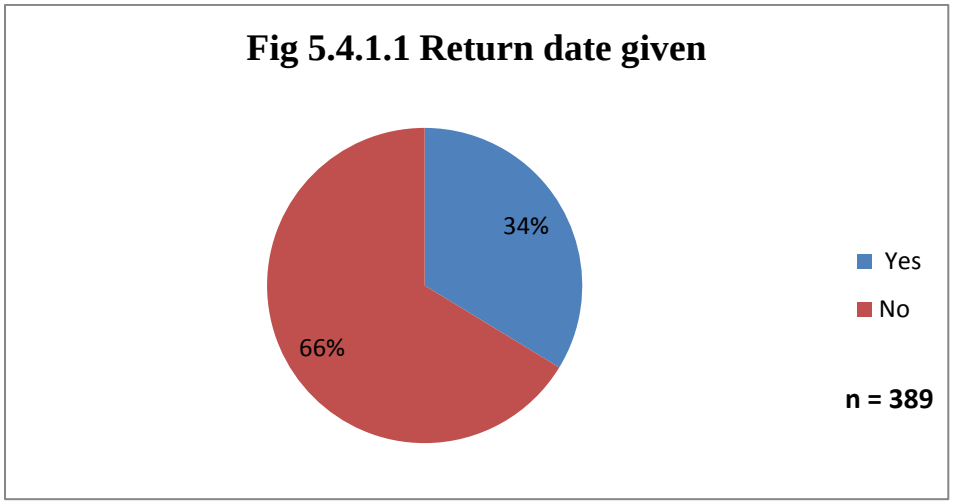
5.4: Health system factors

5.4.1: Health workers' practices as reported by the mothers

Return date for PPC

Most of the respondents (66.3%) did not get a date indicating when to return for PPC as shown in fig 5.4.1.1. During the FGDs the mothers cited that most of the times the health workers did not tell them to come back for their own checkup; they just gave them return date for the baby's immunization.

Fig 5.4.1.1 Return date given



Period when to return for PPC

Among those given return dates majority (72.5%) were to come back within 1 to 2 weeks and 22.9% were to come back within 4 to 6 weeks as shown in table 5.4.1.2 One of the key informants reported that when mothers get return date to come after 2 weeks, they came but when they only get to return after 6 weeks, then that is the time they came.

"Sometimes Kenyatta was telling them to come at two weeks for postpartum care, these days I have not been getting those, we only get them at six weeks PNC" Service provider KII 1

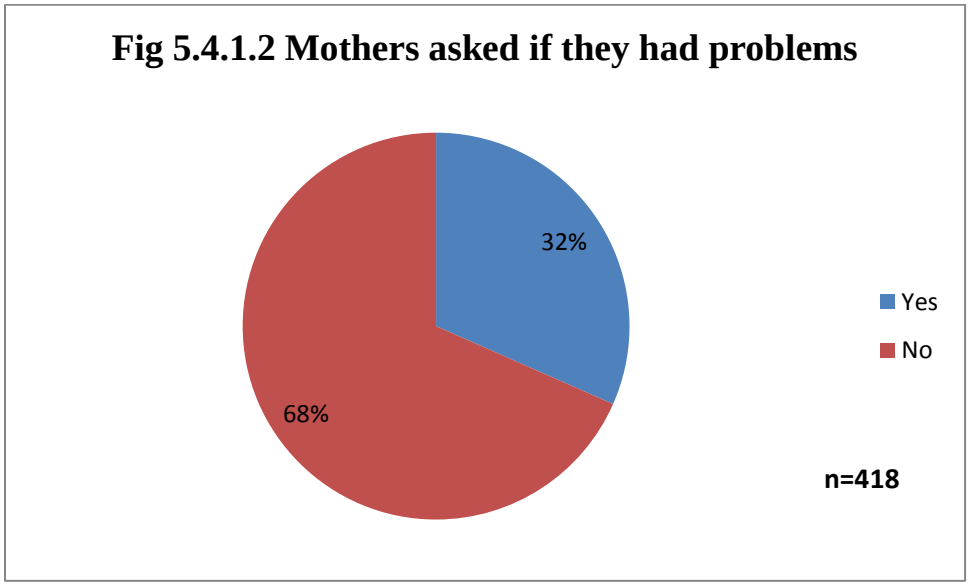
Table 5.4.1.2 Period within which those given return date were to return

		Frequency	Percent
Within when to return	24 to 48 hours	3	2.3
	1 to 2 weeks	95	72.5
	4 to 6 weeks	30	22.9
	Others	3	2.3
Total		131	100.0

Mothers asked if they had problems

Majority of the mothers (68.4%) were not asked if they had any health problems when they brought their babies for PNC as shown in fig 5.4.1.2.

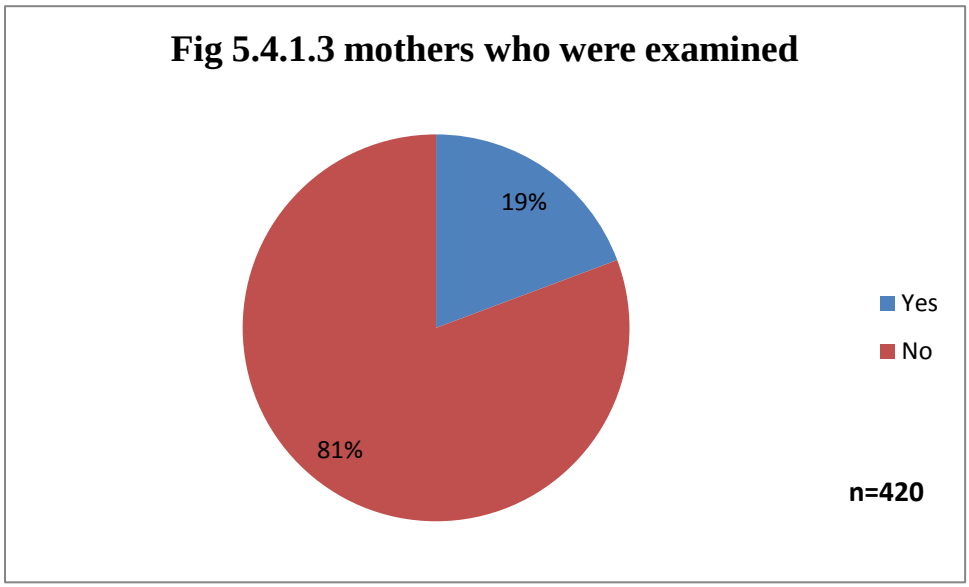
Fig 5.4.1.2 Mothers asked if they had problems



Examination as mothers took babies for PNC

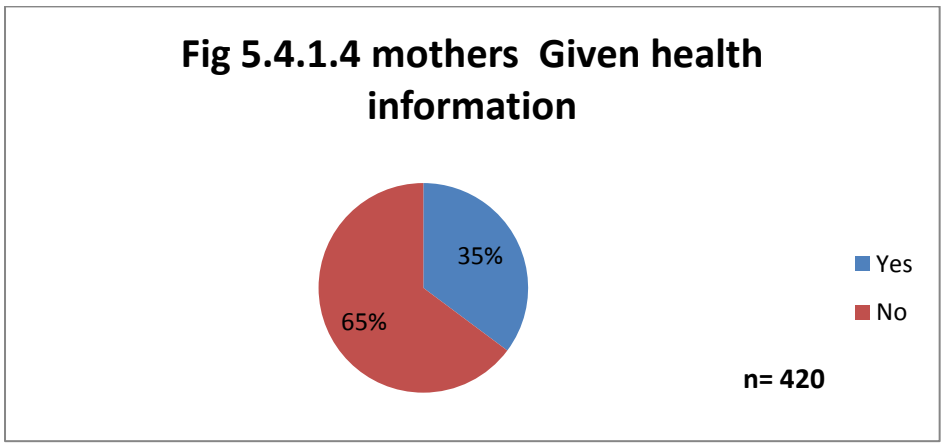
Only a few mothers (19.3%) were examined when they took their babies for PNC as shown in fig 5.4.1.3.

Fig 5.4.1.3 Mothers who were examined



Only 35.2% of the mothers got some information on their health when they took their babies for PNC.

Fig 5.4.1.4 Mothers given health information



5.4.2 Mothers' experiences during seeking care from health care workers

During the FGDs the mothers reported that they were generally happy with the care that their babies got when they took them to the clinic. However they wanted to be given the opportunity to ask questions and wished they would have more time with the health workers to be explained to issues concerning their own health.

The health workers reported that the mothers were mainly interested getting services for their babies rather than for themselves.

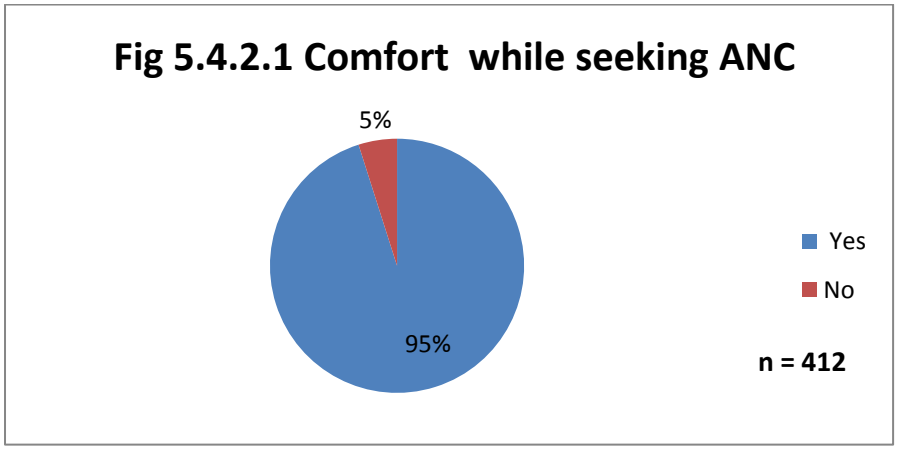
"…. not unless they have problems they don't come..... Most come for the immunization schedule. If we receive you and we counsel you and give you the card and you don't appear we actually don't interfere" PNC Service provider IDI 5

"Once you deal with their children they just go, unless someone advices them to make sure when her kid is vaccinated she will not just go. She will remain and get examined and start family planning ....we have a referral card…. they are told to enter the family planning unit clinic" PNC Service provider KII 1

Comfort during ANC

Majority of the mothers (95.1%) felt comfortable while getting ANC services for the current infant as shown in fig 5.4.2.1

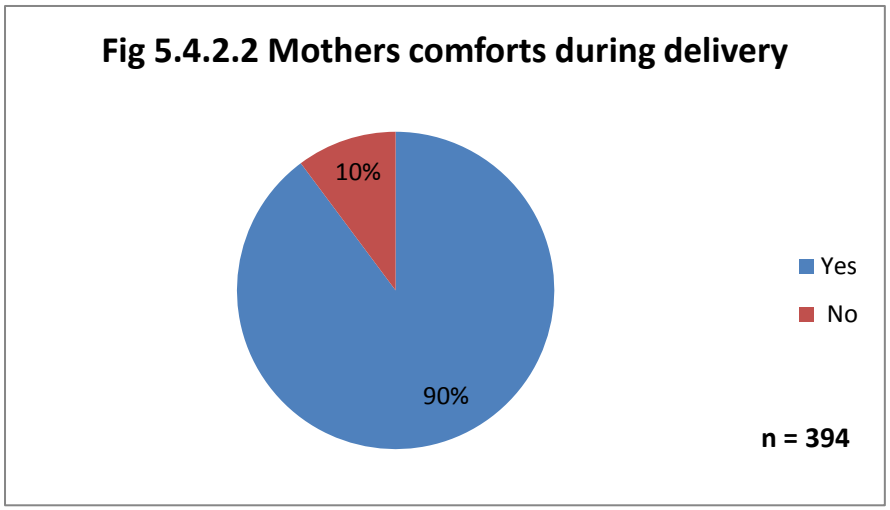
Fig 5.4.2.1 Comfort while seeking ANC



Mothers comfort during deliver

Majority of the mothers (89.8%) reported having felt comfortable while seeking delivery services for the current baby.

