Determinants of Birth Positions among Women Aged 18-49years in Mama Lucy Kibaki Hospital

MONICA N. KANGE'THE[1], Dr. Jane Karonjo[2], Ms. NancyMaingi[3]

[1]*A Thesis Submitted In Partial Fulfillment of the Requirementfor the Award of Master of Science
Degree in Nursing (Midwifery Option) of Mount Kenya University*
[2]*School of Nursing Mount Kenya University*
[3]*School of Nursing DedanKimathiUniversity*

Abstract: *The term birthing position refers to the different physical postures that expectant women can assume during birthing process.Most of the women labor while lying in bed in a recumbent position, the position this is convenient for staff offering delivery service.The study objective was to establish the social demographic factors that influence birth positions among women aged 18-49 year in MLKH, to determine the social cultural factors that encourages the birth positions among women aged 18-49 years in MLKH,to assess the health facility factors that determine birth positions among women aged 18-49years in MLKH and to identify the health provider's factors that determine birth positions among women aged 18-49 years in MLKH.A descriptive cross-sectional study design undertaken incorporating quantitative methods. Yamane (1967:886) formula used to compute the study sample of 264 women, in postnatal period. Systematic and simple random sampling techniques applied. Ethical approval sought from relevant Research authorities. Consent sought from the clients before the execution of the study. Data collected using a structured questionnaire, which was pretested before the study. Quantitative data entered after cleaning and coding and was analyzed using statistical package of social sciences (SPSS) version 22. Analysis involved both descriptive and inferential statistics. Factor analysis carried out to reduce dimensions of multivariate variables. The correlation and regression also used to determine the relationship between variables. The Findings presented in the form of text, charts, graphs and table. From the findings majority of the respondent were aged between 28-32 years at(30%).Most of the respondent were them married (56.1%), (35%) had formal employment. Most of the respondents lived above poverty level at 79.9%.In social demographic factor the level of education and occupation were significant at .026(p-value<0.05).Most of the women had their labor in recumbent position. The main determinant of birth position was self at 81.8%,. Cultural birth practices mainly encouraged walking during labour but there was no significant relationship between birthing positions and culture (p value>0.05). On health facility factor, respondents felt that the staff were available at 97.7% while equipment and tools required for birth positions were not available 86.4%.This variable was significant at .000(p-value<0.05).On health providers factors 81.4% were advised on position to use during labour and 77.3% felt that the health worker were very supportive. These variables were significant to birth position at .000 (p-value< 0.05).The study found benefits of delivering in the upright position as opposed to the recumbent position and recommends staff training, infrastructural change and future studies on the same.*

I. Introduction

Chapter onepresents brief description of the background information, statement of the problem, justification, research question, hypothesis, objective, scope, and the period of study

1.1 Background to the Study

The term birthing position refers to the different physical postures that expectant woman can assume duringdelivery(Edqvist, et al., 2016).Birthing processisa combinationof physiological and mental forces that bring a new life into the world. Theprocess of labour contains key emotional, social, and physical dimensions that usher in the arrival of a new born baby signifying addition of a family (Walsh, 2017). During birth women's preferences are of importance in choosing birth positions(Nieuwenhuijze, de Jonge, Korstjens, Budé, & Lagro-Janssen, 2013). Pregnant women assume various birthing positions from upright, lithotomy, lateral or supine positions during the second stage of labour(Gupta, Hofmeyr, & Shehmar, 2012).In recumbent position, an expectant mother lie on the bed in semi prone position at an angle of 45 degrees, or lying on theside. A pillowcan be flexed or extendedbetweenher legs. The expectant mother can also stands up straight without or with support from a bed, chair, or partner in the upright position(Gizzo, Di Gangi, Noventa, Bacile, Zambon, &

Nardelli, 2014). Shecrouchesin contraction and recuperates in relaxation in the squatting position. She may siteeitheron a bed, or on a ball, or a chair, or in the all fours positions; then kneel to support herself fusing her arms in the sitting position. The upright positions avoid lying flat in the first stage, whichinclude walking around. During the second stageoflabour the mother may maintainupright position which includes sitting in semi prone atan angle of 45 degree, squatting or kneeling, and being on hands or on knees.(MIDIRS, 2012).

Available studies reveal upright birthing positions, has many benefit yet many women continue giving birth in recumbent position.(Zileni, Glover, Jones, Teoh, Zileni, & Muller, 2017). It has been a point of contention for centuries on whether lying down or being upright (sitting, chairs squatting, birthing stool or kneeling)is advantageous for women delivering their babies (Gupta, Hofmeyr, & Shehmar, 2012).The involvement of pushing can yield drastically increase satisfaction for women giving birth. Some situations lead to confounding effects where a woman in second stage of labour may be required to lie down for the midwife to perform some procedures like episiotomy, despite of maintaining upright position during labour.(Warmink-Perdijk, Koelewijn, de Jonge, van Diem, & Lagro-Janssen, 2016).Lying in recumbent position is mostly dominant in the westernized societies and other developing countries especially to mothers delivering in the hospitals (De Jonge & Lagro-janssen, 2006). In spite of the significant advantages in an upright position in labour, supine position happens to be the most frequently used position (Royal college of Midwives, 2012). No evidence of advantage has been associated with the recumbentpositioneven though it may be more convenient for health providers (Lawrence, Lewis, Hofmeyr, & Styles, 2013).Since the nineteenth century, the recumbent position came to be preferred almost entirely. This was largely due to an increasing utilization of obstetrical technology and interventions, such as the forceps, monitoring of fetal wellbeing, which restricted the mother into a supine position during labour and delivery. With an increasing number of obstetricians attending to birth, the women's power to choose a position comfortable for her was no longer an option (Kitzinger, 2011). Immobility in labor, and even restraint during birth became a common phenomenon, especially as the use of drugs became more frequent during the first half of the twentieth century. Mother's movement during labor and change of position, is usually affected by use of, intravenousfluidinfusions, monitoringof fetal status by use of electronic and different methods of analgesia (Royal College of Midwives, 2010).

Supine position is associated with unfavorable effects especially on uterine contractions along with obstructing progress in labour, and in some cases it reduces placental blood flow (Gizzo, Di Gangi, Noventa, Bacile, Zambon, & Nardelli, 2014). The duration of labour is significantly reduced when a woman walks and maintains upright positions during the first stage of labour; this also reduces the risk of caesarean birth, reduces the need for an epidural, and also is not associated with increaseof negative effects on mothers and also the baby's wellbeing (Lawrence, Lewis, Hofmeyr, & Styles, 2013). But there is likelihood ofan increase in blood loss greater than half a litre(Gupta, Hofmeyr, & Shehmar, 2012).A quasi-experimental study in Taiwan established that women who pushed when they were positioned in the upright and pushed spontaneously while receiving support had considerable lower pain index, shorter period of second phase of labour, less exhaustion after birth and had more positive labour experiences compared to women that pushed from the supine position, with support of Valsalva pushing(Chang, Chou, Lin, Lin, Lin, & Kuo, 2011).It has been well documented that non-supine birthing positions have a number of medical advantages in various quantitative studies though some psychological benefits have been suggested which are difficult to interpret(De Jonge & Lagro-janssen, 2006).It has been indicated that when women give birth innon-upright positions they are more likely to receive anepisiotomy, unlike their counterpart who deliver while sitting,(Warmink-Perdijk, Koelewijn, de Jonge, van Diem, & Lagro-Janssen, 2016).According to numerous studies there are many consequences of the recumbent position during delivery, this position is associatedwith the danger of perineal tears (Diorgu, Steen, Keeling, & Mason-Whitehead, 2016).A study conducted in US came into a conclusion that a high cesarean rate of almost one-third of women had been contributed to lack of mobility during labour; the study also adds that lack of mobility during labour resulted to an increase of maternal morbidity and mortality (Ondeck, 2014).The birthing position also affects the Apgar score for newborn infants (Gayiti, Li, Zulifeiya, Huan, & Zhao, 2015).Data from epidemiology studies indicates that even though there are a lot of benefits that can be obtained from vertical birthing, it is necessary to consider the means of delivery and also the people involved (Desseauve, Fradet, Lacouture, & Pierre, 2016).There is not enough evidence on the risks of women's options for birthing positions, this is also true for the benefits (Shorten, Donsante, & Shorten, 2002). There is huge difference in a women's choice for positions during birth (Nieuwenhuijze, de Jonge, Korstjens, Budé, & Lagro-Janssen, 2013). Commonly women in both low and high income countries labour in bed and give birth in health facilities(Macdonald, 2011). Various factors that influence the birthing positionincludeinstinctive behavior as well as extrinsic factorsthatincludecultural norms.

