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Examining the Mismatch between Fertility Desire and Contraceptive Behaviour in the Extended Postpartum Period in Uganda

by

Patricia Ndugga

Thesis for the Degree of <u>Doctor of Philosophy</u>

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<u>Abstract</u>

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In the two years following delivery, women often have an unmet need for family planning, with unplanned and not-optimally spaced pregnancies. Drawing on quantitative and qualitative data, this thesis explores women's expressed fertility desire, decisions about further childbearing, and contraceptive use among Ugandan women in the extended postpartum period. Data from the 2016 Uganda Demographic and Health Survey (n=5,088 women) were analysed in bivariate and multivariate logistic regression. Qualitative data from 43 interviews with women and men, and 13 family planning providersliving in Mayuge district, Uganda, were transcribed, coded and analysed using thematic analysis.

Overall, most women reported desire for further children; having children of the same sex, was associated with increased fertility desire, as was being Muslim. Practising postpartum abstinence, reporting the last child was unwanted, having at least, or more than the desired number of children, being unmarried, no formal education, and being unemployed were negatively associated with fertility desire. In interviews, Muslim men reported to desire large family sizes; women said to continue childbearing to maintain marital stability—implying a need for family planning programmes to actively engage male partners. Contraceptive use was low (33%) and inconsistent with the 92% of women who said not to want a child soon. In interviews, the mismatch was attributed to poor access to contraceptives, side effects, being amenorrhoeic, and provider and partner attitudes. Women recognised they were not at risk of pregnancy while amenorrhoeic, but did not appreciate they could conceive before return of menstruation; educational efforts are needed to encourage the uptake of contraception during postpartum amenorrhoea.

In conclusion, programme implementers need to take social norms that favour child sex preference into consideration when providing support to women in their fertility-decision making. This could be done through opinion leaders, such as religious leaders and community leaders, to increase understanding of the importance of birth spacing for women and childrens' health.

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Declaration of Authorship

I, Patricia Ndugga, declare that this thesis entitled

"Examining the Mismatch between Fertility Desire and Contraceptive Behaviour in the Extended Postpartum Period in Uganda"

and the work presented in it are my own and has been generated by me as the result of my own original research. I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission

Signed: ....

Date: ....

Acknowledgements

List of Acronyms

CHC	Combined hormonal contraceptive
CHW	Community Health Worker
CI	Confidence Interval
CPR	Contraceptive Prevalence Rate
DHO	District Health Officer
DMPA	Depot Medroxyprogesterone Acetate
FP	Family Planning
FP2020	Family Planning 2020
HC	Health Centre
ICPD	International Conference on Population and Development
IDI	In-Depth Interview
IUD	Intrauterine Device
KII	Key informant interview
LAM	Lactational amenorrhoea method
LC	Local Council
MDGs	Millennium Development Goals
MEC	Medical Eligibility Criteria
MSU	Marie Stopes Uganda
NGO	Non-Governmental Organisation
OR	Odds Ratio
PACE	Programme for Accessible health Communication and Education
PNC	Postnatal care
PPFP	Postpartum Family Planning
PPIUD	Postpartum Intrauterine Device
RA	Research Assistant
SDG	Sustainable Development Goal
STI	Sexually Transmitted Infection
TPB	Theory of Planned Behaviour
TDIB	Traits Desires Intentions Behaviour

TFR	Total Fertility Rate
UDHS	Uganda Demographic and Health Survey
UNFPA	United Nations Population Fund
VHT	Village Health Team
WHO	World Health Organisation

Chapter 1   Introduction: Overview, objectives, rationale and study context

1.1   Introduction

This chapter provides a general overview of the background of the study, followed by the research objectives and the rationale for conducting this study. Next, I present the study context and Uganda's population and family planning (FP) policies and programmes and thereafter I introduce the Traits-Desires-Intentions-Behaviour Framework (TDIB) and the Theory of Planned Behaviour (TPB). Finally, I provide a short outline of the forthcoming chapters.

1.2   Overview of the study

Globally, sub-Saharan Africa has the highest fertility rate with women bearing over five children on average compared to the world average of three children (Bongaarts and Casterline, 2013, PRB, 2017). This rises to over six children in countries such as Niger, Chad, Somalia and Congo (PRB, 2017). High fertility has been associated with negative health, social, and psychological outcomes for women and children (Darroch and Singh, 2013). Additionally, increasing population slows down economic growth and exerts pressure on public services and infrastructure of the country (Ezeh et al., 2012, Bongaarts and Bruce, 1995). Thus, reducing fertility levels remains a key reproductive health goal for planners, researchers and policy-makers in most sub-Saharan African countries. Factors contributing to high fertility include low socio-economic development, deeply-ingrained cultural values for large family sizes and low levels of contraceptive use (Bertrand, 2003, Creanga et al., 2011, Dyer et al., 2002, Caldwell and Caldwell, 1987c).

Some scholars have argued that in spite of high fertility in sub-Saharan Africa, many women (80 per 1,000 women aged 15-44 (Sedgh et al., 2014)) have unintended pregnancies, defined as those that are mistimed (came sooner than desired) or unwanted (were not wanted at all) (Bongaarts, 2015a). Women who are at risk of unintended pregnancy include those with unmet need for family planning, defined as those who wish to delay childbearing and those who want no more children but are not using

1

contraception. In 2012, an estimated 222 million women in developing countries who reportedly desired to space or limit pregnancies were unable to access contraception (Singh and Darroch, 2012). Unmet need for family planning is high because women encounter multiple obstacles to the use of effective contraception which include insufficient knowledge of contraceptive methods, limited access to services, fear of social disapproval, fear of side effects, and perception of husband's opposition (Bongaarts and Bruce, 1995, Cleland et al., 2006, Casterline and Sinding, 2000, Westoff and Bankole, 1995).

Evidence shows that women in the first two years after childbirth (hereafter extended postpartum period), have the greatest need for contraception (Ross and Winfrey, 2001b, Vernon, 2009, Moore et al., 2015, Borda and Winfrey, 2010), with almost all women expressing a desire to delay or prevent their next pregnancy for at least two years. This finding is supported by those from a seminal study by Ross and Winfrey (2001b) using data from 27 Demographic and Health Surveys (DHS) conducted among women within a year after delivery. The study found that 95% of postpartum women did not wish to become pregnant within two years of delivery, yet only 29% were using contraception. Similarly, in another study that used data from 22 recent Demographic and Health Surveys conducted among women between 0-23 months postpartum, in 21 low-and middle-income countries including Uganda, Moore et al. (2015) found that 61% of all women had an unmet need for family planning. These results have great public health ramifications because they suggest a gap between women's fertility desire and their ability to prevent pregnancy successfully (Westoff, 1992).

In addition to the variables commonly mentioned to be associated with the likelihood of becoming pregnant, child sex preference is less extensively studied and of particular relevance in this study setting. Women with child sex preference continue bearing children until they attain their desired sex composition (Adebowale & Palamuleni, 2015). Research among postpartum women has highlighted short inter-pregnancy intervals (defined as intervals of less than 24 months between pregnancies)in women who have not yet met their ideal sex preference (Adebowale & Palamuleni, 2015; Fayehun, Omololu, & Isiugo-Abanihe, 2011; Rutstein, 2005). Rutstein (2005) revealed that about one-quarter of inter-birth intervals in low-and middle-income countries were less than 24

months in length. This is not in line with the World Health Organisation (WHO) recommendation of an interval between a live birth and an attempt to the next pregnancy of at least 24 months, which corresponds to a birth-to-birth interval of 33 months under the assumption of nine months gestation (World Health Organization, 2005). Short birth intervals pose adverse consequences for maternal and infant health outcomes. For instance, pregnancies conceived within 24 months of a previous birth are at considerably higher risk of prematurity, low birth weight, fetal and early neonatal death (Conde-Agudelo et al., 2006). Further, a systematic review by Conde-Agudelo et al. (2007) confirmed that mothers with short birth intervals are at a higher risk of birth complications such as uterine rapture, bleeding disorders and spontaneous abortion. All this evidence suggests that spacing pregnancies appropriately through use of effective contraception is of paramount importance to help prevent adverse health outcomes among women in the postpartum period.

Unfortunately, national family planning programmes of many developing countries often neglect the needs of new mothers (RamaRao et al., 2003), which is partly explained by their perceived low risk of conceiving as such women are thought to be sexually abstinent, postpartum amenorrhoeic and breastfeeding for a prolonged period which suppresses ovulation. In addition, postpartum women are expected to be in regular contact with health providers for well-baby visits and postpartum family planning counselling. Unfortunately, this is not the case in many sub-Saharan Africa settings, where home deliveries are common and postnatal care attendance low. This presents a missed opportunity of providing family planning counselling to postpartum women (Vernon, 2009).

Factors influencing fertility desire and use of contraception have been studied extensively in the general population (Matovu et al., 2017a, Mohammed and Assefa, 2016, Antelman et al., 2015, Melka et al., 2014, Gyimah et al., 2015, Mayhew et al., 2017, Wanyenze et al., 2015a). However, less is known about the determinants of fertility desire and contraceptive uptake among women who had a child within the last two years in a high fertility context. This information is nevertheless critical to the design of strategies to reduce fertility and increase contraceptive uptake. It is against the background of high

preference to delay subsequent births and low contraceptive usage rates in Uganda that I undertake this study.

1.3   Rationale for investigating fertility desire among Ugandan women

Studies on fertility desire and contraceptive uptake among women within two years of delivery in sub-Saharan Africa are limited (O'Shea et al., 2015, Mayondi et al., 2016, Sofolahan-Oladeinde et al., 2017, Gutin et al., 2014). Specifically, few attempts have been made to examine the interrelated issues of fertility desire, contraceptive use and family planning service environment in one study. Previous studies have revealed rapid resumption of sexual activity after delivery (Hyde et al., 1996, Adanikin et al., 2014, Ndugwa et al., 2011a) and high unmet need for family planning among women within two years of delivery. Hence, the assumption that women within two years of childbirth are sexually abstinent and not in need of contraception is not tenable.

Clearly, this group of women is at risk of having unintended pregnancies and therefore interventions to meet their fertility goals are warranted. This study will add to the emerging body of evidence on fertility desire and contraceptive behaviour of women in a sub-Saharan Africa setting. This thesis pays important attention to Uganda due to its distinct characteristics.

Uganda has one of the highest fertility rates in the world (5.4 births per woman) and a faster population growth rate (2.9% per year) than other countries in the East African region (UBOS and ICF, 2018, PRB, 2017). The high fertility rate is partly attributed to low contraceptive use among women ages 15–49 (UBOS and ICF, 2018). Paradoxically, knowledge of at least one method of contraception among all women is almost universal (99%); and yet only 35% of married women use modern contraception (UBOS and ICF, 2018). Overall, 28% women indicate unmet need for family planning, of whom 18.3% would like to space and 10.1% to limit births (UBOS and ICF, 2018). According to the 2016 Uganda Demographic and Health Survey report, more than four in 10 births are unplanned, 9% of births occur within 18 months of a previous birth while a quarter occur within 24 months. Thus in Uganda, most unplanned pregnancies may be associated with short birth intervals. In this context, the period following delivery is particularly important

for initiating contraception to avert unintended pregnancies and increase birth spacing (Cleland et al., 2006).

After delivery, breastfeeding is considered an effective form of contraception only when the criteria for the Lactational amenorrhoea method (LAM) is strictly observed; that is, if breastfeeding is practised exclusively—infants receive no other foods or liquids besides breastmilk (Kramer and Kakuma, 2004), during postpartum amenorrhoea (defined as the interval between a birth and resumption of the next menstruation) and the infant is below six months (Family Health International, 1989, Ravera et al., 1995). However, according to the 2016 Uganda Demographic and Health Survey (UDHS), only two-thirds of infants under six months are exclusively breastfed; consequently, the effectiveness of the Lactational amenorrhoea method for pregnancy prevention is diminished (Lutter et al., 2011). Resumption of menses is generally used as a signal of return to fertility and the need to resume contraceptive use (Ndugwa et al., 2011a, Mumah et al., 2015, Borda et al., 2010, Abera et al., 2015).

Women are likely to be in regular contact with the health care system for well-baby care visits and postpartum care— care of the mother and baby that begins one hour after delivery until six weeks after childbirth— and are thus, in principle, exposed to family planning counselling during these visits (Warren et al., 2010, Do and Hotchkiss, 2013, Eliason et al., 2013). However, the 2016 UDHS data reports that only 54.3% of women have the recommended postpartum care check-up within two days of delivery and more than a quarter of live births in the five years preceding the survey were delivered at home, thus reducing the opportunity for family planning counselling.

The UDHS 2016 revealed that Ugandan women are having more children than they wish to. Women indicated that their ideal family size would be 4.8 children while in reality the estimated total fertility rate (TFR), which measures the number of children a woman would have by the end of her reproductive age given current age-specific fertility rates, was 5.4 in 2016. This difference between reported ideal family size and estimated TFR indicates evidence of unwanted fertility. Evidence from other African countries indicates that the mismatch between desired and actual births is attributed to partner's fertility preferences, socio-economic status, desire for marital stability, and child sex preference—

wanting more male children, more female children, or a mixture (Abbawa et al., 2015a, Gyimah et al., 2015, O'Shea et al., 2015).

Only a few studies, most of which are quantitative in nature, have been conducted to identify the determinants of fertility desire and contraceptive behaviour among postpartum women in Uganda (Gutin et al., 2014, Sileo et al., 2015, Rutaremwa et al., 2015, Ayiasi et al., 2015). Results of these studies suggest socio-demographic characteristics (education, wealth status, religion, age, number of living children, partner's desired number of children, having received postnatal care and exposure to mass media) as the main determinants of fertility desire and contraceptive uptake.

However, there are no mixed methods studies (defined as those that combine both quantitative and qualitative approaches) that have been conducted to better understand the fertility decision–making autonomy related to the use of contraception and childbearing among Ugandan women in the extended postpartum period. This study aims to fill this gap and to contribute to knowledge generation in the field of fertility desire and contraceptive behaviour after delivery.

1.4 Aim, objectives and research questions

This thesis aims to extend the understanding of how women approach fertility decisions using a sequential exploratory mixed methods design (combining both qualitative and quantitative approaches).

The objectives and research questions of this study are presented in Table 1.1

Table 1.1   Research objectives and research questions

Objectives	Research questions
1) To study the factors associated with the self-reported fertility desire among Ugandan women who were interviewed in 2016 and had a live birth between 2014 and 2016 **(Chapter four).**	What factors are associated with self-reported fertility desire among Ugandan women who were interviewed in 2016 and had a live birth between 2014 and 2016 in Uganda?
2) To investigate the association between sex composition of living children and child sex preference and fertility desire among Ugandan women in the extended postpartum period **(Chapter four).**	Is child sex composition and child sex preference associated with fertility desire among Ugandan women in the extended postpartum period?
3) To investigate if women's self-reported fertility desire is associated with a likelihood of using modern contraception among Ugandan women in the extended postpartum period **(Chapter five).**	Does women's expressed fertility desire correspond with their actual use of modern contraception?
4) To explore the motivations for subsequent fertility decisions and contraceptive behaviour among Ugandan women in the extended postpartum period **(Chapters six and seven).**	What are the motivations for subsequent childbearing among women in the extended postpartum period?
5) To explore women's considerations regarding contraceptive use in the extended postpartum period, and understand the contexts women use to achieve their fertility desire in Uganda **(Chapter seven).**	What considerations do women make when deciding to use contraception after delivery?

In this thesis, fertility desire has been defined as the wish to either have another child, or not as expressed by married and unmarried individuals at the time of interview.

1.5   Study context

In order to understand the research questions at individual, household and community levels, it is essential to understand Uganda's geography, demographic and health profile.

1.5.1   Uganda: Geography, history, politics, economy

Geographically, Uganda is a landlocked country located in East Africa, bordered by five countries (Kenya to the East, Tanzania to the South, Rwanda to the Southwest, the Democratic Republic of Congo to the West and South Sudan to the North). Uganda is administratively divided into four regions: Central, Eastern, Northern and Western (as shown in Figure 1.1). These are further subdivided into 112 districts. The districts are further subdivided into Counties, Sub counties and Parishes.

Figure 1.1   Map of Uganda showing the four main regions

Source: PhD Candidate's map

Uganda is a former British Protectorate that gained its independence in 1962.
Approximately 75% of the country's population reside in rural areas and about two-thirds
(64%) of the working population rely primarily on subsistence agriculture as their source
of livelihood (UBOS, 2016).

Uganda is one of the poorest nations in the world, ranked 163rd (out of 188 countries) on the human development index, by the United Nation Development Programme (UNDP, 2015). Only 20% of Ugandan households use electricity for lighting, and the majority of households (71%) use firewood for cooking (UBOS, 2016). Uganda's population is made up of different ethnic groups with a common culture, tradition and language: Baganda are the majority accounting for 17%, followed by the Banyankole with about 10%, Basoga (8.9%), Bakiga (7.2%), Iteso (6.7%), Langi (6.4%), Bagisu (4.8%), Acholi (4.9%), Lugbara (4.4%), while other smaller ethnic groups (31.4% in total) form the remainder (UBOS, 2016). Religion plays an influential role in influencing fertility dynamics by imparting behavioural norms and values among its followers and enforcing compliance. Uganda is characterised by a diversity of religious beliefs and practices. The 2014 Census results indicate that Christianity is the largest religious denomination constituting 84.6% of the population followed by Islam with about 12.4% and all other religions 3%. Thus, it is important to study differentials by religion and ethnicity as they may contribute to understanding women's fertility desire and contraceptive behaviour in Uganda. Uganda is patrilineal in structure, with males exerting authority over their female counterparts on all matters including fertility decision-making (Ntozi and Odwee, 1995, Kabagenyi et al., 2016). As a consequence, the number of children a woman bears is perceived to reflect the desired fertility of her husband (Caldwell and Caldwell, 1987b).

1.5.2 Uganda: Demographic and Health profile

Uganda has a total population of 34.6 million and an annual population growth rate of 3.03% which implies that Uganda's population increases by more than one million people every year (UBOS, 2016). At the prevailing growth rate, the population is projected to reach 95.6 million by mid-2050 (PRB, 2017). Such a rapid population growth rate fuelled by the high fertility rate is an obstacle to Uganda's development and contributes significantly to low achievements in education, health and poverty reduction. Due to the high population growth rate, Uganda is a very youthful nation, with more than half of the population (55%) under the age of 18 years (UBOS, 2016). Inevitably, this leads to high levels of child dependency and a built-in momentum for population growth, such that, even if fertility was to drop drastically to replacement levels of around two children per

woman, the population of Uganda will continue to grow for the next 50 years or so. Additionally, the high child dependency ratio acts as a barrier to social transformation and development in Uganda.

In Uganda, health services are delivered through public and private sectors. As in many other African countries, the Government of Uganda is the main provider of health at public health facilities. The public health system is organised at several levels, the National Referral Hospital (NRH), Regional Referral Hospitals (RRHs), General hospitals, Health Centre's (HC): HC IV, HC III, HC II and HC I (Uganda Ministry of Health, 2015). This facility level classification is based on the services they provide and the catchment area they are intended to serve. Due to existing and perceived inefficiencies in the public sector, the role and prominence of the private sector (comprising private for profit (PFP) and private not-for-profit providers/non-government organisations (PNFP/NGOs)) is increasing (Kasirye et al., 2004, Basu et al., 2012).

With regards to maternal health, Uganda has made great strides given the marked improvement in pregnant women attending four or more antenatal care visits (from 48% in 2011 to 60% in 2016), and the number of births in health facilities increasing from 57% in 2011 to 73% in 2016. However, its maternal mortality rate is still very high. Approximately 336 women die for every 100,000 live births (UBOS and ICF, 2018),down from 438 in 2011(UBOS and ICF, 2012). The postnatal period (or called postpartum, if in reference to the mother only) is defined by the WHO as the period beginning one hour after the delivery of the placenta and continuing until six weeks (42 days) after the birth of an infant(WHO, 1998). The 2016 Uganda Demographic and Health Survey data indicate that 54% of women received the recommended postnatal check-up within two days of delivery, down from 33% in 2011.

Uganda has also registered improvements in child health indicators. Currently, under-five mortality is 64 deaths per 1000 live births, down from 90 deaths per 1000 live births in 2011, and infant mortality rate is 43 deaths per 1000 live births, down from 54 deaths per live birth in 2011 (UBOS and ICF, 2018). Breastfeeding is very common, but only 66% of infants under six months are exclusively breastfed.

1.5.2.1   Marriage in Uganda

Marriage is an important aspect of life in Uganda. In 2014, 65 percent of people aged 18 years or above were currently married, 13 percent were formerly married (divorced, separated or widowed) and the remaining 22% were single(UBOS and ICF, 2018). Marriage is either informal— involving men and women living together without a marriage ceremony, or formal, established under customary, religious or civil laws (Lwanga et al., 2018, UBOS and ICF, 2018). Under formal customary marriage—which is the most popular— the intending bridegroom's family pays bride wealth to the bride's paternal family. Thereafter, the customary marriage should be registered within six months of its occurrence for it to be legally recognised. Informal marriages are also very common in Uganda (Seeley, 2012). Under an informal marriage, a couple starts to live together and may formalise the union by paying bride wealth or a church ceremony some years later when the couple, or more particularly the husband, has accumulated enough wealth to afford such an expense. Religious marriages (Christian or Islamic) are less common than either customary or informal marriages (Bantebya et al., 2014), with one in four married men and women reporting they had a religious ceremony (UBOS and ICF, 2018). The religious ceremonies are performed in a church or mosque while civil marriages are officiated by a Registrar General.

Traditional gender norms and expectations within formal or informal marriage are strong. Husbands are considered head of household and main decision-maker in household decisions including reproduction, while wives are valued primarily for their reproductive roles and household duties in both formal and informal marriages (Bantebya-Kyomuhendo and McIntosh, 2006, Nantamu, 2011, Adams et al., 2013, Kabagenyi et al., 2016). Consequently, women are expected to consult with their husbands about household and health-related issues and to respect their husbands' decisions. Furthermore, women are expected to bear children within marriage, failure to do so can result into marital instability (Nabaitu et al., 1994, Agol et al., 2014, Matovu et al., 2017a). These inequitable gender norms also constrain women's access to health services, including their access to family planning services which elevates women's risk of unintended pregnancy, particularly in situations where the men oppose contraceptive use.

Furthermore, polygyny is a strong cultural norm in some Ugandan communities, backed up by religious and cultural norms which tolerate and condone multiple sexual partners among men (Kabagenyi et al., 2016). According to the 2016 Uganda UDHS, approximately one of every four women reported being in a polygynous union in 2016(UBOS and ICF, 2018). At the same time, men report a higher ideal family size than women—6.1 and 5.1 respectively (UBOS and ICF, 2018). Thus, polygyny combined with high levels of pronatalism, explains Uganda's high fertility rate to a considerable extent.

1.6   Uganda's fertility and contraceptive use profile

1.6.1   Fertility trends in Uganda

Uganda's population has grown rapidly over the recent decades increasing from 9.5 million in 1969 to 24.2 million in 2002, and reaching 34.6 million in 2014 (UBOS, 2016). Figure 1.2 shows that the high population growth rate is associated with high fertility rate. The data indicate that Uganda's TFR has been declining since 1988-89, although there was a stall between 1995 and 2000-01 (the TFR remained the unchanged between these two surveys). The possible explanation for the stall in Uganda was diversion of resources away from other health priorities including family planning to HIV/AIDS prevention programmes (World Bank, 1992), inadequate political support for family planning programmes (Mugisha and Reynolds, 2008) and reduced availability of modern contraceptive methods (Okullo et al., 2003, Ezeh et al., 2009). This was followed by a slight decline in 2006 and 2011 of 0.2 and 0.5 respectively, and a reduction of fertility rate from 6.2% to 5.4% in 2016. Thus, within a period of about three decades, fertility rate in Uganda has reduced by only two children. A reflection of this reduction is the declining trend in the annual population growth from 3.2% in 1991-2002 to 3.0 in 2002-2014 (UBOS, 2016).

Figure 1.2   Trends in Total Fertility Rate, 1988-89 – 2016*
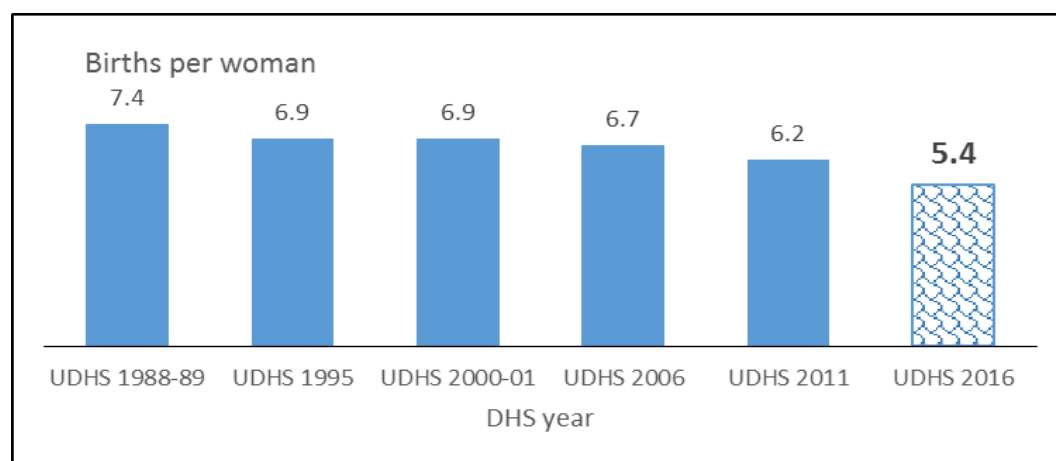
*Rates are per 1,000 women and refer to the three-year period preceding the survey

Source: UDHS reports (1988/89-2016);(Kaijuka et al., 1989, UBOS and ORC Macro, 2000-2001, UBOS and ICF, 2007, UBOS and ICF, 2012, UBOS and ICF, 2018)

The reduction in the fertility rate between 2011 and 2016 followed increased political and financial commitment towards efforts aimed at increasing access to family planning services, under the leadership of President Yoweri Museveni after the 2012 London Summit on family planning. During the Summit, 36 developing countries including Uganda, committed to improving the welfare and health of women and girls. President Museveni committed specifically to increasing Uganda's annual budget allocation for family planning from $ 3.3 million to $ 5 million per year over the next five years, and to mobilise additional donor funds. Two years later, during Uganda's first National Conference on Family Planning in 2014, the President endorsed family planning as a pillar of social-economic transformation. He said:

> "…Family planning is good for the health of the child and the mother, for the wellbeing of the family, and the whole country …It is about holistic development that starts with the realisation that having too many children is not good for development," (African Institute for Development Policy, 2014)

The president's public stance set the tone for policymaking and appears to have changed the minds of previously wary cabinet members, as well as religious and

district leaders. The United Nations Population Fund (UNFPA) Uganda Country Representative, Alain Sibenaler said:

> *"Uganda's leadership has come from an attitude of considering family planning taboo to embracing it"*[1]

In November 2014, the Ministry of Health developed the Uganda Family Planning Costed Implementation Plan 2015-2020, to set out guidelines and strategies for family planning interventions. Costing a total of $235 million between 2015 and 2020, the Plan aims at increasing the number of women in Uganda using modern contraception from about 1.7 million in 2014 to 3.7 million by 2020. With the increased political, financial commitment, service delivery has been strengthened and capacities of health workers have been built.

Despite a reduction to 5.4 births per woman in 2016, Uganda's total fertility rate is still relatively high. A comparison of Uganda's TFR with selected countries in East and Southern Africa reveals that Uganda has the second highest TFR, after Mozambique and similar to Zambia and Tanzania (Figure 1.3). The reduction of fertility is an important step to help women achieve their reproductive goals.

It is important to note that fertility is not the primary explanation for Uganda's population growth. Migration and mortality are also important factors. The link between migration and population growth has been documented (Carr, 2009, Mountford and Rapoport, 2016, Todaro, 1997).

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[1]https://www.devex.com/news/uganda-s-lessons-for-family-planning-summit-90638 Uganda's lessons for family planning summit. Accessed 7th/May/2018

Figure 1.3   Total Fertility Rates in Eastern and Southern Africa, DHS surveys
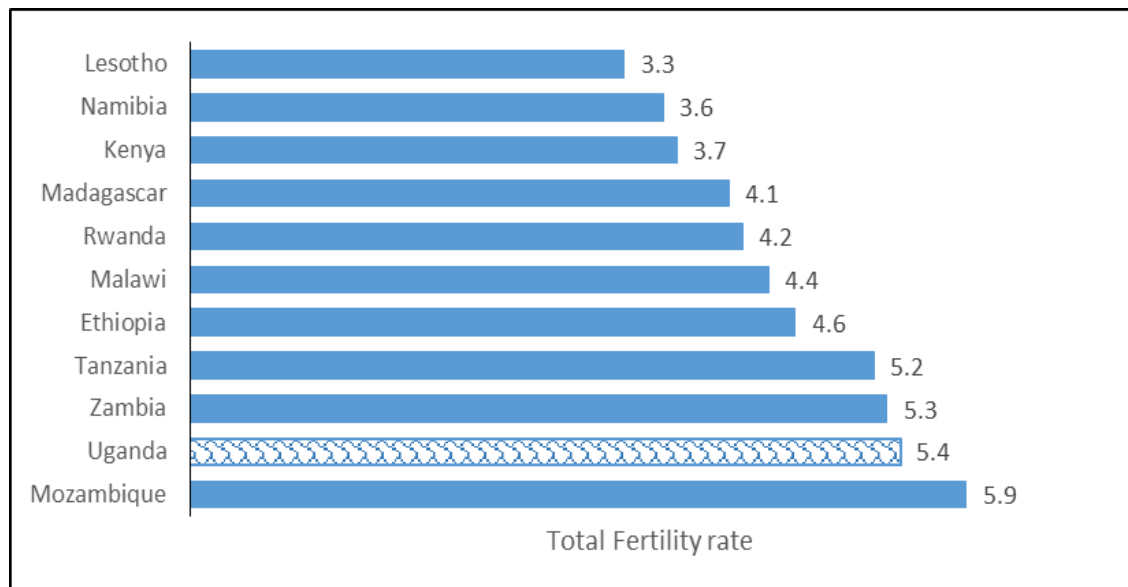
Source: most recent DHS of all selected countries; (Ministry of Health/Lesotho and ICF International, 2016, Health et al., 2014, 2014, National Institute of Statistics of Rwanda et al., 2016, National Statistical Office/Malawi and ICF, 2017, Central Statistical Agency - CSA/Ethiopia and ICF, 2017, Ministry of Health et al., 2016, Central Statistical Office/Zambia et al., 2015, Institut National de la Statistique - INSTAT/Madagascar and ICF Macro, 2010, UBOS and ICF, 2018, Ministerio da Saude - MISAU/Moçambique et al., 2013)

1.6.2   Contraceptive use in Uganda

Knowledge of contraceptive methods is an important precursor to their use (Ochako et al., 2017, Bongaarts and Bruce, 1995). In Uganda, knowledge of contraceptive methods is almost universal with 99% of all women and 99.8% of all men reporting knowledge of at least one method (UBOS and ICF, 2018). Among men and women, modern contraceptive methods are more widely known than traditional methods. According to the DHS categorisation, modern contraceptive methods include intrauterine devices (IUD), hormonal implants, oral contraceptive pills, male and female condoms, injectable contraception, female sterilisation, male sterilisation, emergency contraception, standard day's method (SDM), and Lactational amenorrhoea method. The modern Contraceptive

Prevalence Rate (CPR) for all married [2]Ugandan women aged 15-49 years in 2016 is 35% (UBOS and ICF, 2018). In the global context, this is relatively low, for example the corresponding figure in 2017 among married women globally is 63% (United Nations, 2017). A comparison of Uganda with selected countries in sub-Saharan Africa also shows that the CPR in Uganda is among the lowest (Figure 1.4).