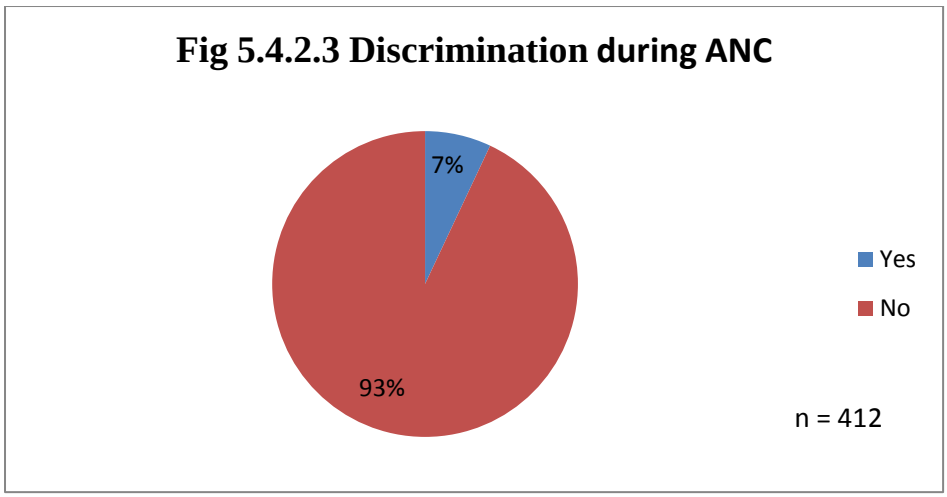
Fig 5.4.2.2 Mothers comforts during delivery



Discrimination during ANC

Majority of the mothers did not feel discriminated against while seeking ANC services as shown in fig 5.4.2.3.

Fig 5.4.2.3 Discrimination during ANC



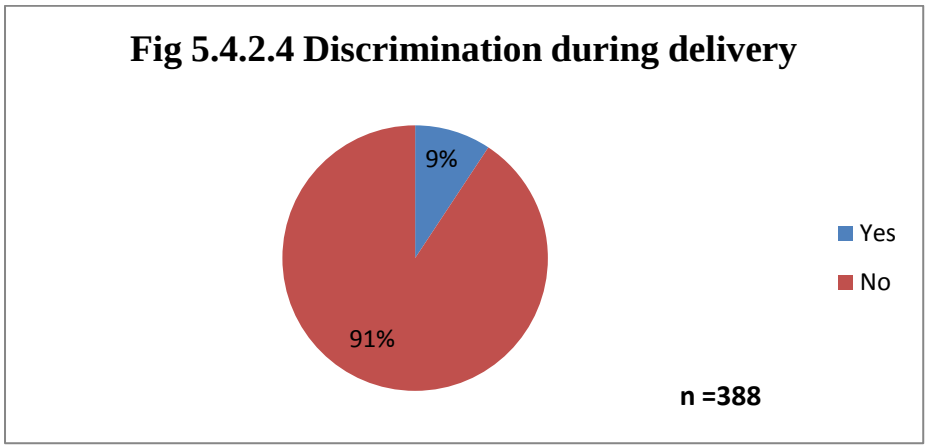
Discrimination during delivery

The mothers reported during the FGDs that some had experienced verbal abuse and harassment from providers especially and that it was worse for the young mothers.

"It happens, not only being told that she is a kid,..... instead of the health worker telling her in a kind way you should keep yourself and your baby clean, it is quarrelling her so sometimes it forces one not to come back to the hospital..... being quarreled, and when you are quarreled in front of people you get embarrassed" Participants PNC FGD 1.

Nine percent of the respondents felt discriminated against as they were seeking delivery services as shown in fig 5.4.2.4.

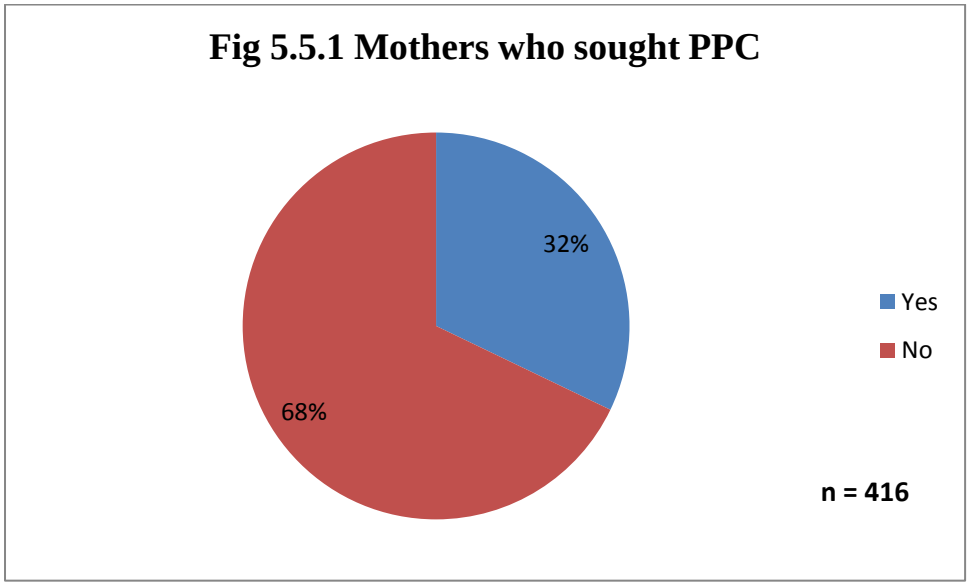
Fig 5.4.2.4 Discrimination during delivery



5.5 Utilization of Postpartum Care

One hundred and thirty five mothers (32.5%) reported having sought post-partum care within six weeks after delivery of their current baby as shown in fig 5.5.1. Of the adolescents interviewed, 34.4% sought PPC while 32.3% of the older women sought PPC. During the FGDs mothers generally agreed that it was good for them to seek PPC, however they reported that most had not sought the care.

Fig 5.5.1 Mothers who sought PPC



Some health workers felt that PPC was still underutilized. They said even thought they were offering PPC, it was not to the standard. They reported that there were very many challenges in offering PPC. They reported lack of space (room), few staff, inadequate supplies and even guidelines on how to deliver the care. Service providers felt that while it would be good to offer the mothers who brought their children for PNC care, they felt the logistics do not allow.

"…as for postpartum care, may be what we can say…….we don't give it 100 percent because we don't have that room ...There is a problem of space…..You cannot attend to people well who are under one roof, because we cannot put immunization in that room. …..this nurse you have found her weighing is the same nurse who is supposed to see the mothers.... she is the one who is supposed to do the immunization. …. There is so much lining up, they reach outside there then they go into another room where the weighing is done, and then they go to line for the immunization" PNC Service, provider KII 3

"The challenges are so many, like now we don't have drugs the patients are buying for themselves and we keep on borrowing from one facility to another. …we borrow

gloves…. They are not paying anything, we need gloves, we need soap ….. Sometimes even those ferrous folic tablets are not there…….” PNC Service provider KII 4

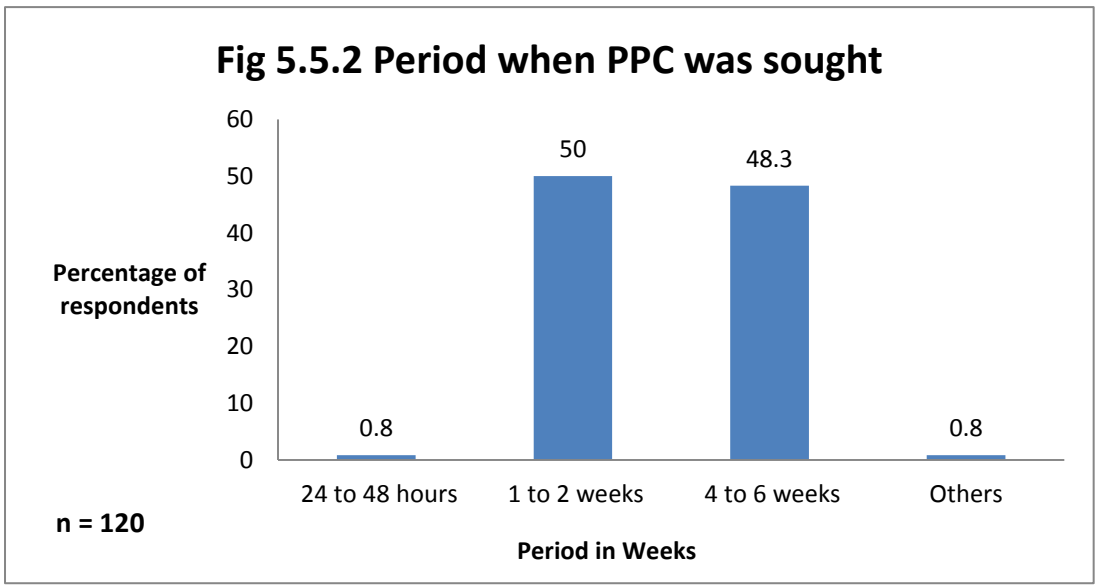
Some providers suggested creating separate clinic for post-partum care while others felt giving all PNC services under one roof would be good to prevent mothers from absconding due to queuing for every service at different areas. Employment of more staff in the PNC department was seen as vital dealing with the challenge of inadequate staff.

“If there is space and nurses are there it can be done under one roof, from immunization, there should be another nurse who is doing post natal services and offer family planning services; all things being done at the same time, ... Instead of lining in different places, one can get all those services at the same time” PNC Service provider IDI 3

Time of seeking PPC

Most mothers sought care either at 1- 2 weeks (50%) followed by 4-6 weeks (48.3%) after delivery as shown in fig 5.5.2.

Fig 5.5.2 Period when PPC was sought



Reasons for seeking PPC

Most mothers reported that they would seek PPC if they experienced complications such as excessive bleeding or if they had pain. A few mothers however indicated that one might never know if they have abnormalities and it was therefore important for all mothers to go for PPC.

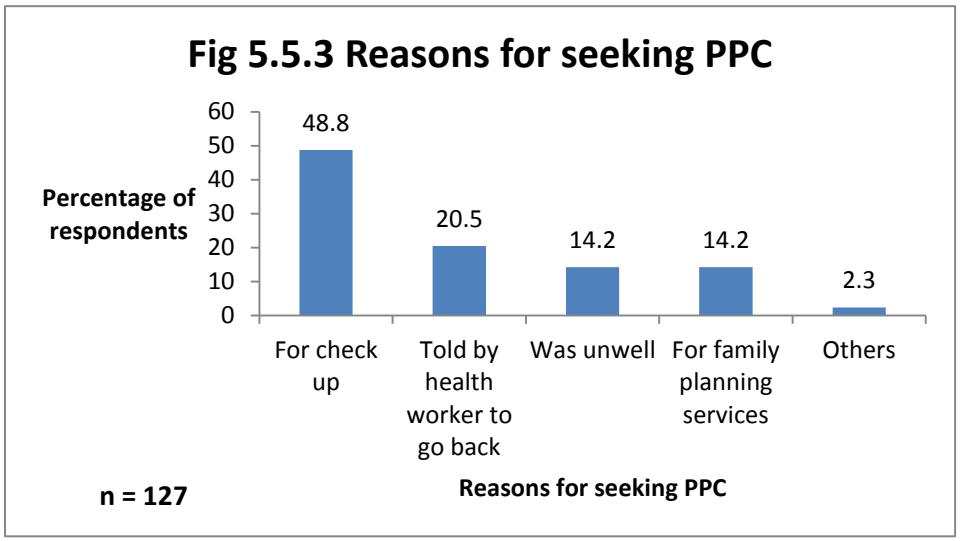
"I think that one is supposed to come back because you can never know which kind of problem you have, so you should come to be examined if you are okay" Participant FGD 3

The health workers reported that those who get return dates for their care, especially after the caesarian section, do come back for PPC.

"Well you see the mothers we get are actually, the post section mothers. From the hospital, they are actually advised to come here after two weeks, so after two weeks they come and we examine them" PNC Service provider, KII 5

Mothers sought PPC for various reasons with nearly half (48.8%) doing so for routine checkup and a further 20.5 % because the health care worker had asked them to as shown in fig 5.5.3. Other reasons for seeking PPC included being unwell and for family planning services.