1.1.1Social demographic factors

In Dutch, women with preferenceofnon-upright positionsusually delivered in theposition more often than women who are inclined to other postures. One of the main reasonsfor preferenceof other birthing postures

were linked to the extended period of the second phase of labor, the potency of preference, advanced educationlevels, and home delivery. Home deliveryaddedvalueto women with preference ofnon-supinepositions(Nieuwenhuijze, de Jonge, Korstjens, Budé, & Lagro-Janssen, 2013).Not much is known on women's awareness on using differentbirthing positions; this considerablyinhibits abundant possibilities of childbirth practice enhancement. A study done in Malawi revealed that , most women had idea about walkingat (66.4%) and recumbent at (60.6%) as the possible positions for labour.(99.2%) of the women had an idea about supine as a position for childbirth(Zileni, Glover, Jones, Teoh, Zileni, &Muller, 2017).A study done in Netherlands revealed thatmajority of women who were in their thirties and highly learned women were least likely to use the supine position during birth. Giving birth in upright position was mainly associated with women who werereferred in the second phase of labour, women who pushed for more than an hour and those who underwent home delivery (De Jonge, Rijnders, van Diem, Scheepers, & Lagro-Janssen, 2009).

1.1.2 SocialCultural Factors
Birthing process had special meaning in every culture and usuallymarked by either spiritual or cultural symbols (Kitzinger, 2011).It is suitable and viable to implement a skillfuldelivery model that can be able to combine both and traditionaland modern medical aspects. This contradicts common mindset thathomedelivery is a cultural preference or unawareness (Gabrysch & Miranda, 2009). In Netherlands most women were familiar with non-upright position but despite of this fact, they also sought information on different birthing positions (De Jonge & Lagro-janssen , 2006).

1.1.3 Health Facility Factors
In Dutch maternity system women have a chance to decide where they want to give birth, however the system does not assist them in choosing the birth positions to use during birth(De Jonge, Rijnders, van Diem, Scheepers, & Lagro-Janssen, 2009).For a long time, women had been given the freedom to change positions during labouraccording to their wishes(Gizzo, Di Gangi, Noventa, Bacile, Zambon, & Nardelli, 2014). Womenadmitted in the hospital in developed countries guides to obstetrical practices which holdback impulsive and natural attitude; the main focus is on intrapartum fetal safety and maternal co-morbidities but not labour position (Gupta, Hofmeyr, &Shehmar, 2012). When childbirth has many clinical procedures especially during labourit limits the women's choices for childbirth positions (Lavender & Mlay, 2012).

1.1.3 Health Provider's Factors
If midwives enquired which birthing position the mother would prefer throughout pregnancy and delivery, maternal services could be improved.(Diorgu, Steen, Keeling, & Mason-Whitehead, 2016) Midwives also need to support mothers in formulating appropriate choicesand factor in their decisions where possible(Nieuwenhuijze, de Jonge, Korstjens, Budé, & Lagro-Janssen, 2013). Midwives have a vital task in broadening the array of women's delivery preferences (De Jonge& Lagro-janssen, 2006). Midwives should be competent enough in order to give encouragement and aid mothers to deliver in various positions, so professional training of midwives in various positions of delivery is a must(Zileni, Glover, Jones, Teoh, Zileni, & Muller, 2017). Flexible birthing methods can be employed by midwives encouraging a woman to use various delivery positions in second phase of labor .The response of the woman and also medical assessment should be incorporated too (Nieuwenhuijze, de Jonge, Korstjens, Budé, & Lagro-Janssen, 2013). Prenatalnurses should ensure that the environment is suitable; this ensures women feel a sense of connection to the midwifeand also feel in command of their childbirth. The key ingredient for optimal birth delivery is to make sure maternal care is in line with the wants of the mother in particular mothers not familiar with labor or birth delivery (Goldbort, 2009). Positions women use during the second phase of labor by the maternity care provider have not been fullyexplored(Nieuwenhuijze, Low, Korstjens, & Lagro-Janssen, 2014).The experiences of women's delivery oughtto mirror choices made in alliance with obstetricians and midwives(Shorten et al. 2002).

1.2 Statement of the Problem
Child birth is always challenging and thus women in labour need support (Gizzo, Di Gangi, Noventa, Bacile, Zambon, & Nardelli, 2014)(Hodnett, Gates, Hofmeyr, Sakala, & J., 2011). The experience during labour and birth leave the women feeling deprived of womanhood(Kopas, 2014).In health care facilities almost all women giving birth do so while in the supine recumbent position. Failure to utilize position options have led to expectant mothers to prefer home delivery with an untrained birth assistant rather than delivering at a hospital (Lavender & Mlay, 2012). Evidence has shown that birth position has a possibility of affectingperineal outcome (Shorten, Donsante, & Shorten, 2002). Enabling collective decision making during birth can be considered as a continuouslychanging process requiring an assortment of approaches and one cannot just use a single approach (Nieuwenhuijze, Low, Korstjens, & Lagro-Janssen, 2014). Currently, the advantages and disadvantage associatedwitha variety of delivery positions are not predictable with higher assurance, and thus women should

be given a chance to choose birthing posture they desire to for childbirth (Gupta, Hofmeyr, & Shehmar, 2012). Practical advice should be given to during pregnancy and labor in order to give women control on positions that they might be prefer(De Jonge & Lagro-janssen, 2006).Childbirth education about various labour and birthing positions is needed so that women can be able to make moreknowledgeable choices for birth (Zileni, Glover, Jones, Teoh, Zileni, & Muller, 2017).Previous studies concluded that birth position is a relevant topic and thus research should be carried out more in order to determine the 'best' position possible for birth (Okonta, 2012)they also recommended the need for future studies to ascertain that midwife, clinical and various other factors have an immense impact on women's preference of birth positions.The need to identify strategies that empower women to make their own choices (De Jonge, Rijnders, van Diem, Scheepers, & Lagro-Janssen, 2009).Position change and ambulation during labour and birth are known to be natural responses to physiologic cues; nevertheless they remain greatly underutilized in the hospital setting(Declercq, Sakala, Corry, & Applebaum, 2006).With no documented studies or statistics found related to determinants of birth positions in Kenya and precisely in MLKH which has an average of 800 deliveries per month.

1.3 Justification

Findings from the study are beneficial to obstetricians, expectantmothers, midwives, and the public in general. These findings can be used to formulate educational sources of birth position in order to substitute the supine position which has inevitably been a consistent option for majority of women to uprights birth positions which has numerous benefit (De Jonge, Rijnders, van Diem, Scheepers, & Lagro-Janssen, 2009).Using various birth positions while in the second phase of labor, can immensely speed up progress, improve the birthing outcomes, and alsohavean encouraging birth experience tomothers(Nieuwenhuijze, Low, Korstjens, & Lagro-Janssen, 2014).The findings can be used by county and national governments to formulate guidelines associated with labour position in Kenya.Therefore, the study was meant to assess determinants of various birth positions among women age 18 – 49 years in MLKH.The finding of the study will be useful to policy marker both in central and county government in order to formulate guidelines and protocols related to birth position.atMLKH and other health providers will use the findings for improved service delivery.

1.4 Research Questions
1. Which social demographic factors influencebirth positions among women aged 18-49 year in MLKH?
2. Which social cultural factors determine choice of birth positions among women aged 18-49 years in MLKH?
3. Which health facility factors that encourage birth positions among women aged 18-49years in MLKH

1.5 Hypothesis
H_O: There are no social demographic, social cultural, health facility, and health provider's factors that significantly influence birth positions among women aged 18-49 years in MLKH

1.6 Study objectives
1.6.1 Broad Objective
To establish the determinants of the choice of birth positions among women aged 18-49 years in MLKH.
1.6.2 Specific Objectives
1. To establish the social demographic factors thatinfluence choice of birth positions among women aged 18-49 year in MLKH.
2. To determine the social cultural factors that encourage the choice of birth positions among women aged 18-49 years in MLKH.
3. To assess the health facility factors that determine the choice of birth positions among women aged 18-49years in MLKH

1.7 Limitations and delimitations
1.7.1 Limitation ofThe Study
The limitation in this study was the use of statistical sample to ensure generalizability of the findings. Moreover, the subjects willingness to provide the information.
1.7.2 DelimitationsofThe Study
Study tools were pre-tested and research assistants were trained to ensure random and representative sampling and completeness of research tool. Datawas collected through interviews from all stakehold. Consent was sought and confidentiality ascertained to ensure that no respondents are victimized.
1.8 Theoretical and Conceptual Framework
1.8.1 Theoretical Framework
This study revolves around Virginia Henderson theory. According to George (2011), Virginia Henderson illustratednursingas the process of assisting an individual, whether he/she is sick or healthy. The Virginia Henderson theory focuses on the significance of improving the patient autonomy to speed their recovery in

hospital; the theory emphasizeshow nurses can aid the patient in attaining basic human needs. The society, culture, health provider and health facility have to aid the client to achieve the theory's fourteen functions. The need to move and maintain a desirable position is applicable in changing of positions by a woman inlabour and birth. With the ability to choose, majority women will react to pain through movement;these movements drastically reduce pain and aid the baby to be able to access the best passageway through pelvis. Dancing, walking, kneeling, swaying, sitting, and lying down are the main ways a woman can move to attain comfort during labour. Gravityassists in the descent of the baby mainly when the mother assumes an upright position. Moving freely assists inamplifyingcontractionshence reducing the labour period; this also relievesdiscomfortas a result reducing the need for painkillers and the need foroperationsto aid childbirth. The social demographic , health providers, culture, and health facility factors are key in the determining birth positions during the process of birth .(George, 2011).The theory highlights on the fourteen basic needs of a client which include; to breathing as expected; todrinkand eat satisfactorily; to get rid of body excrement; to aid in mobility and retain desirable position; tobe able to attain sleep and also rest; to choose appropriate clothing; to ensure normal body temperature is maintained; to maintain body hygiene; tobe safe from any dangers in the environment; free communication to others; ability to worship regardless of one's faith; toattain sense of achievement while working; to participate in diverse types of leisureactivities; tostudy, find out or gratify theinquisitiveness that paves way forself-improvement; along with health and use of accessible health facilities