Figure 1.4   Contraceptive Prevalence Rates in Eastern and Southern Africa, DHS surveys
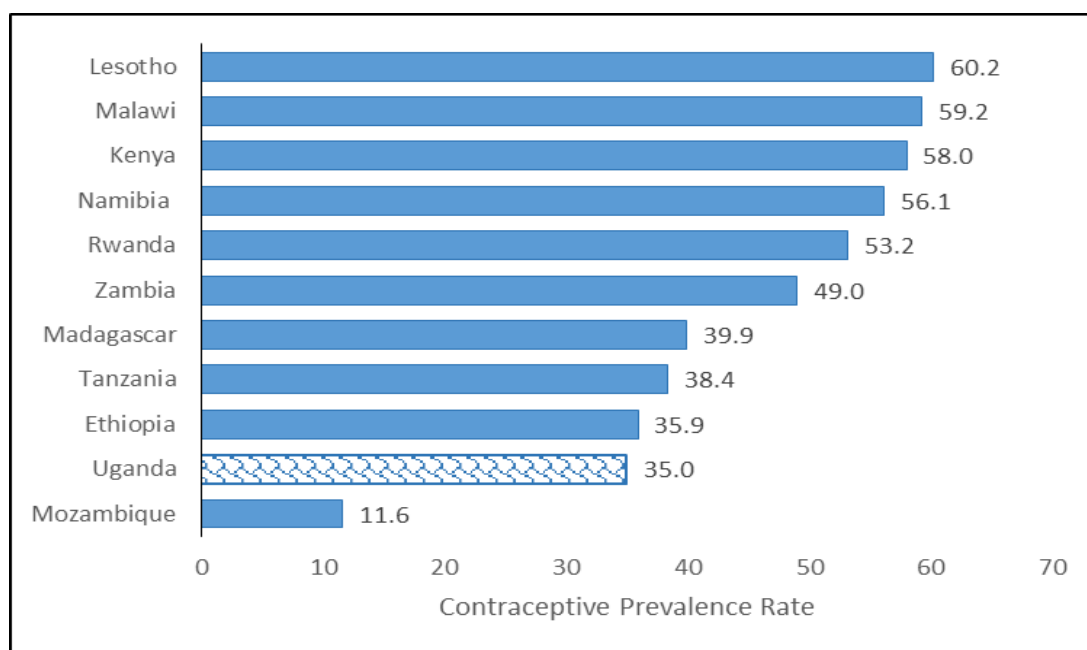
Source: most recent DHS of all selected countries; (Ministry of Health/Lesotho and ICF International, 2016, Health et al., 2014, 2014, National Institute of Statistics of Rwanda et al., 2016, National Statistical Office/Malawi and ICF, 2017, Central Statistical Agency - CSA/Ethiopia and ICF, 2017, Ministry of Health et al., 2016, Central Statistical Office/Zambia et al., 2015, Institut National de la Statistique - INSTAT/Madagascar and ICF Macro, 2010, UBOS and ICF, 2018, Ministerio da Saude - MISAU/Moçambique et al., 2013).

There are distinct variations in modern contraceptive use among sub groups. Results from the 2016 DHS indicate that only 33% of rural married women compared to 41% of urban married women use modern contraception. With regard to parity, modern contraceptive use is lowest among women without children (6.2%) and highest among women with at

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[2] In Uganda, virtually all childbearing happens within marriage hence my focus on married women here

least three (78%). A plausible reason for high contraceptive use among women with at least three children is increased awareness about the benefits of using family planning for optimal birth spacing and limiting among women who want to delay or cease childbearing.

The most widely used contraceptive method among married women is injectable hormonal contraception, used by 18.5% of women, followed by implants, by 6% (UBOS and ICF, 2018). Women choose injectable hormonal contraception because it is easily reversible, allows for covert use, is more accessible and does not require daily administration (Hoke et al., 2012, Castle et al., 1999). In addition, the Uganda National Guidelines for Sexual and Reproductive Health and Rights recommends use of injectable hormonal contraception among breastfeeding mothers after six weeks postpartum and use at any time for non-breastfeeding mothers (MOH, 2006).

In contrast, use of other long-term contraceptive methods—IUDs and sterilisation—the most effective methods (Trussell, 2004), is relatively low: among married women, intrauterine device usage stood at 1.5% and female sterilisation at 2.7% (UBOS and ICF, 2018, United Nations, 2017). Key factors influencing low use of IUDs and sterilisation include myths and misconceptions around use of long term methods such as IUDs, limited access to long-term methods (Jacobstein and Stanley, 2013) and community-based distribution of injectable contraception.

In Uganda, approximately 59% of current family planning users obtain their modern contraceptive method from the public sector. The remaining 41% accessed contraception through the private sector (39%) or other sources such as (shops, church or friends)) constituting 2% (UBOS and ICF, 2018). Contraceptive methods, including long-acting reversible contraception (LARC) are provided free of charge at all public health facilities, which results into increased access to contraception since women would potentially be deterred by cost. However, there are other obstacles that hamper modern contraception uptake such as unavailable contraceptive methods, long distance to health facilities, partner opposition, cultural barriers, health concerns and fear of side effects (Kibira et al., 2015, Ouma et al., 2015, Nabukera et al., 2006).

1.6.3   Uganda Government policy on contraceptive use

According to the Uganda Bureau of Statistics, family planning services in Uganda were launched in 1957 when the Family Planning Association of Uganda (FPAU) was established. Since its inception, family planning services had been largely urban-based, despite the fact that 75% of Uganda's population lived in rural areas. This posed adverse effects on the accessibility of family planning services which further hampered the prevailing policy governing its provision. Until the mid-1990s family planning services were supposed to be provided to married women, but married women wishing to use the services had to be accompanied by their husbands, or provided with written documents indicating their husband's consent to the use of contraception.

It was not until after the International Conference on Population and Development (ICPD) in Cairo in 1994, that the Government of Uganda, through the Ministry of Health, started supporting family planning as part of the new policy of promoting universal access to reproductive health care including family planning. The conference called for the provision of reproductive services that allow all individuals and couples to make informed choices about when to space births, stop childbearing and to have the information, education and means to do so (United Nations, 1994). The International reproductive health policy therefore prescribed the provision of reproductive health services that ensure equal access to reproductive health rights by individuals as well as couples. Thereafter, family planning services were introduced countrywide.

In 1995, Uganda adopted its first National Population Policy for sustainable development whose overall goal was to influence future demographic trends and patterns in a desirable direction to improve quality of life and standards of living of her people. The 1995 policy reversed the previous requirement that married women should receive permission from their husbands prior to using family planning services. This policy had modest impact prior to 2000. Some of the targets that were set to guide the population policy and programme planning up to the year 2000 included, reduction of the total fertility rate from 7.1 to 6.5 and increasing the contraceptive prevalence rate from 7.8% to 15%. The contraceptive prevalence rate further increased to 18% in 2000-01, however

the total fertility rate stalled between 1995 and 2000-01 (UBOS and ORC Macro, 2000-2001).

Uganda's National population policy of 2008 is a revision of the National population policy of 1995. This is the current policy guiding all key players developing programmes to reduce fertility and achieve a sustainable population. These programmes mainly focus on improving knowledge about birth control and access to contraceptives. The policy acknowledges that an individual's reproductive behaviour largely influences the growth of the population, which impacts the welfare of both individuals and households. The policy recognises the challenge of frequent childbearing which deprives the mother of gainful employment, impedes career advancement, and increases her morbidity. The downside of this policy is that it does not set an explicit fertility reduction target but rather it emphasises child spacing for the improvement of the health of mothers and children. Currently, family planning services are provided daily at public health facilities which are widely spread throughout the country.

Given that some of the set targets were achieved and others were not, other fertility-related goals at both local and International level such as the Millennium Development Goals (MDGs) were taken into account for the country to move forward. The eight Millennium Development Goals were developed by the United Nations (UN) to focus the efforts of the International community onto key development issues and to introduce measureable goals and targets. The year 2015 marked the end of the original target date of the MDGs. The Uganda MDG report (2015) indicates Uganda was unable to achieve the fertility-related goal (fifth Millennium Development Goal (MDG 5), target 5.B) aimed at achieving universal access to reproductive health by 2015. Nevertheless, Uganda made impressive gains in improving access to reproductive health. The contraceptive prevalence rate increased from 15% in 1995 to 30% in 2011, illustrating improved access to safe, affordable and effective methods of contraception. Additionally, increased CPR reflects a number of successful Government interventions, including increased recruitment of midwives and expansion of family planning services and provision of long-acting and reversible, permanent methods. Increased use of contraception led to a fall in TFR from 6.9 to 6.2 over the same period. The adolescent birth rate in Uganda came down to 135 births per 1,000 women aged 15 to 19 years in 2011 from 204 in 1995. The

high adolescent birth rate reflects the low rate of contraceptive use and high incidence of early marriages in Uganda. Despite these improvements, unmet need for family planning rose from 22% to 34% over the same period—indicating that contraceptive use was outpaced by the rising demand.

Building on the experience gained with the MDGs, the Government of Uganda continues to be committed to achieving the 17 Sustainable Development Goals (SDGs) agreed to by 193 United Nations member countries in 2015. SDGs range from halving extreme poverty rates to reducing child and maternal mortality and providing universal primary education, access to clean water and sanitation for all, by the target date of 2030. Most of the SDGs line up with Uganda's Vision 2040 ("A Transformed Ugandan Society from a Peasant to a Modern and Prosperous Country within 30 years")—the national vision statement of the country. Similarly, the Government has integrated 70% of the goals in its National Development Plan (NDP II) for the period 2015/2020 which implies national ownership is high in the implementation of the SDGs in Uganda. In particular, the third SDG: "Ensure healthy lives and promote well-being for all at all ages" has nine targets which require an increase in national budget allocations to the health sector. Specifically, Target 3.7 calls for universal access to sexual and reproductive health services, including family planning, information and education, and the integration of reproductive health into national strategies and programmes. To this end, the Government of Uganda intends to reduce unmet need for family planning to 10% by 2020 and increase contraceptive prevalence rate to 50% (Uganda Ministry of Health, 2014). To achieve this, Uganda developed the Family Planning Costed Implementation Plan (FP-CIP) 2015- 2020, which provides national guidance towards attainment of increased knowledge of and access to family planning interventions. However, attaining Uganda's fertility-related targets remains a challenge because allocation to health as a percentage of the total Government budget reduced from 8.7% (FY (Financial Year) 2016/2017) to 8.3% in (FY 2017/18) which is below the Abuja Declaration[3]target of 15% that Uganda committed to fulfil.

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[3] In April 2001, African heads of state committed themselves to allocate at least 15 percent of their annual budget to the health sector.

1.7 Traits-Desires-Intentions-Behaviour framework and theory of planned behaviour

The design of this study was informed by two theories: Traits-Desire-Intention-behaviour Theory and the Theory of planned behaviour (see chapter two for a detailed theoretical discussion).

TDIB theory was used in the context of fertility desire while Theory of planned behaviour was used in regard to contraceptive behaviour. The relevance of the TDIB to this study is supported by data from other studies on fertility decisions, from both developed and developing countries (Chen et al., 2001, Oladapo et al., 2005, Wagner et al., 2014, Berrington and Pattaro, 2014, Mynarska and Rytel, 2017, Alexander et al., 2018, Fair and Albright, 2016). It is a three-step psychological sequence that is required to promote or prevent pregnancy (Miller, 1994). Figure 1.5 shows the sequence starts with an individual's underlying motivation towards childbearing. This motivation has biological origins but is also shaped by people's experiences (Miller and Pasta, 1993). Motivational traits are mainly latent because they do not enter a person's consciousness or influence their behaviour (Miller and Pasta, 1993). Traits could be either positive or negative motivations and include feelings right from pregnancy, child birth, child rearing and interactions with parents, friends, a partner and significant others. When childbearing motivations get activated, they are experienced as the desire for a child. Desires are personal wishes that do not lead directly to behaviour until they are converted, through the appraisal of reality and of perceived situational constraints, into intentions of whether to have children, when, and how many (Miller and Pasta, 1993). Miller et al. (2004) noted, "The difference between desires and intentions is akin to the difference between what one would like to do given no situational constraints and what one actually plans to do given the reality within which one ordinarily operates". When the time and conditions are right, intentions of sufficient intensity are translated into fertility behaviours.

Figure 1.5   The Traits-Desires-Intentions-Behaviour framework
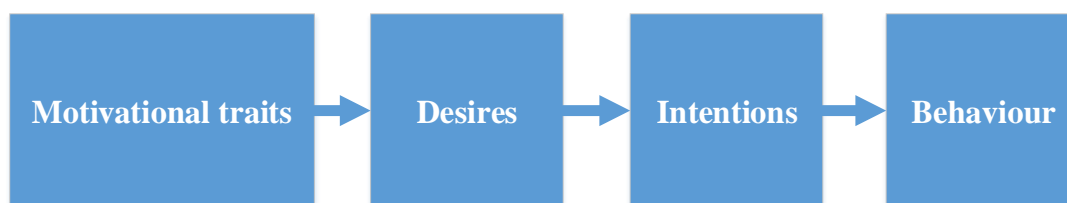
Source: Adapted from Miller (1994)

The theory of planned behaviour proposes that the most important determinant of behaviour (in this case, contraceptive behaviour) is a person's intention to perform the behaviour. In turn, three variables are identified as determinants of intention: attitude, subjective norm and perceived behavioural control (PBC). Attitudes are an individual's positive or negative evaluation of performing the behaviour. Subjective norms reflect an individual's perceptions of social approval or disapproval for performing the behaviour. PBC represents an individual's perceptions of control over behavioural performance in the face of internal and external barriers. Ajzen (2002) views PBC as a combination of perceived control (PC; i.e., perceptions of external barriers to behavioural performance) and self-efficacy (SE; i.e., confidence that one has the ability to perform behaviour). The theory of planned behaviour also proposes that PBC can act as a predictor of behaviour if it accurately reflects actual control over behavioural performance (Figure 1.6).

Figure 1.6   Theory of Planned Behaviour
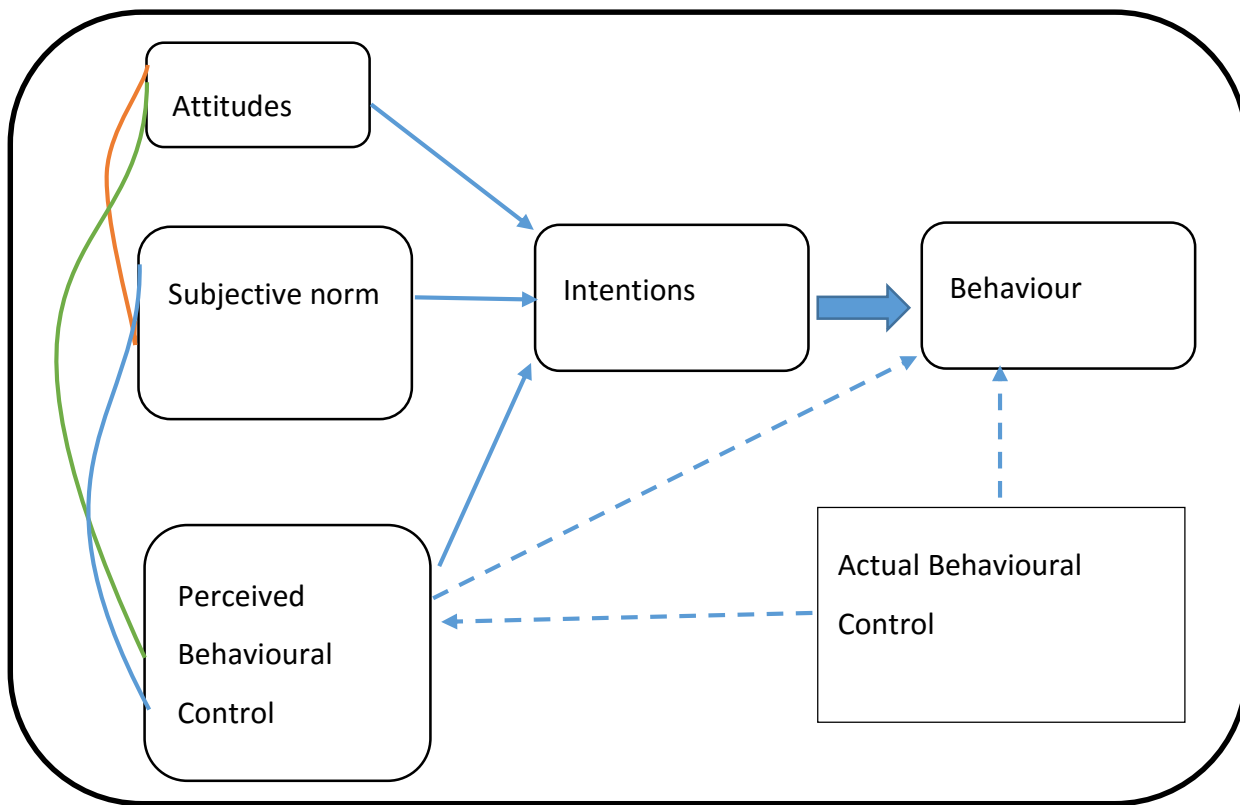
Source: Azjen (1991)

1.8   Organisation of the thesis

This thesis comprises eight chapters. Chapter two provides a literature review of the factors associated with fertility desire and contraceptive uptake among women in sub-Saharan Africa, examining the key theoretical approaches. Chapter three describes the study design, study populations, data sources and methods of analysis used. Chapters' four to seven cover the empirical side of the study.

Chapters four and five present findings from the analysis of the quantitative data, with chapter four focusing on determinants of fertility desire, and chapter five on contraceptive use in the period following delivery. The main findings from the qualitative investigation are presented in Chapters six and seven. Chapter six focuses on motivations for further childbearing decision making of rural women with a delivery in the last two years as reported by 14 men, 29women and 13 key informants. Chapter seven reports on contraceptive behaviour among women describing their knowledge, beliefs and practices. The last chapter, Chapter eight, contains a discussion of findings from this thesis, the recommendations of the study, the study limitations, potential implications for policy and the final concluding statement of the thesis.

Appendices A to E contain the study protocol, ethics approval letter, Informed consent forms (English and Lusoga[4] versions), the interview guides (English and Lusoga versions) and the UDHS Woman's questionnaire

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[4] Language spoken in the qualitative study site

Chapter 2   Fertility decision-making in the extended postpartum period: a review of the literature

2.1   Introduction

This chapter presents a review of published studies that are of relevance in understanding fertility desire and contraceptive uptake among women in relation to the study's research questions (Chapter one). The purpose of this chapter is threefold. First, it seeks to demonstrate the rationale of the research questions; second, it provides the theoretical frameworks and informs the design for the study; finally, the chapter identifies the gaps within the literature that the study will attempt to address.

The chapter is divided into five sections. The first presents the literature search strategy, followed by a review of relevant literature explaining fertility trends experienced in developing countries to set the stage for my focus on sub-Saharan Africa. The third section discusses the fertility decision-making theories guiding this work, highlighting their appropriateness and challenges. The fourth section discusses fertility decision–making women in the two years following delivery. Lastly, section five presents the research gaps.

2.2   Literature search strategy

I searched literature from multiple electronic databases including Web of science, PubMed Central, POPLINE, google scholar and JSTOR for articles published between 1990 and 2019. This timing coincided with the onset of the fertility transition in Africa which occurred on average in the mid-1990s (Bongaarts, 2017, Garenne and Joseph, 2002). The search also included some earlier or historical studies that are relevant in understanding fertility decision-making, obtained from reference lists of relevant studies.

Different combinations of words and phrases were entered in the search as key words. The search terms used were fertility desire, fertility preferences, childbearing preferences, reproductive desire, reproductive wishes, fertility intentions, reproductive decision-making, reproductive intentions, motherhood, fatherhood, parenthood and fertility. This was narrowed down to consider studies in sub-Saharan Africa. Studies from other parts of the world were reviewed to fill data gaps. The review considered 83 research papers from sub-Saharan Africa, including 28 from Uganda.

2.3 Fertility trends in developing countries

In the early 1950s, fertility levels were high (above six children per woman) in sub-Saharan Africa ("Africa"), Asia and Latin America, suggesting that these regions were pre-transitional, that is, there was little deliberate effort to reduce fertility through the use of contraception or abortion (United Nations, 2011). In the mid-1960s, fertility began to decline in Latin America and slightly later in Asia. In both regions the decline was steady and rapid, reaching 2.4 children per woman between 2010 and 2015 (United Nations et al., 2015). This fertility decline was attributed to economic and social changes such as a rise in urbanisation, industrialisation, new occupational structures and increased education, which are key determinants of fertility decline (Bongaarts, 2017, Hirschman et al., 1994, Boserup, 1985, Caldwell, 1980), with these socio-economic changes being associated with a decline in child mortality, which reduced incentives for large families, which subsequently led to a decline in fertility. In addition, urbanisation and industrialisation provided increasingly attractive alternatives to large family sizes resulting from the declining economic value of children (there was a shift from use of familial to larger-scale modes of production which reduced the labour utility of children). The advent of mass education made children less available for domestic and agricultural work (Caldwell, 1980), this reduced the desired family size and consequently led to a rise in the demand for and adoption of contraception.

In contrast, Africa has experienced a late and slow fertility decline compared to the fertility transition experienced in Asia and Latin America (Casterline, 2001, Bongaarts,

2008, Bongaarts and Casterline, 2013, Shapiro and Gebreselassie, 2013, Bongaarts, 2017). In addition, fertility has stalled in mid-transition in some African countries, a pattern that was not observed in other developing regions (Ezeh et al., 2009, Shapiro and Gebreselassie, 2013, Bongaarts, 2006). There are several possible explanations for the slow and late fertility transition in Africa.

First, Africa is regarded as being resistant to fertility decline due to its unique pronatalist features that are absent or weaker in non-African countries. For example Caldwell and Caldwell (1987b) argued that African societies emphasise the importance of ancestry and descent to continue the family lineage. High fertility is the logical consequence if a family line is to be maintained in the face of high mortality risk which is prevalent in low-middle income nations (Lassi et al., 2016). With such a perspective, reproduction becomes a matter of concern not just for the individual but for the wider network of kin. In addition, the social and economic advantages that come from large family sizes (children as a source of labour, old age support and lineage continuation) encourage high fertility preferences (Caldwell and Caldwell, 1987a, Cleland and Wilson, 1987). The importance of the extended family and child fostering practice (children are sent out to be raised by non-biological parents) are widely upheld in sub-Saharan Africa. These factors promote high demand for children, who 'belong' to the clan rather than just to their parents, and lowers the financial cost of raising children as the cost is not borne by the biological parents alone (Caldwell et al., 1992, Isiugo-Abanihe, 1994). Existence of fatalistic attitudes towards childbearing, such as, "number of children is up to God" when asked about the desired number of children, shaped a couple's behaviour in traditional societies (Mazrui, 1994, Caldwell and Caldwell, 1987a). Fatalistic attitudes that child-birth is beyond a woman's control is still prevalent in some African countries (Baylies, 2000, Hayford and Agadjanian, 2011), and some scholars argue that women with fatalistic attitudes should be considered less advanced along the path to low fertility because they are less likely to adopt contraception to achieve desired preferences (Hayford and Agadjanian, 2011, McCarthy and Oni, 1987). Such deeply ingrained cultural values that maintain the demand for large families have provided a powerful and coherent rationale for high fertility.

Second, there is ample evidence that husband's opposition to contraceptive use contributes greatly to slow decline in fertility in sub-Saharan Africa (Blackstone et al., 2017, Muanda et al., 2017, Bawah et al., 1999). Men's opposition of contraception has been associated with perceptions that its use undermines a husband's authority within a family (Withers et al., 2015). Men have the most influence over decisions regarding contraception and reproductive health, even in the rare cases of joint decision-making (Bogale et al., 2011). Consequently, women cite that their husband's disapproval of contraceptives, or their fear of husband's disapproval, often prevents uptake and consistent use. A study in Ghana noted that despite the fact that a majority of women considered family planning acceptable, an even higher percentage of women expressed that they would require the permission of their partners before they actually adopted a modern method (Eliason et al., 2013). Qualitative research undertaken in other sub-Saharan African countries supports the suggestion that male involvement in family planning can increase uptake and continuation of contraceptive use by improving spousal communication (Vouking et al., 2014, Kabagenyi et al., 2014).

Third, adoption of voluntary family planning programmes appears to be slower in Africa than the pace observed in other regions of the developing world. Evidence of high rates of unintended pregnancies persuaded Governments to implement family planning programmes from the 1960s onward in Asia and Latin America, and these efforts accelerated fertility declines (Bongaarts et al., 2012, Cleland et al., 2006). In contrast, family planning programmes aimed at reducing high fertility received low priority by policy-makers and Governments in sub-Saharan Africa (May, 2017). Most African leaders perceive large populations to be socially and economically advantageous, and probably, of political advantage (Kokole, 1994). African Governments questioned the motivation of donors concerned with limiting the growth of African nations, and they viewed foreign assistance for population programmes as a poor use of resources, given the other development needs of their countries. Perhaps, this partially explains why modern contraceptive use remains low in sub-Saharan Africa compared to other developing regions. About one in four women of reproductive age in Africa use a modern method of family planning, and this proportion is substantially lower in many parts of this region

(PRB, 2017). In light of this background, it is not surprising that fertility decline in sub-Saharan Africa has been slow relative to the other developing regions.

However, some few African countries such as Kenya, Malawi, Ethiopia and Rwanda have experienced rapid uptake of contraception and subsequent fertility decline. For example, Rwanda's contraceptive prevalence rate increased from 17% to 52% between 2005 and 2010 (National Institute of Statistics of Rwanda - NISR et al., 2012). There is evidence that increased contraceptive use in Rwanda, Kenya, Malawi and Ethiopia was due to the strong political commitment to family planning service provision. For instance, the Rwandan Government has supported family planning provision through massive public family planning campaigns that strengthened the demand for family planning, improved in quality of services and increased access to family planning services (Logie et al., 2008).

2.3.1 Are fertility preferences fixed or moving targets?

Early researchers typically assumed fertility preferences to be a "fixed target"(Lee, 1980, Becker, 1960). According to this theory, individuals or couples fertility preferences are shaped early in life and remain constant throughout their reproductive career (Lee, 1980), which was confirmed to some extent in studies conducted in the United States (Hayford, 2009, Schoen et al., 1999, Westoff and Ryder, 1977b). However, scepticism about the operationalisation of fertility preferences as a "fixed target" is a concern in the demographic literature. At the individual level, fertility preferences are likely to be not "fixed" but vary depending on life course events and constraints (Lee, 1980, Yeatman et al., 2013, Westoff and Ryder, 1977b). There is a wide-spread acceptance of the sequential-decision-making model of fertility, which implies that fertility decisions are not taken once, but are provisionally taken and constantly re-evaluated in an ongoing process that unfolds over the reproductive life span (Namboodiri, 1974).

Uncertainties such as sub-fecundity and lack of a partner make it almost impossible for individuals to have fixed future fertility plans (Zabin, 1999, Hayford, 2009, Morgan and Rackin, 2010, Agadjanian, 2005, Johnson-Hanks et al., 2005). This uncertainty is most noticeable among young women, with few or no children, than older women (Yeatman et

al., 2013), as young women's fertility goals depend on life circumstances such as marriage, education and employment. Lee (1980) referred to fertility preferences as a "moving target" that changes with age both at the individual and aggregate level.

Only a few studies in Africa using panel data have examined reasons for change in fertility preferences over time, especially at the individual level (Bankole and Singh, 1998, Debpuur et al., 2002b, Bankole and Westoff, 1998, Gipson and Hindin, 2007). In two separate studies that used panel survey data from Morocco and the other from Ghana, approximately two-thirds of women changed their family size preferences over two and three years respectively (Bankole and Westoff, 1998, Debpuur et al., 2002a). In another Ghanaian study that used multiple closely spaced data collection waves (approximately nine months apart), women changed their preference for wanting a child, or for the desired timing of the next birth, in more than one-third of the survey waves (Kodzi et al., 2010a). These findings suggested that fertility desires in this region are unstable, fluid and tentative.

2.3.2   Fertility and fertility preferences in the Ugandan context

Uganda has one of the highest total fertility rates in the world despite a recent reduction from 6.2 to 5.4 children per woman according the Uganda Demographic and Health Survey (UBOS and ICF, 2018, UBOS and ICF, 2012, PRB, 2017). Uganda's rural total fertility rate (TFR) of 5.9 children per woman is much higher than the urban TFR of four children per woman. Fertility also differs by education, decreasing from 6.4 children among women with no formal schooling to 3.6 children among women with secondary or higher education. In terms of region, TFR is above the national average in Karamoja (7.9), Busoga (6.1), Bukedi region (6.1), Teso (6.0), Bunyoro (6.0) and West Nile region (6.0). Several recent studies have attributed Uganda's high fertility to several factors such as preference for large family sizes, sociocultural inhibitions and low levels of contraceptive use (Gideon, 2013, Heys et al., 2009, Kakaire et al., 2010, Kabagenyi et al., 2014, Wanyenze et al., 2013, Nalwadda et al., 2010).

One of the targets of Uganda's health sector strategic plan (HSDP) 2015-2020 is to reduce the total fertility rate to 5.1 by 2019/2020. Meeting this goal will require increasing the use of modern contraceptive methods from 35% of married women in 2016 to 50% (Uganda Ministry of Health, 2014). In terms of ideal family size, data presented in Table 2.1 support the idea that Ugandan women and men have large family size preferences. This is reflected in the ideal family size, which has remained stable and high (five or more children) over the last three decades. According to the 2016 UDHS, women's ideal family size is 4.8 while men have an ideal family size of 5.4 (UBOS and ICF, 2018).