Fig 5.5.3 Reasons for seeking PPC

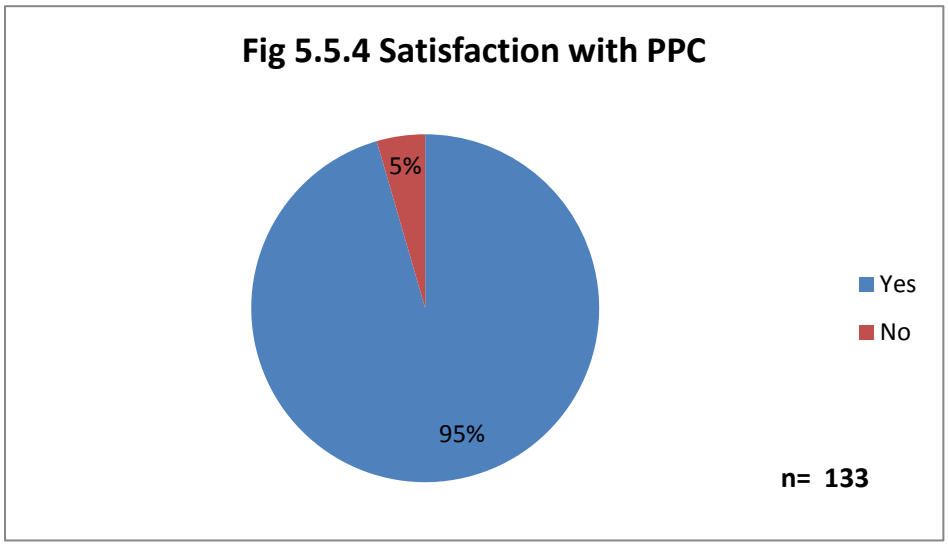


Satisfaction with PPC

Of those who sought PPC 95.5% were satisfied with the care they received as shown in fig 5.5.4. However during the FGDs, mothers reported not being satisfied with the service they received including the amount of information they received from health care workers.

" .... let's say if you go for family planning you are told you are supposed to use it and you have not been tested for pressure or anything, …… You are just given information on what you want to use so….When I came I expected to be told if you use pills this is how it goes, injectable this is how it goes but if you say pills they just give you pills even if you do not know the side effects. I saw they were in a hurry; there were many people so you are just given and you leave…They should be giving more counseling" Participants PNC FGD 3

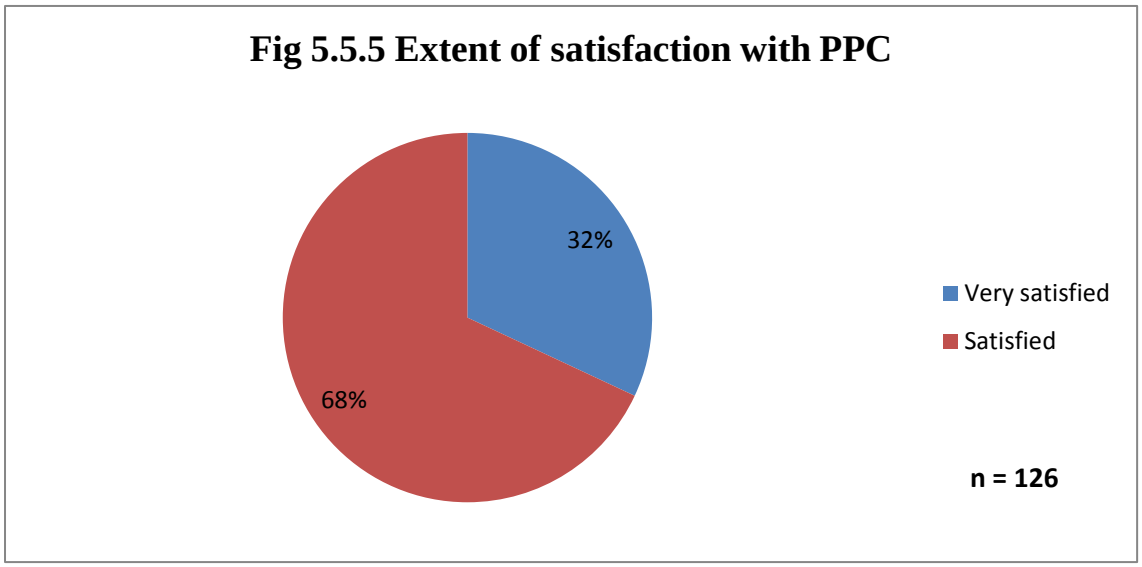
Fig 5.5.4 Satisfaction with PPC



Extent of satisfaction with PPC

Majority of the mothers who sought PPC reported to have been satisfied with the care they received as shown in fig 4.5.5. Various reasons such as being attended in good time, friendly staff among others were given for the satisfaction. However during the FGDs the mothers reported that sometimes the health workers looked tired and overworked so they felt there was no need of asking many questions.

Fig 5.5.5 Extent of satisfaction with PPC



Reasons for not seeking PPC

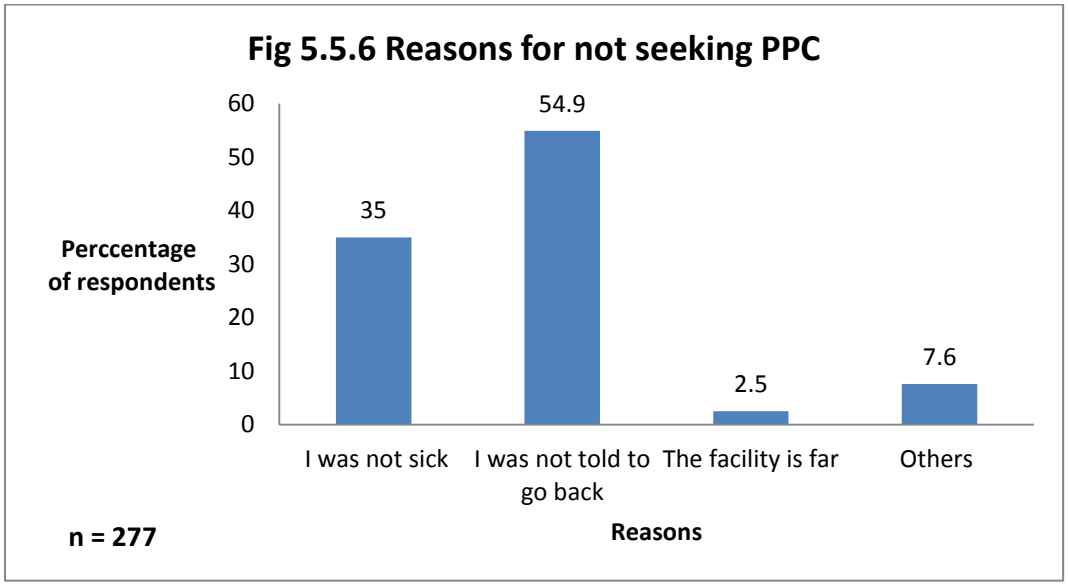
Various reasons were given for mothers not going for PPC as shown in fig 4.5.6 below. Most (54.9%) said they did not go because they were not told to go back while 35% did not go since they were not sick and 7% because the facility was far. The other reasons cited for not seeking PPC for other reasons included; poor services, forgetting, being busy, fear of HIV testing among others. Three clients reported having thought that the service was not available. During the focus group discussions mothers reported that the reasons why they were not keen on seeking PPC was lack of information on the PPC services, they felt that the health workers did not give them much information.

On the other hand some health workers felt that not enough focus (investment) has been put to promote the provision of postpartum care in the facilities and that they face many challenges in offering the service including, shortage of staff leading to overworking and inadequate infrastructure such as space and supplies. They pointed out that they had not been trained on PPC, did not have the guidelines and job aids and that some colleagues had negative attitude towards the clients. They

Some health workers felt the lack of awareness in the community was affecting the utilization of PPC because mothers were not aware of the need of PPC even when they felt okay. They felt it was therefore important to educate the community on PPC.

"There is need of health education; the community should be sensitized about post-partum care and especially about family planning" PNC Service Provider KII 1

5.5.6 Reasons for not seeking PPC



Majority of the respondents did not think that the PPC services as offered in the public facilities were meeting the needs of the youth. During the FGDs most mothers felt that adolescent pregnancies were on the rise but the services were not addressing the issue. They felt that adolescent mothers should be given education on preventing early unintended pregnancies, as well as counseling on how to live after the unintended child birth. They also felt that they should be given dignified care with no verbal abuse despite giving birth early and that they should be seen separately by providers if they are afraid to be served with the other mothers.

"In teaching on early pregnancies, they should be educated about it …The ones who get early pregnancies should come to the health center and get encouraged and be told that pregnancy is not the end of life, they should not be verbally abused that they are stupid for getting pregnant early …..Some nurses abuse them …Yes, if someone is a student she should be encouraged to deliver then go back to school so that they cannot be scared to come to the facility" Participants FGD 4

Health care providers reported that the system did not have focused care for the adolescent and that some health workers do criticize the adolescents and this might lead to discouraging them from seeking care.

5.6 Comparison between adolescents and older women.

Various characteristics were compared between the adolescents and the older women and statistical significance sought using the Chi square or the Fischer's Exact Test.

More than half of the adolescents (53.1%) had primary school level education or less compared to 39.8% of the older women, as illustrated in table 5.6.1. However this difference was not statistically significant, p = 0.140.

Table 5.6.1 Education levels; comparison between adolescents and older women

Level of Education	**Adolescent**	**Older women**	**Total**	**X^2**	**df**	**P Value**
	n (%)	**n (%)**	**n (%)**			
Primary or less	17 (53.1)	154 (39.8)	171 (100	2.175[a]	1	0.140
Secondary and above	15 (46.9)	233 (60.2)	248 (100)			
Total	32 (100)	387 (100)	419 (100)			

There was very little difference between the marital status of the adolescents and the older women with majority (84.8% of the adolescents and 86.3 of the older women) in both groups living in unions. This difference is not statistically significantly, p value = (0.816). This is illustrated Table 5.6.2.

Table 5.6.2 Marital status; adolescents and older women comparison

Marital Status	**Adolescent**	**Older women**	**Total**	**X^2**	**df**	**P Value**
	n (%)	**n (%)**	**N (%)**			
Not living in union	5 (15.2)	53 (13.7)	58 (100)	.054[a]	1	0.816
Living in union	28 (84.8)	334 (86.3)	362 (100)			
Total	33 (100)	387 (100)	420 (100)			

None of the adolescents was in formal employment compared to 25.1% of the older women who were employed as illustrated in table 5.6.3. The older women were more likely to be employed than the adolescents, p = 0.001.

Table 5.6.3 Employment status; adolescents and older women comparison

Employment status	**Adolescent**	**Older women**	**Total**	**X^2**	**df**	**P Value**
	n (%)	**n (%)**	**n (%)**			
Employed	0 (0)	96 (25.1)	96 (23.2)	10.116[a]	1	0.001
Not employed/self employed	31 (100)	287 (74.9)	318 (76.8)			
Total	31 (100)	383 (100.0)	414 (100.0)			

Majority of the respondents; 75.7% of the adolescents and to 72.4% of the older women reported having a monthly household income of K sh. 20 000 or less, as illustrated in table 4.6.4. Only one adolescent reported a household income of more than K sh. 100 000. The respondents were categorized into those with an income of up to Ksh.5000 and those with more. The difference in the house hold income between the two groups was not significant statistically (p =0.473).

Table 5.6.4 Household income; adolescents and older women comparison

Monthly Households income	Adolescents		Older Women		Total	
	(n=33)	(%)	(n=387)	(%)	(n=420)	(%)
Ksh. 5000 and Below	8	24.2	77	19.9	85	20.2
Ksh. 5001 to 20000	17	51.5	203	52.5	220	52.4
Ksh. 20001 to 50 000	0	0.0	44	11.4	44	10.5
Ksh. 50 001 to 100 000	0	0.0	4	1.0	4	1.0
Above Ksh. 100 000	1	3.0	2	0.5	3	0.7
Not certain	7	21.2	57	14.7	64	15.2

Majority of the adolescents (78.8%) did not have previous births compared to the older women (41.9%) who had no previous births. The older women were more likely to have a previous birth (p =0.000).

Table 5.6.5 Previous births; adolescent and older women comparison

Number of Previous births	Adolescent		Older women		Total		X^2	df	P Value
	N	(%)	n	(%)	N	(%)			
None	26	(78.8)	162	(41.9)	188	(44.8)	16.770[a]	1	0.000
One or more previous births	7	(21.2)	225	(58.1)	232	(55.2)			
Total	33	(100)	387	(100)	420	(100)			

Twelve per cent of the adolescents had 2 or more living children compared to the older women amongst who 56.9% had 2 or more living children as illustrated in table 5.6.6 below. The older women were likely to have two or more living children (p =0.000).