1.8.2conceptual Framework

The social demographic factors, social cultural and belief factors, health institutional factors and the health care provider factors affect mother's decision on the birthing and labour position. Social demographic factors include   age, education level, parity, occupation.   Health facility factors include availability of infrastructures and number of health workers relative to number of patients. Health provider's factors include support, attitude, cadre, years of experience. Birthing and labour positions are mainly upright position or recumbent position. The relationship between the variables is as indicated in Figure 1.1.
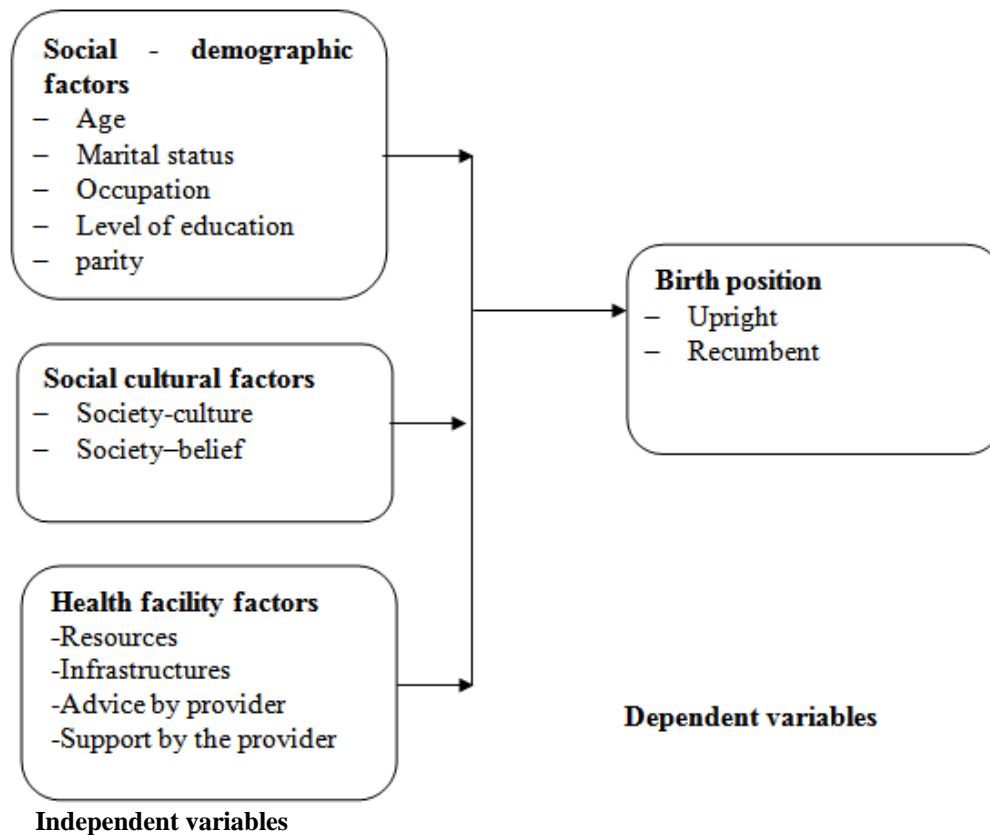

Figure 1.1: Conceptual framework, (Author, 2017)

II. Literature Review

2.0 Introduction
This chapter reviews findings from different researchers on birthing positions.

2.1 Birth position
  Majority ofwomen from both first world and third world countries give birth in health-care centre mostly in bed in the supine positions. The position of a woman during labour has a significant cultural imprint. During the 1960s, previous studies on the upright birth position during labourgenerally looked at the advantages of this position for the mother and her unborn baby. In the 1980s, studiesfocused on the welfare of both the mother and her baby, but it also focused on comparing supine and upright position with obstetrical variables,(WHO, 2016).During the 1990's, there was need to reduce the use of needles and to put expectant women's needs as the center of attention rather than the convenience of health-care providers, studies began to assess women's perceptions of pain while assuming different positions during labour(WHO, 2016).

  Child birth is always challenging and thus women in labour need support. Four dimensions of support has been documented in the literature which include emotional support, informational support, advocacy and physical support (Hodnett, Gates, Hofmeyr, Sakala, & J., 2011). A calm, secure, low-lit environment happens to prevent rise in catecholamine, whichis induced by stress, this in turn inhibits oxytocin and attenuate uterine contractions (Macdonald, 2011). Several benefits can be achieved by change position of during birth. Moving around during labour has some obvious benefit to the client and comprise of an increase in comfort, reduction of pain, distraction, and an enhanced sense of control. Different delivery positions can influence a positive impact mentally on the women's labourexperience especially when finding a relaxedposition can alsoprovide a sensation of being in charge during labor (Nieuwenhuijze, de Jonge, Korstjens, Budé, & Lagro-Janssen, 2013).

  The theoretical physiological advantages for being non-supine through childbirth and delivery are several. The benefits include the result of gravity on the fetus while in theuterus; lower aorto-cavalc compression risk; enhancedplacement of the fetus, extra efficient contractions plus amplified pelvic opening when woman takes squatting and kneeling positions (MIDIRS, 2012). The Cochrane review came to a conclusionthat upright positions and walking in labour are linked to a reduction in the duration of the first stage of labour and also the use of epidural analgesia(Lawrence, Lewis, Hofmeyr, & Styles, 2013). In Malawi, nearly half of expectant mothers walked when they were in labourwhile the majority (91.4%) gave birth while assuming supine position (Zileni, Glover, Jones, Teoh, Zileni, & Muller, 2017). A study conducted in Tanzania, stated that women who delivered at their homestead assisted byrelatives or traditional birth attendants mainly gave birth by squatting or using other upright positions (Lavender & Mlay, 2012).

  There are a number of deleterious effects to the supine recumbent position noted in the literature, which include adverse effects on maternal hemodynamic and fetal status due to supine hypotension syndrome, along with poor descent and engagement of the fetus, leading to an increase in instrumental deliveries, episiotomies, and greater blood(Jansen, Gibson, Bowles, & Leach, 2013). Squatting is a common postureinmany third world countries including the Americas, some countries in Asia and Africa (Lavender & Mlay, 2012). In a European women's hospital, majority of women(86%) usually gave birth while in supine position .In the United States women mostly give birth assuming the non-upright positionsandareusually limited in the length of period they can thrust andthey are also advised to push forcefully by themidwives(DiFranco & Curl, 2014). In Netherlands women who maintained the non-upright position throughout the second phase of labourdepended on the practices of the nurses and midwives though majority of women pushed and also gave birth in the non-uprightposition(De Jonge, Rijnders, van Diem, Scheepers, & Lagro-Janssen, 2009). In Australia, majority of mothers and midwives thought that lithotomy was not helpful for birth and reported that they would be more than willing to choose substitute positions (Diorgu, Steen, Keeling, & Mason-Whitehead, 2016). In Belgium, the lateral position had more rates of intact perineum (Shorten, Donsante, & Shorten, 2002).

  Review of quasi-randomized controlled trial of lateral and supine birthing positions established a not-significant decrease in period of second phase in the lateral position, a considerable lessening in aided childbirth, drop in episiotomies, an increase in second degree perineal tears, heightened projected loss of blood higher than 500 ml, and less irregular fetal heart rate patterns (Gupta, Hofmeyr, & Shehmar, 2012). In Taiwan, the involvement of pushing in the second stage oflabour drastically led to a reduction of pain and exhaustion, pushing during labor was enhanced and pushing time reduced (Chang, Chou, Lin, Lin, Lin, & Kuo, 2011). Women assuming the sitting position during childbirth had a reduced episiotomy rate and an insignificant higher intact perineum compared to those in the non-upright group(Warmink-Perdijk, Koelewijn, de Jonge, van Diem, & Lagro-Janssen, 2016). In Taiwan, Apgar score for newborns in the foremost minute did not significantly differ between women that pushed from an upright position with spontaneoussupport and women that pushed from a supine position supported via Valsalva pushing (Chang, Chou, Lin, Lin, Lin, & Kuo, 2011). Women ought to be heartened and assistedto move and take on most comfortable positions throughout labour(MIDIRS, 2012).

2.2 SocialDemographic Factors
2.2.1 Age
Age is a woman's factor that is associated with birthing position. Women in their thirties had low likelihood to use supine position than women in other age assembly(Nieuwenhuijze, de Jonge, Korstjens, Budé, & Lagro-Janssen, 2013).Older women have a higher likelihood to use non supine position than younger women(De Jonge, Rijnders, van Diem, Scheepers, & Lagro-Janssen, 2009)(Gizzo, Di Gangi, Noventa, Bacile, Zambon, & Nardelli, 2014).