Table 2.1   Ideal family size, desire to space and desire to limit among women and men in Uganda, UDHS 1988/89-2016*

UDHS	1988/89		1995		2000/1		2006		2011		2016	
	W	M	W	M	W	M	W	M	W	M	W	M
Ideal family size	6.5	6.8	5.3	5.8	4.8	5.6	5.0	5.7	4.8	5.7	4.8	5.4
Desire to space births (%)	33	N/A	36	30	35	40	35	42	38	46	40	46
Desire to limit births (%)	19	N/A	31	21	36	27	41	30	40	29	38	29

Source: Computed from *(UBOS and ICF, 2018, UBOS and ICF, 2012, UBOS and ICF, 2007, UBOS and ORC Macro, 2000-2001, Uganda Ministry of Finanace and Economic Planning and Macro International, 1996, Kaijuka et al., 1989)
W=Women, M=Men; N/A = Not applicable.

The high desired family size preference among men and women in Uganda reflects the normative expectation for a large family size, which is linked to pronatalist norms in Uganda. The pronatalist policies of President Museveni of Uganda (although he has recently changed his stance about large family sizes) may contribute to the preference for large family sizes (African Institute for Development Policy, 2014). In addition, Table 2.1 shows that men and women in Uganda have a higher desire to space rather than limit childbearing. This is expected because literature on the history of family planning programmes in the East African region revealed that first users of modern contraception were using it for spacing rather than limiting. In other words, FP programmes were accepted at the initial stage majorly for spacing whereas limiting was never promoted. Further, Moultrie et al. (2012) make a case that some women use contraception to postpone births (because of uncertainty), although because of data constraints,

postponers and spacers are grouped in the same category. The desire to space birth is motivated by considerations of maternal and child health rather than by socio-economic forces that presumably motivated concerns about family size in other world regions (National Research Council, 1993).

The percentage of women and men who report a desire to limit births has risen slowly over the past 20 years. It rose from 31% and 21% among women and men in 1995 to 38% and 29% among women and men in 2016. These results suggest that Ugandans preference to space births is higher than to limit. As expected, results in Table 2.1 indicate that men are generally less supportive of birth limiting than women which may suggest that men are left out of the family planning programmes. The desire to limit childbearing in itself is recognised as having a greater impact on fertility behaviour than birth spacing (Cleland et al., 2006, Westoff and Akinrinola, 2000) and is a major factor driving the fertility transition (Van Lith et al., 2013). Increased use of long-acting reversible contraceptives or permanent contraception by women and men who report a desire to limit births could avert unwanted pregnancies and ultimately lead to the reduction of fertility.

While factors influencing total fertility rate have received a lot of attention in the demographic literature, much less research exists on the determinants of fertility preferences among postpartum women within the Ugandan context. Most studies on fertility preferences focus on women in the context of HIV (Nakayiwa et al., 2006, King et al., 2011a, Matovu et al., 2017b, Beyeza-Kashesya et al., 2010b, Homsy et al., 2009, Matovu et al., 2017a). The study by Matovu et al. (2017a) examined the determinants of fertility desire among married rural women in South-Western Uganda; Gutin et al. (2014) studied fertility desires and intentions among HIV-infected post-natal Ugandan women in Kampala while in his qualitative study conducted in Eastern Uganda, King et al. (2011b) explored the factors associated with pregnancy among women on antiretroviral therapy and their partners. In these studies, having less than the desired family size (≤ 4) and the perception that the partner wants children were the main determinants of the desire to have children. In particular, perceived partner desire has a significant positive effect on

women's own fertility preference; emphasising the importance of relationship dynamics (Nalwadda et al., 2010, Nakayiwa et al., 2006).

2.4   Fertility decision-making theories

The question of what drives individuals to want children has been of interest in research aimed to understand decision-making about childbearing. Accordingly, a number of theoretical frameworks have been developed and tested to uncover the underlying factors that influence childbearing thoughts, feelings and behaviour. The following section presents two major psychological theories suitable for studying fertility decision-making: the Traits-Desire-Intentions-Behaviour framework proposed by Miller (1994) and Ajzen's Theory of Planned Behaviour (Ajzen, 1991).

2.4.1   Traits-Desires-Intentions- Behaviour framework

Miller's (1994) Traits-Desires-Intentions-Behaviour framework posits that fertility behaviour is preceded by a three step psychological sequence. The sequence begins with "the formation of traits, the activation of traits to form desires, the translation of desires into intentions followed by the implementation of intentions in the form of behaviour". The TDIB is a relevant framework for understanding how traits including postpartum and individual level factors shape women's fertility desire, which is explicitly outlined in the TDIB framework. Figure 2.1 depicts the hypothesised independent and outcome variables of interest mapped onto the Traits-Desires- Intention and Behaviour domains.

The TDIB conceptualises multifaceted intentions and its goal is to understand the various elements of the theoretical sequence, the sources, formations and content of traits, desires and intentions and also the pathways between these constructs. TDIB framework is wide-ranging and keeps expanding to incorporate more variables, for instance, childbearing desire stems not only from motivational traits but also non-motivational factors such as family background, cultural factors, life-cycle and situational factors (Miller and Pasta, 1993).

The relevance of the TDIB framework to this study is supported by data from other studies on fertility decisions conducted in both developed and developing nations (Oladapo et al., 2005, Berrington and Pattaro, 2014, Huber and Norris, Wagner et al., 2014, Testa, 2012, Gray et al., 2013, Rotkirch et al., 2011).

Figure 2.1   Conceptual framework explaining fertility decision-making among postpartum women (adapted from Miller,1994)
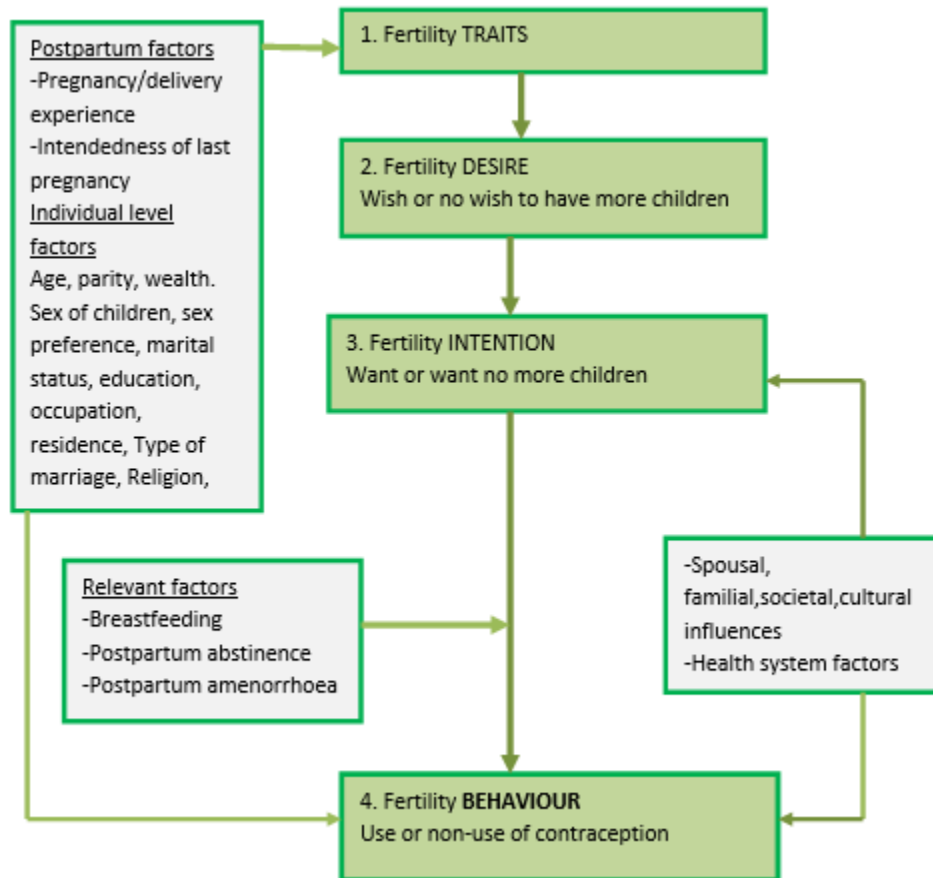
2.4.1.1   Fertility traits

According to Miller (1992), traits are ''psychological dispositions that are derived from the genetic makeup and/or experience of individuals that endure in them over time''. These traits are latent in the sense that they do not enter a person's consciousness or directly influence their behaviour (Miller and Pasta, 1993). Traits that apply specifically to postpartum women include intendedness of the last birth, time since last birth and pregnancy and /or delivery experience. It makes intuitive sense that women who perceive

severe consequences of another pregnancy would wish to have no more children. For example, a prospective cohort study among women who experienced complicated pregnancies in South Africa found that fewer than half of all women expressed a desire for future children (Soma-Pillay et al., 2018), implying subsequent concerns and fears of having another pregnancy based on their previous experience. In addition, a substantial body of literature has examined the influence of personal and socio-cultural characteristics (typical childbearing motivational traits) on childbearing in sub-Saharan Africa (Gutin et al., 2014, Mmbaga et al., 2013, Marcellin et al., 2010, Matovu et al., 2017a, Tamene and Fantahun, 2007, Myer et al., 2007b, Mekonnen and Worku, 2011, Antelman et al., 2015). Traits such as age, marital status, level of education, income, ethnicity, number and sex composition of living children, and societal norms around childbearing need to be considered. Each of these traits may influence whether women would consider subsequent childbearing. According to Miller's theory, these factors are expected to influence or explain fertility desire.

2.4.1.2   Fertility desires

According to Miller and Pasta (1995b), desires are conscious wishes which do not directly lead to action. Perugini and Bagozzi (2004) defined fertility desire as "a state of mind whereby an individual has a personal motivation to perform an action or to achieve a goal". In other words, desires represent feelings about possible goals or objectives. Desires are mainly influenced by factors internal to the individual, such as traits, attitudes and beliefs. According to Miller (1994) fertility desires may be influenced or shaped by an individual's circumstances and the likelihood of achieving them. In view of this, fertility desires are motivational traits influenced by women's circumstances.

Many demographers have argued that the desire for children can be used as a predictor of subsequent fertility (Bankole, 1995, Razzaque, 2000). Most surveys include questions such as 'Would you like to have another child or would you prefer not to have any more children?' These are considered to yield more valid and reliable results than questions that merely require a retrospective recalling of the 'wantedness' status of the recent births or questions that aim to ask about the 'ideal number of children' desired by a

couple (Casterline and El-Zeini, 2007). Such questions are mainly directed towards ever-married women and those within the reproductive age. As for husband's preference, women report their own perception of this in most surveys (proxy reporting). In fact in most developing countries, reporting of fertility preferences is women-centric. According to Miller (1995), variation of both implicit and explicit motivational traits may present situation or circumstances that determine whether desires are translated into intention.

Parity and fertility desire

There is a wealth of evidence showing a relationship between parity and fertility desire in sub-Saharan Africa (Krashin et al., 2018, Snow et al., 2013, Gutin et al., 2014, Wekesa and Coast, 2014a). Some studies have shown that having fewer living children (classified as four or less) is consistently associated with an increased desire to have more children. One study (Krashin et al., 2018) examining factors associated with desired fertility among women and men receiving care at two large public HIV clinics in Malawi found that women and men with fewer living children(≤3) were more likely to desire future children than women with four or more living children. Negash et al. (2013) also found that the total number of living children was among the most important predictors of fertility desire among people living with HIV/AIDS at antiretroviral treatment centres in Eastern Ethiopia.

Explanations for the inverse relationship between parity and fertility desire stems from the fact that women with fewer children are likely to be early into their reproductive years (Matovu et al., 2017a)and may not have achieved their desired family size, or are young women(below 30 years). Indeed, studies have shown that fertility desire is typically higher for younger women (Kakaire et al., 2010, Mmbaga et al., 2013, Tamene and Fantahun, 2007, Demissie et al., 2014). At the same time, there are almost universal expectations for women to have their own biological offspring, particularly in the African setting that views childbearing and a large family size as an integral part of women's lives (Caldwell and Caldwell, 1987a, Agadjanian, 2005). Therefore, childless women are likely to receive negative social disapproval while those with few children may be put under pressure to have more to fulfil the societal expectation of large family sizes.

Accordingly, many studies in sub-Saharan Africa have shown that the desire to stop child bearing rises steadily with increasing parity (Demissie et al., 2014, Adebowale and Palamuleni, 2015b). A cross sectional study among PLWHA in rural Tanzania found that participants with more than two children, the intended number of children, had 40% lower likelihood to desire children as compared to those without children (Mmbaga et al., 2013). Parity –specific desires to stop childbearing may reflect considerations of age as well as desired number of children. In other words, women of high parity (≥5 children) are likely to be older (≥35 years) and have already attained their ideal family size or are close to achieving their ideal family size and therefore may not wish to have additional births (Demissie et al., 2014).

Another interpretation is that women of high parity could be concerned about the adverse health effects resulting from additional births. This has been exemplified in a number of cross-national descriptive analyses that reported high parity women aged 35 and more years being at elevated risk of maternal mortality due to existing pregnancy-related medical complications, such as hypertension and diabetes which may complicate further pregnancy (Stover and Ross, 2010, Blanc et al., 2013, Gyimah et al., 2015). Additionally, higher parity mothers are at risk of delivery complications and in situations of short birth intervals (<2 years), there is a poor survival chance of their infants due to inadequate maternal nutritional reserves (Conde-Agudelo et al., 2007). This suggests that women of high parity and older women (≥35 years) are knowledgeable of the obstetric complications that arise from late childbearing and are less likely to want more biological children. Together, these factors may be markers of empowerment and access to information that facilitate uptake of postpartum contraception, most especially long-acting reversible contraception as reported in several studies (Alemayehu et al., 2012, Hubacher et al., 2011).

Marital status and fertility desire

Marital status has been identified as a key predictor of fertility desire among women. Married women are more likely to desire more children compared to unmarried women (Demissie et al., 2014, Mohammed and Assefa, 2016). Higher fertility desire among

married individuals can be explained by the social expectation of childbearing within marriage as reported elsewhere in Uganda and beyond (UBOS and ICF, 2018, Oladapo et al., 2005, Mmbaga et al., 2013, Aska et al., 2011). Moreover, younger unmarried individuals who are still in their early reproductive age would be expected to desire children than older ones who are more likely to already have children. In terms of type of marriage, the fertility preferences of wives in polygynous unions is less clear. Though wives may want many children to compete favourably with co-wives in terms of childbearing and status in the household, this desire may be curtailed by the fact that women in polygynous unions shoulder greater responsibilities in rearing their children due to less involvement of the father than those in monogamous marriages (Mohammed and Assefa, 2016).

Role of female education in influencing fertility desire

The inverse relationship which exists between fertility desire and female education in sub-Saharan Africa has been well documented (Behrman, 2015, Cleland, 2002, Bongaarts, 2010, Kravdal, 2002). Better-educated women have a higher degree of autonomy, which in turn promotes activities competitive with childbearing and leads to the wish for fewer children (Upadhyay and Karasek, 2012). An analysis of DHS data conducted in Malawi, Uganda and Ethiopia that examined the contribution of Universal Primary Education to women's desired fertility found that increased schooling reduced women's high ideal family size across the three countries (Behrman, 2015). Higher levels of female education tend to decrease fertility through delayed marriage, improved knowledge and ability to process information on contraceptive options that results into more frequent access and use of contraception (Basu, 2002, Bongaarts, 2010). This leads to an increased ability of women to achieve their planned number of births. Higher education may imply that women have a professional or a well-paid job, they may be more likely to live in urban settings and thus the economic part of the decision-making is also different.

Ethnicity and fertility desire

Bhopal (2004) defined ethnicity as a 'multifaceted quality that refers to the group to which people belong, and/or are perceived to belong, as a result of certain shared characteristics, including geographical and ancestral origins, but particularly cultural traditions and languages'. Ethnicity is a key sociocultural dimension that has long been considered as having important influences on attitudes towards fertility (Khanna et al., 2018, Bakibinga et al., 2016). Ethnicity influences norms around lineage such that women are pressured to have an ideal family size and child sex composition which may serve as an important incentive to continue with childbearing. Consequently, ethnic values have been reported as barriers to fertility decline in sub-Saharan Africa(Caldwell and Caldwell, 1987b). For instance, as revealed in the 2016 Uganda DHS, whereas total fertility rate in Uganda is currently 5.4 children per woman, it is 6.1 children per woman in Busoga region (UBOS and ICF, 2018). High fertility in Busoga is in part attributed to the preference for large families, practice of polygyny, son preference and very low levels of contraceptive use (Kabagenyi et al., 2016). Thus, fertility desire may be influenced by the cultural context within which the woman lives.

Income and fertility desire

The link between income and fertility is two-dimensional. Low income has potential to lead to high fertility while high fertility rates are known to perpetuate low income leading to a vicious cycle of high fertility and poverty. As noted in numerous studies, women living in wealthier households are more likely to desire a smaller family size than those from poorer households (Hayford and Agadjanian, 2012, Babalola et al., 2017). Wealth inequality among women demonstrates ability to implement preferences due to improved access to contraception by the wealthier women. A mixed method study examining fertility desire of slum-dwelling Kenyan men and women found that those in the 3rd and 4th wealth quintile were more than twice likely to state a desire to have another child when compared to those in the poorest quintile (OR 2.15 and 2.19) respectively (Wekesa and Coast, 2014a). In-depth interviews from the same study indicated that respondents from poorer households reported difficulties in raising

children. Furthermore, any financial obligations such as FP services that attract user fees or long distances to a health facility inhibit contraceptive access among women from poorer households (van der Kwaak et al., 2012, Kiwanuka et al., 2008, Shiferaw et al., 2013).

Women's employment and fertility desire

A significant association between women's employment and fertility desire has been reported by several researchers (Adamchak and Mbizvo, 1994, Bankole, 1995, Sennott and Yeatman, 2012). A United Nations (1985) study outlined several conceptual frameworks on the relationship between women's employment and fertility. The role-incompatibility hypothesis states that if women's roles of mother and worker are incompatible, an inverse relationship between fertility and work will emerge. The major finding of the United Nations study was that the relationship between women's employment and fertility appears to be strong in countries at higher levels of socioeconomic development, particularly those with strong family planning programmes, and where women's status is relatively high, as measured by age at marriage and educational attainment (United Nations, 1985).

Female employment contributes to total household income, and additional income can be invested in raising more children or in improving childcare quality. This income effect can lead to increased or reduced fertility, but generally fertility drops if income rises (Galor and Weil, 2000). Working outside the household and earning an income empowers women. If women have lower-fertility preferences than men—which has been documented to be the case for sub-Saharan Africa (Upadhyay and Karasek, 2010)—women's empowerment within the household will reduce fertility rates. By being employed, women are empowered and are able to make bold fertility decisions such as deciding when and how many children to have and whether to use modern methods of contraception.

Place of residence and fertility desire

The literature clearly demonstrates that place of residence is a major obstacle to fertility

decline in SSA. Women who live in urban areas are more likely to have a lower fertility desire compared with their rural counterparts (Knodel et al.,1996; Singh andCasterline1985; MahmudandRingheim,1997; Ali,2000). Low fertility desire in urban areas is attributed to increased education of women, diffusion of new ideas on preferences for smaller families, and increased access to contraception, which are considered important mechanisms of fertility change (Bongaarts and Watkins, 1996, Casterline and Population, 2001, Kohler et al., 2001). Urban areas are also associated with higher levels of income and better access to mass media (Westoff et al., 2011). In addition, urban areas are more likely to be saturated with health facilities and well trained health personnel who play a critical role in ensuring child survival, thereby precipitating mortality decline, especially infant mortality, which is key in fertility decline (Kravdal, 2002). The cost of living in urban areas is yet another reason that deserves mention. Urban areas are often characterised by high cost of living due to so much pressure on the available resources which force women to check their fertility. Based on these reasons, urban women find themselves with lower fertility desire than their counterparts in rural areas.

Influence of sex composition of surviving children on fertility desire

Vast amounts of literature exist on the influence of sex composition of surviving children on fertility desire (Adebowale & Palamuleni, 2015; Milazzo, 2014). A strong cultural preference for sons exists in many countries in East and South Asia (Das Gupta et al., 2003), as evidenced by lower educational and nutritional investment in female children, excess female childhood mortality, sex-selective abortion and high sex ratios (Hesketh et al., 2005, Das Gupta et al., 2003). The prevalence of son preference has high social and economic costs, including a distorted marriage market, and loss of potential human capital. In sub-Saharan Africa, recent studies have also reported considerable levels of sex preference in favour of sons over daughters (Beyeza-Kashesya et al., 2010c, Fuse, 2010, Ndu and Uzochukwu, 2011), although the desire for a balanced number of sons and daughters (or at least one child of each sex) is also common (Arnold, 1992, Arnold, 1997). Within patrilineal societies, sons are expected to continue the family lineage and carry on

the family name (Beyeza-Kashesya et al., 2010b), provide labour on the farm and support their parents during old age. In addition, sons act as widowhood insurance for their mother because widows can rightfully claim the late husband's property if they have sons (Lambert and Rossi, 2016). As such, having sons becomes an added advantage to the status of the woman and the family. Studies from Uganda have confirmed the widespread presence of son preference and its impact on reproductive attitudes (Kabagenyi et al., 2016, Beyeza-Kashesya et al., 2010c). However, to date no study has examined the role of sex composition in influencing fertility desire among women in the extended postpartum period.

Nonetheless, some authors have argued that sons are no longer a dependable source of old age support (Mason, 1992), suggesting a desire to have at least one child of each sex. Daughter preference has been reported in some parts of sub-Saharan Africa. Adebowale and Palamuleni (2015b) in their study that examined the influence of gender preference on childbearing intentions among 1,739 high parity women (≥ 5 children), found daughter preference in some parts of Malawi that are predominantly matrilineal. Whereas in matrilineal settings, daughters are highly valued to perpetuate the family lineage, in patrilineal societies, daughters are thought to be a liability because they move to their husband's home after marriage. Hence, investment in daughters is considered as an investment in another family's daughter-in law.

When asked about their preferred child sex composition in the DHS, women tend to have a specific sex composition in mind. Sex preferences for children are associated with various types of reproductive behaviour, depending on the societal context. In high fertility settings, women who are yet to attain their desired child sex composition are likely to continue with childbearing despite reaching their desired family size (Fuse, 2010, Bongaarts, 2013, Rossi and Rouanet, 2015) which explains the higher subsequent fertility. Evidence indicates that women who are dissatisfied with their child sex composition are less likely to use contraception (Rai, 2017), more likely to use short term methods and end up having larger families. For example, if a woman wants a four-child family consisting of two boys and two girls, she is likely continue childbearing if her first four

births are of the same sex. Consequently, sex preference impacts on pregnancy rates, birth intervals and duration of postpartum abstinence (Mace and Sear, 1997).

Role of male partners in fertility decision-making

Several studies in sub-Saharan Africa have recognised the dominant influence of male partners in fertility decision-making processes of women (Ezeh et al., 1996, Oyediran et al., 2002, Kabagenyi et al., 2014, Mbizvo and Adamchak, 1991, Adewuyi and Ogunjuyigbe, 2003, Gebreselassie, 2008, Bawah, 2002, Isiugo-Abanihe, 1994).A long-standing assumption about men's fertility preferences in pronatalist contexts, is that, compared to women, men desire larger family sizes, presumably because they do not suffer the physical or economic costs of repeated childbearing that are imposed on women (Bankole, 1995). Men's desire for large family sizes impacts on women's status in society. In addition, an analysis of couple data from DHS surveys in 18 developing countries—13 in sub-Saharan Africa including Uganda, that examined husbands' and wives' attitudes towards fertility and contraception reported that men in sub-Saharan Africa tend to prefer the next child sooner than their wives (Bankole and Singh, 1998). However, in family settings with a high level of inter-spousal communication, a desire for smaller families appears (Gebreselassie, 2008, Isiugo-Abanihe, 1994).

Influence of social networks on women's fertility decisions

Many studies in sub-Saharan Africa have emphasised and demonstrated the pivotal role played by social networks (family, friends and community) in influencing fertility behaviours (Magadi and Curtis, 2003, Stephenson and Tsui, 2002, Caldwell and Caldwell, 1987b). Social networks impose a set of normative beliefs that shape an individual's perception of what is expected of them in terms of their fertility. Women rely on their social networks for access to resources and support in case of need, and will not deviate strongly from the shared values and norms of their community (Caldwell and Caldwell, 1987b, Smith, 2004). For example, a woman may feel pressured to fulfil family expectations of a large family size, by getting pregnant sooner than she desired. These unspoken rules that govern behaviour are typically called social norms (Figure 2.1).

A longitudinal study conducted in four rural locations in Kenya demonstrated that decisions about childbearing are encompassed in two distinct social network mechanisms that affect behaviour: social learning and social influence (Kohler et al., 2001). The former emphasised that the interaction with others enabled women to learn from others' experience and it shaped their decision regarding timing of fertility as well as family size preferences. The latter aspect, social influence, refers to the tendency for individuals to conform to shared beliefs in one's group of affiliation due to a need to match their behaviour with those of the group to which they belong.

Relationship between use of postnatal care services and fertility desire

Postnatal care is the care given to the mother and her new-born baby immediately after the birth and for the first six weeks of life (Warren et al., 2006). The postnatal period is considered an ideal time to deliver family planning services and information as women more regularly visit healthcare facilities during this time (Warren et al., 2010), and may be more motivated for health behaviour change, having recently given birth(Phelan, 2010). Timely use of contraception in the postpartum period is critical for pregnancy spacing, which protects a mother's health and improves her ability to care for children.

However, Postnatal care is neglected globally, particularly in sub-Saharan Africa, despite its potential to advance the health and survival of mothers and new-borns (Duysburgh et al., 2015). Mothers' low levels of attendance for postpartum care at health institutions contributes to risks including infection, poor nutrition, reduced duration of breastfeeding, and unmet need for family planning (Mbekenga et al., 2011a). Recognising the role of postnatal care (PNC) during this critical period for mothers, the WHO recommended that all nursing mothers attend at least three postnatal care visits within the first six weeks after childbirth timed at three days (48-72 hours), 7 to 14 days after birth, and six weeks to ensure positive health outcomes (World Health Organisation, 2013). Postnatal care is important to identify and manage complications that arise as a result of child birth and to provide health information that is beneficial to both mother and baby (Say et al., 2014). The content for postpartum care for the mother includes routine assessment of the mother for prevention, and early detection and treatment of complications and disease,

the provision of advice on breastfeeding, advising mothers to abstain from sexual activity for at least six weeks after birth and information on time of return to fertility after child birth (World Health Organisation, 2013). The postnatal care visit also serves as an entry point for the provision of other health services including family planning and immunisation. The clinical guidelines for postnatal care in Uganda indicate that the mother and baby should be seen thrice for uncomplicated pregnancies with more visits recommended in case of complications (Uganda Ministry of Health, 2006).The first postnatal care visit is within24 hours after delivery, the second by day seven and the third, six weeks after delivery(Uganda Bureau of Statistics and ICF International, 2018).The 2016 Uganda Demographic and Heath Survey data reports that more than four in ten mothers(43%) did not receive any postpartum care necessitating an inquiry into the factors that are associated with non-attendance of postnatal care. A number of studies have examined factors that influence utilisation of postnatal care services by mothers (Regassa, 2011, Neupane and Doku, 2013, Somefun and Ibisomi, 2016). Studies in developing countries such as Ethiopia, Uganda and Nepal show that access to economic resources ensures that women are able to finance their deliveries in health facilities and are able to obtain subsequent services such as PNC (Mulatu et al., 2015, Kyomuhendo, 2003, Khanal et al., 2014). Besides, women with better financial resources have a better chance of benefiting from health education campaigns through media outlets like television, and newspapers because they are able to afford them. Also, physical access as well as the geographical location of the mother have been shown to influence the use of postnatal care services.

According to Miller's theory, I expected these factors (which constituted the study's independent variables) to influence fertility desire. Variations of motivational traits may present circumstances that determine whether desires are translated into intentions.

2.4.1.3   Fertility Intentions

The next step in the sequence is fertility intentions—which represent a conscious commitment to achieve a particular goal—in this case, to have or not to have a child. Many scholars have used fertility intentions as a proximate determinant for actual fertility

behaviour, examining the factors which influence the formation, realisation and/or change in fertility intentions (Schoen et al., 1999, Berrington, 2004, Westoff and Ryder, 1977b, Philipov, 2009). Others have identified the gap between intended and actual fertility as one of the causes of high fertility, since it reveals an 'unmet need for family planning'. Fertility intentions reflect desires on one hand; on the other hand, fertility intentions reflect reality and perceived situational constraints expressed in relation to the actual childbearing context. According to Santelli et al. (2003), a complexity of factors influence women's expressions of their fertility intentions, including multiple interwoven social and economic influences such as presence of a partner and partner's fertility desire. Therefore, variations of both implicit and explicit motivational traits may present situations or circumstances that determine whether desires are translated into intentions.

There are two main types of fertility intentions examined in fertility literature: namely, intended family size and intention to have another child. Intended family size has been shown to be a poor predictor of the total family size because it is subject to upward or downward adjustment (Iacovou and Tavares, 2011). Intention to have another child has instead been considered more stable and reliable (Schoen et al., 1999), despite the fact that some studies have demonstrated a mismatch between intentions and actual behaviour to prevent a birth (Orbell and Sheeran, 1998, Abraham et al., 1999, Westoff and Ryder, 1977a). This discrepancy in which intentions do not necessarily translate into behaviours is typically referred to as the "intention-behaviour gap". Thus, specifying a time frame in the short run (e.g., two or three years) would significantly improve the predictive value of fertility intentions (Philipov, 2011).

According to previous studies, the main factors causing the mismatch between fertility intentions and behaviour is attributed to partner's expectations (Iacovou and Tavares, 2011), changes in partnership status, activity status and actual fertility events (Liefbroer, 2009) which prevent realisation of intentions. Godin et al. (2005) argue that if a behaviour has moral relevance, intentions that are based on moral norms are much stronger predictors of behaviour than attitudinally controlled intentions. For example, men always exert a greater influence on fertility decisions in patriarchal cultures characterised by

gendered power relations (Ezeh, 1993, DeRose et al., 2002). Therefore, a woman who wants to have another child, and perceives that her partner does not share this wish, is likely to form the belief that the partner does not want her to have another child. This perception may influence the respondent's own fertility intentions. Health service factors such as access to postnatal care and family planning counselling are useful in assisting women to make informed reproductive decisions. Fertility intentions of sufficient intensity are subsequently transformed into behaviour—which is the second outcome measure for this study.