Table 5.6.6 Number of living children; adolescent and older women comparison

Number of living children	**Adolescent**		**Older women**		**Total**		**X^2**	**df**	**P Value**
	N	**%**	**n**	**%**	**N**	**%**			
One	29	87.9	166	43.1	195	46.7	24.470[a]	1	0.000
2 or more living children	4	12.1	219	56.9	223	55.3			
Total	33	100	385	100	418	100			

The majority of the older women (69.9%) had made the recommended 4 or more visits as compared to the 60% of the adolescents who had made a similar number of visits. However this difference was not statistically significant, p = 0.258 as illustrated in table.

Table 5.6.7 ANC visits; adolescents and older women comparison

No of ANC visits	Adolescent		Older women		Total		X^2	df	P Value
	n	(%)	n	(%)	N	%			
1-3 visits	12	(40)	115	(30.1)	127	(30.8)	1.277[a]	1	0.258
4 or more visits	18	(60)	267	(69.9)	285	(69.2)			
Total	30	(100)	387	(100)	420	(100)			

Over 90% of the older women delivered in the facility compared to 81.3% of the adolescents. The adolescents were less likely to have delivered their current baby in a health facility (Fisher's Exact p= 0.041) as presented in table 5.6.8.

Table 5.6.8 Delivery place; adolescent and older women comparison

Place of delivery	Adolescent		Older women		Total		F^2	Df	P Value
	n	%	n	%	N	%			
Facility	26	81.3	355	92.4	381	91.6	4.807[a]	1	0.041
Home	6	18.8	29	7.6	35	8.4			
Total	32	100	387	100	416	100			

Ten percent of the adolescents delivered by caesarian section compared to 11.7% of the older women. However this difference was not significant statistically, p = 0.781 as shown in table 5.6.9.

Table 5.6.9 delivery mode; comparison between adolescents and older women

Delivery mode	Adolescent		Older women		Total		X^2	df	P Value
	n	%	n	%	n	%			
Vaginal	27	90	340	88.3	367	88.4	.078[a]	1	0.781
Caesarian section	3	10	45	11.7	48	11.6			
Total	30	100	385	100	415	100			

Forty point seven per cent of the adolescent stayed in the hospital for only one day after delivery of their babies as compared to 43.4% of the older women who stayed for a similar period, this difference is not statistically significant, p = 0.787 as shown in table 4.6.11.

Table 5.6.10 Hospital stay; comparison of adolescents and the older women

Duration of hospital stay	Adolescent		Older women		Total		X^2	df	P Value
	N	%	N	%	n	%			
One day	11	40.7	155	43.4	166	43.2	.073[a]	1	.787
Two or more days	16	59.3	202	56.6	218	56.8			
Total	**27**	100	387	100	420	100			

Among the adolescents, 34.4% sought PPC compared to 32.3% of the older women who sought PPC as illustrated in table 4.6.12 below. This difference is not statistically significant p=0.809

Table 5.6.11 seeking PNC; Comparison between the adolescents and the older women

	Sought post- partum care						**X^2**	**df**	**P Value**
	Yes		**No**		**Total**				
	n	**%**	**n**	**%**	**n**	**%**			
Adolescent	11	34.4	21	65.6	32	100	.058[a]	1	.809
Older women	124	32.3	260	67.7	384	100.0			
Total		135	32.5	281	67.5	416			

5.7: Association of maternal characteristics with seeking postpartum care

Various maternal characteristics including the socio-demographic and clinical characteristics were analyzed to establish if there was association with seeking PPC.

To establish the association of seeking PPC and education level analysis was done for those with primary school level education or less against those with secondary school level or more. Of those with primary school level education or less 28.4% sought PPC compared to 35% who sought PPC among those with secondary school level as shown in table 5.7.1 below. This difference is not statistically significant, p = 0.160.

Table 5.7:1 Association between education level and seeking postpartum care

Education	**Sought post- partum care**						**X^2**	**df**	**P Value (95% CI)**
	Yes		**No**		**Total**				
	n	**%**	**n**	**%**	**n**	**%**			
Primary or less	48	28.4	121	71.6	169	100	1.970[a]	1	.160
Secondary and above	86	35.0	160	65.0	246	100.0			
Total	134	32.2	281	67.7	415	100			

Categorizing was done for those with secondary school level education or less and college level and above. Of those with secondary school level education or less 29.9% sought PPC compared to 44.3% who sought PPC among those with college level education and above as shown in table 5.7.2**.** Those with college education level were more likely to seek PPC, p = 0.019.

Table 5.7.2 Association between education level and seeking postpartum care

Level of Education	**Sought post- partum care**						**X^2**	**df**	**P Value**
	Yes		**No**		**Total**				
	n	**%**	**n**	**%**	**n**	**%**			
Secondary or less	103	29.9	242	70.1	345	100	5.543[a]	1	.019
college and above	31	44.3	39	55.7	70	100			
Total	134	32.2	281	67.7	415	100			

Majority of the respondents (86%) we living in unions and of those living in unions 32.1% sought PPC compared to 34.5% of those not in unions. This difference is not statistically significant, p =0.722 as shown in table 5.7.3.

Table 5.7.3 Association between marital status and seeking postpartum care

Marital status	Sought post- partum care						X^2	df	P Value (95% CI)
	Yes		No		Total				
	N	%	N	%	N	%			
Not living in unions	20	34.5	38	65.5	58	100	.127[a]	1	.722
Living in unions	115	32.1	243	67.9	358	100.0			
Total	135	32.5	281	67.5	416	100			

Of those in formal employment 35.1% sought PPC compared to 32% of those not employed or in self-employment as shown in table 4.7.4. This difference is not statistically significant.

Table 5.7.4 Association between employment status and seeking postpartum care

Employment status	Sought post- partum care				Total		X^2	df	P Value (95% CI)
	Yes		No						
	n	%	n	%	N	%			
Employed	33	35.1	61	64.9	94	100	.326[a]	1	.568
Not employed/ self employed	101	32.0	215	68.0	316	100			
Total	134	32.7	276	67.3	410	100			

Categorization was done for those with income of up to Ksh 5000 and those with higher than Ksh 5000. Thirty eight percent of those with an income of up to Ksh 5 000 sought PPC compared to 29.4 % of those with income higher than Ksh 5 000. This difference was not significant statistically, p = 0.133 as shown in table 5.7.5.1.

Table 5.7.5.1 Association income and seeking postpartum care

Monthly income	**Sought post- partum care**						**X^2**	**df**	**P Value (95% CI)**
	Yes		**No**		**Total**				
	n	**%**	**n**	**%**	**n**	**%**			
Up to Sh5000	32	38.1	52	61.9	84	100	2.262[a]	1	.133
Over Sh5000	79	29.4	190	70.6	269	100			
Total	111	31.4	242	68.6	253	100.0			

Categorization was also done for those with a monthly household income of Ksh. 20 000 and those with higher than Ksh. 20000 income. Of those with income of up to Ksh. 20000, 30.8% sought PPC compared to 35.3 % of those with a higher income. The difference was not significant statistically, P = 0.522, as shown in table 4.7.5.2.

Table 5.7.5.2 Association income and seeking postpartum care

Monthly income	**Sought post- partum care**						X^2	df	P Value (95% CI)
	Yes		**No**		**Total**				
	n	**%**	**n**	**%**	**n**	**%**			
Up to K Sh 20,000	93	30.8	209	69.2	302	100	.410[a]	1	.522
Over Sh20,000	18	35.3	33	64.7	51	100			
Total	111	31.4	242	68.6	353	100			

Of those living within 1 Km of the facility 32.9% sought PPC as compared to 32.5% of those living further than 2 Km who sought PPC. This difference was not statistically significant, p = 0.928 as illustrated in table 5.7.6.1.

Table 5.7.6.1 Association between distance to the facility and seeking postpartum care

Distance to the facility	**Sought post- partum care**						**X^2**	**df**	**P Value (95% CI)**
	Yes		**No**		**Total**				
	n	**%**	**N**	**%**	**n**	**%**			
1 Km	49	32.9	100	67.1	149	100	.008[a]	1	.928
2 Km or more	86	32.5	179	67.5	265	100.0			
Total		135	32.6	279	67.4	414			

Of those living within 5 Km of the facility 32.3% sought PPC as compared to 37.5% of those living further than 5 Km who sought PPC. This difference was not statistically significant p = 0.598.

Table 5.7.6.2 Association between distance to the facility and seeking postpartum care

Distance to the facility	**Sought post- partum care**						**X^2**	**df**	**P Value (95% CI)**
	Yes		**No**		**Total**				
	n	**%**	**n**	**%**	**n**	**%**			
Up to 5 km	126	32.3	264	67.7	390	100	.277a	1	.598
More than 5 km	9	37.5	15	62.5	24	100.0			
Total	135	32.6	279	67.4	414	100			

Of those with no previous births 30.8% sought PPC compared to 33.8 % of those with previous births. This difference was not statistically significant, p = 0.522 as shown in table 5.7.7.

Table 5.7.7 Association between the number of previous births and seeking postpartum care

Previous births	Sought post- partum care						X^2	df	P Value (95% CI)
	Yes		No		Total				
	n	%	n	%	n	%			
None	57	30.8	128	69.2	185	100	.409[a]	1	.522
One or more	78	33.8	153	66.2	231	100.0			
Total	135	32.5	281	67.5	416	100.0			

Among those with one living child 30.2% sought PPC compared to 33.8% of those with two or more children. This difference was not statistically significant, p = 0.437 as shown in table 4.7.8.

Table 5.7.8 Association between the number of living children and seeking postpartum care

Number of living children	Sought post- partum care						X^2	df	P Value (95% CI)
	Yes		No		Total				
	n	%	n	%	n	%			
One	58	30.2	134	69.8	192	100	.604[a]	1	.437
2 or more	75	33.8	147	66.2	222	100.0			
Total	133	32.1	281	67.9	414	100.0			

Of those who stayed in the hospital for one day after delivery, 28.7% sought PPC compared to 37.5% of those who stayed for 2 or more days as shown in table 4.7.9.1. This difference is not statistically significant.

Table 5.7.9.1 Association between the duration of hospital stay and seeking postpartum care

Duration of hospital stay	**Sought post- partum care**						**X^2**	**df**	**P Value (95% CI)**
	Yes		**No**		**Total**				
	n	**%**	**n**	**%**	**n**	**%**			
One day	47	28.7	117	71.3	164	100	3.262[a]	1	.071
2 or more	81	37.5	135	62.5	216	100.0			
Total	128	33.7	252	66.3	380	100			

Categorization was also done for those who stayed for 1 to 2 days versus those who stayed for 3 or more days. Among those who stayed for 1 to 2 days, 28.7% sought PPC compared to 47.5% of those who had stayed for 3 or more days as shown in table 4.7.9.2 below. This difference was statistically significant, p = 0.001. Those who stayed in the hospital for 3 or more days were more likely to seek PPC.

Table 5.7.9.2 Association between the duration of hospital stay and seeking postpartum care

Hospital stay in days	Sought post- partum care						X^2	df	P Value (95% CI)
	Yes		No		Total				
	n	%	n	%	N	%			
1 to 2	80	28.7	199	71.3	279	100	11.797[a]	1	.001
3 or more	48	47.5	53	52.5	101	100			
Total	128	33.7	253	66.3	380	100			

Of those who delivered in the facilities and were given return date (specifying when they are to come back for PPC), 61% sought PPC compared to 19.2% of those who were not given return date. This difference was significant statistically, p = 0.000. This is shown in table 5.7.1. Those who were given return dates were more likely to seek PPC.

Table 5.7.10 Association between being given a return date and seeking postpartum care

Return date given	Sought post- partum care						X^2	df	P Value (95%CI)
	Yes		No		Total				
	N	%	N	%	N	%			
Yes	80	61.5	50	38.5	130	100	69.225[a]	1	.000
No	49	19.2	206	80.8	255	100.0			
Total	129	33.5	256	66.5	385	100			

Among those who attended ANC visits during the pregnancy of the current baby, 32.4% sought PPC compared to 25% of those who did not attend ANC as shown in table 5.7.11. This is difference is not statistically significant, p= 0.610.