2.2.2 Level ofEducation
Women who were more educated had a less likelihood to birth assuming the supine position this is compared with women with low or fairly medium education level(De Jonge, Rijnders, van Diem, Scheepers, & Lagro-Janssen, 2009).Women with high literacy rates werein a more likely position to use uprightbirthing methods(Gizzo, Di Gangi, Noventa, Bacile, Zambon, & Nardelli, 2014). A study conducted in Dutch by concluded that highly educated women use non supineposition than those with low education(De Jonge, Rijnders, van Diem, Scheepers, & Lagro-Janssen, 2009). A study in Netherlands concluded that older women with a high level of education had a higher likelihood to use upright birthing positions suggesting disparity in choice of position(De Jonge, Rijnders, van Diem, Scheepers, & Lagro-Janssen, 2009)

2.2.3 Parity
Prime gravid women most often took on the left lateral positionin first and second labourstages, while multiparas selected left lateral in first stage and semi-reclining in the second stage. The second stage was affirmed to be shorter in sitting as compared to recumbent positions for both prim gravid and multiparas woman (Keriakos & Gopinath, 2015).Factors that influence a satisfying childbirth experience includes a woman's self-control, perception of labour pain, expectations, andsupport from midwife or nurse. Childbirth experience is greatly influenced by the possibility to adjust and change the various methods of birthing positions, this also affects the outcome of labour(Nieuwenhuijze, de Jonge, Korstjens, Budé, & Lagro-Janssen, 2013).
A study in Dutch established supine positions was the mainly preferred birthing style by 58.9% of the women while 19.6% preferred birthing using other positions however 21.5% had no specific preference with regard to birthing positions during second phase of labor (Nieuwenhuijze, de Jonge, Korstjens, Budé, & Lagro-Janssen, 2013). In Netherlands, the preference of other birthing positions other than supine birthing positions was predicted by: self-influence or influence of self together with others on birthing positions, mind-set duringpregnancy towards delivery, labourpain in second phase and going through delivery at home(Nieuwenhuijze, de Jonge, Korstjens, Budé, & Lagro-Janssen, 2013).

2.3 Socio-cultural Factors
2.3.1 Society
Society makes women labour and give birth in supine position due to historical and cultural reasons despite of gravity being the greatest aid in giving birth (Royal College of Midwives, 2010). In non-Westernized societies, womenadvancethrough the initiallabourstage in an upright position and thereafter change positionaccordingly(WHO, 2016).The most appropriate person to help women use appropriate birthing positions are the midwives(Nilsen, Sabatino, & Lopes, 2011).

2.3.2 Culture
In many cultures the most common position is the supine position, practitioners as well women find this position as the most familiar(De Jonge, Rijnders, van Diem, Scheepers, & Lagro-Janssen, 2009).Historical and cultural beliefs are the main reasons why women give birth lying on their back. Even though some women are fully aware of other options they may still prefer to deliver in supine position, (Royal College of Midwives, 2010). According to Kitzinger (2011)many women may choose supine positions because they have been indoctrinated by culture to believe this . Birthing position varies from culture to culture.

2.4Health Institutional Factors
2.4.1Resourses
Position change and ambulation during labour and birth are greatly underutilized in the hospital settings(Declercq, Sakala, Corry, & Applebaum, 2006).Hospital protocols need utilization of technology in continuous monitoring of fetus and intravenous infusions that inhibit movement at some stage inlabour and birth(Martin & Martin, 2013). Hospital admissions of laboring women leads to obstetrical practice which focus strictly on intrapartum fetal wellbeing and maternal co morbidities especially in developed countries (Gizzo, Di Gangi, Noventa, Bacile, Zambon, & Nardelli, 2014). Expectant mothers receive limitedchancesforlabour and to deliver in their own chosen position. Majority assume the recumbent position which is the standard in

monitoring fetal safety, intravenous therapy administration, loco-regional anesthesia, and medical procedures performance, perinea support, along with assistance in birth (Gupta, Hofmeyr, & Shehmar, 2012).Supine recumbent position which is used most often in the hospital settings is more convenient for staff, this position however is not backed by any evidence that shows it being beneficial to either the woman or the baby (Lawrence, Lewis, Hofmeyr, & Styles, 2013). Midwife should therefore get women out of bed during labour and birth(Royal College of Midwives, 2010). From nineteenth century, the recumbent position came to be preferred almost exclusively. This was largely due to an increasing utilization of obstetrical interventions, such as the forceps, which restricted the mother into a supine position during delivery(Kitzinger, 2011). It is easier for the midwife to palpate the expectant women belly to observe contractions while the mother is in a recumbent birthing position.

2.4.2 Infrastructure
Evidence is not enough to prove choosing birthing positions depends on the setting of the maternity (Walker, Lannen, & Rossie, 2014). Proper measures should be set to ensure there is suitable furniture and items are readily available. Bean bags, chairs, mattressesand birth balls are the various props available to support variouslabour and birth positions (Royal College of Midwives, 2010). Maternity care setting together with characteristics of a woman influences choice of position. Awoman's mobility can be affected by a variety of issues these include the intravenous infusions, utilization of electronic fetal monitoring, and various methods of analgesia (Royal college of Midwives, 2012).

2.5 HealthCare Provider Factors
All women assume a position, either by choice or by direction of care providers or support people.Major of obstetric textbooks affirm that it is of more benefit for women to push while assuming non-supine positions, particularly for women delivering for the first time regardless of the above, many caregivers prefer non-upright positions(Kilpatrick & Garrison, 2016).Midwives therefore need to provide ideas to women on how to assume an upright position in during birth (Royal college of Midwives, 2012).Majority of women and also many midwives believe that the birth should happen while on the bed (Lawrence, Lewis, Hofmeyr, & Styles, 2013).Recumbent positions were preferred by midwives who were more concerned about their own comfort and who needed to have more control over the delivery(Kemp, Kingswood, Kibuka, & Thornton, 2013).Midwives should have adequate knowledge on how birth positions have an impact on birth experience; midwives also should also be supportive of women´s independence by giving neutral information in regard of the different birthing positions and especially non-supine positionsthatleadto an increase in satisfaction during childbirth (Thies-Lagergren, 2013).

2.5.1 Advice by health provider
Clinical factors and work environment influences the tendency for midwives to use specific positions(Goer & Romano, 2012).Independent midwives are innovative. Ithas been argued that they also play a big role in empowering women to be in control and command during birth. A study conducted in Mali found that most of the healthcare workers are competent on issues related to Apgar scoring, management of condition like hemorrhage, uterine rupture, managinghypertensive conditions and post-partum infections, but give little attention to the position used during labour and birth(Traoré, Coulibaly, Huchon, Dumont, & Fournier, 2014).
A study done by Royal College of Midwives in London in 2012 concluded that midwives should advice women toget off the bed during labour and birth. With an increasing number of obstetricians attending births, the women's ability to choose a position most comfortable for her was no longer an option. It is the role of midwives to help women to find and choose relaxed positions(Royal college of Midwives, 2012). There was extensive disparity between various midwife practices and utilization of variouschildbirth positions for labour and birth(De Jonge, Rijnders, van Diem, Scheepers, & Lagro-Janssen, 2009). Midwives could recognize the use of multiple positions in labour(Lawrence, Lewis, Hofmeyr, & Styles, 2013). Midwives know the importance of promoting differentchildbirthpositionsduringlabour but rarely practice this during childbirth. Studies show that care providers encourage most women to push in a recumbent or semi-recumbent position since it is a more suitable method for them. Accessing the woman's abdominal area for fetal heart rate monitoring is easier when a woman is in a supine or semi-recumbent method. Many health care personnel are educated to attend to childbirth when the expectant mothers is in the supine position thusthis makes them comfortable(Gupta, Hofmeyr, & Shehmar, 2012).Midwives and obstetricians as a result have a more significant role to play in aiding women choose a position that they arecontented with.

2.5.2 Support by health provider
Midwives with more experience in their work places have a higher likelihood to utilize non-supine positions other than obstetricians(Goer & Romano, 2012). Women being cared for by midwives with more

experience were to some extentmore expected to utilize upright position than those cared for by learners or inexperienced healthproviders (Royal college of Midwives, 2012).The midwifes are said to be supportive in helping women in labour to move around and thus mentation upright position

III. Methods And Materials

3.0 Introduction
This chapter comprises of an all-inclusive methodology that was followed in execution of this study. Sections covered include the study design, target population, sample determination, sampling criteria, methods of data collection and analysis. Further, the chapter elaborates on quality assurance techniques and research ethics.

3.1 ResearchDesign
Cross-sectional descriptive study design was used incorporating quantitative research methods . The design was appropriate since the researcher wished to test the degree of relationship between and among variables within a specific point in time. The study was also concerned with hypotheses formulation and testing between non-manipulated variables.

3.2 Location of the Study Area
The study location wasconducted in Mama Lucy Kibaki hospital (MLKH) which is located in Nairobi County, Embakasi district in KomaRocklocation.MLKH have a bed capacity of one hundred and thirty-two (132) beds. The facility is a level four hospital. It offers curative, promotive, preventive, and rehabilitative services. The hospital had a catchment area of 434,157 people.

3.3 TargetPopulation
The target population was women aged 18 to 49 years in postnatal ward after spontaneous vertex delivery. Approximately 778 mothers delivered per month in MLKH.