2.4.1.4   Fertility behaviour

The fertility decision-making sequence concludes with fertility behaviour taken to either avoid or realise a pregnancy. According to Morgan and Bachrach (2011), "fertility behaviour is the result of an interaction between a unique set of social circumstances (e.g., normative expectations and structural factors) and schemas, which are mental structures that the human brain uses to represent the surrounding world and to process information." Ajzen (2010) recently clarified that the close link between intention and subsequent behaviour holds true only if the behaviour is specified in all of its four components: namely, the target, the action, the context and the time. In the field of fertility, the target is a child, the action is giving birth, the context could be the current partner, and the time could be a short time horizon. This would then make the intentions more realistic. Behaviour includes two instrumental behaviours –proceptive and contraceptive. Proceptive behaviour as defined by (Miller and Pasta, 1995a) refers to actions such as discontinuing use of contraceptives that are directed to the achievement of conception whereas contraceptive behaviour refers to behaviours such as initiating contraceptive use, consistent use , or even prompt switching aimed at preventing unwanted conception.

2.4.2   Theory of planned behaviour

I used Ajzen's Theory of planned behaviour to analyse the determinants of postpartum contraceptive use. The TPB is another socio-cognitive model of behaviour change which

has been widely used in research on health-related behaviours and intentions (Billari et al., 2009, Dommermuth et al., 2011, Klobas and Ajzen, 2015). TPB has been proved to significantly enhance the ability of researchers to explain and forecast behaviour. According to the TPB, the intention to perform a specific behaviour is the proximate antecedent of the behaviour, in this case, contraceptive use. This intention remains a behavioural disposition until, at the appropriate time and opportunity, an attempt is made to translate the intention into action (Ajzen, 2005, p. 99). This theory is based on the assumption that people usually behave in a rational manner, where they take in available information and implicitly or explicitly consider the implications of their actions. The TPB posits that there are three distinct determinants of intentions which combine to influence subsequent behaviour indirectly through intentions (Figure 1.6): attitude towards the behaviour, which refers to the perceived positive and negative consequences of using contraception for different aspects of a person's life. The second determinant is subjective norm for using contraception, which refers to the perceived external social pressures, resulting from the expectations of referent individuals, combined with a woman's motivation to comply with the referents. Studies indicate that parents, partners and peers are key referents for the decision to use contraception (Decat et al., 2015, Muhindo et al., 2015). The third immediate determinant is perceived behavioural control over using contraception, which refers to a woman's perceptions of whether she is able to use contraception, given the availability of resources and obstacles that can facilitate or interfere with contraceptive use. According to Ajzen (1991), perceived behavioural control is synonymous with self-efficacy (Bandura, 1986); the concepts seem to be used interchangeably. As argued by Ajzen and Madden (1986, p. 455), people may believe that behaviours such as contraceptive use is completely under their control if they decide at will to use or not to use contraception. On the contrary, if contraceptive use depends on the existence of appropriate opportunities or on possession of adequate resources (e.g. time to get to the facility and cost of the method), it is less likely that contraceptive use is under a person's volitional control. Therefore, the inclusion of perceived behavioural control makes TPB particularly useful for looking at contraceptive use as this is a behaviour which individuals may not have much control over.

Nonetheless, the TPB has some limitations: first, the TPB assumes that human behaviour is a result of a rational decision-making process. The TPB theory is widely accepted as a useful aid in describing transition to low fertility in developed countries, with readily available contraception, and childbearing is primarily a result of reasoned decisions (Mills et al., 2008, Goldstein et al., 2003, Testa and Grilli, 2006). However, there is limited application of this theory in sub-Saharan Africa. According to Kodzi et al. (2010b), in high fertility settings, fertility planning is less prevalent, as evidenced by the proportion of people who give non-numeric responses like "it is up to God" or "I don't Know" when asked about their desired family size. Kodzi and colleagues (2010) argue that it is often impossible to gauge the extent to which stated intentions reflect personal goals as opposed to societal expectations in contexts where women are not primary decision-makers on reproductive matters.

Another limitation of this theory is that its main focus is on intentions rather than desires, as noted by Kodzi et al. (2010b). Earlier studies have revealed that short term intentions (two to three years) are strong determinants of the correspondence between intentions and behaviour, and have assumed that the attitudes underlying these intentions remain fixed over the period, which is rarely the case when it comes to desire. It is argued that fixed desire fits well in countries where contraceptive use is widespread in combination with low levels of child mortality. On the contrary, women in sub-Saharan Africa may alter their preferences over a short period of time because of the social importance of having a large family size and influence of partner's child preferences (Kodzi et al., 2010b, Bankole and Singh, 1998, Dodoo, 1998).

2.4.2.1 Intention to use postpartum contraception

Among the general population, the factors influencing women's intention to use contraception have been studied extensively (Lutalo et al., 2018, Udomboso et al., 2015, Ezeanolue et al., 2015). However, less is known about the determinants of contraception intentions among postpartum women. This section examines factors influencing women's intention to use postpartum contraception.

After childbirth, women have been found to be more receptive to discussions with family planning providers regarding different contraceptive methods given that their previous contraceptive method may no longer be desirable or ideal after childbirth (Cwiak et al., 2004, Warren et al., 2010). Moreover, studies in developing countries have indicated that majority of postpartum women would like to delay or prevent further childbearing (Moore et al., 2015, Ross and Winfrey, 2001b). Initiating long-acting reversible contraception during the early postpartum period could effectively delay closely –spaced, repeat births which are a common occurrence among postpartum women. It has been estimated that postpartum family planning can prevent about 30% and 10% of maternal and child mortalities, respectively (Prata et al., 2011). However, there exists a wide gap between family planning intentions and actual uptake among women in sub-Saharan Africa (Ross and Winfrey, 2001b, Moore et al., 2015).

The question of how accurately fertility intention predicts subsequent contraceptive use has significant policy implications in designing and implementing family planning policies in both developed and developing countries. Evidence of the relationship between intention and contraceptive use in sub-Saharan Africa is growing (Curtis and Westoff, 1996, Ross and Winfrey, 2001a, Speizer and Lance, 2015a). A few longitudinal studies using data from a limited number of societies (such as urban areas in Kenya, Nigeria and Senegal) where contraception is moderately used, have reported a strong correspondence between intention and contraceptive use (Bawah, 2002, Speizer and Lance, 2015a). Previous studies have indicated that most women intend to use postpartum hormonal contraception after childbirth, though only a few intend to use LARC. For example, a study that examined intended postpartum contraceptive choice among pregnant adolescents found that most (76%) intended to use postpartum hormonal contraception, but only 23% intended to use LARC as a postpartum contraceptive (Chacko et al., 2016). In another study that assessed intended postpartum contraceptive use among pregnant and puerperal women in Nigeria found condoms and IUCD as the most considered method for use after delivery (Adegbola and Okunowo, 2009). Of note is that an individual's intention to use contraception can change over time because of the disruptive effect of unforeseen events such as death of a spouse. The

more time passes, the greater the likelihood that unforeseen events will create modifications in people's contraceptive use.

Prior research in developing countries has identified an array of multi-level determinants of intention to use postpartum family planning (PPFP). A DHS analysis of data from Ghana and Nigeria reported that women who had attained formal education exhibited a higher intention to use contraceptive methods than women with no education (Udomboso et al., 2015). Another study reported that the educational status of women was positively associated with contraceptive use in Ethiopia (Worke et al., 2016). Regarding the relationship between age and contraceptive use, the prevalence of contraceptive use was highest among women between the age of 20 and 39 years than those younger than 20 or above 39 years old in Malawi (Palamuleni, 2013). The number of children that a woman already had was also associated with the intention to use and the actual use of contraceptive methods. One community-based cross-sectional study conducted in Ethiopia found that women with more than four children were more likely to use contraceptives than those with fewer children (Eshete, 2015). Religious and cultural factors were also factors potentially associated with intention to use contraception, as suggested by (Tiruneh et al., 2016). For instance, Muslim women usually had more children, desired more children, and were less likely to use contraception than non-Muslim women (Najafi-Sharjabad et al., 2013).

2.4.2.2 Attitudes towards contraceptive use

Attitudes towards contraceptive use are important as they promote acceptability of contraceptives, especially in areas with high fertility and low uptake of contraceptive methods. Studies have found varying results regarding the attitudes of postpartum women towards contraceptive use. While those who perceive FP to be of benefit to their well-being are more likely to use contraceptive methods, many women who are at risk of unwanted pregnancy report non-use of contraception after childbirth. The seminal study by Ross and Winfrey (2001b) using data from DHS's conducted between 1993 and 1996 in 27 developing countries demonstrated that, within the first year of delivery, two-thirds of women have an unmet need for contraception. A recent study across five low-income

countries (India, Pakistan, Zambia, Kenya and Guatamala) found that less than 5% of women at six weeks postpartum wished to have another pregnancy within a year, yet unmet need for contraception ranged from 25% to 96% (Pasha et al., 2015). In Uganda, only one in every four women in their first two years postpartum report contraceptive use, and unmet need for family planning reaches 68%, compared with 28% among the general population (Moore et al., 2015, UBOS and ICF, 2018).

Studies have reported that individuals who view contraceptive use as detrimental for their personal health, are less likely to use contraception. It is widely documented that women report fear of side effects as a barrier to using contraceptives, particularly hormonal methods (Blackstone et al., 2017, Sedgh and Hussain, 2014, Keesara et al., 2018). The most commonly reported contraceptive side effects are: fear of infertility, menstrual irregularities, weight gain or loss and cancer (Sedlander et al., 2018, Chebet et al., 2015b). In a setting where children are highly desired, fear of infertility is clearly an undesirable barrier. A study conducted among postpartum women in Tanzania reported that women switched to either condoms or traditional methods (rhythm or calendar method) in order to avoid negative side effects of hormonal methods (Chebet et al., 2015b).

Also, substantial evidence indicates that postpartum women's attitudes towards contraceptive use might be due to women's low perception of pregnancy risk because their menstrual period has not resumed since giving birth or they are practising postpartum abstinence and hence have partial protection from conception even when not using any contraceptive method (Ndugwa et al., 2011a, Rossier and Hellen, 2014, Elweshahi et al., 2017). Traditionally, birth spacing in most African societies was controlled by three mechanisms: postpartum abstinence prolonged breastfeeding, and polygyny.

Postpartum sexual abstinence

Postpartum sexual abstinence is widely practiced in most communities of the world, with the world's longest durations of postpartum abstinence occurring in sub-Saharan Africa.

Traditionally, postpartum sexual abstinence was the main birth spacing mechanism in sub-Saharan Africa as sexual intercourse while breastfeeding was considered a taboo. It was believed that sexual activity during breastfeeding could result in semen contaminating the breast milk, thereby endangering the health of the baby (Yovsi and Keller, 2003). In the past, men were generally polygamous: after delivery, a woman was expected to stay away from the husband with the aim of offering her the opportunity to breastfeed for a long period. Postpartum abstinence was often prolonged for 8 to 33 months after delivery (Desgrées-du-Loû and Brou, 2005, Cleland et al., 1999). For example, among the Yoruba of Nigeria, postpartum abstinence would last up to three years (Van de Walle and Van de Walle, 1988).

Recent reports indicate that long durations of postpartum sexual abstinence are declining, especially among rural and less educated urban populations, which is a shift from the taboo against sexual intercourse after birth. For instance, short periods of postpartum abstinence are reported in most Eastern and Southern Africa countries, with, for example, durations of 2.9 and 4.1 months reported in Uganda and Malawi in 2016 and 2015-16 respectively (National Statistical Office/Malawi and ICF, 2017, UBOS and ICF, 2018). Early resumption of sex after delivery has also been reported in other countries outside sub-Saharan Africa, for example, 35% of women resumed intercourse during the first six weeks following childbirth in Thailand (Woranitat, 2007)while 53% resumed sexual intercourse during the puerperium in Australia (McDonald and Brown, 2013).

Much as early resumption of sex is also common in developed countries, high contraceptive prevalence abates incidence of unintended pregnancy. Results from a randomised control trial in the USA revealed that women initiated contraceptive use soon after they resumed sexual intercourse following delivery (Bernard et al., 2018). In contrast, early resumption of sexual intercourse with limited or non-use of contraception is common in developing countries.

Prolonged breastfeeding and reliance on amenorrhoea for pregnancy prevention

Breastfeeding has been associated with numerous health and well-being benefits for children and their mothers, including prolonging the birth interval (Mattison et al., 2015). The World Health Organisation recommends initiation of breastfeeding for all new-borns within the first hour of life and exclusive breastfeeding (EBF) for the first six months of life. In addition, WHO recommends continued breastfeeding for two years and beyond with nutritionally appropriate and safe complementary foods introduced at the sixth month (World Health Organisation, 2002). Infants who are exclusively breastfed have less chances of becoming ill or dying from diarrhoeal and acute respiratory tract infections, the two leading causes of child deaths worldwide (Lakati et al., 2011, Ogbo et al., 2015). In addition, there is evidence that exclusive breastfeeding increases the likelihood of continued breastfeeding beyond six months (Gartner et al., 2005). EBF also promotes optimal neonate and infant growth as it contributes to 100% of daily nutrition requirement of children up to six months of age, with breastmilk providing 5% of nutritional requirements in children 6–12months old and 35% of nutritional requirement for children aged 12–24months (Gericke, 2001). Exclusive breastfeeding can significantly reduce the number of under five deaths in Africa, especially sub-Saharan Africa where 41% of deaths occur mainly due to inadequate breastfeeding practices in combination with high levels of disease.

Studies have shown that after the delivery of a child, the fertility of breast-feeding women is substantially lower than the fertility of non-breastfeeding women (Gross and Burger, 2002). The contraceptive effect of breastfeeding is attributed to the suppression of ovulation (Santow, 1987). Breastfeeding offers protection against pregnancy most effectively if the criteria for the Lactational amenorrhoea method, are met; that is, if breastfeeding is practiced exclusively with frequent attachment during day and night, during amenorrhoea and for six months after delivery (Kennedy et al., 1989). When these conditions are fulfilled, breastfeeding is estimated to provide more than 98% protection from early repeat pregnancy in the first six months (Gray et al., 1990). A systematic review concluded that for women who were not breastfeeding, pregnancy could occur

within 45 days postpartum even before the return of menses(Jackson and Glasier, 2011). Evidence of pooled data from nine prospective studies from low- and high-income countries in a Lancet study showed that LAM carried a low risk of pregnancy (≤2%) (Kennedy and Visness, 1992). Among breastfeeding women who remained amenorrhoeic (regardless of supplementary feeding), this risk increased only slightly to 3% at six months and 6% at 12 months. These pregnancy risks are similar to those of modern contraceptive methods. This contrasts with a study in rural Egypt showing that in women who reported to be exclusively or almost exclusively breastfeeding, around a quarter (28%) were at risk of pregnancy before six months postpartum, because most of them did not meet the requirements for the LAM (Shaaban and Glasier, 2008).

Demand for effective contraception postpartum was shown to be limited by the prevailing behaviour of women adopting modern contraceptives only when menses resumed (Ndugwa et al., 2011a). A DHS analysis of four countries (Kenya, Indonesia, Dominican Republic and Peru) indicated that women relied on postpartum amenorrhea as a traditional postpartum family planning method without knowing its limitations, especially in sub-Saharan Africa, where they were generally breastfeeding their babies for up to two years although not exclusively (Gebreselassie et al., 2008). Exclusive breastfeeding is sub-optimally practiced in many countries including Uganda where EBF duration is lower than the World Health Organisation recommendation of exclusive breastfeeding for the first six months of life (World Health Organisation, 2013). This means effectiveness of the amenorrhoea method for pregnancy prevention is diminished (Lutter et al., 2011). In Uganda, two-thirds (66%) of children under six months are reported to be exclusively breastfed (UBOS and ICF, 2018). Thus, it is essential for postpartum women to receive family planning services and effective methods early to achieve healthy birth spacing and prevent unintended pregnancies.

According to the 2016 UDHS data, exclusive breastfeeding declines with age, from 83% among children age 0-1 months to 69% among those age 2-3 months and 43% among those age 4-5 months. Furthermore, the data show that children in rural areas and those from the lowest wealth quintile breastfeed longer than those from urban areas and

higher wealth quintile. A possible explanation for this is that urban and wealthier women are engaged in competitive work away from home compared to rural and poor women

Low levels of exclusive breastfeeding contribute to the high levels of unintended pregnancy as these breastfeeding mothers are not fully protected from conception. A shorter duration of breastfeeding would trigger early resumption of menses which increases women's vulnerability to unplanned pregnancy. Several studies based on Demographic and Health Surveys showed a strong link between return of menses and uptake of contraception (Borda and Winfrey, 2010, Gebreselassie et al., 2008, Ndugwa et al., 2011a, Rossier and Hellen, 2014, Becker and Ahmed, 2001). A longitudinal study conducted in two Nairobi slum settlements suggested that women use resumption of menstruation as an indicator to start using contraceptives (Ndugwa et al., 2011a).This is an indication that women understand the postpartum sign of return of full fecundity and the associated increase in the risk of unintended pregnancy. However, by associating the return of menses with the risk of another pregnancy, women may forget that ovulation precedes the appearance of menses with even higher likelihoods of ovulation occurring as the postpartum period gets longer (Becker and Ahmed, 2001). Of note, Lactational amenorrhoea method is rarely used consciously as a contraceptive method. Many women who practice LAM do not declare themselves as LAM users. For example, one recent analysis of 2005-2013 DHS data from 57 countries showed that between 1% and 8% of women who met the criteria for LAM did not declare themselves as LAM users (Rossier et al., 2015).At the same time, Lactational amenorrhoea protection is diminishing globally because of a decline in the intensity of breastfeeding and increased complementary feeding (Desgrées-du-Loû and Brou, 2005). In the absence of intensive breastfeeding— with frequent attachment during day and night, ovulation is likely to precede the onset of the first postpartum menstrual period. A consensus statement issued by the World Health Organisation and the United Nations Children's Fund at the Bellagio conference in 1988 recommended that women begin practicing contraception six months after childbirth (which may be too late for some women) or when their menstrual cycle resumes, whichever occurs first (Kennedy et al., 1989).

2.4.2.3   Subjective norm

Role of men in influencing contraceptive use

Throughout sub-Saharan Africa, men have often been regarded as unsupportive of their partner's use of family planning (Eliason et al., 2013, Kabagenyi et al., 2014, Palamuleni, 2013), which is a significant barrier to contraceptive use. Some researchers have attributed men's lack of support for family planning to gender and social norms regarding women's reproductive responsibilities and men's decision making authority (Bawah et al., 1999, Kabagenyi et al., 2014, Onyango et al., 2010). In other words, men are concerned that contraceptive use encourages infidelity among wives, it interferes with men's desire to raise large numbers of children and weakens the husband's control over the wife.

An analysis by Wolff et al. (2000b) based on survey and focus group data, that examined the role of couple negotiation in unmet need for family planning in Uganda, showed that partner's opposition to contraceptive use led to low contraceptive use. This decreased contraceptive use was independent of other barriers to accessing family planning services and has been found to account for 15% of overall unmet need for any form of contraception (Wolff et al., 2000b). However, not all studies have documented lower contraceptive use reported by men. In a multiple logistic regression analysis of DHS couple data from 23 countries, mostly in sub-Saharan Africa, that examined husbands' and wives' reports of contraceptive use, Becker and Costenbader (2001) found that husbands reported higher levels of contraceptive use within the couple than their wives in every country studied. This result, though debatable provided evidence that interviewing male partners is an important step toward determining the extent of male involvement in contraceptive use.

A number of studies have noted a positive association between spousal communication and contraceptive use, effective use and continuation (Bawah, 2002, Feyisetan, 2000, Hartmann et al., 2012, Kaggwa et al., 2008, Ntshebe, 2011). In Malawi, Ntshebe (2011) found that women who discussed family planning with their spouses were over six times

more likely to use contraception than those who never had any discussion with their partners. Limited or non-existent couple discussion often led to covert use (contraceptive use without the partner's knowledge) of contraception by women. In a study among couples in Zambia, Biddlecom and Fapohunda (1998) found that difficulties associated with the couple's communication about contraceptive use was the strongest determinant of covert contraceptive use among women from an urban setting. In light of this growing evidence of men's role in fertility decisions, many scholars have argued that the neglect of men's role in sexual and reproductive health has hindered efforts to increase contraceptive uptake in sub-Saharan Africa (Mbizvo and Bassett, 1996, Frost and Dodoo, 2009). Thus, they have called for interventions to increase male involvement in family planning to reduce unmet need.

Cultural and gender norms

Research shows that cultural norms related to reproductive decision-making in most rural areas of sub-Saharan countries are a barrier to contraceptive use and a determinant of family size (Lutalo et al., 2000). In various contexts, family planning services are available but are not socially accepted as a result of sociocultural influences that hinder uptake. This ultimately has an impact on the successful implementation of family planning programmes. Gender norms may manifest in several ways that influence a woman's ability to use contraceptives, such as gendered sexual decision-making (Nalwadda et al., 2010), norms prohibiting communication about sexual health (Kiene et al., 2015), and intimate partner violence (Hung et al., 2012). Culture and gender norms may also manifest in form of myths and misconceptions mong women which may be attributed to lack of knowledge.

Role of family planning providers

The role of family planning providers as regards contraceptive use cannot be over-emphasised. It is expected that FP providers offer counselling and education to nullify negative beliefs, offset fears about the negative side effects and also to enable fully informed choices.

Recent studies have examined aspects of client and provider relationships and whether women discussed fertility desire with providers (Wagner et al., 2012, Wanyenze et al., 2013, Achwoka et al., 2017). These studies found that effective contraceptive use was higher among women who discussed contraceptive use with a provider compared to those who did not. In contrast, another study revealed that women were dissatisfied with the information they received from health providers (Beyeza-Kashesya et al., 2009). These studies did not particularly examine the content of the family planning discussions that occurred between the patient and the provider. This literature review filled this gap by examining the content of family planning counselling received by women to better understand how they can be supported to have optimally spaced and intended pregnancies.

Role of religion

Religion is an important factor in determining contraceptive use in developing countries as demonstrated in various studies (Agadjanian et al., 2009, Gyimah et al., 2006). An earlier study by Goldscheider (1971), identified two main hypotheses about the nature of the religion—fertility relationship. First, the "characteristics" hypothesis in which he reports that the association between religion and fertility is spurious. In other words, the higher fertility of certain religious groups could be accounted for by the groups' sociocultural and economic characteristics. Thus, controlling for the sociocultural and economic characteristics would reveal that the role of religion was apparent rather than real. If the association between religious affiliation and fertility persists even after controlling for the sociocultural and economic variables, Goldscheider (1971) suggested the second approach, the "particularised theology" hypothesis. This hypothesis states that high fertility of a religious group is accounted for by the teachings on childbearing or contraceptive use by the religious denomination. For example, there is evidence that the Roman Catholic doctrine is essentially pronatalist (Goldscheider, 1971) because it forbids the use of modern methods of contraception (Johnson, 1982). In a study conducted among 600 women in Nigeria, Avong (2001) noted that, in contrast to Catholics, Protestants either have no proscriptions against contraception and abortion, or have

abandoned the tenet of faith for secularism, which are key factors in enhancing fertility decline. Regarding Islam, a qualitative study that explored women's views on high fertility in Islamic Northern Nigeria, identified high parity within marital unions as a strategy to prevent men from divorcing them and from engaging in plural marriage (Izugbara and Ezeh, 2010).

2.4.2.4 Perceived behaviour control

Perceived behaviour control refers to the extent of individual control which one perceives that he/she has of his/her fertility behaviour. It consists of two dimensions. On one hand, it refers to what one perceives regarding his/her ability, resources and opportunities to implement fertility behaviour, for example, health conditions, job opportunities, economic status of husband and wife, and whether their child is being taken care of. All of these may turn into the ability, resources and opportunities that one will evaluate. On the other hand, it refers to one's evaluation of how important the ability, resources and opportunities are for realising fertility behaviour. When one believes that he/she is capable of implementing fertility behaviour, or the more resources and opportunities one possesses, the stronger the perceived behaviour control as well as fertility behaviour implementation intention will be.

2.5 Gaps this thesis addresses

There are several gaps in the literature on fertility desire and contraceptive use among postpartum women. First, there is a substantial literature on the determinants of fertility desire and contraceptive use among women in sub-Saharan Africa (Matovu et al., 2017a, Casterline and Agyei-Mensah, 2017, OlaOlorun et al., 2016, Speizer and Lance, 2015b, Blackstone and Iwelunmor, 2017, Mmbaga et al., 2013). Yet, few studies have focused on women within the postpartum period (Gutin et al., 2014, Kopp et al., 2017, Gebremedhin et al., 2018, Keesara et al., 2018), despite the fact that postpartum women have the highest unmet need for family planning which exposes them to risks of unplanned pregnancy and their associated adverse health outcomes. As such, fertility desire and contraceptive use among postpartum women is not well understood. There is evidence

that postpartum women have a high fertility desire (Atukunda et al., 2018)which suggests a high need for contraceptive services. This thesis focused on women within two years of the previous birth and examined the factors that influenced fertility desire and contraceptive use among this understudied population.

Second, the majority of studies that inform our understanding of fertility desire and contraceptive use among postpartum women (with the exception of those that used demographic and health survey data) have been conducted among HIV-positive women and HIV-discordant couples (Mayondi et al., 2016, Anguzu et al., 2018, Kopp et al., 2017, O'Shea et al., 2015). Few studies have explored fertility desire from a general population perspective, including married and unmarried individuals. This study uses a mixed method design to explore the determinants of fertility desire among married and unmarried individuals.

Additionally, most Ugandan studies on fertility desire among postpartum women have focused on women within a year of childbirth: Gutin et al. (2014) focused on women within 4 to12 weeks post-delivery; Rutaremwa et al. (2015) targeted women within 12 months post-delivery; Sileo et al. (2015) focused on women at 13 weeks of delivery. However, there is reason to believe that fertility desire and contraceptive use may operate differently among women in the two –year period following childbirth. This period coincides with the WHO recommended minimum duration of birth to pregnancy interval of two years (World Health Organisation, 2013). For example, a recent study by Achwoka et al. (2017) conducted among Kenyan women reported that within the two-year period following childbirth, a substantial proportion of women were using contraception as most had resumed sexual activity and menstruation. Findings from this study may be used to promote efforts for provision of reproductive health services during the postpartum period.

Recent studies have examined aspects of client and provider relationships and whether women discussed fertility desire with providers (Wagner et al., 2012, Wanyenze et al., 2013, Achwoka et al., 2017). These studies found that effective contraceptive use was higher among women who discussed contraceptive use with a provider compared to those who did not. In contrast, another study conducted in Uganda revealed that women

were dissatisfied with the information they received from health providers (Beyeza-Kashesya et al., 2009) which had implications for their fertility desire and contraceptive behaviour. These studies did not particularly examine the barriers to contraceptive use even after having had a discussion with a provider after childbirth. This thesis filled this gap by examining the role of providers in influencing fertility desire and contraceptive use among postpartum women, to better understand how they can be supported to have optimally spaced and planned pregnancies.

Existing literature indicates a plausible relationship between sex composition of children and fertility desire. Demographers have attempted to explore various dimensions of fertility preference of couples, but the paucity of reliable and valid measures has limited their studies as the use of different indicators has often made the different studies incomparable. In the Ugandan context, little is known about the role of sex composition of children on fertility decisions yet fertility desire driven by sex composition of children has important implications on fertility. This study uses in-depth interviews to understand how sex composition of children and child sex preference influence fertility desire and contraceptive behaviour after childbirth.

2.6   Conclusion

This literature review has revealed a limited number of studies on fertility desire and contraceptive behaviour of postpartum women, and yet an understanding of their fertility desire and contraceptive needs is of great public health importance. Ensuring that women are supported in meeting their fertility goals is key in averting unintended pregnancies and promoting optimal birth spacing among postpartum women.

Chapter 3   Research design and methodology

3.1   Introduction

This chapter describes the research methodology and research design employed in this study. The chapter commences with a discussion of the research design—mixed methods—and the rationale of using a mixed methods approach. Thereafter, the chapter is divided into two sub-sections describing the quantitative and qualitative arms of the study. The first section (section A), covering the quantitative arm of the study, provides a description of the quantitative data source, sampling procedures and quantitative data analysis plan. The next section (section B), detailing the qualitative arm of the study, presents a description of the primary data collection including a detailed description of the study site, study sample, the research team and the approach to qualitative collection and data analysis.

3.2   Research design: Mixed-methods

This study used a mixed-methods sequential explanatory design, where the quantitative phase preceded and informed the qualitative phase (Creswell, 2014, Tashakkori and Teddlie, 2010). In the first phase, the quantitative data obtained from the 2016 UDHS was analysed. In the second phase, qualitative data were collected and analysed to help explain the quantitative results obtained in the first phase. The second, qualitative phase builds on the first, quantitative phase, and the two phases are connected in the intermediate stage in the study (Figure 3.1).

Figure 3.1   Sequential mixed-methods design
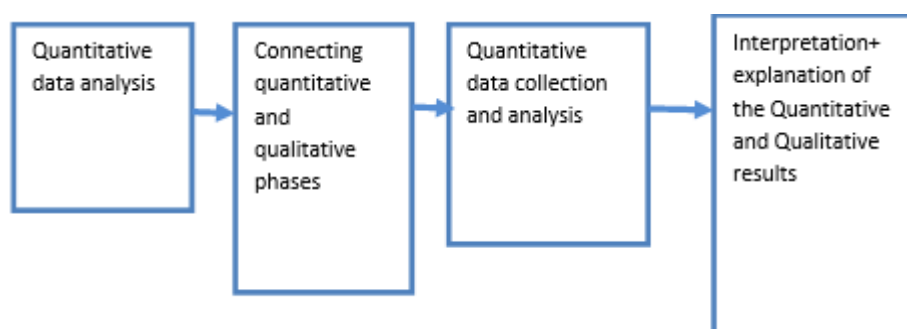
Quantitative approaches have strength in quantifying associations between variables, and the capacity to examine the strength of association between variables. However, one of their major weaknesses is there inability to provide information on contextual factors to help interpret the results or to help explain variations in behaviour. By way of contrast, qualitative approaches examine the context, meanings and provide breadth and depth of the accounts people offer, but lack the capacity to assess the strength of the relationship among categories (Castro et al. 2010).

Because there is a gap between women's desired and actual fertility, using a quantitative approach on its own would not allow shedding light on this phenomenon. The quantitative results helped to elicit and quantify the magnitude of fertility desire and contraceptive behaviour among women, but interpretation was limited by the questions asked in the survey. A mixed-method approach allowed the candidate to get more understanding of why the associations found in the quantitative analyses could have occurred (Pope, Mays et al. 2007). For example, understanding why sex composition is an important determinant of fertility desire based on interviews with women and men provides explanations for the observed quantitative associations. While the quantitative results showed high fertility desire, the context in which women make fertility decisions could not easily be drawn using a quantitative approach alone (see Chapter 4). As such, the qualitative approach was used to illustrate the context. In-depth qualitative interviews were used to fill this gap.