Table 5.7.11 Association between ANC attendance and seeking postpartum care

ANC attendance	**Sought post- partum care**						**P Value* (95% CI)**
	Yes		**No**		**Total**		
	n	**%**	**n**	**%**	**n**	**%**	0.610
Yes	131	32.4	273	67.6	404	100	
No	1	25	3	75	4	100	
Total	132	32.4	276	67.6	408	100	

*** Fisher's Exact Test**

Among those who made 1 to 3 ANC visits during the pregnancy of the current baby, 24.8% sought PPC compared to 35.7% of those who attended 4 or more times as shown in table 5.7.12 below. This is difference is statistically significant, P= 0.030

Table 5.7.12 Association between the number of ANC visits made and seeking postpartum care

	Number of ANC visits	**Sought post- partum care**						**X^2**	**df**	**P Value (95% CI)**
		Yes		**No**		**Total**				
		N	**%**	**n**	**%**	**n**	**%**			
	1-3 visits	31	24.8	94	75.2	125	100	4.697[a]	1	.030
	4 or more	101	35.7	182	64.3	283	100.0			
	Total	132	32.4	276	67.6	408	100.0			

Of those who delivered in the facility 34% sought PPC compared to 20% of those who delivered at home. This difference is not statistically significant, p = 0.93 as shown in table 4.7.13.

Table 5.7.13 Association between the place of delivery and seeking postpartum care

	Sought post- partum care						**X^2**	**df**	**P Value (95% CI)**
	Yes		**No**		**Total**				
Place of delivery	n	**%**	**n**	**%**	**n**	**%**			
Facility	128	34.0	249	66.0	377	100.0	2.830[a]	1	.093
Home	7	20.0	28	80.0	35	100.0			
Total	135	32.8	277	67.2	412	100.0			

Majority (58.3%) of those who underwent caesarian section sought PPC as compared to 28.9% of those who delivered vaginally. This difference is statistically significant, p = 0.000. Those who underwent caesarian sections were more likely to seek PPC.

Table 5.7.14 Association between the mode of delivery and seeking PPC

Delivery mode	Sought post- partum care						X^2	df	P Value (95% CI)
	Yes		No		Total				
	n	%	n	%	n	%			
Vaginal	105	28.9	258	71.1	363	100	16.750[a]	1	0.000
Caesarean	28	58.3	20	41.7	48	100.0			
Total	133	32.4	278	67.6	411	100			

Of the mothers who developed complications during delivery or soon after**,** 50 % sought PPC compared to 29.8 of those who did not have any complications. This difference is statistically significant, p = 0.006 as shown in the table below. Those who had complications were more likely to seek PPC.

Table 5.7.15 Association between maternal complications and seeking PPC

Maternal complications	Sought post- partum care						X^2	df	P Value (95% CI)
	Yes		No		Total				
	N	%	n	%	n	%			
Yes	23	50	23	50	46	100	7.614[a]	1	.006
No	108	29.8	254	70.2	362	100.0			
Total	131	32.1	277	67.9	408	100			

Of the mothers whose babies had complications soon during delivery or soon after 37.5% had complications compared to 31.8% of those whose babies had no complications. This difference is not statistically significant, p = 0.504 as shown in table 5.7.16.

Table 5.7.16 Association between babies having complications and seeking PPC

Baby had complications	**Sought post- partum care**						**X^2**	**df**	**P Value (95% CI)**
	Yes		**No**		**Total**				
	N	**%**	**n**	**%**	**n**	**%**			
Yes	12	37.5	20	62.5	32	100	.446[a]	1	.504
No	121	31.8	260	68.2	381	100			
Total	133	32.2	280	67.8	413	100			

Of the mothers who felt comfortable when seeking ANC services, 31.7% sought PPC compared to 40% of those who did not feel comfortable as shown in table 4.7.17. This difference is not statistically significant, p = 0.438.

Table 5.7.17 Association between comfort during ANC and seeking PPC

Felt comfortable seeking ANC	**Sought post- partum care**						**X^2**	**df**	**P Value (95% CI)**
	Yes		**No**		**Total**				
	n	**%**	**n**	**%**	**n**	**%**			
Yes	123	31.7	265	68.3	388	100	.601[a]	1	.438
No	8	40	12	60	20	100.0			
Total	131	32.1	277	67.9	408	100			

Of the mothers who felt comfortable when seeking delivery services, 31.9% sought PPC compared to 30.8% of those who did not feel comfortable as shown in table 5.7.18. This difference is not statistically significant, p = 0.885.

Table 5.7.18 Association between comfort during delivery and seeking PPC

Felt comfortable seeking delivery services	**Sought post- partum care**						**X^2**	**df**	**P Value (95% CI)**
	Yes		**No**		**Total**				
	n	**%**	**n**	**%**	**n**	**%**			
Yes	112	31.9	239	68.1	351	100	.021[a]	1	.885
No	12	30.8	27	69.2	39	100			
Total	124	31.8	266	68.2	390	100			

Of the mothers who felt discriminated against when seeking ANC services, 27.6% sought PPC compared to 33.2% of those who did not feel discriminated against as shown in table 5.7.19. This difference is not statistically significant, p = 0.532.

Table 5.7.19 Association between discrimination and seeking PPC

Felt discriminated during ANC	Sought post- partum care						X^2	df	P Value (95% CI)
	Yes		No		Total				
	n	%	n	%	n	%			
Yes	8	27.6	21	72.4	29	100	.391[a]	1	.532
No	126	33.2	253	66.8	379	100.0			
Total	134	32.8	274	67.2	408	100			

Of the mothers who felt discriminated against when seeking delivery services, 44.4% sought PPC compared to 55.6% who did not seek PPC while 31.6% of those who did not feel discriminated sought PPC as shown in table 4.7.20. This difference is not statistically significant, p = 0. .118.

Table 5.7.20 Association between discrimination during delivery and seeking PPC

Felt discriminated when seeking delivery services	Sought post- partum care						X^2	df	P Value (95% CI)
	Yes		No		Total				
	n	%	n	%	N	%			
Yes	16	44.4	20	55.6	36	100	2.438[a]	1	.118
No	110	31.6	238	68.4	348	100.0			
Total	126	32.8	258	67.2	384	100			

5.8 Independent predictors of seeking postpartum care

Multivariable analysis was done for various factors using the logistic regression model to determine if they were independent predictors of seeking PPC**.**

None of the socio-demographic characteristics was found to be significantly associated with seeking post-partum care as shown in table 4.8.1.

Table 5.8.1 Socio-demographic characteristics as independent predictors of seeking PPC

Characteristics	slope co-efficient	std error of the estimate	test statistic	df	P value	Odds Ratio	95% C.I. Lower	95% C.I. Upper
Being an adolescent	.531	.533	.993	1	.319	1.701	.598	4.835
Being employed	-.272	.268	1.031	1	.310	.762	.451	1.288
Income level	-.432	.284	2.317	1	.128	.649	.372	1.132
Education level	.334	.250	1.783	1	.182	1.397	.855	2.283
Marital status	-.190	.351	.293	1	.588	.827	.415	1.646
Constant	.131	.708	.034	1	.853	1.140		

Among the health system factors, being given a return date for post-partum care was found to be significantly associated with seeking post-partum care. p = 0.000, OR = 0.132 95% CI (.077, .226) as shown in table 5.8.2.

Table 5.8.2 Health system factors as independent predictors of seeking PPC

characteristics	slope co-efficient	std error of the estimate	test statistic	df	P value	Odds Ratio	95% C.I. Lower	95% C.I. Upper
Distance to the facility	.146	.281	.271	1	.603	1.158	.667	2.010
Return date given	-2.023	.273	55.131	1	**.000**	.132	.077	.226
Feeling comfortable during ANC	.362	.614	.348	1	.555	1.437	.431	4.787
Feeling comfortable during delivery	-.397	.438	.823	1	.364	.672	.285	1.586
Feeling discriminated during delivery	-.461	.444	1.079	1	.299	.631	.264	1.505
Having received family support	.805	.623	1.670	1	.196	2.236	.660	7.580
Constant	2.254	.799	7.952	1	.005	9.527		

The independent predictors of seeking post-partum care among the clinical characteristics were; the number of ANC visits made, p= .018 OR (95% CI) =1.9201 (.117, 3.299), whether the mother had a complication or not around delivery p = 034, OR = .464 95% CI (.228, .943) and the delivery mode p = .001, OR (95%CI) =3.173 (1.590, 6.331). This is illustrated in table 4.8.3.

Table 5.8.3 Clinical characteristics as independent predictors of seeking PPC

Characteristic	slope co-efficient	std error of the estimate	test statistic	df	P value	Odds Ratio	95% C.I. Lower	95% C.I. Upper
Previous births	.377	.698	.292	1	.589	1.458	.371	5.721
Living children	.062	.691	.008	1	.928	1.064	.275	4.126
Duration(1)	.340	.257	1.750	1	.186	1.405	.849	2.323
Number of ANC visits	.652	.276	5.574	1	**.018**	1.920	1.117	3.299
Mothers complications	-.768	.362	4.506	1	**.034**	.464	.228	.943
Baby's complications	.051	.425	.014	1	.905	1.052	.457	2.420
Delivery mode	1.155	.352	10.735	1	**.001**	3.173	1.590	6.331
Constant	-.691	.369	3.512	1	.061	.501		

5.9: **Independent predictors of seeking postpartum care among the adolescents**

None of the socio-demographic characteristics were independent predictors of seeking post-partum care among the adolescents as demonstrated in table 4.9.1.

Table 5.9.1 adolescents Socio-demo characteristics as independent predictors of seeking PPC

characteristics	slope co-efficient	std error of the estimate	test statistic	df	P value	Odds Ratio	95% C.I. Lower	95% C.I. Upper
Had family support	.271	1.425	.036	1	.849	1.312	.080	21.435
Income level	.219	1.362	.026	1	.873	1.244	.086	17.953
Education level	.937	1.263	.551	1	.458	2.553	.215	30.336
Marital status	18.976	19156.029	9.813E-07	1	.999	1.7428	.000	
Constant	19.456	21714.990	8.028E-07	1	.999	2.8188		

None of the health system factors was found to be an independent predictor of seeking post-partum care among the adolescents as shown in table 4.9.2.

Table 5.9.2 Health system factors as independent predictors of seeking PPC among adolescents

characteristics	slope co-efficient	std error of the estimate	test statistic	df	P value	Odds Ratio	95% C.I. Lower	95% C.I. Upper
Return date given	-1.511	1.327	1.296	1	.255	.221	.016	2.974
Felt discriminated against	.858	1.572	.298	1	.585	2.359	.108	51.384
Received health information	-1.050	1.526	.473	1	.492	.350	.018	6.969
Distance to the facility	.594	1.219	.237	1	.626	1.811	.166	19.762
Constant	1.600	2.038	.616	1	.432	4.954		

None of the clinical characteristics was a predictor in seeking postpartum care among the adolescents as shown in table 5.9.3.

Table 5.9.3 Clinical characteristics as independent predictors of seeking postpartum care among the adolescents

characteristics	slope co-efficient	std error of the estimate	test statistic	df	P value	Odds Ratio	95% C.I. Lower	95% C.I. Upper
Delivery mode	1.319	1.519	.754	1	.385	3.740	.191	73.384
Living children	-.698	2.073	.113	1	.736	.497	.009	28.940
Hospital stay	1.175	1.304	.812	1	.368	3.239	.251	41.756
Number of ANC Visits(1)	-.409	1.027	.159	1	.690	.664	.089	4.973
Had complications	-.659	2.052	.103	1	.748	.518	.009	28.862
Previous births	1.275	1.702	.561	1	.454	3.579	.127	100.564
Constant	-.961	1.927	.248	1	.618	.383		

5.10: Independent predictors of seeking post-partum care among the older women

None of the socio-demographic characteristics was an independent predictor of seeking postpartum care among the older women as shown in table 4.10.1.

Table 5.10.1 Older women's socio-demographic characteristics as independent predictors of seeking PPC

Socio-demographic characteristics	slope co-efficient	std error of the estimate	test statistic	df	P value	Odds Ratio	95% C.I. Lower	95% C.I. Upper
Employed	-.275	.268	1.058	1	.304	.759	.449	1.283
Income level	-.493	.292	2.856	1	.091	.611	.345	1.082
Education level	.260	.256	1.034	1	.309	1.298	.785	2.144
Marital status	-.281	.357	.619	1	.431	.755	.375	1.520
Family support	.564	.682	.685	1	.408	1.758	.462	6.690
Constant	.329	.750	.193	1	.661	1.390		

Being given a return date for post -partum care, p=.000 OR = .125 95% CI (.071, .218) and having received health information p = .05, OR = .575 95% CI (.330, 1.002) were found to be independent predictors of seeking post-partum care among the older women as shown in table 5.10.2.