Table 3.1: Six Months Deliveries for year 2016

Months	Jan	Feb	March	April	May	June
Deliveries	829	722	695	798	804	817

3.4 Inclusion and exclusion criteria
3.4.1 InclusionCriteria
Study participantscomposed of all consenting women aged between 18 to 49 years after normal delivery and in postnatal ward within the study period.

3.4.1 ExclusionCriteria
The study excludedwomenwho had normal delivery but below the age of 18yrs and those, above 49yrs of age.All those with abnormal birth were also included together with who declined to be included in the study.

3.5 Variables
3.5.1 Independent variables
The independent variables were the social demographic factors, social cultural factors,health facility factors and health care provider's factors.

3.5.2 DependentVariable
Dependent variable was birth positions.

3.6SamplingProcedures
The researcher used probability-sampling methods where every woman in the post-natal period and aged between 18 to 49 years had an equal chance to be sampled for interview. Women admitted in the post-natal ward within one-month study period formed the sampling frame. Systematicsamplingwas used to select a sample of 264of the admitted women after delivery. The sample distribution was as indicated below.

Systematic random samplinginvolved random selection of the first woman using lottery method. The consequent woman was sampled as the kth.k was the outcome of thetarget population (N) divided by the required sample (n), that is, k = N/n= 778/264 = 2.9 ≈ 3. This implied that every 3^{rd}woman was sampled until the required sample size was achieved.

3.7 Sample size determination
A sample is a smaller group or sub-group that is representative and studied on behalf of the entire target population (Banerjee & Chaudhury, 2010). The study sample size wasdetermined using the Yamane (1967:886) formula at a precision level of 5% and 95% confidence interval (Israel, 2013) as shown below.

$$n = {}^N\!/_{1 + N\sigma^2}$$

Where,
$n$is the desired sample size
NIs the average monthly number of women aged 18 to 49 years in postnatal ward after spontaneous vertex deliveryin MLKH (778)
σIs the level of precision (5%)

That is

$$n = \frac{778}{1 + (778 \times 0.05^2)} = 264.2 \approx 264$$

The studyused a sample of 264 women.

3.8 Data collection Tools and methods
Data wascollected using a structured questionnaire with both closed and open-ended question. Carefully designing of the tools wasensured in order to complete description of the situation; this ensured minimum bias in the collection ofdataand also reduced errors in interpreting the data collected.

3.9 Validity and reliability
3.9.1 Validity
Quality control was a continuous process throughout the study to maximize validity and reliability of the findings of the study. Validity is an accuracy approximation of data representing a specific variable or construct in a study (Bolarinwa, 2015). Validity in this study wasensured by pre-testing the instrument before administering to a groupof postnatal womenin Mbagathi hospital. The pre-test ascertained the respondent understood thequestions in study tools through effectiveness of response given. The tools werereviewed appropriately. The content of the tools wastobe examined for logical or content validity. Content validity can be termed as the extent in which a measuring instrument provides ample coverage of the topic under study (Drost, 2011).

3.9.2 Reliability
Reliability can be termed as the level of internal consistency and stability of scores obtained using a study instrument over time (Rossi, Wright, & Anderson, 2013). This was ensured by minimizing the external sources of variation and concentration on study variables. Reliability was measured using the split half technique (spearman's prophecy formula) where a Cronbach Alpha coefficient of 0.7 and above would ascertain that the data and findings are highly reliable.

3.10 Data management
Data analysis is the process of reducing accumulated data to manageable size, developing summaries, looking for patterns and applying statistical techniques necessary to extract usable information (Cooper & Schindler, 2006). Data collected using hard copies of study tools were entered into computer using software to ensure accuracy, consistency and avoid double entry. Data entered wascleaned by checking for consistency and outliers. Missing entries were imputed or discarded. Quantitative data was exported to Statistical Package for Social Sciences (SPSS Version 22) for analysis. Analysis included descriptive statistics such as frequencies, proportions, mean, median and percentages. Inferential statistics such as chi square tests of association, correlation and regression models used to determine and delineate the relationship between variables. Factor analysis carried out to reduce dimensions of multivariate variables for inferential analysis. Study findings presentedin form of text, tables, charts and graphs.

3.11 Ethical considerations
Ethical clearance was sort from Mount Kenya University Ethical review committee. Research permit was sort from the National Commission for Science, Technology and Innovation (NACOSTI). Clearance consent was sort fromNairobiCounty Research Council andMLKH Ethical and research committee. All clients were to give consent before proceeding with data collection.

3.12 Assumption
The assumption was that all clients would agree to partake in the study and the study findings would be generalized for the study population.

IV. Data Analysis And Interpretation
4.0 Introduction
This chapter presents the data analysis techniques and interpretation of the findings of the factorsthat determines birth positionsamong women aged 18-49 year in MLKH. Data composed was collated and reports were produced in form of tables and figures and qualitative analysis done in prose. All findings were analyzed at 95% confidence level.

4.1 Socio Demographic Characteristics
This section presents the socio-demographic information of the respondents presented in Frequency tables and chart. The characteristics discussed include; age, marital status ,occupation and education.

4.1.1 Distribution byAge
The study sought to establish the distribution by age of the respondents in selection of the sample.
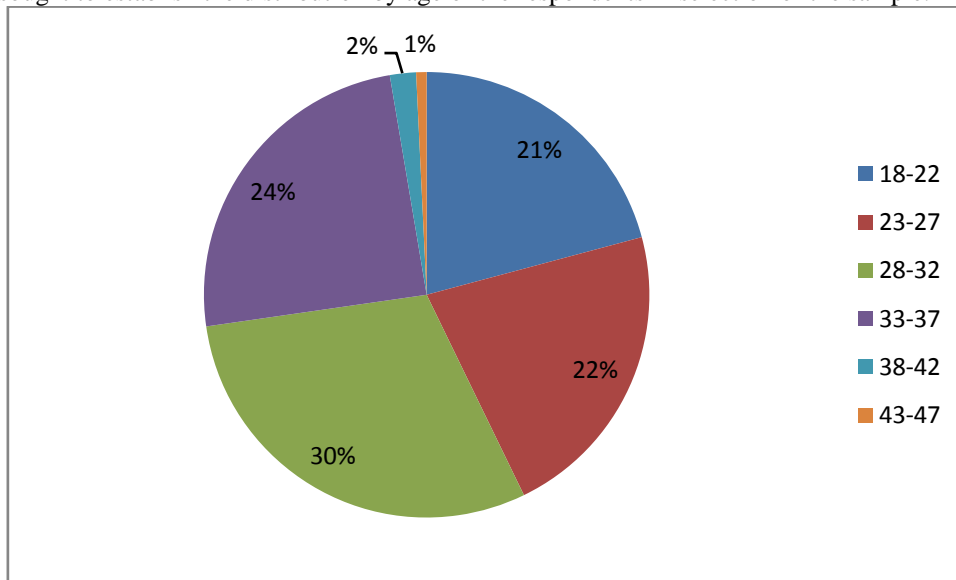

Figure 4.1: Six Months Deliveries for year 2016

The Figure 4.1 Present the Age of the respondents, the findings reveal that 21% (n=55)of respondents were aged between 18-22 years, 22 %(n=58)aged between 23-27years, 30%(n=79)aged 28-32 years,24% (n=65)33-37 years , 2% (n=5) aged 38-42years and the remaining 1%(n=2) aged 43-47 years.

4.1.2 Distribution By Marital Status
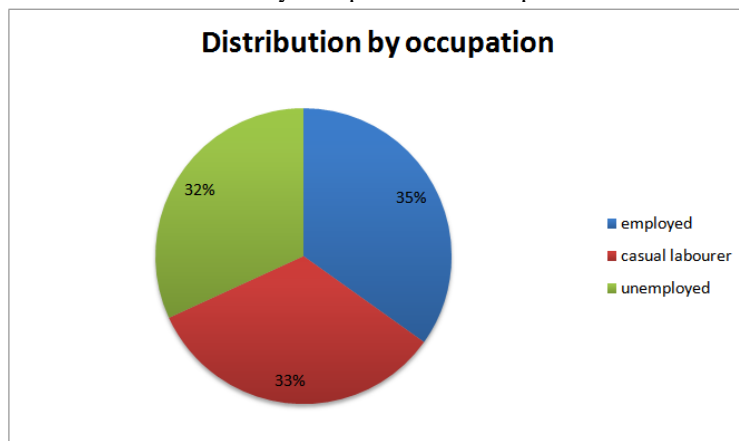The study sought to establish the distribution by marital status of the respondents in selection of the sample.
Table 4.1: Marital Status

	Frequency	Percent	Cumulative Percent
Single	91	34.5	34.5
Married	148	56.1	90.5
Divorced	15	5.7	96.2
Widowed	10	3.8	100.0
Total	264	100.0	

The Table 4.1 shows that the 34.5% were single,56.1 % married,5.7% divorced and the remaining 3.8%were widowed.

4.1.3 Distribution ByOccupation
The study sought to establish the distribution by occupation of the respondents in selection of the sample.

The Figure 4.1.3shows that the 35% formal employed,33% casual laborer and 32 %unemployed.