Ways of integrating the two data streams have received considerable attention, with different authors offering practical guides (Onwuegbuzie and Teddlie, 2003, Hanson et al., 2005, Teddlie and Tashakkori, 2003, Creswell et al., 2003). In this study, I connected the quantitative and qualitative phases during the intermediate stage, where the results of the Quantitative data analysis in the first phase guided the data collection in the Qualitative phase. The second connecting point included developing the interview protocol based on the results from the quantitative phase. Finally, the results from the quantitative and qualitative phases were integrated during the interpretation of the outcomes of the entire study (Chapter 8).

3.3   Section A: Quantitative data sources

3.3.1   Source of data

The data used for this study come from the 2016 Uganda Demographic and Health Survey, accessed with permission from MEASURE DHS upon providing a brief description of the study via their website (UBOS and ICF, 2018). The DHS is a cross-sectional nationally representative survey which is regularly carried out in developing countries with the aim of providing information on fertility, mortality, family planning, maternal and child health, as well as behaviour regarding HIV and other sexually transmitted infections. The UDHS main implementer is the Uganda Bureau of Statistics (UBOS) in cooperation with other agencies and Organisations which facilitated the successful implementation of the survey through provision of technical support.

3.3.2   Sample design

In the DHS, two-stage cluster sampling was used to generate a nationally representative sample of households based on the sampling frame from the 2014Uganda National Population and Housing Census(UBOS, 2016). The first stage involved selecting the clusters from sampling frames used in recent nationwide surveys, followed by the second stage, which selected households in each cluster. Stratification of urban and rural areas was taken into account. A sample of 697enumeration areas was covered and proportionally allocated among Uganda's 15 regions[5] (Figure 3.2). Details on the sampling procedure are described elsewhere (UBOS and ICF, 2018).

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[5] The 2016 UDHS grouped Uganda into 15 regions

Figure 3.2 Hierarchical structure of the 2016 UDHS dataset
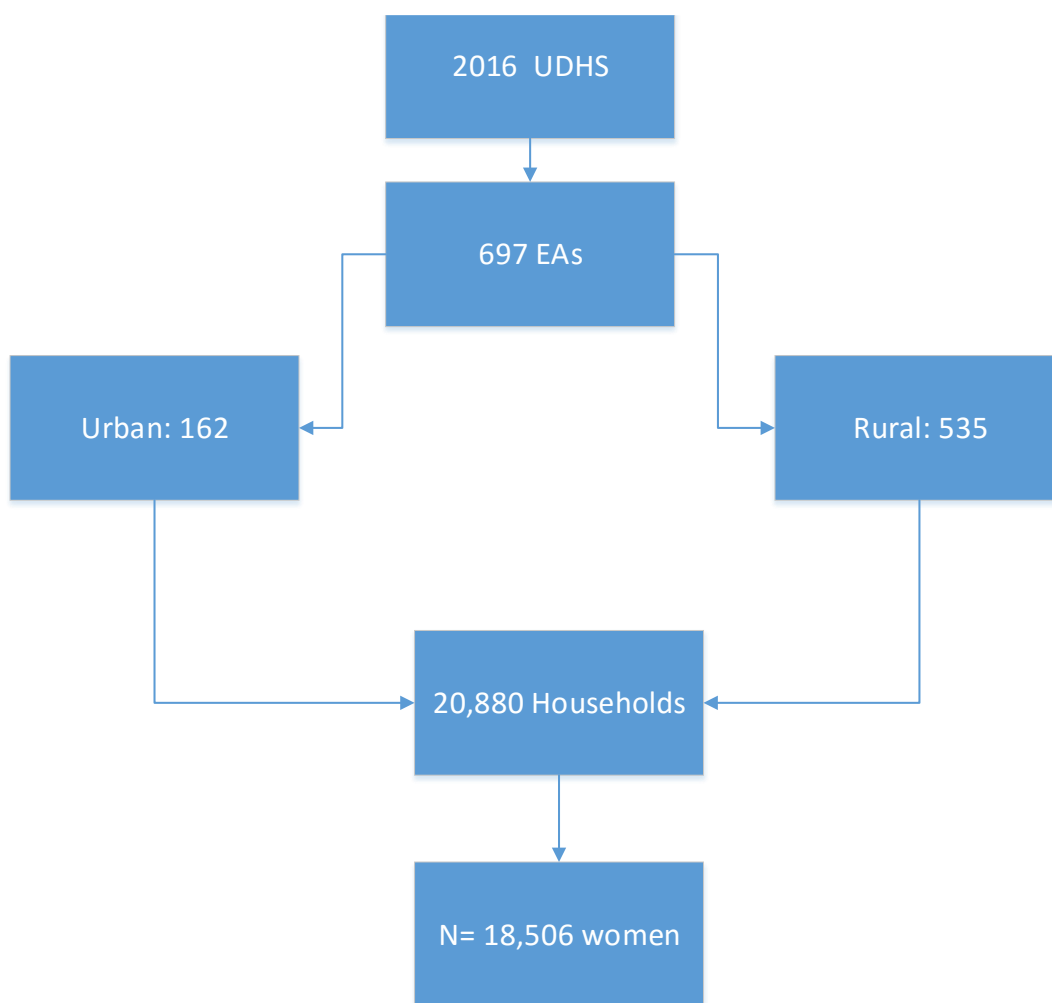
3.3.3   Study sample

From the sample of 18,506 women[6] interviewed in the 2016 UDHS, data relating to 5,088 women (weighted sample) of reproductive age (15-49 years) who had a live birth in the two years prior to the 2016 UDHS survey were extracted for further analyses (see Figure 3.3showing the sample selection procedure). The two year period is in line with the World Health Organisation recommendation for spacing of births between a live birth and an attempt to the next pregnancy of approximately two years (World Health Organization, 2005). The reproductive age group 15-49 years is the target population for fertility related programming efforts by the Ugandan Government.

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[6] All eligible women (age 15-49 who were either permanent residents of the selected households or visitors who stayed in the households the night before the survey) in the selected households.

Analyses are presented for both married and unmarried women. Generally, childbearing is more likely to take place in marriage, however, of recent, there is an increase in premarital childbearing in sub-Saharan African countries including Uganda (Richter et al., 2010, Palamuleni and Adebowale, 2014, Ayiga, 2015). At the same time, the original index of marriage, as a pre-requisite for childbearing in Bongaarts (1978) proximate determinants of fertility has been replaced by "women at risk of conception" in Bongaart's revised model (Bongaarts, 2015b). Women at risk of conception include all women regardless of marital status, who had sex within the last four weeks or those using contraception.

The study sample was limited to women who self-report to be fecund and non-pregnant and non-sterilised (Figure 3.3). Pregnant women were excluded from this sample because they are classified as having no current need for contraception and are likely to have a different set of fertility desire compared to a non-pregnant subgroup (Westoff, 1992). Similarly, infecund and sterilised women were excluded from this study sample because infecundity was self-reported as "can't get pregnant" while sterilisation referred to either the woman or man being sterilised within a stable relationship and therefore have no prospects of childbearing in the future. The small number of women (5.3%) that reported that they were either unsure or undecided were excluded from further analysis because it was difficult to assess whether they want another child or not.

Figure 3.3   Sample selection procedure


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┌─────────────────────────────────────────────────────────────┐
│      Number of women interviewed (15-49) N=18,506           │
└─────────────────────────────────────────────────────────────┘
                            ▼
┌─────────────────────────────────────────────────────────────┐
│ Women who had a live birth in the last two years            │
│ (Weighted n=5,901)                                          │
└─────────────────────────────────────────────────────────────┘
                            ▼
┌─────────────────────────────────────────────────────────────┐
│   Exclude women who are pregnant (Weighted n=5,447)         │
└─────────────────────────────────────────────────────────────┘
                            ▼
┌─────────────────────────────────────────────────────────────┐
│ Women included in the sample excluding undecided, unsure,    │
│ sterilised and infecund (Weighted n=5,088)                  │
└─────────────────────────────────────────────────────────────┘
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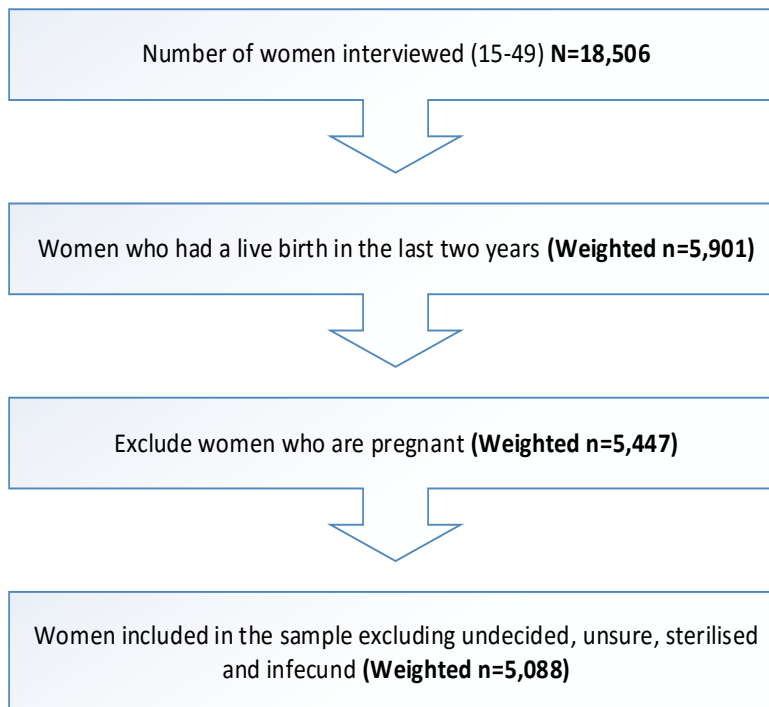
3.3.4   Variable selection

This sub-section discusses the variables chosen for the study and their known influences on fertility desire and contraception use, and how some of these were derived. All the quantitative variables for this study were extracted from the women's individual record file in the UDHS 2016. The core of investigation in this thesis is fertility desire and contraceptive uptake. Hence, this study has two dependent variables as detailed below:

Dependent variables

Dependent variables are "those that depend on the independent variables; they are the outcomes or results of the influence of the independent variables". Dependent variables are also commonly referred to as response or outcome variables.

The first dependent variable was self-reported fertility desire of the woman at the time of the survey. The DHS offers three measures of self-reported fertility desire namely: 1) ideal number of children, 2) desire for additional children and 3) "wanted status" of recent births. This analysis (see question wording in Appendix E) focused on desire for additional children because this is considered to be unbiased measure as there is no reason why a woman should over or underreport her preference for continued childbearing (Bongaarts,

1990). However, the major setback of this measure lies in misinterpretation of the question. Some women may misinterpret the question as asking whether they want another child soon rather than asking about their ultimate intentions. Another setback is that women who prefer to have their next child after longer periods (five years and more) are more likely to be classified with women who want to stop childbearing because they have similar behaviours (Bongaarts, 1990).

Information on fertility desire was captured by asking all women whether another child was desired, and if so, the desired waiting time. Women's responses were coded as: a) wants within two years b) wants after two years c) wants no more. In order to focus on the respondents' fertility desire, I recoded these variables into two categories to make the variable binary: wants another (yes) and no more (no), with yes being the event of interest coded 1, and no being the reference category coded 0. This approach has been used in previous studies on fertility desire elsewhere (Pasha et al., 2015). Women who report not wanting more children are considered as those who with an intention to limit childbearing Preliminary analysis showed that about two-thirds of women (68%) wanted more children while a third (32%) wanted no more.

The second dependent variable for the study was modern contraceptive use. Modern methods of family planning refer to safe, effective and legal methods to prevent pregnancy (WHO, 2013a). Contraceptive methods considered 'modern' include the pill, intrauterine device, injectable contraceptives, male and female condoms, female and male sterilisation, implants, Lactational amenorrhoea method, standard days method and emergency contraception, as classified by the DHS programme(UBOS and ICF, 2018). Information on current use of contraception was captured by asking the question, "Are you or your partner currently using something or using any method to delay or prevent getting pregnant?"(Appendix E). Women who reported that they were using a method were asked to name all the methods they were using. The coding categories for contraceptive use were: 1) not using, 2) folkloric method7, 3) traditional method and 4) using a modern method. The focus of this study is on modern contraceptive use considering the fact that they are effective in preventing unintended pregnancies and

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[7] Folkloric methods include use of herbal plants, beads and other methods

because modern contraception is the focus of Uganda's family planning programmes. By contrast, traditional and folkloric methods such as use of herbs are considered less effective than modern methods and are associated with high failure rates (Tunkara-Bah, 2016, Che et al., 2003) and were therefore regrouped with the not using category. Consequently, the outcome variable, modern contraceptive use (MCU) was expressed as a binary outcome— whether a woman or her partner was using modern contraception or otherwise. Modern contraceptive use was coded 1, if a woman used any modern method of contraception and otherwise coded 0.

Independent variables

Independent variables are defined as "those that cause or influence or affect outcomes" (Creswell 2009). Another name for independent variables is explanatory variables. The choice of independent variables reflects those reported in fertility literature as relevant risk factors as well as what is available in the 2016 UDHS dataset. Apart from focussing all the attention on a sub-set of variables of interest, there were other theoretical and practical considerations. The theoretical consideration is that some variables that emerged from the literature, were found to be important in influencing fertility desire and contraceptive uptake among the study population in previous studies (Achwoka et al., 2017, Rutaremwa et al., 2015, Warren et al., 2013, Ndugwa et al., 2011a, Gebremedhin et al., 2018, Pasha et al., 2015). The practical consideration was based on the inadequacies of the variables themselves by way of providing relevant and detailed information. In view of the above observations, only 14 variables applied to the analysis of factors influencing fertility desire: age, education attainment, religion, marital status, place of residence, employment status, ideal number of children, number of living children, sex composition of children, child sex preference, feelings towards last pregnancy, partner's desired number of children, time since birth and postpartum abstinence (De Souza et al., 2017, Melka et al., 2014, Gutin et al., 2014).

Contraceptive use among women within two years of childbirth has been found to be affected by age, marital status, education attainment, residence, employment status, religion, number of living children, having discussed family planning with a provider, fertility desire, sex composition of living children, return of menses and resumption of sexual intercourse (Jalang'o et al., 2017, Sileo et al., 2015, Wuni et al., 2017, Mengesha et

al., 2015, Pradhan et al., 2017, Abraha et al., 2017, Revanna and Agadi, 2016, Ujah et al., 2017). Table 3.1 presents the categorisation of the variables.

Key Independent variables of interest

Based on the study's research questions, the key independent variables were child sex preference and sex composition of living children. I hypothesised these to be the primary factors associated with fertility desire. With regards to contraceptive use, I hypothesised fertility desire and sex composition of living children as being associated with contraceptive use.

Child sex preference

In relation to respondents' preferred child sex composition, the UDHS Questionnaire (Appendix E) included a question: "If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?" This initial query was followed by the question, "How many of these children would you like to be boys, how many would you like to be girls, and for how many would the sex not matter?" In every survey, the sum of the responses to these questions (i.e., the ideal number of boys, girls, and either sex) matched the response to the preceding question (i.e., the ideal total number of children). Based on their responses to these questions, I classified the women into one of three gender preference categories: prefer mixed, prefer sons and prefer daughters. Mixed preference was assigned to women who reported an equal number of children of either sex or accept God's decision were considered as not having a preference or have a mixed child sex preference. Women who reported a higher number of boys than girls as their ideal number of children were regarded as having preference for boys while those who reported a higher ideal number of girls than boys were considered as having preference for girls.

Sex composition of living children

The second key independent variable of interest is based on each respondents' number of living children and the sex composition of children residing at either the respondent's home or elsewhere, as provided in the UDHS. I categorised sex composition of living

children into three categories: a) have a mixed sex composition b) have only boys c) have only girls.

Other independent variables

The women's questionnaire collected information on socioeconomic and -demographic characteristics, such as age, education, religious affiliation, marital status, place of residence, employment and other fertility and postpartum factors (Table 3.1). For this analysis, women's characteristics were coded as categorical variables.

Age of the respondent

The wish for parenthood often declines with increasing age, and this has a bearing on contraceptive uptake. In the DHS, information on age of respondents is recorded in single years, but for analytical purposes, single years of age were tabulated into subgroups (Appendix E). Combining the ages into groups allows one to understand the needs of a particular group as opposed to focusing on single years. Age was grouped into seven standard five-year age groups (15-19, 20-24, 25-29, 30-34, 35-39, 40-44, and 45-49).

Education attainment

Education has an impact on demand for children. Educated women are much less fatalistic regarding their family size compared to illiterate women(Castle, 2001, Kinfu, 2017). Research has shown that educated women desire fewer children compared to illiterate women (Jejeebhoy, 1995). In the DHS, all women in the sample were asked to state their highest level of education attained, and on the basis of the response, women were grouped into three categories, namely: none, primary schooling with one to seven years completed and secondary or higher education with eight or more years of schooling (Appendix E).

Religious affiliation

Religion plays an important role in fertility decision-making. Each religion has its own ideology and culture that has an impact on fertility decisions. Thus, women with strong religious conviction are less likely to use contraception even when they have attained their desired family size. In Uganda, there are three main denominations (Protestant, Roman Catholic and Muslim), while the rest of the smaller religious groups were grouped

into the "other" category. The other category included women who belong to Pentecostal religion and Seventh Day Adventists. Hence, I regrouped religion into four: Protestant, Roman Catholic, Muslim and Others.

Place of residence

In Uganda, fertility decision-making varies from urban to rural area, the reason being that women from urban areas are more likely to be well educated and exposed to information about family planning than their rural counterparts. The data is derived from the question: *How long have you been living continuously in this place? (*Appendix E). Responses to this question were classified into two categories according to the usual place of residence, namely: rural or urban.

Marital status

It important to consider women in different categories: unmarried (or living with a partner), currently married, and formerly married (Appendix E). This is because each of the categories, when dealing with the topic of fertility, has different exposure risks. During preliminary analysis, the proportions of women who were never married were too small to be analysed separately without leading to an unstable model; this category comprised 6.1% of the respondents. As a result, they were coded with the formerly in union category as both categories comprise of women who are not in union and are therefore likely to differ from the married category in terms of fertility desire and contraceptive use (Appendix E).

Women's occupation status

Women were asked about the kind of work they did in the last 12 months. The DHS categorised these responses as: 1) Not working 2) Professional/ technical/managerial, 3) Clerical, 4) Sales and services5) Agricultural, 6) Craft and trade, 7) Plant/machine operator, and elementary occupations (Appendix E). In this sample, women employed in professional/technical/managerial and those in clerical jobs were less than eight percent, and were therefore re-categorised with sales and services, skilled manual, unskilled manual to form one group. Those in agriculture-related employment were also collapsed to form one group. Finally, women's occupation status was regrouped into three: unemployed, professional/sales employment and agriculture-related employment. The

argument is that those that are employed in professional employment would be less inclined to want another child than unemployed women or those engaged in agriculture-related jobs.

Feelings towards the last pregnancy

Respondents were asked about their feelings towards their past fertility (whether last pregnancy was mistimed or unintended), as past fertility can affect future reproductive choices, and their future fertility intentions (whether they wanted more children, when they would want to have those children, how many children they desire in total). This variable was coded as: 1) wanted, 2) wanted later (mistimed), 3) unwanted (Appendix E).

Discussion of family planning with a health care provider

Health care providers are known for providing expert information regarding fertility and contraceptive uptake. Respondents were asked whether they discussed family planning with a health provider within the past 12 months (Appendix E). This variable was coded as: 1) Yes, 2) No.

Partner desired number of children

In Uganda, just as in most African countries, the husband plays a pivotal role in fertility decisions. Respondents were asked about their partner's desire for children. According to the DHS data, information on this variable is divided into four parts: whether the husband wants same number of children as the respondent, husband wants more, husband wants fewer children, and don't know.

The above-mentioned variables were grouped into three major categories:

1) Socioeconomic and demographic factors: age, education attainment, religion, marital status, place of residence and employment status,
2) Fertility and postpartum factors: ideal number of children, number of living children, sex composition of children, child sex preference, feelings towards the last pregnancy, partner's desired number of children, months since birth, postpartum abstinence, breastfeeding status, return of menses and discussion of family planning with a provider.

Table 3.1   Definition of variables in the analysis

Variable	Description and coding of the variable
Demographic and socio-economic factors	
Maternal age	Defined as age of the woman at last birthday. Measured in standard five year age groups 15–19, 20–24, 25–29, 30–34, 35–39, 40-44, 45-49
Education attainment	Defined as the highest level of education attainment: (0) None, (1) Primary (1–7), (2) Secondary/ higher
Religion	Religion was grouped into (1) Protestant, (2) Roman Catholic, (3) Muslim, (4) others
Marital status	Marriage was categorised into three: 1) Never married, 2) Currently married, 3) Formerly in union
Type of place of residence	Place of residence has two categories: (1) Urban and (2) Rural
Current employment status	Occupation was regrouped into 1) Unemployed,2) Professional/Clerical, 3) Employed in the Agricultural sector
Fertility and postpartum factors	
Ideal number of children	Ideal number of children which was originally continuous was categorised into 0-2, 3-4 and 5 or more children
Number of living biological children	Number of surviving children which was originally a continuous variable was categorised into 0-2, 3-4 and 5 or more children
Sex composition of living children	Derived from sex of all living children. The resulting variable classifies women into three categories based on the sex composition of their children: 1) Has mixed sex composition of children, 2) Has only boys and 3) Has only girls
Child sex preference	Derived from ideal number of sons and ideal number of daughters. The resulting variable was coded as:1) Wants equal sons and daughters, 2) Wants sons more than daughters, 3) Wants daughters more than sons.

Variable	Description and coding of the variable
Feelings towards last pregnancy	Defined as the wanted status of the last child. This was coded as: 1) Wanted, 2) Wanted later, 3) Unwanted
Time since birth	Interval between the last birth and the date of the interview in months. I categorised this into four: (1) <2 months, 2) 3-5 months, 3) 6-11 months, 4) 12-23 months
Postpartum abstinence	Defined as the duration of postpartum abstinence after the birth of the last child in months. Coded as 1) Sexually active, 2) Postpartum abstinent
Currently breastfeeding	Defined as whether or not the last child was still being breastfed. This was coded as 1) Yes , 2) No
Return of menses	Defined as whether or not the woman was still amenorrhoeic, coded as 1) Yes , 2) No
Discussion of family planning	Defined as whether or not the woman discussed family planning with a health care worker within the past 12 months, coded as: 1) Yes, 2) No
Partner desired number of children	Defined as whether or not the respondent believes her partner wants the same number of children, more children or fewer children than she wants herself. This was classified as 1) Both want same, 2) Husband wants more, 3) Husband wants fewer, 4) Don't know

3.3.5   Assessment of data quality

As is the case with other large surveys, DHS is prone to sampling and non-sampling errors that affect the reliability and accuracy of the conclusions derived from the data (Pullum et al., 2013, Alkema et al., 2012, Schoumaker, 2010).

3.3.5.1   The fertility preference concept and its measurement

The idea of measuring fertility preference has a long history. Fertility preference data were first collected in the 1940s in the United States with their inclusion in the survey questions, and have been routinely included in most Demographic and Health Surveys for many decades in a wide range of contexts. Fertility preference data are important at the aggregate level for predicting future fertility patterns (Kodzi et al., 2010b, Westoff and Ryder, 1977a), interpreting the prevalence of unwanted or mistimed fertility (Koenig et al., 2006, Westoff, 1991), and understanding of reproductive decision-making among individuals and couples (Debpuur et al., 2002a, Morgan and Rackin, 2010, Santelli et al., 2003).

Different concepts have been used to measure fertility preference in the demographic literature, such as desired family size, ideal or preferred number of children, desire for additional children and fertility intentions (Wanyenze et al., 2015b, OlaOlorun et al., 2016, Peltzer et al., 2018, Muhoza et al., 2014). In fertility literature, the terms fertility 'preference' and 'intention' are often used interchangeably. While the word "intention" conceptually has elements of both desire and planning (Stanford et al. (2000), preference relates only to the desire aspect based on self-reported hypothetical scenarios. To obtain data about fertility preference, demographic and health surveys have relied on three items:

A question asking for the woman's ideal number of children (Ideal family size): In the DHS, women are asked, "If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?" Questions about the ideal number of children are aimed at measuring the reproductive norms in the population at a given time and provide quantitative basis for assessing variation in desired and actual fertility. The desired fertility also enables the calculation of excess fertility (defined as a situation in which actual fertility exceeds

desired fertility). Although responses to this question should be integer values, some respondents provided non-numeric responses such as "Up to God" or "as many as possible" that cannot be readily incorporated into an average. In the past, the proportion of women who reported a non-numeric response was substantial. Recently, the percentage of women that reported non-numeric responses has declined to less than 5% in the majority of surveys. The respondents' non-numerical response to a fertility preference question was believed/assumed to be used to avoid direct confrontation with an issue that is believed to be beyond their control.

As with any attitude or opinion measure, questions on ideal family size have been criticised regarding their validity and reliability in the African setting (Johnson-Hanks, 2007). First, the stated ideal number of children is prone to rationalisation (respondents reported an inflated ideal number of children mainly due to reluctance to provide a number smaller than their current family size). Rationalisation is typically higher among older women who have been married for many years and are of high parity (Bongaarts, 1990). Second, a number of factors, such as death of a child and unfulfilled child sex preferences may render the stated ideal family size as misleading because women are unable to anticipate these factors and thus cannot incorporate them in their response. Hence, respondents may continue with childbearing to replace dead children or until they have a desired boy or girl. Thus, total fertility rate may exceed desired family size even without any unwanted fertility (Bhushan and Hill, 1995).

A question asking about the wanted status of previous births (retrospective preferences). Women are asked, "At the time you became pregnant with [NAME], did you want to become pregnant then, did you want to wait until later, or did not want (more) children at all?" Questions on wanted status of recent births as a measure of wanted fertility are useful for estimating the level of unwanted fertility, and determining the quality of care that the child receives (Westoff and Bankole, 1995). Longitudinal studies in which wanted status of the child was assigned both prospectively and retrospectively provided evidence of ex-post rationalisation (tendency of women to declare pregnancies that were unintended at the time of conception to be intended) (Bankole and Westoff, 1998). Substantial percentages of women who prospectively indicated the desire to terminate childbearing, later reported births that occurred in the interim as wanted (A Bankole & Singh, 1998; Casterline, El-Zanaty, & El-Zeini, 2001; Koenig, Acharya, Singh, & Roy, 2006).

For instance, (Akinrinola Bankole & Singh, 1998) in their study that used panel survey data from 1,664 Moroccan women who were interviewed in 1992 and re-interviewed in 1995, found large inconsistencies in reporting of wanted status of previous births. In this study, 20% of women who wanted no more children in 1992 but experienced a birth by 1995, reported the births as wanted. While it is possible that this mismatch in preference is due to genuine changes in fertility desires between the first interview and the time of conception, the more plausible explanation is African mothers are reluctant to label any particular child as "unwanted" (Bongaarts, 1992). On the other hand, those who want more children may later on report a desire to avoid further childbearing. This could be attributed to the role of family planning programmes that influenced individuals to revise downward their fertility preferences, through the spread of the norms about small families and increased access to contraception (Rutstein, 1998, Bongaarts, 2011).

A question asking about a woman's desire for another child, and the desired timing of the next birth (prospective preferences). The woman was asked "Would you like to have (a/another) child, or would you prefer not to have any (more) children?" Due to the prospective nature of this measure, it does not suffer from the problem of ex-post rationalisation encountered when retrospective preference data are used. In other words, this measure yielded valid and reliable results because there is no effect of unintendedness (Machiyama et al., 2015, Bankole and Westoff, 1998, Casterline et al., 2003, Casterline and El-Zeini, 2007).

3.3.5.2   Child sex preference

In the DHS, women were asked, "If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many that would be?" This initial query was followed by the question, "How many of these children would you like to be boys, how many would you like to be girls, and for how many would the sex not matter?" The latter question on child sex preference measures fertility attitudes and behaviour of the woman but the likely data quality problem is that the responses captured by the DHS programme may be influenced by spouses, family, peers, and societal preferences (Lightbourne, 1985).

Another data quality problem with the reported child sex preferences is that they are assumed to be stable (Kodzi et al., 2010b, Trinitapoli and Yeatman, 2018), yet child

preferences are likely to change over time because of uncertainties such as death of a partner, changes in employment opportunities and housing (Johnson-Hanks, 2007).

Inaccurate age reporting

Another commonly encountered error in large scale survey is inaccurate age reporting, most of which is a result of illiteracy, rural residence and poor economic conditions (Borkotoky and Unisa, 2014). In Uganda, where a large proportion of the population (30%) is illiterate and 75% resides in rural areas (UBOS, 2016), ignorance of actual ages is expected. Age misreporting may also arise from the interviewers recording incorrect responses in spite of the extensive training received prior to the data collection phase. This has implications on correct interpretation of results: for instance, if most women report that they are 20 years old and yet they are 16 years, one could conclude that fertility desire is very low among women in the group 15-19 years. As such, it is important that age is reported correctly. To test for possibilities of age misreporting, this study employed a simple graphical inspection of women's age in single years (Figure 3.4).

Figure 3.4   Distribution of women aged 15-49 years by single years, UDHS 2016
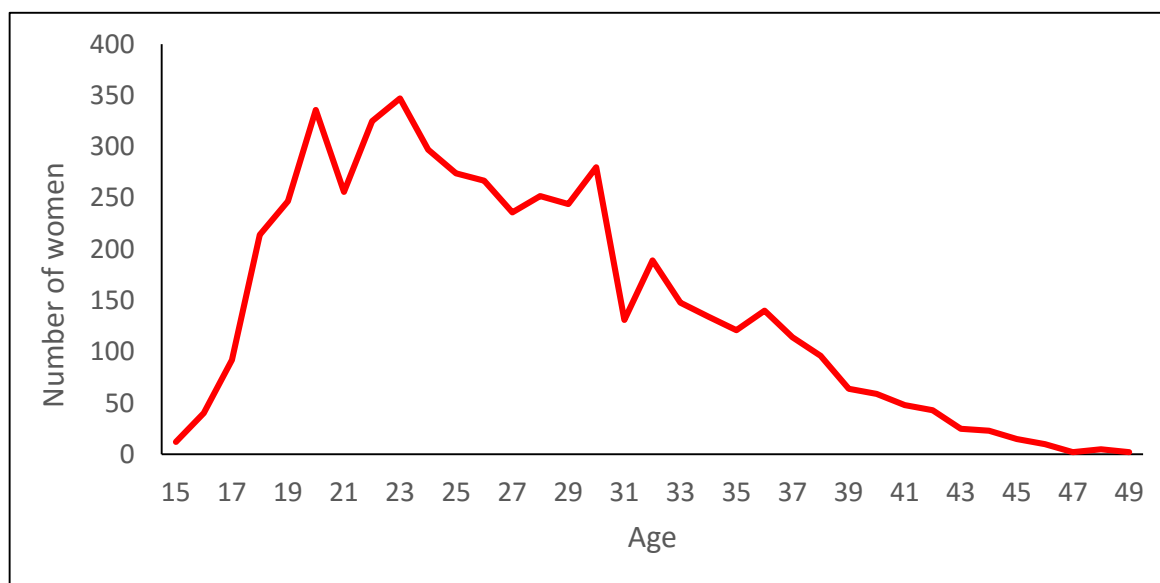
Instead of a fairly smooth distribution with slightly lower proportions of the total population at each successive single year of age, Figure 3.4 shows a saw-edged pattern at some ages indicating age heaping- tendency to report ages in certain digits more than others. The graph shows heaping at ages 20, 24, 30, 32 and36 years.