Table 5.10.2 Health system factors as independent predictors of seeking PPC among the older women

characteristics	slope co-efficient	std error of the estimate	test statistic	df	P value	Odds Ratio	95% C.I. Lower	95% C.I. Upper
Return date given	-2.081	.284	53.546	1	**.000**	.125	.071	.218
Felt comfortable seeking ANC	.108	.659	.027	1	.870	1.114	.306	4.051
Felt comfortable seeking delivery services	-.274	.467	.346	1	.557	.760	.305	1.897
Felt discriminated during delivery	-.312	.459	.462	1	.496	.732	.297	1.800
Received health information	-.554	.284	3.815	1	**.05**	.575	.330	1.002
Distance to the facility	.118	.291	.165	1	.684	1.126	.636	1.992
Constant	2.425	.848	8.174	1	.004	11.302		

The delivery mode; p = .001, OR = 3.197, 95% CI (1.560,6.551) number of ANC visits made; p = .011, OR = 2.094, 95% CI (1.184, 3.702) and mother having had complications around delivery time; p = 3.046, OR = .474, 95% CI (.227, .987) were found to be independent predictors of seeking post-partum care among the older women as shown in table 5.10.3.

Table 5.10.3 Clinical characteristics as independent predictors of seeking of seeking PPC among older women

characteristics	slope co-efficient	std error of the estimate	test statistic	df	P value	Odds Ratio	95% C.I. Lower	95% C.I. Upper
Delivery mode	1.162	.366	10.086	1	**.001**	3.197	1.560	6.551
Living children	.210	.806	.068	1	.794	1.234	.254	5.992
Duration of hospital	.302	.266	1.291	1	.256	1.353	.803	2.279
Number of ANC Visits	.739	.291	6.463	1	**.011**	2.094	1.184	3.702
Mothers complications	-.747	.375	3.975	1	**.046**	.474	.227	.987
Baby's complications	-.042	.437	.009	1	.923	.959	.407	2.259
Previous births	.248	.809	.094	1	.760	1.281	.262	6.255
Constant	-.697	.381	3.340	1	.068	.498		

Chapter 6: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

6.1 Discussion

6.1.1 The Socio-demographic characteristics of the respondents

Of all the respondents interviewed in this study only 8% were adolescents. This is much lower than the findings of KDHS 2008/09 and KDHS 2014 during which period a higher proportion of adolescents had delivered[11,12]. This may mean that the adolescents are less likely to seek MCH services, compared to the older mothers, since the sampling was from mothers of infants seeking services in the MCH unlike the KDHS which is a community survey. Other studies including analysis of DHS data have found that adolescents are less likely to seek maternal health services [37,57]. However the findings are unlike what Amina found on analyzing data from Uganda Demographic and Health Survey (UDHS) 2006; that younger mothers were more likely to utilize post-partum care in Uganda[28]. The lower proportion of adolescents in this study might have been contributed to the fact that the study was done in an urban area where there are less adolescent pregnancies compared to the rural areas. Pregnancies by older mothers are also associated with higher complication rates. It is notable that those aged 35 years and above were lower in this study than in the KDHS 08/09. However this study does not tell us whether this is because the percentage of women aged 35 and above who are pregnant is indeed lower in the area or it is because they are less likely to seek postpartum care.

Majority of the participants had secondary school education followed by primary school education with only a small proportion having attained college level education and very few having no education. This is unlike in KDHS 2008/09 where majority of the mothers had primary school education with only close to a quarter having secondary education and above

and a significant number having no education. The education level is also higher than in the KDHS 2014. This might be due to the fact that Nairobi County where the study was done is an urban area where education levels tend to be higher than rural areas while the KDHS was a nationwide survey. On further analysis it was notable that the adolescents had either primary or secondary education with none having no education. This may point to the increasing literacy, levels in the country. However none of the adolescents had attained college education. This could be due to the fact that this is a younger age or because those in college were less likely to be mothers. This demonstrates the well-known fact that retaining girls in school delays their child bearing, adolescent pregnancies contribute to girls dropping out of school and that low education levels are closely associated with early childbearing[9,10].

Majority of the mothers, including adolescents, were either married or cohabiting. These findings agree with those of other studies and point to the fact that the mothers who marry early get babies at an early age[9, 11]. Majority of the study participants were unemployed, with none of the adolescents being in any formal employment. This points to the fact that early (adolescent) pregnancies may interfere with opportunities of the girls to be empowered economically[9].

Almost all of the mothers were living within the WHO recommended distance to the facility of 5 kilometers and transport was not a problem. This is not surprising being in the urban center. This might explain the reason why distance from the facility was not a significant factor associated with seeking PPC in this study.

6.1.2 The Clinical characteristics of the respondents

Majority of the respondents had no previous birth or had only one previous one meaning they had one or two babies. These findings may be due to the falling fertility rates in the country

especially in the urban areas[11,49]. However it is notable that among the adolescents, some had already delivered severally. This means that these adolescents had had repeat pregnancies. The finding is similar to what has been reported that repeat adolescent pregnancies are common[34]. If these adolescents do not embrace family planning, the likelihood of them getting many more births is high since they are still young and therefore have many years within the reproductive age. This underscores the importance of adolescents receiving PPC during which they should be offered family planning services.

The reported caesarean section rate was within the recommended international rate of 10 to 15%[58]. Majority of the mothers reported having stayed in the hospital for 1 to 2 days after the delivery. This is most likely because majority had delivered vaginally and most mothers had no complications hence the short stay.

An overwhelming majority of the respondents reported to have attended ante natal clinic during the pregnancy for the current baby and some had attended the recommended 4 times or more. This is slightly above the national average and close to the urban average[12]. Those who delivered in a facility are slightly more than the reported average in urban areas in Kenya [11, 12].

6.1.3 Mothers experience while seeking services

Most mothers reported to have felt comfortable as they received maternal health services. However it is notable that the percentage of those who reported having felt comfortable during delivery care of the current baby is slightly lower than those who reported having felt comfortable while seeking the ANC services Similarly proportion of mothers who felt

discriminated against during delivery is slightly higher than the proportion that felt discriminated against during the ANC. Of those who sought PPC, majority reported to have been satisfied with the PPC services. Satisfaction by clients reflects a positive health worker altitude. This is unlike what has been reported in other studies about health workers having negative attitude and being rude[44, 45]. However during the FGDs the mothers reported that abuse was common especially on the young mothers by the health workers. During the individual interviews they might have wanted to please the investigator despite being reassured that there was no possibility of victimization.

Majority of the mothers were not given a return date (appointment) for post-partum care. Of those given return dates not all were asked to return after the recommended 1 to 2 weeks for the initial checkup. Thus the health workers are not implementing the PPC guidelines well. This suggests that the guidelines are not well disseminated and hence the health workers are not familiar with the recommended schedule. It could also be that they know the schedule but they are not motivated to implement it.

6.1.4 Utilization of Post-partum Care

In this study the proportion of those who sought postpartum care within six weeks post-delivery at least once was lower than what was reported in the KDHS 2008/09 and 2014 KDHS [11, 12]. This is true for both the adolescents and the older women. It is also lower than what was reported in Nepal (NDHS 2011) and Nigeria but it is comparable to what was reported in Bangladesh that only one-third of the young mothers had received postpartum care [59, 60].

However unlike the KDHS those who sought post-partum care in this study did so from health facilities hence received care from recognized providers. It is also notable that majority report to have received care within 1 to 2 weeks or 4 to 6 weeks and they went to the facility for this service, unlike in the KDHS where majority reported a post natal check within first 24 hours, most likely the check in the facility before discharge after delivery. If this study had explored those who received post-partum check before discharge after delivery, the proportion would most likely have been much higher. There is need for studies including KDHS to look out for whether mothers are receiving PPC within 48 hours when they deliver outside the facility and whether they come for the service within the other recommended times after discharge from the facility for those who deliver in facilities.

Reasons for seeking PPC mainly included routine check and having been told to do so by a health worker. This may point to the fact that when mothers have information that the service is important then they are likely to seek it. If health workers did more in explaining to the mothers the need of post-partum care and told them to return on a particular date, it is likely that many more would seek the care.

Notably most of the mothers who were interviewed including during the FGDs had skilled birth attendance but majority did not seek PPC. Reasons given for not seeking care were mainly because they were not sick as well as not being asked to go back by the health worker. This means that many mothers have not appreciated the role of PPC for promotion of their health as well as for prevention of possible ill health. During the focus group discussions, the mothers, reported that that most women do not seek post-partum care services (PPC) for their own benefit but seek post natal care (PNC) for their infants' sake. It appears that awareness of the importance of PPC in the community is low; many mothers had the perception that

only women who encounter problems should go for PPC. Most of them said that it is important for women to go for post-partum care services if they experience excessive bleeding or any other abnormal sign after delivery.

It is notable that in this study, nearly all the mothers had sought ANC services at least once during the pregnancy and an overwhelming majority had delivered in health facilities but only a third had sought post-partum care. It is also notable that almost all the respondents had taken their babies for post natal care with majority of them taking their babies for post natal care at 1-2 weeks and at 6 weeks. These are the same periods when the mothers are supposed to seek care for themselves as well. The high utilization of ANC, delivery and PNC (for the baby) services yet low utilization of postpartum care by the mothers may point to the fact that the importance of postpartum care has not been appreciated by the community.

6.1.5 Factors associated with Utilization of PPC

6.1.5.1. Association of socio-demographic factors with seeking PPC

The Social Demographic factors have been shown in various studies to have a bearing in the utilization of PPC. The woman's own occupation and ethnicity, the husband's socio-economic status, occupation and education and in some cases age were significantly associated with the utilization of postnatal care[28,29,59,60]. However in this study the woman's occupation was not significantly associated with seeking postpartum care ($p = 0.568$). Those with college education were more likely to seek PPC ($p = 0.019$) but there was no difference for those with primary and secondary education ($p = 0.160$). This might be because majority of mothers in this study had primary and secondary education, hence other factors had more significance in influencing the decision on whether to seek care or not. The household income was not significantly associated with seeking PPC ($P = 0.48$) in this study. This might

be because the public facilities where this study was done offer free PPC care and hence everyone can access the service regardless of their economic status. The age was not associated with seeking PPC; the difference between adolescents and older women in seeking care was not significant (p = 0.88), neither was there a significant difference across the other age categories. Similarly the Marital status is not associated with seeking PPC (p = 0.722).

In multivariable analysis none of the socio-demographic characteristics was found to be significantly associated with seeking post-partum care.

6.1.5.2 Association of clinical characteristics with seeking PPC

The delivery mode was significantly associated with seeking PPC (p = 0.001) and so was the duration of hospital stay after the delivery (p = 0.00) and mother having had complications during delivery (P = 0.006). Those who had undergone caesarean sections (C/S) were more likely to seek PPC compared to those who had a vaginal delivery. In multivariable analysis the mode of delivery was found to be an independent predictor of seeking care, P value = 0.001, OR = 3.173, 95% CI (1.59, 6.331). Those who undergo C/S are usually asked to go back to check if the wound was healing well. They are also likely to stay in the hospital longer compared to those who deliver normally. The finding is similar to other studies that have reported that women experiencing health problems appeared strongly motivated to seek postnatal care and is similar to what was found in Machackos and Nairobi[30] that puerperal disorders experienced by the mothers were the main factors influencing postpartum care services attendance'[29]. This may point to the possibility that many women and their families do not appreciate the need for PPC unless there is a health problem to be addressed. In this study multivariable analysis revealed that having complications was an independent predictor of seeking PPC, P = 0.034, OR = 0.464, 95% CI (0.228, 0.143).

Studies have reported parity, number of living children and having attended ANC as factors associated with seeking care [30,31]. However in this study these factors were not significantly associated with seeking PPC. It is not surprising that having attended ANC was not significantly associated with seeking PPC because almost all the mothers had attended ANC at least once. However those who had attended ANC 4 or more times were more likely to seek PPC compared to those who had attended less times (p = 0.03). Having sought ANC four or more times was a n independent predictor of seeking PPC; P = 0.018, OR = 1.92 95% CI (1.117, 3.299). This is consistent with other findings[29]. Those who attend ANC the four recommended times may be more positive on seeking health services.