4.1.4 Distribution by Level of Education
The study sought to establish the distribution by education of the respondents in selection of the sample.

Table 4.2: Distribution Level of Education

	Frequency	Percent	Cumulative Percent
degree	3	1.1	1.1
diploma	63	23.9	25.0
certificate	81	30.7	55.7
secondary	48	18.2	73.9
primary	59	22.3	96.2
none	10	3.8	100.0
Total	264	100.0	

Table 4.2 shows that 1.1% are degree holders, 23.9% diploma ,30.7% certificate, 18.2% secondary,22.3% primary and 3.8% had none**.**

4.1.4 Distribution by Social Economic Status
The study sought to establish the distribution ofsocial economic status inselection of the sample.

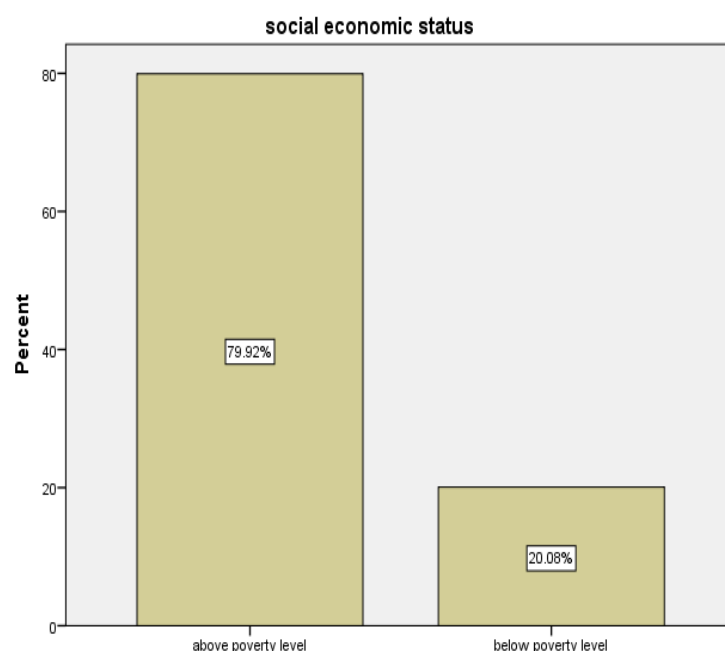**Figure 4.2: Social Economic Status**

Figure 4.3 shows that 79.9% lived above poverty level and 20.1% lived below poverty level.

Table 4.3: Correlation between the Socio-Demographic Characteristics and Birth Position

		birth position	age of women	marital status	occupation of a woman	level of education
birth position	Pearson Correlation	1	.038	.048	.118*	.116*
	Sig. (2-tailed)		.534	.435	.021	.026
	N	264	264	264	264	264

**. Correlation is significant at the 0.05 level (2-tailed).

The Table 4.3 revealed that there was a positive correlation between birth position and age as shown by a correlation figure 0.038, which was not significant (p-value>0.05).

The correlation between birth position and marital status was positive (0.048) but not significant (p-value>0.05). The correlation between birth position and occupation was positive (0. 118) which was significant .021 (p-value<0.05).It was also revealed that there was positive correlation between birth positions and level of education as shown by a correlation figure 0.116 which was significant.026 (p-value<0.05).

4.2 Social Cultural Factors
The other objective was to analyze how the culture and beliefs determines the birth positions ..
4.2.1 Cultural Birth Positions
Different communities encourage different labour and birth positions.

Table 4.4: Cultural Choice of Birth Positions

Variables	Categories	Frequency	Percent
LabourPositon	Walking	39	14.8
	Sitting	16	6.1
	None	209	79.2
Delivery Position	Lying down	198	75.0
	Sitting	16	6.1
	None	50	18.9

Table 4.4 shows that the 14.8% of respondent's culture preferred walking during labour, 6.1% sitting and 79.2% had no specific information of what their culture encourages. Also 75% of respondent's culture preferred lying down while delivering, 6.1% sitting and 18.9% had no specific information of what their culture encourages.

Table 4.5: Relationship between social cultural factors and on of birth position

		Model Summary		
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.118[a]	.014	.010	.32966

a. Predictors: (Constant), social cultural factors

Table 4.5 presents the coefficients of the regression model equation and tests of significance.

Table 4.6: Regression Coefficients in relation to social cultural on birth position

		Coefficients[a]				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.013	.062		16.397	.000
	socaial cultural factors	.089	.046	.118	1.921	.056

a. Dependent Variable: birth position

As shown in Table 4.6 the constant was statistically significant (B = 1.00, t = 16.284, p < 0.05). The regression model is given by:
Birth position (y) = 1.00 + 0.099*social cultural factors

Table 4.7: Correlations social cultural factors and birth positions

		Birth Position	Social Cultural Factors
birth position	Pearson Correlation	1	.118
	Sig. (2-tailed)		.056
	N	264	264
socaial cultural factors	Pearson Correlation	.118	1
	Sig. (2-tailed)	.056	
	N	264	264

The Table 4.7 shows that there was a positive correlation between birth position and social cultural factors as shown by a correlation figure 0.118 which is not significant(p-value>0.05).

4.3 Health Facility Related Factors
The other interest was to study how health facility factors affect the birth positions among women in Mama Lucy Kibaki hospital.

Table 4.8: Availability of Resources

Variables	Categories	Frequency	Percent
Staff during Labour and Delivery	Available	258	97.7
	Not available	6	2.3
Equipment and tools	Inadequate	228	86.4
	Adequate	36	13.6

From table 4.8 shows that 97.7% of respondents believed that the hospital had enough and available staffs while 2.3% believed had no enough and available staffs.86.4% responded that equipments and tools were inadequate while 13.6% believed that the equipments were adequate.

Table 4.9: Relationship between Health Facility Factors and Birth Positions

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.693[a]	.481	.479	.23922

a. Predictors: (Constant), health facility factors

Table 4.9Presents the coefficients of the regression model equation and tests of significance

Table 4.10: Regression Coefficients in relation to birth positions

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.378	.050		7.526	.000
	health facility factors	.653	.042	.693	15.574	.000

a. Dependent Variable: birth position

As shown in Table 4.11 the constant was statistically significant (B = 0.378, t = 7.526, p < 0.05). The regression model is given by:Birth position (y) = 0.378+ 0.653*health facility factors

Table 4.11: Correlations Health Facility Factors and Birth Positions

		birth position	health facility factors
birth position	Pearson Correlation	1	.693[**]
	Sig. (2-tailed)		.000
	N	264	264
health facility factors	Pearson Correlation	.693[**]	1
	Sig. (2-tailed)	.000	
	N	264	264

**. Correlation is significant at the 0.05 level (2-tailed).

Table 4.11 shows that there is positive correlation between birth position and health facility factors as shown by a correlation figure 0.693 which was significant(p-value<0.05).

4.4 Health Provider's Factors
Health providers factors were assessed based on advice, support and suggestion given by health workers; and patients' perception on health workers experience.
4.4.1 Advice

Table 4.12: Advice from Health Worker

	Frequency	Percent	Cumulative Percent
Yes	215	81.4	81.4
No	49	18.6	100.0
Total	264	100.0	

From table 4.4.1 shows that 81.4% were advised by health workers on birth positions while 18.6 % were not advised by health workers.
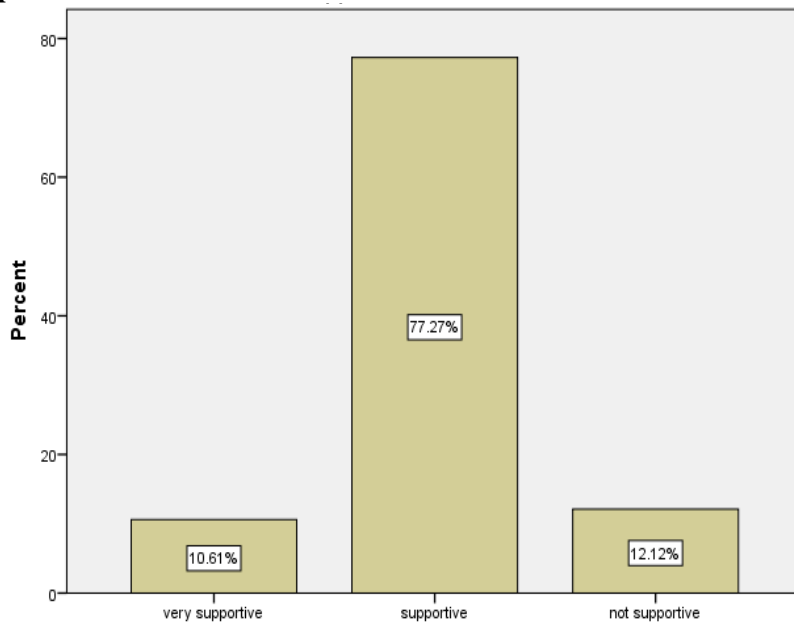
4.4.2 Level of Support

Figure 4.3: Level of Support from Health Workers

Figure 4.4 shows that 10.61% of health workers were very supportive in terms of Monitoring both labour and delivery process, 72.27% were supportive while 12.12% not supportive

4.4.3 Decision on Birth Position
Table 4.13: Decision on Labor and Delivery Position

Variables	Categories	Frequency	Percent
Decision on LabourPosition	Self	216	81.8
	Nurse/midwife	35	13.3
	Doctor	13	4.9
Decision on Delivery Position	Nurse/ midwife	164	62.0
	Doctor	59	22.5
	Self	10	3.7

From Table 4.13 shows that 81.8% of women decided themselves on which labour position they adopted.13.3% were advised by the nurses while 4.9% were advised by doctor. Whereas 62% took the decision of a nurse/ midwife when delivering, 22.5% doctor while 3.7% made the decision.