The possible explanation for this age heaping is cultural preference for or avoidance of certain digits. Other issues include ignorance of the true age and problems in data collection. The line graph also shows that sizeable troughs are in digits ending with one and seven. As such, digit preference in this sample ranges between 19 and 37 years. The graph shows that there is a downward trend with increasing age meaning there are fewer women in the upper age groups. This effect has been reduced to some extent by grouping the data into five-year age groups (15-19, 20-24, 25-29,30-34,35-39,40-45, and 45-49) during analysis.

DHS collects retrospective data that are prone to recall problems. For measures such as time since last birth, under-reporting is likely to occur, and distorts accuracy of reported events. However, this study relates to women with a delivery that occurred less than two years ago prior to the interview, it is likely they would still remember when it was. Additionally, questions on "wanted status" of the most recent child are likely to encourage rationalisation of previously unwanted births (Bankole and Westoff, 1998). For example, a mother may report that her now living child was intended at the time of conception even though the pregnancy had been actually unwanted or mistimed. This is expected to reduce the effect of any association. For questions on desired family size that are sensitive to actual number of children a woman has, there is a tendency for women to deny that their desired family size is smaller than their actual family size (Pritchett, 1994).

DHS data on health services are limited to assessing availability and utilisation, and no data on quality of care are collected. For example women are asked whether any staff member at the health facility talked to them about family planning methods. However, this does not delve further in the content of the discussion, length of the talk, whether it was a group discussion with other women or one on one. Likewise, the question on whether a woman's health was checked after delivery while they were still at the health facility, does not assess the quality of postnatal care received(UBOS and ICF, 2018).

3.3.6   Statistical analyses

Statistical analyses were conducted at three levels. First, frequency distributions were used to describe the characteristics of the respondents. At the second level, cross-tabulations were used to investigate the associations between fertility desire, modern contraceptive use (dependent variables) and women's socioeconomic and demographics

and reproductive factors. Pearson's chi-squared (χ^2) tests were used to examine the significant differences between the dependent variables and independent variables. The level of statistical significance using p-values was set at $p < 0.05$. After testing for co-linearity (Pagano et al., 2001) and interaction (Van Ness and Allore, 2006), all the variables that were significant at 95% confidence Intervals (CI) were included in the logistic regression models. Third, since the two dependent variables are dichotomous, binary logistic regression models were used to examine the association between the dependent variables and independent variables whose p-values were less than 0.05 during the chi-square tests. Results are presented in the form of Odds Ratios (OR). All analyses were weighted and performed in stata version 13 (College Station, Tx, USA).

Assessment of model fit

The Demographic and Health Surveys use a multistage sampling technique, with clustering as part of the design. As a consequence, the assumption of independence of the observations is violated, and the logistic regressions were performed using a method of estimation called "pseudo maximum likelihood" (stataCorp, 1999). The point estimates are the same as those of weighted "ordinary" maximum likelihood estimators. However, the likelihood is no more a "true" likelihood and is thus not suitable for statistical inference. To determine the goodness-of-fit of the consecutive models, regression diagnostic was done using Akaike Information Criteria (AIC), a likelihood based measure of fit which adjusts for higher numbers of independent variables. A lower AIC represents an improved model over a model with a higher AIC

Logistic regression models

Logistic regression models were used to improve understanding of the characteristics that influence women's desire to have other children and those that influence use of modern contraception.

The two binary dependent variables were fertility desire and modern contraceptive use. Let y_i denote the binary dependent for individual $i (i = 1, ..., n)$ where

$$y_{i=} \begin{cases} 1 \\ 0 \end{cases}$$

1=outcome of interest present (success)

0=outcome of interest not present (failure)

y_i is assumed to follow a Bernoulli distribution, with conditional outcome $p_i = pr(y_i = 1)$ and $1 - p_i = pr(y_i = 0)$

Taking the natural logarithm of both sides, this relationship is expressed as:

$$logit(p_i) = log\left(\frac{P_i}{1-P_i}\right) = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \cdots \beta_k X_{ki} \ldots\ldots\ldots\ldots\ldots 3.1$$

where $X_k(k = 1, \ldots j)$ denotes the k independent variables The logistic regression estimates the effect of one unit change on log odds of the dependent variable, when controlled for other factors. The preferred approach is to model a transformation of the success probabilities instead of the actual probabilities, such that the equation can be transformed to:

$$p_i = \frac{exp(\beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \cdots \beta_k X_{ki})}{1 + exp(\beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \cdots \beta_k X_{ki})} \ldots\ldots 3.2$$

β_0 is the constant, $\beta's$ are the regression coefficients, and exp (β) is the odds ratio.

Then the odds of success are computed from the probabilities obtained from equation 3.1 are defined as,

$$odds = \left(\frac{P_i}{1-P_i}\right) \ldots\ldots\ldots\ldots 3.3$$

3.3.6.1 Accounting for the survey design

Clustering

The simplest approach to selecting households from which respondents are drawn in a survey is by using simple random sampling (srs). This means every household has an equal chance of being selected for the survey. However, it would be prohibitively costly to send fieldworkers to households spread out randomly all over the country. Furthermore, with srs, you need to have a sampling list of all households from which to select your sample. In addition, DHS do not just require nationally representative results but the may need to gather data to estimate indicators separately for urban and rural areas, for provinces, and so on. The majority of DHS use complex multistage cluster sampling designs to address challenges indicated above. The first stage involves stratification, for example, urban and rural strata, or stratification by province. This is then followed by randomly selecting

clusters/enumeration areas within each stratum; after all the households in each cluster/enumeration are listed, the second stage is drawing a random sample of a set number of households (in the case of the 2016 Uganda DHS, 30) in each cluster/enumeration area. While multistage cluster designs are more practical, it also means that households are clustered, thus not statistically independent. Instead, the characteristics of a household (and its household members) are more like other households in the same cluster, and less like households in other clusters.

Weighting

Most African countries have smaller urban to rural populations such that if sampling was done proportional to size, there would be too few urban households in the sample. To correct this, most DHS over-sample some strata (e.g. urban areas) so that there are sufficient numbers of urban households to estimate urban-specific indicators. This over-sampling is corrected with sampling weights when calculating national estimates, otherwise the samples would be "too urban". In Uganda 2016 DHS, the strata are the 15 regions at both the urban and rural level and the three special areas (Islands, Mountains and Greater Kampala) to allow for reliable estimates for each stratum.

Since a complex sampling design is used in the DHS rather than srs, there is often a "design effect", which works as follows: clustering and weighting often leads to larger standard errors, implying that results may be less statistically significant than if srs had been applied; stratification leads to smaller standard errors. Many statistical software are available for correcting these design effects. In Stata, the sampling weight, clustering, and stratification are corrected using Stata's svy set commands.

3.4   Section B: Qualitative data sources

3.4.1   Introduction

Social researchers often set out to study and understand complex social phenomena such as human behaviour, but the task to understand ''the reality of this complexity is limited by research methods'' (Morse, 2003:189). In other words, choosing the appropriate methodology in every research endeavour is vital. This is because methodologies are useful tools that determine the whole research process from the beginning to the end,

and in particular how researchers will answer the research questions raised to arrive at valid conclusions (Silverman, 2011). This section provides a detailed account of the methodological procedures that I followed to conduct the qualitative study. The section provides an account of how the main fieldwork was conducted, a description of the study site, the study population, qualitative data collection methods ethical considerations and how the data were analysed.

3.4.2   Study site

The study was conducted in Mayuge district, which is located in the East Central region of Uganda (Figure 3.5), approximately 120 km from Uganda's capital city Kampala. Mayuge was purposively selected based on its very high fertility rate. Mayuge district has a fertility rate of 5.8 children per woman(Uganda Bureau of Statistics, 2017), which is even higher than the national fertility level of 5.4(Uganda Bureau of Statistics & ICF International, 2018). Given the very high level of fertility, desired fertility is also likely to be high, making it ideal for the study on fertility desire. Additionally, the district has a very low contraceptive prevalence rate –25.2 for all methods and is ranked among the worst performing districts in terms of maternal health indicators in the district league table (Ministry of Health, 2015).

Mayuge district is bordered to the North by Iganga district, to the North East by Bugiri district, to the West by Jinja district and to the South West by Lake Victoria and Tanzania. The district is composed of twelve sub-counties namely Baitambogwe, Imanyiro, Kigandalo, Kityerera, Bukatube, Buwaya, Mpungwe, Bukabooli, Malongo Islands, Wairasa, Busakira and Mayuge town council.

Field work took place in two purposively selected sub-counties– Kigandalo and Mayuge town council. The two sub-counties are located on the north eastern side of Mayuge district (Figure 3.5), about 20 km from each other. Selection of the sub-counties was influenced by socio-economic setting of the study areas, one representing a purely rural setting and the other a rural site with peri-urban characteristics–the intention being that such differences would provide a point of contrast in terms of change and persistence in social norms around fertility desire and contraceptive behaviour. The literature suggests that people in urban areas usually have better access to family planning services, and

have fewer children than those living in rural areas whose motivation for additional children includes the demand for child labour (Odewale et al., 2016).

Figure 3.5   Map of Uganda showing Mayuge district*
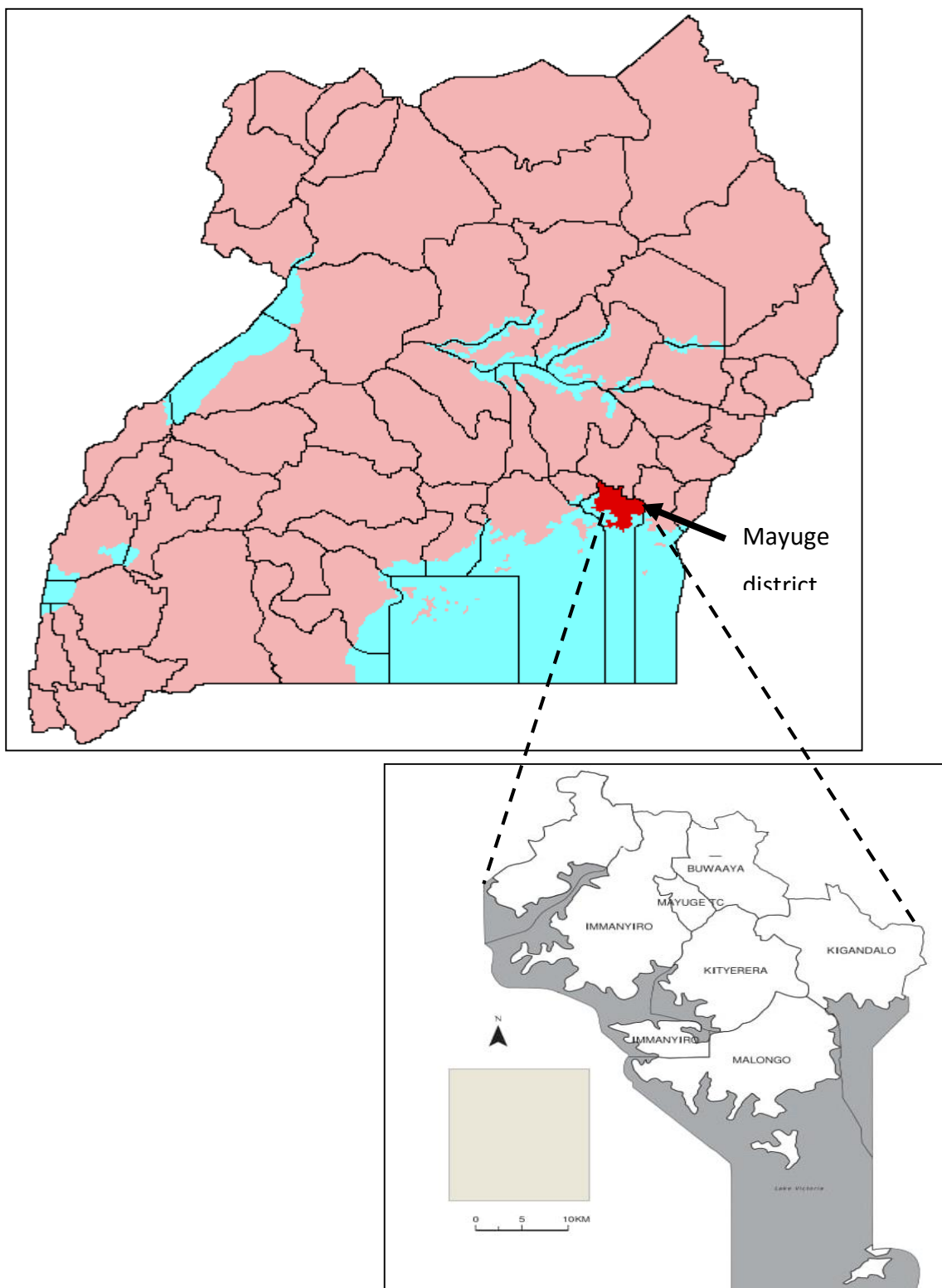
Source: PhD Candidate's map

* (Inset) selected sub-counties in Mayuge district

According to the 2014 Uganda National Population and Housing Census, Mayuge district has a total population of 473,239 compared to 324,674 in 2002 indicating a 3.5% growth rate(UBOS, 2016). The district's population is expected to double after 29 years. 63% of the population is below 18 years and 3.6% are above 60 years, denoting high dependency ratios (Mayuge and Government, 2011).

Mayuge district is predominantly rural (93%) with very few people having formal employment. The only town in the district, Mayuge Town Council has a population of 17,392 representing only 3.7% of the district population, which is far below the national urbanisation rate of 21%. About 36% of the Population is Muslim. Anglican and Catholic are second and third respectively with 33% and 23% respectively. About two thirds (65%) of the population in Mayuge district depend on subsistence farming for their livelihood, but a few of them are involved in fishing and trade on a small scale (Uganda Bureau of Statistics, 2017). Health services are mainly delivered by the public health system. The district is comprised of three health sub-districts (HSD) namely: Bunya East, Bunya West and Bunya South, with a total of 38 functional health units, six of which are NGOs. The district has only one Hospital, St. Francis Buluba, which is Catholic owned.

The majority of the population in Mayuge district belong to the Basoga ethnic group. Common languages spoken in Mayuge include Lusoga, Luganda and some English. The Basoga follow a patrilineal marriage system whereby inheritance and power are vested in the male line. Because patrilineal norms emphasize descent through a male ancestor, women move into the husband's home upon marriage, in many cases at some distance from their natal home. Similar to other patrilineal societies in Uganda and elsewhere, in Mayuge, women are expected to produce children in their new marriage; failure of which can result into marital instability. Sometimes, women look at child bearing as a form of social protection; believing that this will minimise chances of marital disruption (Agol et al., 2014). The husband's kin often have a stronger say in reproductive decisions, since by means of marriage, families gain control over childbearing matters. Thus, one could argue that this study was conducted in a setting where women have low participation in reproductive decisions.

3.4.3   Selection of study participants

Fertility decisions and actual contraceptive behaviour involve multiple actors (i.e the individual, partner, family members, and health care providers) at different levels. The inclusion of participants in the study was based on having had a child in the last two years or health providers involved in family planning service provision to women who had a child in the last two years.

The study had three sets of participants who were purposively selected to cover a wide range of perspectives:

a) Women aged 20-49 years who had a child in the last two years and resided in Mayuge district. Since median age at birth in Uganda and the official age of consent in Uganda is 18 years, minimum age for this sample was set at 20 years to give a chance to women who are early in their reproductive career and those who are late into their reproductive career.

Teen mothers were excluded because: they are at the beginning of their reproductive career, are thus less likely to have strong views on stopping childbearing. Furthermore, most teen mothers do not have sufficient information on fertility decision-making based on their low parity (Beyeza-Kashesya et al., 2010a). While it would have been interesting to compare the fertility intentions and behaviours of teen and older mothers, there were already many other interesting research questions to address in the thesis. Quantitative results (Table 4.2) showed that the study sample had a mean number of three children. The candidate used this as a cut off to select participants for the qualitative study. Additionally, a cross tabulation between maternal age and number of living children (categorised as either < 3 children or ≥3 children) indicated that nearly all women aged 15-19 had fewer than three children (Table 3.3). I therefore limited the qualitative sample to mothers who were aged 20 years or over.

In addition, a separate analysis showed that women with at least three children of the same sex composition were less likely to want another child. This suggests that having at least three children of the same sex composition may have differential impact on women's fertility desire and behaviour. By limiting the qualitative sample to mothers who were aged 20 years or over, I was able to obtain an in-depth account from

women who were further in their reproductive career, had at least three children of the same sex, and likely to have sufficient information about the research problem.

b) Men aged 18-54 years (whose wives had a child within the last two years) and whose current residence is Mayuge district.

c) Health care providers who were directly involved in family planning service provision and whose remit includes the postpartum period.

Table 3.2   Percentage and frequency distribution of maternal age by number of living children

Maternal age	Fewer than 3 children n (%)	3 or more children n (%)
15-19	595 (98.5)	9 (1.5)
20-24	1133 (72.6)	427 (27.4)
25-29	386 (30.4)	886 (69.5)
30-34	93 (10.5)	789 (89.5)
35-39	10 (2.0)	525 (98.1)
40-44	3 (1.4)	197 (98.7)
45-49	0 (0.0)	35 (100.0)

Recruiting the participants

Since this was a community-based study without established lists of men and women who had children within the last two years, I employed a mix of purposive and snowball sampling to select interviewees. Creswell suggests use of purposeful sampling to ensure that participants that are knowledgeable about, or those who experienced a phenomenon of interest are selected deliberately (Cresswell and Plano Clark, 2011).Thus, identifying the best set of individuals who met the study eligibility criteria was a key consideration in this study.

The LCI Chairperson had advised the research team (comprising of the PhD Candidate and three research assistants) to use community health care workers (commonly known as Village Health Team (VHT) member) during participant recruitment. Consequently, purposive sampling was done with assistance of a VHT. Community members do identify with the VHTs because they live in the same villages and the community members respect them. The VHT was briefed about the study and the eligibility criteria of the participants

and thereafter recruitment of potential participants started. Potential participants were contacted if they met the criteria outlined in section 3.4.3.

Upon identifying a potential participant who fulfilled the study eligibility criteria, the research team visited the identified participant (woman or man) in their homes to recruit them into the study. If we found that a woman or man selected into the sampling frame was not at her or his dwelling, we attempted to locate her or him whenever this was possible: by waiting for her or him to return or revisiting at a later date. Up to three revisit attempts were made before giving up entirely. Men were recruited separately from women and were not the husbands of female participants.

Aside from selecting participants who met the study criteria (those who had a delivery within the last two years), I ensured that some study participants were recruited on the basis of sex composition of their living children. This was based on results from the quantitative part of this PhD which indicated that stated child sex preference was not significantly associated with fertility desire but actual sex composition of children was. The quantitative results indicated that women with three or fewer children of the same sex composition had a higher desire to have another child than those with three or fewer children of a mixed sex composition. Consequently, the sample included women and men with at least three children of the same sex composition and those with a mixture.

In some instances, the research team faced difficulties in recruiting participants. Stratification based on sex composition of living children created difficulties in finding participants particularly in the rural sub–county within this high fertility setting. It would take a while before getting potential participant s who had children of the same sex composition especially among males since polygamy is very popular in the area and the fact that there was a high chance that with a high number of children, one is likely to end up with children of a mixed sex composition.

Following this challenge, a participant (who had children of the same sex composition) was used to nominate or contact their friends who would be interested in participating in the study. This technique-also known as snowball sampling was dependent on an identified participant's networks. Through these networks, all women approached agreed to participate in the study. During the initial meeting with a prospective participant, the

research team introduced themselves, explained the study, answered any questions and asked the woman or man to participate.

Selection of participants for key informant interviews

Key informant interviewees were recruited with the assistance of a Senior Clinical Officer (health facility manager) at the health facility and the village health team member. The research team contacted the health facility's officer in-charge and briefed him about the aims of the study. The purpose of meeting the facility manager was to authorise recruitment of key informants from the health facility. During the meeting, the facility manager provided a list of potential key informants and their mobile phone contacts. The initial contact of participants was by telephone or in person. A potential participant was briefed about the aims of the study and once a positive response had been received, an appointment was made to set up an interview. The VHT assisted with recruitment of community based key informants[8]. Community-based key informants were contacted in person, either at their home or at their work place. The informants included family planning providers from public and private health facilities, mentor mothers (local women that are trained to support mothers within the community), village health team members, traditional birth attendants (TBAs) and focal persons in charge of family planning at the district. Some of these informants had children below two years themselves at the time of the interview.

Key informants working in formal health facility settings had their interviews conducted within the health facility premises while those who were community-based, had interviews conducted in their homes.

3.4.4 Data collection methods and tools

To increase the rigor of the qualitative analysis(Devers, 1999), I obtained information from two sources: (1) in-depth interviews (IDIs) with women and men; (2) key informant interviews (KIIs) with FP providers –who serve women. In-depth interviews typically involve recruiting a small number of individuals to explore their individual experiences on

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[8] Community based key informants included Traditional Birth attendants, mentor mothers and village health team members

a particular issue. IDIs were the best suited to explore how women and men who had a child within the last two years make decisions about further childbearing and contraception use by capturing "lived experiences" in detail. Lived experience refers to how the social world or phenomenon is experienced and made sense of by people. It is not just what happens to people, but also how people make sense of what happens to them (Charmaz, 1990). To capture lived experiences, men and women were asked to provide narratives of their experiences using their own words.

The purpose of the key informant interviews was to gather information about the family planning service environment from knowledgeable, community health professionals whose remit includes women within two years of childbirth. In contrast with the IDIs with "cases", key informants are asked to report about the behaviour of the population of interest rather than their own behaviour. As service providers, they were also able to provide a glimpse into the policy guidelines and how these operate on the ground.

Study site pre-visit

Prior to conducting the fieldwork, a two-day pre-visit was conducted in Mayuge district. During this pre-visit, I consulted community stakeholders to get their input in the research process. This involved the researcher introducing herself to the Mayuge District Health Officer (DHO), who is responsible for approving any health research within Ugandan districts. The purpose of meeting the DHO was to brief him about the study such that he could authorise data collection within the district. The DHO also assisted the research team in identifying the sub-counties that met the study selection criteria (two sub counties- one rural and another being peri-urban).

Each sub-county is governed by a sub-county chief. Under each sub-county, there is a parish which is made up of several villages. A village is the lowest political administrative unit. Villages usually consist of between 50 and 70 households and may be home to anywhere between 250 and 1,000 people. Ugandan villages are governed by a Local Council 1(LC 1) Chairperson who is expected to have good knowledge of the residents within their respective communities, making him or her a key 'gate keeper' within the selected sub-county. I briefly explained the study purpose, procedures and the population of interest to the village LCI Chairperson. Because of the LCI Chairman's busy work schedule, he proposed that I use a Village Health Team (VHT) member to assist the

research team in recruitment of study participants. VHTs are the initial point of contact for health within Ugandan communities and link communities with health facilities. They actively participate in mobilisation of the community for health services such as mass and routine immunisations as well as monitoring maternal health in their areas (Komakech, 2007).

Sample size

Qualitative scholars differ in the numbers of interviews (participants) that can be considered enough in a given study, and when to stop interviewing because enough data have been elicited (O'Reilly and Parker, 2013). Most scholars argue that the concept of saturation is the most important factor to think about when debating over sample size decisions in qualitative research (Mason, 2010). Saturation is defined by many as the point at which the data collection process no longer offers any new or relevant data (Charmaz, 2006). Saturation depends on many factors and not all are within the researcher's control. These include the homogeneity and heterogeneity of the study population, selection criteria of the population, financial and time considerations.

While some scholars avoid the topic of "how many", earlier scholars such as Spradley (1979) suggest between 25 and 30, more recent researchers (Guest, Bunce and Johnson, 2006) revealed that they reached theoretical saturation in their coding at the twelfth interview. This is why Mason (2010) urged caution, stating that this depends on the discipline as well as the researcher's experience, because a few interviews conducted by an experienced researcher may produce more quality data than numerous interviews conducted by an inexperienced interviewer.

In this study, I aimed to recruit a total of 48 participants (28 women, 10 men, 10 KIIs) as this number was thought to be good a balance between manageability of the interviews and having enough participants in the study to capture a variety of perspectives. Other practicalities such as time to conduct the field work and resources available were taken into consideration. The plan was to recruit an equal number of participants from both sub-counties. However, owing to the difficulties faced in recruitment of participants (as explained in section 3.4.3), the research team was unable to carry out an equal number of interviews with men and women in both sub-counties. In the end, slightly more participants were recruited in Mayuge TC (Town Council) than in Kigandalo (Table 3.3). In

total twenty-nine women, fourteen men and thirteen key informants took part in the study, giving 56 interviewed participants overall.

Table 3.3   Distribution of in-depth interviewees by sub-county of residence

IDIs	Mayuge T.C	Kigandalo	Total
Women	18	11	29
Men	8	6	14
Key informants			13
Total	26	17	**56**

Recruitment and training of research assistants

I recruited three female research assistants (RAs) to assist her in conducting the in-depth interviews, transcribing and translating qualitative data. These research assistants were from Makerere University's Department of Population Studies master's student class. The research assistants had extensive experience in qualitative data collection, and were familiar with the study context. One RA was a native of Mayuge district. The RAs familiarity with the socio-cultural context and residents greatly encouraged not only participant participation, but also discussion of any sensitive matters around fertility decision-making. They were all competent in Lusoga, which is the local language spoken in Mayuge district.

The research assistants were trained by the PhD Candidate for three days prior to data collection. The training sessions were conducted within one of the lecture rooms at the Department of Population Studies in Makerere University. The RAs underwent training on the study protocol; including research questions, sample selection procedures and the research process. Different aspects of ethical consideration were addressed, including confidentiality of the information obtained, privacy of the research participants and obtaining informed consent (voluntary participation, right to withdraw, explaining the purpose of study, risks and benefits of the study and doing no harm). In addition, all interview guides were rehearsed and interview techniques revisited. The aim of the training was to ensure that data collection would be done ethically and that power imbalance between the research team and the participants would be minimised. I arranged practice interviews between the research assistants as part of the training.

Interview guides

Using the Traits- Desire- Intention and Behaviour framework and the Theory of Planned Behaviour as frameworks, I developed an interview guide (Appendix D). My initial

thoughts prior to developing the interview guide focused on the different trajectories that women take in deciding about future fertility. Consequently, the interview guide was organised in five sections to explore factors that may influence further childbearing decision–making among participants. Section one asked questions about participants' socio-demographic and background information, including, age, marital status, religion, number and sex composition of children. The second section asked of experiences around previous births. The third section captured participants' future childbearing plans. Section four focused on contraceptive behaviour. Family planning support offered to recently delivered women constituted the fifth and final section of the guide. In summary, section one and two addressed the Traits, the third section captured desires and intentions, section four focused on contraceptive behaviour.

The domains addressed in the key informant interview included family planning support provided to women, women's barriers to attaining fertility goals, family planning access, role of culture(beliefs) and content of family planning counselling received by women.

The semi-structured nature of the interview helped the interviewers to cover the salient issues for all participants as well as flexibility for the participants to respond in a unique way. This way the interviewer was able to direct the interview, yet adapt the inquiry by probing interesting responses for clarifications and elaborations (Bauer and Gaskell 2000; Lee, Sullivan, and Lansbury 2006).

Each section of the guide consisted of a series of questions organised by topic and suggested probes for the interviewer. The topic sections were ordered in such a way so as to guide the interview through from simpler topics toward conceptually more complex questions. The introductory section was designed to get the participants thinking and talking about the topic. Thereafter, the interviewer proceeded onto the main part of the discussion. The in-depth interview guide was originally written in English by the PhD Candidate and then translated into Lusoga by a competent Lusoga translator. The key informant interview guide did not require any translation to Lusoga since all key informants were conversant in English.

Pilot testing

A one-day pilot study was conducted in Mayuge district, in a village that was comparable to the one where the actual data was collected. The pilot study was conducted with four

participants (1 man, 2 women and 1 key informant). A one-day pilot study was deemed sufficient as the research assistants and the PhD Candidate had previously undergone extensive training that involved role playing– asking one another in turn to simulate the fieldwork environment. The purpose of conducting the pilot was to determine if the questions were logical and to make any revisions if necessary prior to the actual data collection. It was anticipated that the tool would be refined with new issues emerging. Indeed, issues around phrasing of certain terms in Lusoga were highlighted. The pilot study resulted into final validation of the study tools for data collection.

Conducting the interviews

I budgeted four weeks of research time to conduct all the interviews. The data collection was conducted between February and March 2017. This time frame demanded a hectic schedule involving contact with "gate keepers", booking interview appointments, travel between the two study locations and actual data collection. Since the interviews were conducted in Lusoga, the PhD candidate was unable to moderate the interviews herself since she only has a basic understanding of the language, so the research assistants took on this role. However, I moderated all key informant interviews as all key informants were conversant with English.

Interviews were audio recorded with a digital recorder upon getting the participant's consent. Only one interview was not audio recorded because the participant did not consent to audio recordings. Audio recording gave the research team an opportunity to go over the interview and enabled the interviewer to concentrate, listen and respond better during the interview.

Debriefing was done on a daily basis to obtain information on the clarity of the questions in the interview guide and their relevance to the study research questions. During these meetings the team discussed any issues and difficulties that might have arisen and possible ways to mitigate them. This helped the team to focus subsequent interviews by probing more for sufficient answers and new information. The daily work output was at least two, but no more than three, interviews per day per research assistant.

Each interview recording was saved on a password protected computer and backed up on a USB drive and deleted from the digital recorder before the next interview. This was

done for purposes of keeping confidentiality and safety of the information collected. Each interview lasted between 45 minutes and one hour.