6.1.5.3 Association between health system factors and seeking PPC

Some of the factors that have been associated with utilization of services in various studies is unavailability due to long distances and/or poor transport system[11,12]. In this study distance to the facility was not significantly associated with seeking postpartum care (p = 0.809). This might be because being in the urban area the distance to the facility is relatively short (majority within 5 kilometers). Even those who lived more than 5 kilometers from the health facility were not less likely to seek PPC (p = 0.598) probably because transport is available as reported during the FGDs.

6.1.5.4 Association between the health worker practices and seeking PPC

Being given a return date by the health worker was significantly associated with seeking PPC (p = 0.001). This may point to the fact that when mothers are given a specific return date by a health worker they are likely to take it seriously and attach importance to the appointment. When mothers are left to return of their own volition, they might not find it necessary to

return. During the FGDs this fact was retaliated. While some mothers indicated they had been given a return date and so they went for PPC during that return date, some mothers reported not to have been given a return date and so did not go back for PPC. In multivariable analysis using the logistic regression, being given a return date for post-partum care was found to be an independent predictor of seeking post-partum care p = 0.000 OR= 0.13, 95% CI (0.077, 0.226). This underlines the importance of the health workers giving a return date to the mothers who deliver at the health facility for their PPC.

The mothers had expressed concern that the health workers seemed tired and not ready for their questions. On the other hand some health workers felt the system was not ready for quality PPC services; this could affect their attitude and the way they deliver the PPC services to the mothers. Studies have reported rudeness by health workers, long waiting hours and negative provider altitude to be factors that discourage mothers from seeking PPC [44,45]. A study by Population Council in collaboration with Ministry of Health identified several challenges, the health workers were found to have inadequate knowledge of the policy and guidelines on postpartum care including the schedule[44]. This may explain why most of the mothers were not given a return date and of those given not all got for the correct return period.

Provision of information by the health workers to the mothers is one of the expected practices of the health workers. When the community does not have adequate information, they do not appreciate the importance of seeking PPC. This was demonstrated by the findings of a study in the western Kenya region that found that most community members' males and females alike thought that post-partum care was not necessary for women who had normal deliveries and had no complications. [44] When women have information on the important role of PPC in promoting health and preventing ill health, they are more likely to seek the service. In this

study the women who had received health information from the health workers were more likely to seek PPC; p = 0.005, OR= 0.575, 95% CI (0.330, 1.002). This is similar to what the study in Uganda found that having awareness on health was a significant factor in seeking PPC[29].

Unfortunately studies have pointed out that many mothers are not given adequate information on the postpartum period. In a certain study, mothers felt they were not well prepared to deal with the consequences of pregnancy and childbirth. They were dissatisfied with information they had received from the healthcare providers. In another study, new mothers would have liked to learn about how to take care of their babies health-care professionals instead of getting advice from family from the or friends. What the new mothers wanted to learn most was not adequately addressed[42]. In another study, health workers focussed mainly on medical issues and gave very little attention to the 'small' concerns the clients had[43]. Even in this study the health workers pointed out the important aspects of the PPC to mainly include medical attention rather than emotional support. During the FGDs the mothers indicated they would have appreciated more time to ask questions, they implied that they do not get enough information even when they make the effort to go for PPC. They also indicated that verbal abuse and harassment from providers especially on young mothers occurred and discouraged some from seeking care. The different opinion between mothers and nurses on the most important aspects of care could lead to perceived poor quality of post-partum care and discourage mothers from seeking care.

Despite an overwhelming majority of the mothers reporting having felt comfortable while seeking ANC and delivery services, this experience was not significantly associated with seeking PPC. Similarly not many mothers reported having been discriminated against by the

health workers and discrimination during ANC or delivery time was not significantly associated with seeking PPC. It is possible that the mothers were afraid of reporting these aspects during the individual interviews. However from the FGDs, it was clear that the community feels the quality of services is not good enough. Mothers reported not getting time to ask questions and being served in a manner suggesting that the health workers were too busy. Some mothers reported that there was fear of being mistreated or being forced to undergo mandatory HIV testing among some of them. All these factors could contribute to poor uptake of PPC.

6.1.6 Comparison between adolescents and older women

Various characteristics were compared between the adolescents and the older women, some differences were noted but for many characteristics there was no difference. Most notable is that there is no significant difference in seeking PPC between the adolescents and the older women, p = 809. This is surprising since various studies report that that the adolescents less likely to seek maternal health services. This might be due to the fact that not as many adolescents were interviewed as compared to the older women. The study design was systematic random and did not purposefully look out for adolescents to have a similar number for the comparison. There is need to do further studies where more adolescents will be included.

On the socio-demographic characteristics, the older women were more likely to be employed (p = 0.000). This may point to the fact that adolescents who have started child bearing early have less opportunity of getting formal employment. While there was no significant difference between the two groups as far as income below 5000 Kenya shillings is concerned, it is notable that only one adolescent reported to have a household income of over 20, 000 shillings. All the adolescents had either primary or secondary school education, none had

attained college level. This demonstrates the lost opportunity to pursue higher education by adolescents who start childbearing early [9, 10]. There was no significant difference between the two groups as far as the marital status was concerned (p = 0.816) as well as the distance to the facility (p = 0.755).

It is notable that the older women were more likely to deliver in the facilities than the adolescents; P=0.028, OR=0.35 95% CI (0.135, 0.929). This is worrying considering that skilled birth attendance is a key determinant of maternal and newborn outcomes. Adolescent pregnancies are at a higher risk of complications and hence need to be under skilled care[9, 10]. However there was no difference between the two groups as far as seeking ANC is concerned, P = 0.257. The older women were more likely to have previous births p = 0.000, OR=5.16, 95% CI (2.19, 12.18) and were more likely to have one or more living children. This is not surprising since the older women have had more years within the child bearing age.

There was no significant difference between the older women and the adolescents as far as the delivery mode is concerned (Fischer's exact test p = 1.000) and neither was there any significant difference in the duration of hospital stay. This means that among the respondents, even the younger adolescents who were mainly primigravida, were not more likely to deliver by caesarian section. Sometimes mothers avoid coming to hospital for deliveries due to fear of caesarian section.

6.1.7 Utilization of postpartum care and The Theory of Planned Behaviour

In this study, having complication was an independent predictor of seeking PPC. This is most likely because with complications there is likely to be a clear need for the PPC and a likely clear outcome. This points to the theory of planned behavior. When there is a perceived health problem, then the woman expects some positive outcome from PPC. When there is no complication the woman may not be clear about the outcome (benefit) of PPC and may therefore not be motivated to seek the service. It may therefore mean that when there was no complication, the mother regardless of these other factors did not see the need to seek PPC. The mothers who had delivered by caesarean section may have felt there was a need to be reviewed and went for PPC. Similarly if the return date was not given by the health worker, then the mother regardless of other factors may not have seen the need to seek PPC. This corresponds to the theory of planned behavior which supposes that the expected outcome determines the behavior. If not much benefit is expected then there is no motivation for the behavior.

The results of this study point to the fact that many mothers do not seek post-partum care because they did not appreciate the benefit. Most mothers reported they had not sought PPC because they were not sick or because they were not asked to go back. These reasons suggest that they did not attach much importance to the service. This fact is further demonstrated by the fact that an overwhelming majority of the mothers had taken their infants who they delivered for PNC. Infants get a clear benefit of growth monitoring and immunizations, the mothers hence make the effort to seek the service. It is important to note that in Kenya the PPC services and the PNC for infants are usually available in the same facility and in fact within the same unit at no charge or at a highly subsidized cost. It therefore appears that in

this population availability of PPC may not be the most important factor in increasing the utilization of PPC, but the perception of the importance of the service and the resulting benefit.

6.2: Conclusions

The utilization of post-partum care within the study population is low for both the adolescents and the older women.

Though having college education was found to be significantly associated with seeking PPC in bivariate analysis, none of the socio-demographic characteristics was an independent predictor of seeking PPC.

Clinical characteristics that were significantly associated with seeking PPC included, having undergone a caesarian section, having had complications during delivery or soon after, having attended ANC four or more times and having delivered in a facility.

The most important health system factors that were associated with seeking PPC included being given a return date for PPC by the health worker and receiving health information. The health system was not well prepared to offer PPC with clear gaps such as shortage of staff, space and supplies as well as health workers not being trained on PPC. These might have affected the health worker practices negatively. It was also clear that the mothers did not appreciate the importance of seeking PPC and this contributed to the low utilization of PPC.

Though there were some significant differences between the adolescents and older women in their socio-demographic and clinical characteristics, there was no significant difference between the factors associated with utilization of postpartum care between the two groups.

6.3: Recommendations

6.3.1 Policy implementation

1. The Ministry of Health and the County governments should explore ways of enhancing and enforcing positive health worker practices such as giving mothers information on PPC as well as giving mothers a return date at the appropriate time for their own checkup in order to improve utilization of Post-partum care.
2. The stake holders including the health workers and program implementers should lay special emphasis to reach out to the mothers whose clinical characteristics are not associated with seeking PPC to encourage them to seek PPC.
3. Stakeholders including the government and non-state actors need to invest in increasing the level of knowledge of the importance of Post-partum care both at the community level and among the health care providers.

6.3.2 Areas of further research

1. Researchers need to evaluate the health system readiness to support provision of Post-partum care and the quality of Post-partum care being offered in public health facilities.
2. There is need to evaluate further the level of utilization of PPC in other areas in Kenya and to evaluate possible factors that are associated with their seeking Post-partum care comparing the adolescents and older women.

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Appendix 1: Mothers Questionnaire

Questionnaire Serial number_____ Date____/____/2013

Enumerator's Name_____ Signature_____

Health facility _____

Facility level: level 4 ( ) level 3 ( ) level 2 ( )

Section 1: SOCIO- DEMOGRAPHIC INFORMATION

No.	Question		Coding Category	Skip to
Q1	Which year were you born?			
Q2	Which District do you reside?			
Q3	What is your marital status	1	Single	
		2	Married	
		3	Widowed	
		4	Separated	
		5	Divorced	
Q4	What is your highest level of education? **ONE RESPONSE ONLY**	1	No education	
		2	Adult education	
		3	Primary education	
		4	Secondary education	
		5	College certificate/	

			diploma	
		6	Bachelors degree	
		7	Masters degree	
Q5	What is your current occupation	1	Employed (formal)	
		2	Self employed	
		3	Casual job	
		4	unemployed	
		5	Other Please specify.	
Q6	What is your approximate household income in a month?	1	>5000	
		2	5001 to 10000	
		3	10001 to 15000	
		4	15001 to 20000	
		5	20001 and above	
			Not certain	
Q7	How far from this facility do you live	1.	Less than 1 KM	
		2.	1 to 5 KM	
		3.	More than 5 KM	

Section 2. Obstetric History.

No.	Question		Coding category	Skip to
Q8	How many previous births have you had?	1	none	Go to 10
		2	One	
		3	Two	
		4	Three	
		5	Four	
		6	five	
		7	Other, specify	
Q9	How many have survived to date?			
Q10	During this baby's pregnancy did you attend ANC	1.	yes	
		2.	No	Go to 13
Q11	Which facility did you attend ANC?			
Q12	How many visits did you make?	1.	One	
		2.	Two	
		3.	Three	
		4.	Four	
Q13	Where was this baby born, home or health facility? If a health facility give			

	the name			
Q14	What was your mode of delivery for this baby?	1.	normal	
		2.	caesarian	
Q15	How long did you stay in hospital on delivery?	1.	1 day	
		2.	2 days	
		3.	3 to5 days	
		4.	More than 5 days	
Q16	Were you given a return date for post partum care?	1.	Yes	
		2.	No	Go to 18a
Q17	You were told to return after how long?	1.	24 to 48 hours	
		2.	1 to 2 weeks	
		3.	6 weeks	
		4.	Others (specify)	
Q 18a	Did you have any complications during or soon after delivery	1.	Yes	
		2.	No	Go to 19a
Q 18b	Which complications did you have?			
Q 19a	Did your baby have any complications during or soon after delivery	1.	Yes	
		2.	No	Go to 20
Q19b	Which complication did your baby			

	have?			

Q20	Did your family support you during your pregnancy	1.	Yes	
		2.	No	
Q21	Did you feel comfortable seeking ANC and delivery services	1.	Yes	
		2.	No	
Q22a	Did you feel discriminated against by the health workers in any way?	1.	Yes	
		2.	No	Go to 23
Q22b	If so how?			