Table 4.14: Relationship between Health Provider's Factors and Birth Position
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.632[a]	.399	.397	.25736

a. Predictors: (Constant), health provider's factors

Table 4.14 presents the coefficients of the regression model equation and tests of significance.

Table 4.15: Regression Coefficients in relation to Health provider's Factors Related Factors
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.407	.057		7.187	.000
	health provider's factors	.640	.049	.632	13.189	.000

a. Dependent Variable: birth position

As shown in Table 4.15, the constant was statistically significant (B = 0.407, t = 7.187, p < 0.05). The regression model is:

Birth positions (y) = 0.407 + 0.640*health providers factors

Table 4.16: Correlations health providers factors and birth positions

		birth position	health provider's factors
birth position	Pearson Correlation	1	.632[**]

	Sig. (2-tailed)		.000
	N	264	264
health provider's factors	Pearson Correlation	.632**	1
	Sig. (2-tailed)	.000	
	N	264	264

**. Correlation is significant at the 0.05 level (2-tailed).

Table 4.16 shows that there was positive correlation between birth position and health providers factors as shown by a correlation figure 0.632which was significant (p-value<0.05).

4.5 Birth Position
The respondents were asked to give the type of birth positions they used during labour and delivery.

Table 4.17: Different Birth Positions

Variables	Categories	Frequency	Percent
LabourPositon	Recumbent	207	78.4
	Upright	57	21.6
Delivery Position	Recumbent	253	95.8
	Upright	11	4.2

Table 4.17 shows that the 78.4% used recumbent and 21.6% used upright labour position. Whereas 95.8% used recumbent and 4.2% used upright delivery position.

4.6 ANOVA

Table 4.18: ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	15.041	4	3.760	70.396	.000^b
	Residual	13.834	259	.053		
	Total	28.875	263			

a. Dependent Variable: birth position
b. Predictors: (Constant), health provider's factors, social cultural factors, socio-demographic characteristics, health facility factors

The significant value is 0.000 thus the model is statistically significance in predicting how socio-demographic characteristics, social cultural factors, health facility factors and health provider's factors impact to birth positions. The F calculated is greater than the F critical (value=70.396), this shows that the overall model was significant.

4.7 Test of hypothesis
The test of hypothesis was done using the p value obtain from SPSS program , null hypothesis is rejected if p value is less than the critical value alpha (0.05). The hypotheses are developed as follows.
H_o:birth position is independent of the socio-demographic characteristics
H_o:birth position is independent of social cultural factors
H_o:: birth position is independent of health facility factors
H_o:birth position is independent of health provider's factors
Since the significant value for socio-demographic characteristics, health facility factors and   health provider's factors is less than the critical value alpha (0.05) reject the null hypothesis and conclude that the three independent variables affect the birth position. This implies that the four variables are statistical significant to the model. However social cultural factors was not significant since significant value is greater than critical value alpha (0.05) thus fail to reject the null hypothesis

V. Summary Of The Findings, Discussion And Reccommedation
5.0 Introduction
This chapter contains discussion of the current study findingsin relation with findings from other studies conducted elsewhere. The chapter further highlights the conclusion made from the study findings. Recommendations from the final section of this chapter.5.1 Summary of Findings
5.1 Discussion
This section will present the discussion of the results as presented in chapter four. The results discussed in relation to study objectives
5.1.1Influence ofSocio Demographic Characteristics on Birth Positions
The findings of the study show that Age category, marital status and occupation had no significant effect on birth positions, the p-values of these variables was above 0.05. Only level of education and occupation as socio Demographic variable had significance effect on birth positions since the p-value < 0.05.
The findings of the study also show that majority of respondents (78.4percent) used recumbent labour position while (21.4percent) used upright labour positionson comparison, majority of women 95.8% used recumbent

delivery position as compared to the 4.2% who used upright birth position.The main birth position was lying on bed, that is, recumbent. The findings agrees with previous studies, which stated that the recumbent position is mostly dominant in the westernized societies and other developing countries especially to mothers delivering in the hospitals (De Jonge&Lagro-janssen, 2006).

5.1.2 Relationship between Social Cultural Factors and Birth Positions
To measure the impact of social cultural factors on choices of birth position the study sought to know whether the respondent's culture had any specific choice of birth positions, majority had no specific choice of birth position that their culture encourages. There was a positive correlation between birth position and social cultural factors as shown by a correlation figure 0.118 but it was not significant since the (p-value>0.05). This was supported by the table of coefficients that gives p-value as0.056 which is above 0.05. This implies that the social cultural factors are not statistically factors for determining birth positions. This is contrary to a study conducted by kitzinger (2011) which stated that Labour and birth had special meaning for every culture and the event was usually marked by either spiritual or cultural symbols

5.1.3 Impact of Health Facility Factors (Availability of Staffs /Equipments) on Birth Position
97.7% of respondents believed that the hospital had enough and available staffs while 2.3% believed that there was inadequate and available staff. Also 86.4% responded that the equipments and tools were inadequate while 13.6% believed that the equipment's and tools were adequate.
Health facility factors influence the birth position. The model 4.3.3 shows that a change by one unit of the health facility factors changes the birth position by 0.643.There was also positive correlation between birth position and health facility factors as shown by a correlation figure 0.693 which was significant(p-value<0.05).This tends to agree withprevious study which states that Position change and ambulation during labour and birth are greatly underutilized in the hospital settings (Declercq, Sakala, Corry, & Applebaum, 2006)

5.1.4 Impact of Health Service Providers OnBirth Positions
Health service providers influence the birth positions .The model 4.4.5 shows that change by one unit of the health service providers changes the birth position by 0.640.There was positive correlation between birth position and health facility factors as shown by a correlation figure 0.632 which was significant(p-value<0.05).The health workers advice, suggestions and support significantly related to birth positions.This agrees with previous studies conducted which reveals that Midwives have a vital task in broadening the array of women's delivery preferences (De Jonge&Lagro-janssen, 2006).Most of respondent felt that the health providers were experienced in terms of how they handled them, which agrees with the previous study which stated that Midwives should be competent enough in order to give encouragement and also aid mothers to deliver in various positions, so professional training of midwives in various positions of delivery is a must (Zileni, Glover, Jones, Teoh, Zileni, & Muller, 2017). Flexible birthing methods can be employed by midwives encouraging a woman to use various delivery positions (Nieuwenhuijze, de Jonge, Korstjens, Budé, & Lagro-Janssen, 2013).

5.2 Conclusion
This study sought to establish the determinants of birth positions among women aged 18-49 years in MLKH. Most of the women had their labor in recumbent position. The determinants under study were social demographic factors, social cultural factors, health facility factors, and health provider's factors. Based on the findings, the study concluded as follows. The social demographic factors under study included age, marital status, occupation status, education level, and social economic status. The level of occupation and education were significantly related to birth positions.The study tends to agree with study done on Women with high literacy rates, werein a more likely position to use uprightbirthing methods(Gizzo, Di Gangi, Noventa, Bacile, Zambon, & Nardelli, 2014)byGupta ,Hofmeryandshahmer (2012) which revealed that education and occupation weresignificantly related to labour position. Women aged 18-22 years were significantly more likely to use recumbent labour position compared to those who are older .Culture mainly encourages walking and sitting during labour while lying down during delivery. There was no significant relationship between birth positions and cultural beliefs. Many women who believed in either upright or recumbent positions used them.
Health facility factors including availability of equipment and staff were readily available and mainly influenced labour and delivery position as shown by correlation tables and also from the model of regression cofficient.
Health providers factors including advice, support and suggestion given by health workers; and patients' perception on health workers experience significantly relate with birth position.Women ought to be heartened and assisted to move and take on most comfortable positions during labour and delivery

5.3 Recommendations
Majority of mothers use recumbent position as compared to upright position irrespective of the many benefits

associated with the upright position. The study thus recommends:

1. The Creation of awareness on benefits of upright birth positions as opposed to recumbent position to mothers during antenatal visits and during early labour.
2. The medical staff needs to be sensitized on the need to encourage the mothers to maintain upright birth position during birthing process.
3. The health facility set up of the maternity should have all the equipment needed for support of upright birth position.
4. The study reviewed that 47.9% of birth position is attributed to other factors, which were not investigated in this study. Therefore, there is need to further research that should be conducted to investigate the other factors (47.9%) that determines birth positions
5. There is need for future studies on strategies that enhance upright position.

VI. Acknowledgment

VIII.