The process of in-depth interviews

The research team made every effort to establish close research relationships with the participants to gain their trust. Marshall and Rossman (2006) provided evidence that the researchers needs to familiarise themselves with the setting and the people, their routines and environments to anticipate how to fit in the community prior to the data collection. As earlier mentioned, one of the research assistants on the team was a native of the study site. She was instrumental in linking the team to the "gate keepers" such as the LC chairman with whom she had good working relations. Consequently, the process of identifying and recruiting the study participants was not only done with ease but made participants feel comfortable with our presence.

Interview setting

In both communities, the in-depth interviewees were given an opportunity to choose an interview site in which they felt comfortable and confident to discuss the study topic. Briggs (2002) has highlighted the importance of giving study participants the opportunity to provide accurate information by letting them choose their interview site. All in-depth interview participants were comfortable with having the interviews conducted in their home while key informant interviews were conducted either at office or at home. Other researchers, such as Blichtfeldt and Heldbjerg (2011) have also noted the interviews dealing with personal experiences are best conducted in the participant's home since such a setting offers a sense of privacy, intimacy and friendliness. Thus, in this research the home proved to be the appropriate interview site for in-depth interviews.

3.4.5   Ethical considerations

Confidentiality and anonymity

Several measures were used to ensure the anonymity and confidentiality of the participants' data. These included using pseudonyms to protect the identity of the participants and assuring participant's that the results would be reported in such a way as not to disclose their identities. During the research assistants' training (conducted by the

PhD Candidate), different aspects of ethical consideration were addressed, including the importance of maintaining confidentiality of the information obtained. During the in-depth interviews, participants were asked about their personal experiences, therefore, re-negotiation for confidentiality was an on-going process since it was at times embarrassing to divulge certain personal details. Data was stored on a password-protected computer to guarantee confidentiality.

Ethical approval

Ethical approval to collect primary data for this study was obtained from the ethics and research governance office at the University of Southampton, United Kingdom (IRB 20764) and the National HIV/AIDS research committee in Uganda (ARC198). Both committees approved the study protocol (Appendix B). Local permission to conduct this study was obtained from the District Health Officer (Mayuge) and two local political representatives (Local Council 1 Chairmen) prior to conducting interviews.

Informed consent

Informed consent from all participants was a vital aspect of this study. Prior to their involvement, the participants were briefed on the study purpose, why they had been chosen, benefits of participation and risks involved before consenting to participate in the study. Participants were informed that the study was voluntary and that they had a right to freely withdraw from the study. None did so. They were asked to sign the consent form (see appendix C). Illiterate research participants were asked to sign with a thumbprint. The expectation of participant's involvement was also honestly explained, including the fact that interviews will last approximately one hour and that the interview will be audio recorded.

Compensation

The Uganda national guidelines for research involving humans as research participants advise that participants should be informed in advance about any form of compensation for their time(Uganda National Council for Science and Technology, 2014). After consultation with a few community "gate keepers" and the PhD candidate experience from previous studies in rural Ugandan communities, the candidate opted for a non-cash payment for the participant's time. Each study participant was given a small gift (one bar

of washing soap), which is a cultural norm when visiting at a new-born's home. The research team believed that provision of such a small gift was fair and reasonable and was not excessive so as to unfairly influence the participants to agree to participate. However, with the level of poverty within rural settings, this may have acted as an incentive for some participants to participate in the study. Two female participants who had been recruited through snow balling technique were dropped after it was discovered that they were wrongfully classified as having a child below two years. One mentioned that the last child belonged to a co-wife and that she had been convinced to participate in the study in anticipation of the bar of soap from the research team.

3.4.6   Data analysis

Qualitative data were analysed in the following phases:

Phase 1: In the field,

- The candidate held debrief sessions with the research assistants (RAs) on a daily basis to discuss the data they had collected, any concerns they had and what their main findings were.
- If a key theme evolved or developed with any one interviewer, the team explored the theme further with subsequent participants.
- All three RAs listened to the audio recordings and transcribed the audio taped data in Lusoga. Thereafter, the RAs translated the interviews into English, and early samples of transcripts were checked for accurate translation by another Lusoga speaking RA. The RAs was asked to provide annotations for the PhD Candidate to explain nuances or slang terms for the purpose of analysis. Since the key informants were interviewed by the PhD candidate, she transcribed the audio recorded interviews and made reference to field notes jotted down during the field work.
- The process of transcribing the qualitative material elicited from the interviews was an integral part of the analysis in terms of increasing familiarity with the data whilst, at the same time, allowing team members to identify key themes emerging from the data.

Phase 2: Preparing and organising data for analysis

- The candidate prepared the transcripts by type, participant and study site. All personal and identifying information that participants made reference to during the course of the interviews was de-identified in the transcripts. As such, only general identifiers, such as "F1/age/number of children" referring to female participant 1, while among men, "M5/age/number of children" referring to male participant 5 were used. Similarly, generic job titles such as "FP provider designation", referring to Family planning providers from a public or private health facility or community worker were used such that participants and events described could not be identified.

Phase 3: Exploration and coding of interview data

- Transcripts were imported into Nvivo 11 software in order to assist with the process of analysing the data. Nvivo 11 offers features for organising, coding, searching and storing qualitative data. Coding has been defined as "the process of identifying aspects of the data that relate to your research question" (Braun & Clarke 201, p206). It follows, therefore, that coding is the process of segmenting and labelling text to bring meaning to information. According to Braun and Clarke (2013), there are two types of coding- selective coding and complete coding. Selective coding involves use of pre-existing theory and existing literature to derive codes, while complete coding derives codes from the data. This study used the latter where the codes derived were data-driven to enable the PhD Candidate to generate new theory emerging from the data. Another advantage of Nvivo is that it allows quantification of words or phrases which may be used to identify how many times an idea has been mentioned. Thereafter, concepts were modified, merged and renamed to form the coding structure.

- Transcripts were read and reread to gain familiarity with the data, reading line-by-line through the whole transcript.

- Given the study had had two major qualitative research questions, I decided to read each transcript based on answers for each of those research questions.

- While reading the words, phrases, sentences and expressions from the transcripts, I began to create codes. I coded each interview transcript, line-by-line. Though sometimes strenuous, line-by-line coding, a process of naming each line of written data, allows a person to explore the data in detail, whilst remaining open to the

data. This process also prevents a person from superimposing their ideas onto the data (Charmaz, 2006).

Phase 4: Emerging themes and developing a thematic framework-

- After coding each transcript, core themes were identified. Themes are the units of analysis which are broader than codes (Braun and Clarke 2013). Themes are generated by aggregating similar codes into meaningful patterns in relation to a research question. This study used thematic analysis to identify patterns of meaning across the data to provide an answer to the research question being addressed. This approach is commonly used to answer questions related to understanding, such as "How do women make decisions about further childbearing?" It also suits questions related to experiences, or people's views and perceptions (Braun and Clarke, 2006). This approach endeavours to base the data interpretation within the particular context of the study and in the participants' perspectives, as opposed the analyst's perspective. One of the most cited advantages of thematic analysis is its flexibility: it can be used in a variety of different research contexts and applied to different kinds of data. In particular, thematic analysis is recognised as a suitable for mixed methods research projects (Pope et al., 2007).

- Transcripts were reviewed again to determine the sub-themes that could be collated together to form major themes.

- After developing themes, transcripts were re-read to look for variations according to age and sex, and to look for conditions under which particular categories or themes arose.

- A coding framework was developed to identify dominant themes and subthemes relating to fertility desire and contraceptive use.

Phase 5: Higher level analysis drawing on the conceptual framework

- For both fertility desire and contraceptive use, themes were compared with the theory of planned behaviour, the results of which are presented in Chapter six and seven.

- Transcripts were read repeatedly and selected quotes that illustrated the themes identified (Miles & Huberman, 1994).

Phase 6: Interpreting the meaning of the results

- Generating and interpreting a story from the data constituted the next item on the qualitative analytic agenda. This was accomplished by connecting and interrelating themes into "a storyline" (Creswell 2009). The themes were clustered into larger and shared issues to generate a coherent story. To tell a coherent story, commonalities within a theme and across themes were given priority, although differences were highlighted and discussed.

3.4.7 Methodological considerations

Several criteria are used in evaluating trustworthiness: credibility, transferability, dependability, and confirmability(Lincoln and Egon, 1985, Graneheim and Lundman, 2004). In this study credibility, that is how well the data addressed the intended focus, was covered in several ways. The use of purposive sampling enabled the selection of participants who fulfilled the criteria for participation. Confidentiality was encouraged and re-negotiation for confidentiality was an ongoing process (see section 5.12.1). This increased the credibility of the information produced. The use of an independent Lusoga speaking researcher to listen in to the audio recordings to check the accuracy of translation from Lusoga to English enhanced dependability by ensuring that the interpretations emerged in data reflect the participants responses. The description of the study context, selection criteria, and data collection and analysis process was complemented with quotes to allow readers to assess the transferability of the findings. All interviews followed an interview guide and allowed openness to new insights through open-ended questions. New issues that emerged were considered in subsequent data collection and the analysis process followed an emergent design that enhanced dependability. The translation of in-depth interview guides from English to Lusoga was intended to increase the free expression of participants, as the participants were more conversant with Lusoga than English.

3.4.8 The role of the researcher: Reflexivity and Positionality

Reflexivity refers to the "reflection of the role, background, culture and experiences of the researcher on the data"(Creswell, 2014). It involves understanding how the background of the researcher may shape the direction of the study. Payne (2007)

argues that reflexivity allows the researcher to acknowledge his position in the creation of the analytical account and emphasises that one's theoretical and disciplinary background should be recognised before undertaking data collection to ensure that the research remains open to new ideas. Reflexivity involves reflecting on the assumptions that have been made about the world for instance how the research questions have been defined and how the interview schedules have been structured (Willig, 2013). In this respect, the following point warrants recognition in this study.

I gained interest in this topic based on my 'lived experience' as a mother to two daughters. A few months after having my second daughter, while conversing with one of my relatives, I was asked, "When do you plan to have another child?" These conversations raised a number of questions in my head, including: Would I be asked that question if I had a boy and a girl? What are the societal expectations regarding ideal number of children and child sex composition? To me, it clearly felt that there is indeed a preference for a male child. Intrigued by this conversation I decided to study "fertility desire" with a focus on "child sex composition" as my PhD research topic.

Role in quantitative study

After conceptualising the study and developing the research question, I conducted a sequence of quantitative analyses, and used these results to inform my qualitative study. I began with a preliminary analysis of the 2016 Uganda Demographic Health Survey data and identified my outcome and independent variables. Variable selection is described in greater detail in section 3.3.4. Missing data were identified through cross-tabulations and resolved through consistency checks with other variables. I corrected any errors or discussed discrepancies with my supervisors. I received training in Multivariate data analysis during a short course at the University of Southampton. I also received informal support from staff and PhD colleagues at the Department of Demography and Social Statistics to conduct analysis using stata version 13. The training and informal support received from colleagues helped to inform my decision to use logistic regression analyses to explore factors associated with self-reported fertility desire and contraceptive uptake among women.

Role in qualitative study

My choice of study site was influenced by my previous research experience. Alongside my responsibilities as a lecturer in demography at Makerere University, I have worked as a research assistant on several research projects, where I gained experience in conducting population and health- related research using qualitative techniques. Most of the fieldwork I engaged in focused on fertility, contraceptive uptake and reproductive health. Most of the fieldwork was conducted in Eastern Uganda which enhanced my familiarity with the research site and its population. My positionality on population and health -related research might have affected the way I analysed and reported the findings. I endeavoured to maintain objectivity as a researcher

Being born and raised in Uganda, female, native-Luganda speaker and foreign educated needs to be recognised. There is no final agreement on whether studying "your people" is a good or bad thing. However, it is extremely difficult to reflect on "indigenous" research because "you are likely to take a lot of things for granted that an outsider would pick up right away" (Bernard 2006, 373). As with all research, my personal background, especially my dual identity as an "outsider" (student at University of Southampton) and insider (Ugandan) could potentially influence responses and reactions. My gender, personality, age and social status might have impacted on the study responses. This is because some respondents might have felt uncomfortable discussing sensitive matters to someone of a different gender, age and social class leading to alteration of their responses to reflect this dynamic. However, I minimised this by conducting the key informant interviews and leaving the in-depth interviews to the three research assistants.

3.5   Summary

This chapter has described the rationale for the study design, the quantitative methods (source of data, defined the variables, justified their categorisation), while the qualitative section has explained how the data was collected using in-depth interviews and key informant interviews. The subsequent four chapters present the quantitative and qualitative findings and their analyses, presented in line with the conceptual frameworks and research questions detailed in Chapter one.

Chapter 4   Associations between sex composition of living children, child sex preference and fertility desire[9]

4.1   Introduction

While there is a significant body of evidence on factors influencing fertility desire, a number of important gaps in research remain. In particular, studies focusing on the role of children's sex composition and child sex preference in driving the desire for more children is limited, especially in the extended postpartum period (defined as two years from delivery), yet child sex preference is said to be common in many societies throughout the world (Bongaarts, 2013, Milazzo, 2014, Jayachandran and Pande, 2017). In Uganda, preference of sons over daughters has been reported (Kabagenyi et al., 2016, Beyeza-Kashesya et al., 2010c). In these studies, women's rationale for son preference was attributed to patriarchal family systems, in which sons are valued for family lineage continuation and providing security during old age, while daughters are married away to a different family.

Examining the role of children's sex composition and child sex preference in high fertility countries such as Uganda is important because these affect women's fertility attitudes and behaviour, posing significant obstacles to fertility reduction efforts. For instance, fertility attitudes based on sex composition of living children and child sex preference often translate into continued childbearing even after a woman has attained her reported desired family size. In addition, having children with short preceding birth intervals (<24 months) increases the risk of maternal and child mortality (Conde-Agudelo et al., 2012). Consequently, the success and effectiveness of family planning programmes aiming to reduce fertility is undermined if women continue to have children until their or their partners desired sex composition is achieved. Previous studies have reported that couples have a tendency for having at least one child of each sex, often referred to as preference for a gender mix (Arnold, 1997). Gender preferences may have substantial

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implications for a couple's fertility behaviour. Unfortunately, there is limited empirical research investigating this subject in Uganda. Available evidence in Uganda mainly focuses on women in the general population. To the best of my knowledge, no study has focused on women in the postpartum period of two years and yet evidence shows that women within the first two years of childbirth have the greatest unmet need for family planning (Moore et al., 2015) which increases the risk for unwanted pregnancies and adverse social and reproductive health outcomes.

This study was therefore designed to fill this gap. The first objective of the PhD was addressed by presenting the associations between individual and community factors and self-reported fertility desire among Ugandan women interviewed in the 2016 DHS who had a live birth between 2014 and 2016. In particular, this analysis focussed on the link between sex composition of living children and fertility desire, examines the relationship between child sex preference and fertility desire and identifies socio-demographic variables that are related to child sex preference, sex composition and fertility desire. This chapter consists of two main parts. The first part presents women's descriptive statistics (section 4.2 and 4.3). The second part (section 4.4) quantifies factors associated with fertility desire among these women from bivariate and multivariate analyses. A summary of the chapter is presented in section 4.5.

4.2   Description of the sample

This section summarises the socioeconomic and demographic, fertility- and postpartum characteristics of non-pregnant women who had a live birth in the two years prior to the 2016 Uganda Demographic and Health Survey. The total weighted sample size was 5,088 women.

4.2.1   Socioeconomic and demographic characteristics of the 5,088 respondents

The statistics for the socioeconomic and demographic information (age, education, thirteen years or more of education). Most respondents were affiliated with either Protestant (31.1%) or Roman Catholic (38.8%) Churches. In terms of marital status, only 6.1% of the women were never married and the majority (84.3%) were currently married or living with a partner. More than three quarters (78.7%) lived in rural areas, fewer than half (44.7%) were employed in the agricultural sector, 18.4% were unemployed and just over 7% were in professional employment.religion, marital status, residence and

occupation) are summarised in Table 4.1.More than two-thirds of women in this sample were young (below 30 years, 66.6%) with an estimated median age of 26 years (interquartile range of 22-31 years). Overall, 9.7% of women had no formal education, approximately 60% had attained some primary education, and less than a third (30%) secondary or higher education (equivalent to

Table 4.1   Socioeconomic and demographic characteristics* of women, UDHS 2016

Variable	Frequency (N=5,088)	Percent (%)
Median (IQR), years		26 (22-31)
Age categories		
15-19	604	11.9
20-24	1,560	30.7
25-29	1,273	25.0
30-34	882	17.3
35-39	535	10.5
40-44	199	3.9
45-49	35	0.7
Education attainment		
None	487	9.6
Primary	3,074	60.4
Secondary/higher	1,527	30.0
Religion		
Protestant	1,580	31.0
Roman Catholic	1,976	38.8
Muslim	740	14.6
Other	791	15.6
Marital status		
Never married	312	6.1
Married/living with partner	4,291	84.3
Formerly in union	485	9.5
Place of residence		
Urban	1,085	21.3
Rural	4,003	78.7
Employed in the past 12 months		
Unemployed	938	18.4
Professional/Clerical	384	7.5
Agricultural sector	2,273	44.7
Sales and services	1,493	29.4

*Socioeconomic and demographic characteristics: age in five year groups, highest level of education, religious affiliation, current marital status, type of place of residence, and employment status in the past 12 months; IQR: interquartile range.

4.2.2   Fertilityand postpartum factors (N=5,088)

This section presents a summary of women's fertility and postpartum factors, namely: self-reported ideal number of children, number of living children, sex composition of living children, self-reported child sex preference, feelings towards last pregnancy, partner's desire for children, time since birth and postpartum abstinence status of the woman. The results are presented in Table 4.2.

Each woman was asked to state the number of children they would like to have in their life thinking back to the time before they had any children (the ideal number). Nearly all women (98.7%) were able to provide a numeric response when asked to report their ideal number of children. Those who gave a non-numeric response such as "up to God" (1.3%) were coded with the response at the highest ideal family size (in this case, five and more children). This approach is similar to the one used by Riley et al. (1993)to understand the determinants of nonnumeric response to desired family size in Costa Rica. Most women (86.2%) reported they would want four or more children in their lifetime, which is fairly close to the preferred family size of 4.8 for all women in the general population, reported in the UDHS 2016. Only 13.8% of women considered three or fewer children as ideal.

Table 4.2   Fertility and postpartum characteristics* of women in the extended postpartum period, UDHS 2016

Variable	Frequency (N=5,088)	Percent (%)
Ideal number of children Mean (SD)		4.6 (1.3)
Ideal number of children		
0	19	0.4
1	26	0.5
2	282	5.6
3	371	7.3
4	2102	41.3
5	617	12.1
6+	1,605	31.5
Non-numeric response	66	1.3
Mean number of living children (SD)		3.4 (2.2)
Median number of children (IQR)		3 (2-5)
None	36	0.7
1 child	1,179	23.2
2	1,005	19.8
3	862	16.9
4	648	12.7
5	494	9.7
6+	864	17.0
Sex composition of living children		
Mixed sex	3,148	61.9
Only males	961	18.9
Only females	979	19.2
Child sex preference		
Prefers girls and boys	3,741	73.5
Prefers boys	527	10.4
Prefers girls	820	16.1
Feelings towards last pregnancy		
Wanted	2,691	52.9
Mistimed	1,904	37.4
Unwanted	493	9.7
Partner desired number of children (N=4,292)[a]		
Both want same	1,582	36.9
Husband wants more	1,439	33.5
Husband wants fewer	433	10.1
Don't know	838	19.5
Time since birth Mean (SD)		10.5 (6.7)
Median time since birth (IQR)		10 (5-16)
Time since birth		
0-2 months	503	9.9
3 to 5 months	916	18.0
6 to 11months	1493	29.3
12 to 23 months	2176	42.8
Postpartum abstinence		
No	3,906	76.8
Yes	1,182	23.2

*Fertility and postpartum characteristics: Ideal number of children, Number of living children at the time of the survey, sex composition of living children, child sex preference, how the respondent felt about the last pregnancy, partner's desired number of children, whether respondent practises postpartum abstinence; [a] Applies to only married women; SD: standard deviation; IQR: interquartile range

Figure 4.1 shows that Ideal family size increased with age, rising from 4.4 among women aged 15-29 years to five children among women 4.2 among those with secondary or higher education. Married women and those who resided in rural areas

reported a larger ideal family size (4.7) than their unmarried counterparts and those who lived in urban areas respectively. Finally, women in agriculture-related employment had a higher ideal family size (4.8) than unemployed women and those in professional employment.aged 30-49 years. Ideal family size decreased with increasing education, from 5.2 among those with no education to

Figure 4.1   Bar chart of mean ideal family size by selected background characteristics
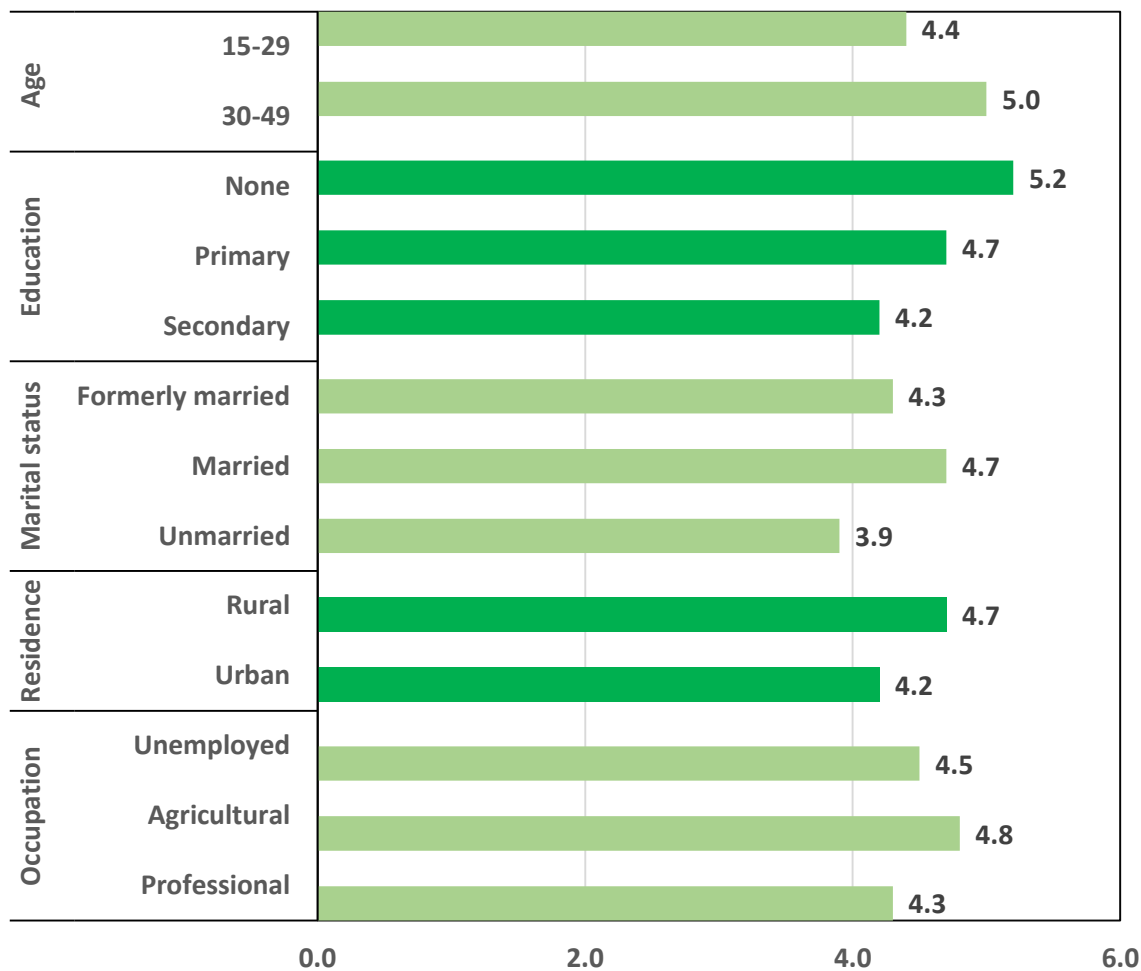
The mean number of living children among the respondents was 3.4 (standard deviation=2.2; median 3 (IQR 2-5)); more than a quarter (26.7%) of the women had five or more children. In terms of sex composition of living children, around 62% of the women had families with a mixed sex composition, 18.9% of women reported having only boys and 19.2% only girls (Table 4.2). Although 74% of the women had no specific child sex preference, a higher percentage of women reported preference for daughters over sons (16.1%) than sons over daughters (10.4%).

Women were also asked whether they had wanted to get pregnant when they last became pregnant and, if so, whether they had wanted to become pregnant at the time, or would have preferred to be pregnant earlier or later. This question is designed to reveal women's feelings and attitudes towards the pregnancy that resulted in the live birth. More than half (52.9%) of women reported they had desired their last pregnancy at the time they got pregnant; 47.1% of women reported that their last pregnancy was unintended (defined as either mistimed (37.4%) or unwanted—9.7%) (Table 4.2).

Of the 4,291 married women, more than a third (36.9%) reported that their partner preferred the same number of children as they did, which is defined as spousal concordance with respect to the number of desired children. About 44% of the respondents reported spousal discordance; in other words they perceived their partner wanted either more (33.5%) or fewer (10%) children than they want, while around one-fifth (19.5%) of the respondents were ignorant of their husbands' desired number of children.

The median duration of time since birth was 10 months, indicating that half of the women were within 10 months of delivery. Table 4.3 shows that almost 80% of the women abstained from sexual relations within the first three months of delivery. However, starting from the third month following birth, the contribution of abstinence to the period of insusceptibility to pregnancy was greatly reduced. Table 4.3 shows that at 3-5 months postpartum, the percentage of abstaining women decreased to 32% and by 6-11 months, to 17%.

Table 4.3   Percentage distribution of women's postpartum abstinence status, by time since birth

Time since birth	Abstaining	Not abstaining
<3	399 (79.4)	104 (20.6)
3-5	291 (31.8)	624 (68.2)
6-11	258 (17.3)	1,235 (82.7)
12-23	233 (10.7)	1,944 (89.3)

4.3   Fertility desire

Information about fertility desire was captured by asking all eligible women aged 15-49 years whether they would like to have another child in the future (Table 4.4).

Table 4.4   UDHS question asking about fertility desire

704	Now I have some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any (more) children?		HAVE (A/ANOTHER) CHILD 1	
			NO MORE/NONE 2	→ 707
			SAYS SHE CAN'T GET PREGNANT... 3	→ 712
			UNDECIDED/DON'T KNOW 8	→ 710
705	CHECK 226:		MONTHS 1	
	NOT PREGNANT OR UNSURE / PREGNANT		YEARS 2	
	How long would you like to wait from now before the birth of (a/another) child?	After the birth of the child you are expecting now, how long would you like to wait before the birth of another child?	SOON/NOW 993	→ 710
			SAYS SHE CAN'T GET PREGNANT....994	→ 712
			AFTER MARRIAGE 995	
			OTHER _____ 996 (SPECIFY)	710
			DON'T KNOW 998	

Figure 4.2 presents the fertility desire of women in the extended postpartum period. Out of 5,088 women, 68% (3,459) reported they would like to have more children in the future. Of these women, the majority (88.4%, 3,058/3,459) desired another child after two years, and 11.6% (400/3,459) reported desire to have a child soon. Nearly a third of women (32%, 1,629) expressed a desire to stop childbearing.

Figure 4.2   Distribution of fertility desire among women (UDHS 2016)
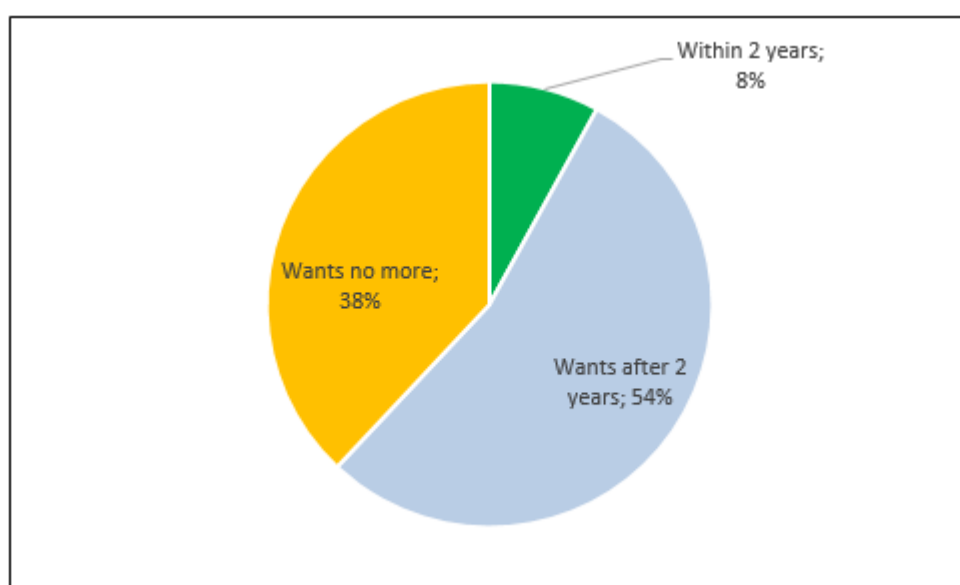
4.3.1 Fertility desire, sex composition of living children and child sex preference

The key independent variables for this study were sex composition of living children and child sex preference. I hypothesised that having children of the same sex and having a preference for a particular child sex were the prime factors associated with the desire for additional children.

Sex composition of living children and fertility desire

Information about sex composition of living children was generated from the questions on number of living daughters and living sons that was asked to only women who had ever given birth (Table 4.5).

Table 4.5   UDHS questions asking about sex composition of living children

202	Do you have any sons or daughters to whom you have given birth who are now living with you?	YES .... 1 NO .... 2 ➝204
203	How many sons live with you? And how many daughters live with you? IF NONE, RECORD '00'.	SONS AT HOME .... ☐☐ DAUGHTERS AT HOME .... ☐☐
204	Do you have any sons or daughters to whom you have given birth who are alive but do not live with you?	YES .... 1 NO .... 2 ➝206
205	How many sons are alive but do not live with you? And how many daughters are alive but do not live with you? IF NONE, RECORD '00'.	SONS ELSEWHERE ...... ☐☐ DAUGHTERS ELSEWHERE ☐☐

What stands out in Figure 4.3 is the high preference to have another child among women with children of the same sex composition (90.2% among those who have only boys and 90.5% among those with only girls) compared to slightly over half (54.2%) who had children of a mixed sex composition.