Section 2: PNC INFORMATION

No.	**Question**		**Coding category**	**Skip to**
Q23	Did you seek postnatal care after delivery of this baby?	1	yes	
		2	no	go to 30
Q24	After how long did you seek postpartum care?	1.	Within 4 hour	
		2.	Within 48 hours	
		3	Within 2 weeks	
		4	Within 6 weeks	

		5	Others , specify_____	
Q25	At what period/s have you sought PPC after delivery of this baby (Tick all the applicable)	1.	Within 4 hour	
		2.	24 to 48 hours	
		3	1 to 2 weeks	
		4	4 to 6 weeks	
		5	Others , specify_____	
Q26	Why did you seek postnatal care?	1.	For my check up	
		2.	For my baby's check up	
		3.	The health worker told me to go back	
		4.	Was unwell	
		5.	My baby was unwell	
		6.	Others specify	
Q27	To what extent were you satisfied with the PNC services you received the last visit? If applicable	1.	Very satisfied	
		2.	Satisfied	
		3.	Not satisfied	
		4.	Very unsatisfied	
		5.	Others specify	
Q28	Give reasons for satisfaction	1	Attended in good time	
		2	Friendly staff	

		3.	Got good care	
		4.	Others specify	
Q29	Give reasons why you were not satisfied.	1	Long waiting period	
		2	unfriendly staff	
		3.	Care not good	
		4.	Others specify	
Q30	Why did you not seek PNC?	1.	I was not sick	
		2.	I was not told to go back	
		3.	The facility is far	
		4.	Poor services in the facility	
		5.	Others specify	
Q31	Have you ever taken your baby for immunization	1.	yes	
		2.	No	
Q32	How many times have taken your baby for immunization since you left the hospital after delivery?	1.	One	
		2.	Two	
		3.	Three	
		4.	Four	
Q33	When the baby was immunized did the health worker ask whether you had any health problems?	1.	yes	
		2.	no	

Q34	When the baby was immunized did the health worker examine you?	1.	yes	
		2.	no	
Q 35	When the baby was immunized did the health worker give you information on your health	1.	yes	
		2.	no	

Q36	Did your family support you during the post partum period?	1.	Yes	
		2.	No	
Q37	Did you feel comfortable seeking post partum care services	1.	Yes	
		2.	No	
Q38a	Did you feel discriminated against by the health workers in any way?	1.	Yes	
		2.	No	Go to 39a
Q 38b	If so how?			
Q 39a	Do you think the services are meeting the needs of the youths?	1.	Yes	
		2.	No	
Q 39b	How can the services be improved?			

End. Thank you for your responses.

Appendix 2: Consent Form for mothers.

Research title:

Factors Associated with Utilization of Postpartum in Dagoretti District, Nairobi County; A comparison between adolescents and older women**.**

Introduction:

My name is Shiphrah Kuria. I am a post-graduate student pursuing masters of Public health degree at the School of Public Health, University of Nairobi. As part of my degree program, I am conducting a study within the health facilities in Dagoretti District in order to determine the Factors Associated with Utilization of Postpartum and you were randomly selected to participate.

I would like to kindly request you to participate in the study but before you can decide to take part in it, I would like to explain to you what the study entails.

Purpose of the study.

The purpose of this study is to assess the factors that are associated with utilization of post-partum care in Nairobi County. The research will inform the stakeholders in maternal and child health on some of the reasons why mothers are not receiving post-partum care in Nairobi hence inform on how to offer better post-partum care.

The information will be used to write a report and will be submitted as a dissertation at the University of Nairobi, school of public health.

Benefits.

There are no direct benefits for you but the information you give will be important. It will be used by policy makers to improve delivery of post-partum care in health facilities.

Risks

There are no risks involved in participating in this study, but you will spend your time giving the information. Some of the information sought will be personal but the responses you provide will be anonymous and confidential and will not be used against you in any way. The information you give will not affect you or this institution in any negative way.

Compensation

You will not receive any money or other compensation for participation in the study

Confidentiality

All information that you provide to this study will be kept confidential. Your name will not appear anywhere on the data collection form. Only codes will be used to identify you. The filled data collection forms will be kept in a locked safe place and the only person to access them will be the research investigator and the research assistants.

Voluntary participation.

You do not have to give any answer to any question you do not wish to respond to, and you have the right to stop participating at any point if you feel uncomfortable. However your honest responses to these questions will give us a better understanding on how to improve the services.

Expected time in the interview.

This interview will take approximately 30 minutes.

Contacts of the Researcher

If you have any questions regarding this study during and after the study you are free to contact the principal researcher; Shiphrah Kuria on telephone 0722-300279 or Email: shiphonk@yahoo.com

Or , the Secretary; KNH/UoN-Ethics and Research Committee on 020-2726300 ext.44102 or Email: uonknh_erc@uonbi.ac.ke

After my explanation regarding the study, do you have any questions?

Certificate of Consent

I have read/been explained to about the study and have been given the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I therefore consent voluntarily to participate as a participant in this research.

Name of Participant_____

Signature of Participant _____Date _____/_____/_____

Statement by the researcher/person taking consent

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that it is clear to the participant.

I confirm that the participant was given an opportunity to ask questions concerning the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

A copy of this Informed Consent Form has been provided to the participant.

Name of researcher---------- **Signature**----------

Name of participant---------- **Signature**----------

Date --------/-------/-------

Kiambatisho 3: Idhini ya Fomu kwa mama.

Utafiti:

Tathmini ya kata ya Nairobi.

Utangulizi:

Jina langu ni Shiphrah Njeri kuria. Mimi ni mwanafunzi katika Shule ya Afya ya Umma, Chuo Kikuu cha Nairobi. Mimi ninafanya utafiti katika vituo vya afya katika Wilaya ya Dagoretti, Kata ya Nairobi ili kujua ni sababu gani zinazo fanya kina mama kupata au kutopata huduma ya afya ya baada ya kujifungua. Utafiti utatimiza nusu ya mahitaji ya shahada ya Masters ya Afya ya Umma katika Chuo Kikuu cha Nairobi. Wewe umechaguliwa kushiriki.
Naomba muda wako wa kama dakika thelathini ili uweze kujibu baadhi ya maswali yangu. Kwanza nitapitia fomu ya idhini kukusaidia kuelewa utafiti ili kukuwezesha kuamua kama utashiriki au la.

Madhumuni ya utafiti.

Lengo la utafiti huu ni kutathmini sababisha kina mama kupokea au kutopokea matibabu ya baada ya kujifungua kama inavyotakikana. Utafiti huu utawajulisha wadau wa afya ya uzazi na watoto changamoto na vizuizi vinavyokubana na akina mama wanapojifungua zizowazuia kupata matibabu wanayohitajika kupata. Hii itawasaidia kuelewa ni mikakati gani inaweza kuwekwa ili kuwawezesha wamama kuzipata hizi huduma.

Faida.

Nitatumia taarifa utakayonipa kuandika ripoti kwa ajili ya kazi yangu ya kitaaluma. Habari hii inaweza kutumiwa na watunga sera kuboresha utoaji wa matibabu ya baada ya kujifungua kwa akina mama wanaojifungua. Hii italeta matokeo mazuri katika afya ya akina mama na watoto wachanga na kupunguza matukio ya maradhi na vifo wakati wa kipindi cha kwanza baada ya kujifungua.

Hatari

Huwezi kuwa kwa hatari yoyote ukishiriki katika utafiti huu. kujitolea katika mahojiano haya haiwezi ikakuathiri wewe au kituo hiki kwa njia yoyote.

Sehemu yako katika utafiti.

Nakukaribisha wewe kama mama kunipa maoni yako na taarifa juu ya huduma ya afya kwako ya baada ya kujifungua uliopeata. Utanielezea pia vile wewe unafahamu juu ya hii huduma.

Fidia

Hutapokea fedha yoyote au fidia nyingine kwa ajili ya kushiriki katika utafiti huu.

Usiri

Taarifa zote ambazo zitakusanywa na mradi huu itakuwa siri. Taarifa itapatikana kwa mtafiti peke yake. Nakala za majibu zitakua bila.

Hiari ushiriki

Huna rasma ya kutoa jibu la swali ambalo hutaki kujibu, na una haki ya kuacha kushiriki katika hatua yoyote kama wewe utajisikia vibaya. Hata hivyo majibu yako na uaminifu kwa maswali haya itatupa ufahamu bora wa matibau ya baada ya kujifungua anayopewa mama.

muda

Inatarajiwa wakati wa mahojiano utachukua takriban dakika 30.

Nini kinatokea kwa habari?

Taarifa zote zinazotolewa zitatumika kuandika taarifa na itawasilishwa kama dissertation katika Chuo Kikuu cha Nairobi, shule ya afya ya umma. Nakala itapatikana katika Chuo Kikuu cha Nairobi , Chuo cha afya maktaba ya sayansi. Unaweza kupata nakala kwa kuwasiliana na mimi kwa anuani ifuatayo.

Mawasiliano

Kama una tatizo wasiwasi, au maswali yanayohusiana na utafiti huu tafadhali wasiliana na mimi, au kamati ya maadili ya Hospitali ya kenyatta na chuo cha Nairobi kwa anwani ifuatayo:

Shiphrah Kuria kwa simu 0722-300279 au Email: shiphonk@yahoo.com

KNH / UON-ERC 020-2726300 ext.44102 au Email: uonknh_erc@uonbi.ac.ke

Baada ya kusikiliza habari hii una maswali yoyote?

Hati ya Idhini

Nimesoma habari hapo juu. Nimepewa fursa ya kuuliza maswali kuhusu utafiti huu na maswali ambayo nimeomba yamejibiwa na nikaridhika. Mimi nakubali kwa hiari kushiriki katika utafiti huu.

Jina la mshiriki _____

Saini ya Mshiriki _____ Tarehe _____ / _____ / _____

Siku / mwezi / mwaka

Taarifa ya mtafiti / mtu kuchukua ridhaa

Mimi nakili kuwa nimemsomea mshiriki maelezo hii kadri ya uwezo wangu nakuhakikisha kwamba ni wazi kwa mshiriki.

Nathibitisha kuwa mshiriki alipewa fursa ya kuuliza maswali kuhusu utafiti huu, na maswali yote yakajibiwa kwa kadri ya uwezo wangu. Nathibitisha kwamba hajashurutishwa katika kutoa maamuzi yake, inashiriki kwa uhuru na kwa hiari.

Ridhaa uliotolewa na mshiriki.

Jina la mtafiti ---------- Sahihi --------- ----------

Jina la mshiriki ---------- Sahihi --------- ----------

Tarehe --------/-------/-------

Appendix 4 Focus Group Discussion Guide

Enumerator's Name_______ Signature_____

Health facility _____

Facility level: level 5 ( ) level 4 ( ) level 3 ( ) level 2 ( ).

1. Generally what is your view with regard to the post partum care?
2. Should all the mothers seek post partum care, even those whose babies did not survive?
3. Is it okay for mothers with very small babies leave their homes?
    a. What does the community/culture expect of a woman with a small child?
4. Why do some mothers not seek post partum care?
5. What would you say are the 5 most important topic visits? that health workers should educate mothers on during the postpartum care
6. Are you happy with the care you get in the facilities?
    a. Do the health workers give adequate information?
    b. Do they give you time to express your concerns
7. What do you like about the care?
8. What is not so good about the care?
9. How can the care be improved?

Appendix 5 Key informant interview guide for maternity in-charge

Enumerator's Name_____ Signature_____

Health facility _____

Facility level: level 4 ( ) level 3 ( ) level 2 ( )

1. Generally what is your view with regard to the postpartum care in this facility?
2. Are you aware of the current PNC guidelines? Do you have a copy in your facility? If yes which one?
3. Do you have the PNC registers?
4. What is your take on health worker patient ratio in this Unit.? Elaborate
5. When mothers are discharged from the maternity are they always told to seek postpartum care for themselves in addition to the baby s post natal care?
6. When mothers bring their infants for well-baby clinic or for curative services, do the health workers pro-actively offer them postpartum care?
7. What do you think are the 4 most important messages that health workers should pass to the mothers during the postpartum care visits?
8. Do you think young mothers less than 20 years old need any special attention during their postpartum care visits? If yes which special care?
9. What barriers/challenges do you encounter in offering postpartum care services? Please elaborate
10. What strategies and interventions would you recommend to improve postpartum care here in this facility and in the general health care?
11. Is there anything else you would like to add?

THANK YOU FOR YOUR PARTICIPATION.

Appendix 6 Ethical Review Board Approval