IX. References

[1]. Banerjee, A., & Chaudhury, S. (2010). Statistics without tears: Populations and samples. Industrial psychiatry journal, 19(1), 60.
[2]. Best, J., & Khan, J. (2007). Research in Education. New Delhi: Prentice Hall of India.
[3]. Bolarinwa, O. A. (2015). Principles and methods of validity and reliability testing of questionnaires used in social and health science researches. Nigerian Postgraduate Medical Journal, 22(4), 195.
[4]. Chang, S. C., Chou, M. M., Lin, K. C., Lin, L. C., Lin, Y. L., & Kuo, S. C. (2011). Effects of a pushing intervention on pain, fatigue and birthing experiences among Taiwanese women during the second stage of labour. Midwifery, 27(6), 825-831.
[5]. Cooper, R., & Schindler, S. (2006). Business research methods. Singapore: McGraw-Hill.
[6]. De Jonge, A., & Lagro-janssen, A. L. (2006). Birthing positions. A qualitative study into the views of women about various birthing positions. Midirs Midwifery Digest, 16(2)., 229-229.
[7]. De Jonge, A., Rijnders, M. E., van Diem, M. T., Scheepers, P. L., & Lagro-Janssen, A. L. (2009). Are there inequalities in choice of birthing position?: Sociodemographic and labour factors associated with the supine position during the second stage of labour. Midwifery, 25(4), 439-448.
[8]. Declercq, E. R., Sakala, C., Corry, M. P., & Applebaum, S. (2006). Listening to mothers II. . New York: Childbirth connection.
[9]. Desseauve, D., Fradet, L., Lacouture, P., & Pierre, F. (2016). Position for labor and birth: State of knowledge and biomechanical perspectives. European Journal of Obstetrics & Gynecology and Reproductive Biology.
[10]. DiFranco, J. T., & Curl, M. (2014). Healthy birth practice# 5: Avoid giving birth on your back and follow your body's urge to push. The Journal of perinatal education, 23(4), 207-210.
[11]. Diorgu, F. C., Steen, M. P., Keeling, J. J., & Mason-Whitehead, E. .. (2016). Mothers and midwives perceptions of birthing position and perineal trauma: An exploratory study. Women and Birth, 29(6), 518-523.
[12]. Drost, E. A. (2011). Validity and Reliability in Social Science Research. Education Research and Perspectives, 38(1), 105-123.
[13]. Edqvist, M., Blix, E., Hegaard, H. K., Ólafsdottir, O. Á., Hildingsson, I., Ingversen, K., et al. (2016). Perineal injuries and birth positions among 2992 women with a low risk pregnancy who opted for a homebirth. BMC Pregnancy and Childbirth,.
[14]. Gabrysch, S. L., & Miranda, J. J. (2009). Cultural adaptation of birthing services in rural Ayacucho, Peru. Bulletin of the World Health Organization, 87(9), 724-729.
[15]. Gayiti, M. R., Li, X. Y., Zulifeiya, A. K., Huan, Y., & Zhao, T. N. (2015). Comparison of the effects of water and traditional delivery on birthing women and newborns. Eur Rev Med Pharmacol Sci, 19(9), 1554-1558.
[16]. George, J. B. (2011). Nursing Theories: The Base for Professional Nursing Practice. India: Pearson Education .
[17]. Gizzo, S., Di Gangi, S., Noventa, M., Bacile, V., Zambon, A., & Nardelli, G. B. (2014). Women's choice of positions during labour: return to the past or a modern way to give birth? A cohort study in Italy. BioMed research international.
[18]. Goer, H., & Romano, A. (2012). Optimal care in childbirth: The case for a physiologic approach. Classic Day Publishing.
[19]. Goldbort, J. G. (2009). Women's lived experience of their unexpected birthing process. MCN. The American Journal of Maternal/Child Nursing, 34(1), 57-62.
[20]. Gupta, J. K., Hofmeyr, G. J., & Shehmar, M. (2012). Position in the second stage of labour for women without epidural anaesthesia. Cochrane Database Syst Rev, 5.
[21]. Hodnett, E., Gates, S., Hofmeyr, G., Sakala, C., & J., W. (2011). Continuous support for women during childbirth. Cochrane Database Syst Rev16(2).
[22]. Huchon, C., Arsenault, C., Tourigny, C., Coulibaly, A., Traore, M., Dumont, A., et al. (2014). Obstetric competence among referral healthcare providers in Mali. International Journal of Gynecology & Obstetrics, 126(1), 56-59.
[23]. Israel, G. D. (2013). Determining sample size. Gainesville, Fla: University of Florida IFAS Extension.
[24]. Jansen, L., Gibson, M., Bowles, B. C., & Leach, J. (2013). First do no harm: Interventions during childbirth. The Journal of perinatal education, 22(2), 83-92.
[25]. Kemp, E., Kingswood, C. J., Kibuka, M., & Thornton, J. G. (2013). Position in the second stage of labour for women with epidural anaesthesia. The Cochrane database of systematic reviews, 1, CD008070.
[26]. Keriakos, R., & Gopinath, D. (2015). Obstetric anal sphincter injuries. Journal of Acute Disease, 4(4), 259-265.
[27]. Kilpatrick, S., & Garrison, E. (2016). Normal Labor and Delivery. Obstetrics: Normal and Problem Pregnancies, , , 267.
[28]. Kitzinger, S. (2011). Rediscovering birth. Pinter & Martin Publishers.
[29]. Kopas, M. L. (2014). A Review of Evidence-Based Practices for Management of the Second Stage of Labor. Journal of Midwifery & Women's Health, 59(3), 264-276.

[30]. Lavender, T., & Mlay, R. (2012).) Position in the second stage of labour for women without epidural anaesthesia: RHL commentary . Geneva: The WHO Reproductive Health Library:World Health Organization.
[31]. Lawrence, A., Lewis, L., Hofmeyr, G. J., & Styles, C. (2013). Maternal positions and mobility during first stage labour. Cochrane Database of Systematic Reviews 15(2).
[32]. Macdonald, S. (2011). Mayes' Midwifery: a textbook for midwives. Elsevier Health Sciences.
[33]. Martin, C. J., & Martin, C. R. (2013). A narrative review of maternal physical activity during labour and its effects upon length of first stage. . Complementary therapies in clinical practice, 19(1) , 44-49.
[34]. MIDIRS. (2012). Understanding physiology breech birth . Midwives information and resources services 3(2).
[35]. Nieuwenhuijze, M. J., de Jonge, A., Korstjens, I., Budé, L., & Lagro-Janssen, T. L. (2013). Influence on birthing positions affects women's sense of control in second stage of labour. Midwifery, 29(11), 107-114.
[36]. Nieuwenhuijze, M. J., Low, L. K., Korstjens, I., & Lagro-Janssen, T. (2014). The role of maternity care providers in promoting shared decision making regarding birthing positions during the second stage of labor. Journal of Midwifery & Women's Health, 59(3), 277-285.
[37]. Nilsen, E., Sabatino, H., & Lopes, M. H. (2011). The pain and behavior of women during labor and the different positions for childbirth. Revista da Escola de Enfermagem da USP, 45(3), 557-565.
[38]. Okonta, P. (2012). Birthing positions: awareness and preferences of pregnant women in a developing country. Internet J Gynaecol Obstet, 16(1), 21-30.
[39]. Ondeck, M. (2014). Healthy birth practice# 2: Walk, move around, and change positions throughout labor. The Journal of perinatal education, 23(4), 188-193.
[40]. Rossi, P. H., Wright, J. D., & Anderson, A. B. (2013). Handbook of survey research. India: Academic Press.
[41]. Royal College of Midwives. (2010). The Royal College of Midwives annual report. RCM.
[42]. Royal college of Midwives. (2012). Evidence baased guidlines for midwifery led delivary in healthcare . RCM.
[43]. Shorten, A., Donsante, J., & Shorten, B. (2002). Birth position, accoucheur, and perineal outcomes: informing women about choices for vaginal birth. Birth, 29(1), 18-27.
[44]. Thies-Lagergren, L. (2013). The Swedish birth seat trial.
[45]. Traoré, M. A., Coulibaly, A., Huchon, C., Dumont, A., & Fournier, P. (2014). Obstetric competence among primary healthcare workers in Mali. International Journal of Gynecology & Obstetrics, 126(1), 50-55.
[46]. Walker, D., Lannen, B., & Rossie, D. (2014). Midwifery practice and education: current challenges and opportunities. Online journal of issues in nursing, 19(2).
[47]. Walsh, D. (2017). Care in the first stage of labour. Retrieved 2017, from Nurse Key: http://nursekey.com
[48]. Warmink-Perdijk, W. D., Koelewijn, J. M., de Jonge, A., van Diem, M. T., & Lagro-Janssen, A. L. (2016). Better perineal outcomes in sitting birthing position cannot be explained by changing from upright to supine position for performing an episiotomy. Midwifery, 34, 1-6.
[49]. WHO. (2016). Reproductive Health Library. Retrieved 12 4, 2016, from http://apps.who.int/rhl/pregnancy_childbirth/childbirth/routine_care/CD003934_makuchmy_com/en/
[50]. Zileni, B. D., Glover, P., Jones, M., Teoh, K. K., Zileni, C. W., & Muller, A. (2017). Malawi women's knowledge and use of labour and birthing positions: A cross-sectional descriptive survey. Women and Birth, 30(1), e1-e8.