Figure 4.3   Distribution of women's sex composition of living children by fertility desire

Have mixed sex — Want no more 46.8%, Want more 54.2%

Have only boys — Want no more, 9.8%, Want more 90.2%

Have only girls — Want no more, 9.5%, Want more 90.5%
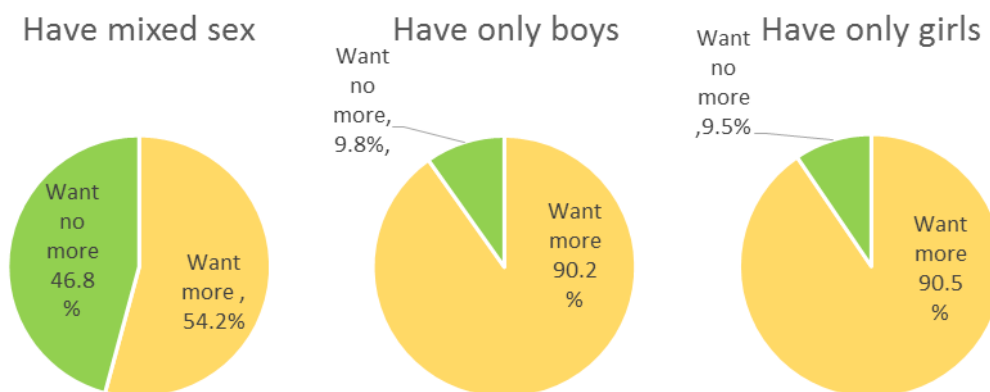
Child sex preference and fertility desire

I generated child sex preference as a proxy from DHS information on ideal number of sons and ideal number of daughters. Women were asked to state the number of children they would like to have in their lifetime if they were to go back to the time they did not have children as indicated in Table 4.6.

Women who reported a higher number of sons than daughters as their ideal sex composition of children were regarded as having preference for males while those who reported a higher number of females were considered as having a preference for females. Those who reported equal numbers of sons and daughters or reported a non-numeric response were considered as having a preference for a mixed sex composition of children or recorded as "balanced". Non-numeric answers were recorded as "balanced" because there is no strong evidence about a woman's preference for boys or girls among women who reported non-numeric responses. As such, the respondent was categorised as having a "balanced preference". A similar approach was used by Fuse (2010) in her study that examined attitudinal gender differences for children using 50 Demographic and Health Surveys from Less developed countries.

Table 4.6   UDHS question asking about child sex preference

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
712	CHECK 216: HAS LIVING CHILDREN NO LIVING CHILDREN If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be? If you could choose exactly the number of children to have in your whole life, how many would that be? PROBE FOR A NUMERIC RESPONSE.	NONE . . . . 00 NUMBER . . . . ☐☐ OTHER _____ 96 (SPECIFY)	→ 714 → 714
713	How many of these children would you like to be boys, how many would you like to be girls and for how many would it not matter if it's a boy or a girl?	BOYS GIRLS EITHER NUMBER ☐☐ ☐☐ ☐☐ OTHER _____ 96 (SPECIFY)	

Figure 4.4 reveals that fertility desire was slightly higher among women who preferred children of a mixed sex composition (68.5%) than among the other two preference categories. This did not reach statistical significance (prefer sons—66.1% and prefer daughters—66.7%).

Figure 4.4   Distribution of women's fertility desire by child sex preference
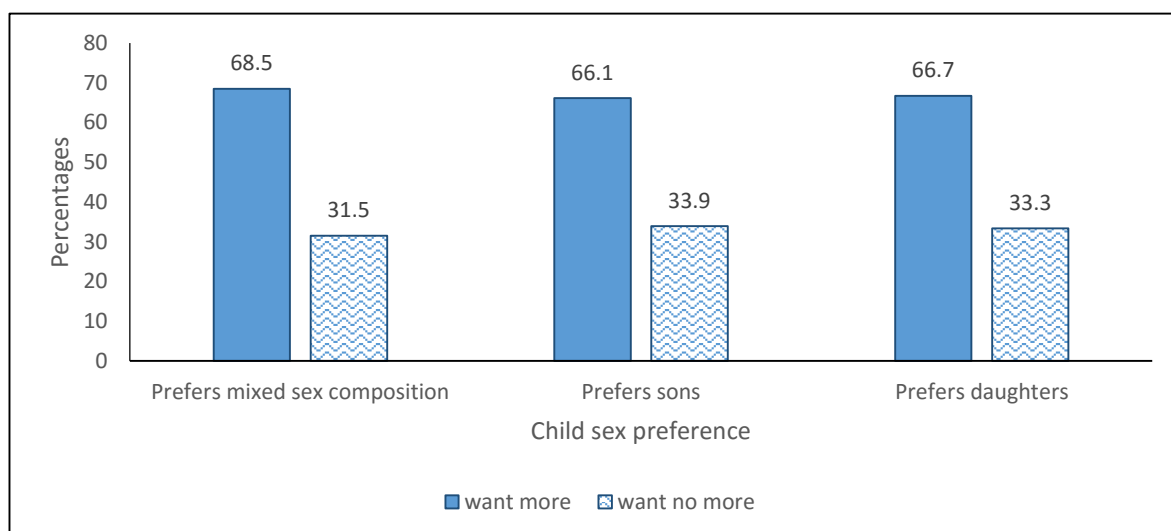
4.4 Factors associated with fertility desire among women in the extended postpartum period

4.4.1 Bivariate analysis of fertility desire

Table 4.7 summarises the socioeconomic and demographic, fertility and postpartum factors of the respondents, stratified by fertility desire. Chi-square tests were performed to show the association of the independent variables with fertility desire. A woman had a higher fertility desire if: she was young (15-29), had secondary or higher education, practised Islam, never married and in professional employment. In addition, fertility desire was high if a woman reported an ideal family size of 3 to 4 children, had fewer than three living children, had children of the same sex composition and if she had resumed sexual activity.

The results with respect to age were in the expected direction. Generally older women (aged 30 years and more) were more likely to have attained their desired family size or perceive themselves as being less fecund and reported lower fertility desire than younger women. Surprisingly, fertility desire increased with increasing education, that is, 45.1% of women with no formal education, 65.9% of those with primary education and 79.5% of those with secondary or higher education reported to want to have more children.

Fertility desire was higher among Muslim women than women from other religious affiliations. This may not be surprising because studies have shown that Muslims have a desire for large family sizes compared to women affiliated to other religions (Izugbara and Ezeh, 2010). Never married women had higher fertility desire than married or formerly married women. It seems fair to say that high desire among unmarried women is influenced by cultural pressure to have children; In Uganda, having children is highly valued and considered as social security (Nalwadda et al., 2010).

Women's occupation was significantly related to fertility desire. Women in professional or clerical occupations expressed the highest level of fertility desire while those engaged in agriculture-related occupations, sales and services and the unemployed had lower fertility desire.

Table 4.7   Percentage distribution of women within the extended postpartum period by fertility desire

Variable	Frequency (N=5,088)	Desire more children in the future (N=3,459)	Do NOT desire more children in the future (N=1,629)	p-value*
Age categories				
15-29	3,437	2,885 (83.9)	553 (16.1)	**<0.001**
30-49	1,651	574 (34.8)	1077 (65.3)	
Education attainment				
None	487	220 (45.1)	268 (54.9)	**<0.001**
Primary	3,074	2,025 (65.9)	1,049 (34.1)	
Secondary/Higher	1,527	1,213 (79.5)	313 (20.5)	
Religion				
Protestant	1,580	1,056 (66.8)	524 (33.1)	**0.024**
Roman Catholic	1,976	1,337 (67.7)	639 (32.4)	
Muslim	740	543 (73.4)	197 (26.7)	
Other	792	522 (66.0)	269(34.0)	
Marital status				
Never married	312	249 (80.0)	62 (20.0)	**<0.001**
Married	4,291	2,969 (69.2)	1,323 (30.8)	
Formerly in union	485	240 (49.5)	245 (50.5)	
Place of residence				
Urban	1,085	765 (70.5)	320 (29.5)	0.102
Rural	4,003	2,694 (67.3)	1,310 (32.7)	
Employed in the past 12 months				
Unemployed	938	662 (70.5)	277 (29.5)	**0.008**
Professional/Clerical	384	279 (72.5)	105 (27.5)	
Agricultural sector	2,273	1,479 (65.1)	794 (34.9)	
Sales and services	1,493	1,039 (69.6)	454 (30.4)	
Ideal number of children				
0-2	327	179 (54.8)	148 (45.2)	**<0.001**
3-4	2,473	1,770 (71.6)	703 (28.4)	
5+	2,288	1,509 (65.9)	779 (34.1)	
Number of living children				
0-2	2,220	2,042 (92.0)	178 (8.0)	**<0.001**
3-4	1,510	1,027 (68.0)	483 (32.0)	
5+	1,358	390 (28.7)	969 (71.3)	
Sex composition of living children				
Mixed sex	3,148	1,707 (54.2)	1,442 (45.8)	**<0.001**
Only males	961	866 (90.2)	95 (9.8)	
Only females	979	886 (90.5)	93 (9.5)	
Child sex preference				
Prefers girls and boys	3,741	2,563 (68.5)	1,178 (31.5)	0.459
Prefers boys	527	349 (66.1)	179 (33.9)	
Prefers girls	820	547 (66.7)	273 (33.3)	
Feelings towards last pregnancy				**<0.001**
Wanted	2,691	2,003 (74.4)	689 (25.6)	
Mistimed	1,904	1,406 (73.9)	498 (26.2)	
Unwanted	493	49 (10.0)	443 (90.0)	
Partner desired number of children(N=4,292)[a]				
Both want same	1,582	1,157 (73.1)	425 (26.9)	**<0.001**
Husband wants more	1,439	919 (63.9	520 (36.2)	
Husband wants fewer	433	329 76.1)	103 (23.9)	
Don't know	838	564 (67.3)	274 (32.7)	
Time since birth				
0-2 months	503	328(65.3)	174 (34.7)	0.367
3 to 5 months	916	629 (68.6)	288 (31.4)	
6 to 11months	1493	998 (66.8)	495 (33.2)	
12 to 23 months	2176	1,504 (69.1)	673 (30.9)	

Variable	Frequency (N=5,088)	Desire more children in the future (N=3,459)	Do NOT desire more children in the future (N=1,629)	p-value*
Postpartum abstinence				
No	3,906	2,715 (69.5)	1,191 (30.5)	**0.002**
Yes	1,182	744 (62.9)	438 (37.1)	

*p-value calculated using Pearson chi-square, numbers in bold indicate statistically significant *p*<0.05), **p<0.01; [a]denotes married women

With regard to number of living children, women with fewer than three children had a higher fertility desire than those with three and more children, suggesting that women desire a large family size.

Fertility desire was highest among women who perceived their partner wanted fewer children than themselves compared to those whose partner's preference either matched their own, partner wanted more children or those who were ignorant of their partner's preference. Desire for another child also increased as more time since birth elapsed, as is expected. Women who practised postpartum abstinence had a lower fertility desire than those who resumed sexual activity.

Surprisingly, there was no significant association between reports of child sex preference and fertility desire, contrary to the hypothesis that desire for another child would be influenced by preference for a particular child sex. Similarly, place of residence and time since birth were not significantly associated with fertility desire.

The significant associations between fertility desire and some of the socio-demographic and postpartum factors as suggested in this section may no longer hold once other variables are allowed for. The next section presents results of the logistic regression models used to understand the odds of fertility desire by sex composition of living children and child sex preference.

4.4.2   Multivariate results

Logistic regression was used to quantify the association of sex composition of living children and self-reported child sex preference with fertility desire controlling for selected explanatory variables. Explanatory variables were age, education, religion, marital status, employment status, ideal number of children, number of living children, sex composition

of living children, feelings towards the last pregnancy, partner's desired number of children and postpartum abstinence. Only those explanatory variables that added meaningful information based on prior knowledge of determinants of fertility desire and exploratory data analysis and those that were statistically significant at (P<0.05) were entered in the logistic regression model. For instance, although child sex preference was not significantly associated with fertility desire in bivariate analysis, it was included as a variable in logistic regression analysis. It was included because it was deemed to warrant investigation based on the literature review. Owing to the importance of time since birth as a key risk factor of pregnancy among postpartum women (Altshuler and Blumenthal, 2016), it was also included in the logistic regression model despite not being significant at bivariate analysis.

By contrast, the age of the respondent was not included in multivariate analysis because of its interaction with number of living children, with the latter variable considered more interesting than age to explore further.

Likewise, partner's desired number of children, which is often included in analysis of determinants of fertility desire, was omitted because of its collinearity with marital status. Rather than having number of living children and ideal number of children in the model, a more meaningful variable "parity balance" was constructed from the difference between "number of living children" and "desired number of children". Parity balance was categorised into:

1) Women with more than their desired number of children,

2) Women who had their desired number of children and

3) Women with fewer than their desired number of children.

Interactions were further tested between sex composition of living children and child sex preference to determine whether fertility desire of those women who have same sex children and prefer having children of the same sex differ from those with children of the same sex composition and prefer having children of a mixed sex composition. The result of this test indicated statistically significant interaction between sex composition of living children and women's child sex preference, showing that women who prefer having children of a mixed sex composition and have children of a mixed sex were less likely to want another child (or 0.60, 95% CI 0.38-0.93). This interaction suggests that fertility desire is influenced by sex composition of living children.

For a better understanding of the interaction between child sex preference and sex composition of children, Figure 4.5 presents predicted probabilities of desire for another child by these two different variables. It shows that among women who prefer children of a mixed sex, the probability of having another child was higher among those with children of the same sex composition than among those with children of a mixed sex composition. This makes sense: if you already have mixed sex children, then the desire to have more children is lower than if you have same sex children. Figure 4.5 further shows that among women who prefer having children of the same sex, women who have children of the same sex composition have a higher desire for another child than those with already with mixed sex, allowing for potential confounders (time since delivery, postpartum abstinence, feelings towards the last child, parity balance, marital status, education attainment, religion and employment status). Again this makes sense: if your preference was children of the same sex and you have borne children of mixed sex, then the most rational decision would be to stop.

Figure 4.5   Predicted probabilities of desire for another child by child sex preference and child sex composition, 2016 UDHS
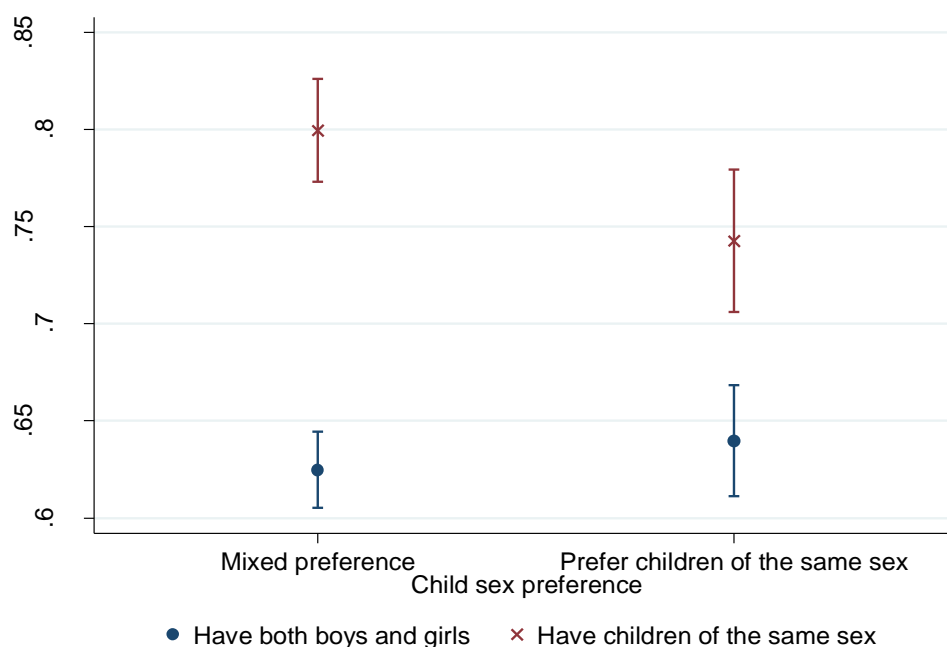
Interaction between family sex composition and family size

Interactions between family sex composition (either mixed sex or same sex composition) and family size (number of living children (0-1, 2, 3, 4, 5 or more)) were tested to examine

whether the sex of children's association with fertility desire varied by number of living children. There was no evidence of statistically significant interactions, as shown in Table 4.8. The interpretation of the results in Table 4.8 is that, the sex composition of children seems not to be strongly correlated with fertility desire. Rather, it is the family size which is more strongly correlated with fertility desire.

Table 4.8   Interaction between sex composition of children and number of living children

Fertility desire	N (5,088)	Model	
		OR	95% CI
Child sex composition			
Mixed sex	3,148	1.00	
Same sex composition	1,939	1.61	0.53-4.83
Number of living children			
0 or 1 child	1,215	1.00	
2	1,005	0.59	0.20-1.76
3	862	0.27**	0.09-0.79
4	648	0.14*	0.05-0.41
5 or more	1,358	0.04*	0.01-0.11
Child sex composition, living children interaction			
For those who have children of the same sex,			
Have only two children		1.24	0.38-4.07
Have only three children		0.61	0.19-1.99
Have only four children		0.80	0.23-2.74
Have 5+ children		3.20	0.82-12.39

OR; Odds ratio, CI: Confidence Intervals

Table 4.9 shows the unadjusted and adjusted odds ratio (aOR) and 95% confidence intervals associated with fertility desire. At the bivariate analysis, the factors associated with fertility desire were having children of the same sex (OR 7.89, 95% CI 6.52-9.54), being postpartum abstinent (OR 0.75, 95% CI 0.59-0.95), reporting the last child was unwanted (OR 0.04, 95% CI 0.08-0.17) and having more than their desired or having attained the desired number of children (OR 0.04, 95% CI 0.04-0.05). All socio-demographic factors –marital status, education, religion and employment status were associated with fertility desire. Being unmarried (OR 0.71, 95% 0.60-0.84), being illiterate (OR 0.43, 95% CI 0.34-0.53) or having secondary education (OR 2.00, 95% CI 1.67-2.40), being Muslim (OR 1.32, 95% CI 1.06-1.14) and being unemployed (OR 1.28, 95% CI 1.04-1.59) or employed in professional employment (OR 1.26, CI 1.09-1.47) were associated with fertility desire.

Table 4.9   Associations between fertility desire and fertility, postpartum and socioeconomic-demographic factors in women within the extended postpartum period, UDHS 2016

Variable	N (5,088)	Bivariate		Multivariate	
		OR	[95% CI]	aOR	[95% CI]
Child sex composition					
Has girls and boys	3,148	1.00		1.00	
Has same sex children	1,939	**7.89****	6.52-9.54	**4.48****	3.34-6.01
Child sex preference					
Prefers boys and girls	3,741	1.00		1.00	
Prefers having same sex children	1,347	0.91	0.79-1.06	1.03	0.83-1.28
Time since delivery					
0-2	503	1.00		1.00	
3-5	916	0.97	0.77-1.23	1.15	0.84-1.58
6-11	1,493	0.96	0.78-1.17	1.00	0.78-1.29
12-23	2,177	1.06	0.86-1.31	0.90	0.73-1.11
Postpartum abstinence					
No	3,906	1.00		1.00	
Yes	1,182	**0.75****	0.64-0.87	**0.75****	0.59-0.95
Feelings towards last child					
Wanted then	2,691	1.00		1.00	
Wanted later	1,904	0.97	0.83-1.14	1.08	0.89-1.32
Unwanted	493	**0.04****	0.03-0.05	**0.11****	0.08-0.17
Parity balance					
Has more /has desired	1,536	**0.04****	0.03-0.05	**0.06****	0.05-0.07
Has few	3,552	1.00		1.00	
Marital status					
Married	4,292	1.00		1.00	
Unmarried	796	**0.71****	0.60-0.84	**0.31****	0.24-0.40
Education attainment					
None	487	**0.43****	0.34-0.53	**0.64***	0.48-0.85
Primary	3,074	1.00		1.00	
Secondary/Higher	1,527	**2.00****	1.67-2.40	1.19	0.94-1.50
Religion					
Anglican	1,580	0.96	0.83-1.12	1.11	0.90-1.36
Roman Catholic	1,976	1.00		1.00	
Muslim	740	**1.32***	1.06-1.64	**1.43***	1.06-1.93
Other	791	0.93	0.76-1.14	1.05	0.79-1.39
Employed in the past 12 months					
Unemployed	938	**1.28***	1.04-1.59	**0.73***	0.56-0.94
Professional/Sales	1,877	**1.26***	1.09-1.47	0.90	0.72-1.12
Agricultural sector	2,273	1.00		1.00	
Preference, sex composition interaction					
For those who have same sex* prefer same sex composition				**0.60***	0.38-0.93

Bold (Statistically significant at *p<0.05, **p<0.001); OR, odds ratio; aOR, adjusted odds ratio; CI, Confidence Interval; [a] Unmarried women

To ascertain the correct specification of the model and also to know how well the model fits the data, Akaike's information criterion (AIC) was used and the model with the smaller value is deemed a better fit. Model 3 has a significantly reduced value of the AIC value as compared to Models 2 and 1, which supports the inclusion of socio-demographic variables to evaluate fertility desire among postpartum women.

In the multivariate model adjusted for marital status, education, religion and employment status, as noted in Table 4.9 and Table 4.13 (Model 3), the factors that were positively associated with fertility desire were: having children of the same sex (aOR 4.48, 95% CI 3.34-6.01), and being Muslim (aOR 1.43, 95% CI 1.06-1.93). Factors negatively associated with fertility desire after adjustment were: being postpartum abstinent (aOR 0.75, 95% CI 0,59-0.95), reporting the last child was unwanted (aOR 0.11, 95% CI 0.08-0.17), having more than desired number of children or having attained the desired number of children (aOR 0.06, 95%, CI 0.05-0.07), being unmarried (aOR 0.31, 95% CI 0.24-0.40), not having any education (aOR 0.64, 95% CI 0.48-0.85) and being unemployed (0.73, 95% CI 0.56-0.94).

In Table 4.13, I present results of the expanded multivariate logistic regression models of the relationship between fertility desire and the independent variables. Sex composition of living children and fertility desire were the primary independent variables. Three models are presented here as follows: In model 1, fertility desire was modelled with child sex composition and child sex preference. The only variable that had a statistically significant relationship with fertility desire was child sex composition. Women with children of the same sex were 7.89 times (aOR 7.89, 95% CI 6.53-9.53) more likely to want another child than those with children of a mixed sex composition.

In model 2, I added postpartum and fertility related factors to the first model. Five variables were significantly associated with fertility desire: child sex composition, time since birth, reporting postpartum abstinence, feelings towards the last child and parity balance. In the second model, child sex composition was weakened by postpartum and fertility related factors. In particular, the decline in odds ratios (from 7.89 to 2.89) was due to inclusion of parity balance which suggested that women with children of the same sex composition were more likely to want more children if they had fewer than their desired number of children as shown in Table 4.10.

Table 4.10   Distribution of fertility desire of women with children of the same sex composition by parity balance, UDHS 2016

Parity balance	No more children	Wants more children
Have more than desired	17 (47.7)	19 (52.3)
Have desired number	40 (55.3)	33 (44.7)
Have fewer than desired	130 (7.1)	1,700 (92.9)

Data presented as n (%)

In the final model (model 3), socio-demographic variables are added. In this model, adding the socio-demographic variables increased the odds ratios of all variables (except parity balance) that were significant in model 2. Fertility desire was significantly associated with child sex composition, reporting postpartum abstinence, feelings towards the last child, parity balance, marital status, education, religion and employment.

Table 4.9, Table 4.13 illustrated the likelihood of wanting another child was highest among women with children of the same sex composition. Having children of the same sex composition remained significant after controlling for all the other variables. Adjustment substantially reduced the size of the odds ratio of child sex composition from 7.89 to 4.48 among women with children of the same sex composition (Table 4.9, Table 4.13) although statistical significance remained.

Child sex preference was not significantly associated with fertility desire in either bivariate or multivariate analysis whereas sex composition of children was highly significant in both analyses. The possible explanation is that these two variables are closely related, and while sex composition of children is likely to inform women's child sex preference, the latter is a much harder concept to understand and self-report than the former. Higher fertility desire among women who have children of the same sex may be due to the fact that majority (over 90%) had not yet attained their desired number of children (Table 4.11). In other words, women who have fewer than their ideal family size are likely to continue with childbearing until they attain their desired family size.

Table 4.11   Distribution of women's parity balance by sex composition, UDHS 2016

Sex composition of living children	Parity balance	
	Have more than desired/has attained desired number	Have fewer than desired number
Have boys and girls	1427 (45.3)	1722 (54.7)
Have children of the same sex	109 (5.6)	1831 (94.4)

Child sex preference was not significantly associated with fertility desire in both univariate and bivariate analysis. Adding time since birth (Model 2) did not alter the association between having children of the same sex composition and child sex preference and fertility desire (shown as Model 2). Further, inclusion of time since birth was not found to significantly improve the fit of the model (AIC was 4006.1 without time since birth, but changed to 4005 after including it), suggesting that any impact of time since last birth on fertility desire is likely to be limited and indirect.

Fertility desire was significantly associated with being postpartum abstinent. Univariate and multivariate analysis indicated that women who were practising postpartum abstinence were less likely to want another child than women who had resumed sexual activity. It can be reasoned that women who are sexually active know they are at risk of conception and their desire for another child was likely increased compared to those who are practising postpartum abstinence.

Unadjusted and adjusted regression analyses results indicated that women whose last child was unwanted were less likely to want another child compared to women who reported that the child was wanted at the time they had them. This may reflect a high motivation to avoid further childbearing on the basis of actual fertility. In other words, women whose last child was unwanted are likely to align their fertility desire with behaviours that prevent further childbearing. It is also likely that women who reported their last child was unwanted, had attained their desired family size or were older (30-49 years) and therefore perceived themselves as being infecund (Table 4.12).

Table 4.12 Distribution of women's parity balance by age group, UDHS 2016

Parity balance	Age group	
	15-29	30-49
Has more than desired number	166 (17.6)	777 (82.4)
Has desired number	277 (46.8)	315 (53.2)
Has fewer than desired number	2,994 (84.3)	558 (15.7)

In terms of parity balance, at bivariate analysis, women who had more than their desired number of children or those who had attained their desired family size were less likely to want another child than those who had fewer than their desired number. The odds did not change much after adjusting for other variables in multivariate analysis.

Unmarried women were less likely to want another child than married women in bivariate analysis. After adjustment, unmarried women were still less likely to want another child (aOR=0.31, 95% CI 0.24-0.40).

Maternal education is commonly believed to influence family size decisions both by reducing desired fertility and through increasing women's ability to implement their fertility preferences. Having no formal education was associated with decreased likelihood of fertility desire compared to women with primary education, in bivariate analysis. By contrast, women with secondary or higher education were twice as likely to desire another child compared to women with primary education. After controlling for all other variables, secondary or higher education lost significance while having no formal education remained significant (aOR 0.71, 95% CI 0.52-0.99).

Both unadjusted and adjusted regression analyses results indicated that Muslim women were more likely to want another child compared to Roman Catholic respondents. This could reflect the fact that Islamic doctrine encourages fertility through the practice of polygamy which leads to co-wives' competition to bear as many children and hence high fertility among Muslim women than women from other religious affiliations (Izugbara and Ezeh, 2010).

In bivariate analysis, unemployed women and those in professional employment were more likely to want another child (aOR 1.28, 95% CI 1.04-1.59 and aOR 1.26, 95% CI 1.09-1.47, respectively) compared to women working in agriculture-related occupations. However, after adjustment, the significance disappeared among women in professional employment while being unemployed remained significant, unemployed women less

likely (aOR 0.73, 95% CI 0.56-0.94) to want another child than women in agriculture-related occupations, suggesting that being unemployed was associated with uncertainty about future childbearing compared to being employed. This result may also suggest that women in professional employment were more likely to hold attitudes that are more favourable to small families and family size limitation because of their relatively high level of education. Therefore, they may appear to want fewer children compared to those in agriculture-related occupations.

Table 4.13   Adjusted odds of fertility desire by fertility, postpartum and socio-demographic factors of women within the first two years of delivery, UDHS 2016

Variable	N	Model 1		Model 2		Model 3	
	(5,088)	aOR	[95% CI]	aOR	[95% CI]	aOR	[95% CI]
Child sex composition							
Has girls and boys	3,148	1.00		1.00		1.00	
Has same sex children	1,939	**7.89****	6.53-9.53	**2.89****	2.29-3.64	**4.48****	3.34-6.01
Child sex preference							
Prefers boys and girls	3,741	1.00		1.00		1.00	
Prefers having same sex children	1,347	0.91	0.78-1.06	0.98	0.81-1.19	1.03	0.83-1.28
Time since birth							
0-2	503			1.00		1.00	
3-5	916			0.71	0.50-1.00	1.15	0.84-1.58
6-11	1,493			**0.61***	043-0.87	1.00	0.78-1.29
12-23	2,177			**0.66***	0.48-0.93	0.90	0.73-1.11
Postpartum abstinence							
No	3,906			1.00		1.00	
Yes	1,182			**0.56****	0.44-0.72	**0.75****	0.59-0.95
Feelings towards last child							
Wanted then	2,691			1.00		1.00	
Wanted later	1,904			1.06	0.87-1.29	1.08	0.89-1.32
Unwanted	493			**0.10****	0.07-0.15	**0.11****	0.08-0.17
Parity balance							
More than/has desired number	1,536			**0.08****	0.06-0.09	**0.06****	0.05-0.07
Has fewer than desired	3,552			1.00		1.00	
Marital status							
Married	4,292					1.00	
Unmarried	796					**0.31****	0.24-0.40
Education attainment							
None	487					**0.64***	0.48-0.85
Primary	3,074					1.00	
Secondary/Higher	1,527					1.19	0.94-1.50
Religion							
Protestant	1,580					1.11	0.90-1.36
Catholic	1,976					1.00	
Muslim	740					**1.43***	1.06-1.93
Other	791					1.05	0.79-1.39
Employed in the past 12 months							
Unemployed	938					**0.73***	0.56-0.94
Professional	1,877					0.90	0.72-1.12
Agriculture	2,273					1.00	
Preference, sex composition interaction							
Have same sex * prefer same sex composition						**0.60***	0.38-0.93
AIC		5716		4006		3930	

Bold (Statistically significant at *p<0.05, **p<0.001); aOR, adjusted odds ratio; CI, Confidence Interval;

[a]Unmarried women; AIC , Akaike Information Criteria

4.5   Summary of key findings

Chapter four presented results reflecting the first PhD objective whose aim was to investigate the factors associated with self-reported fertility desire among married and unmarried Ugandan women interviewed in the 2016 DHS who had a live birth between 2014 and 2016. This study found that:

- Approximately two-thirds of women in this sample (68%, 3,459/5,088) reported they would like to have another child in future. Of these, 11.6 % (400/3,459) desired to have a child within two years of delivery. This trend among postpartum women has been observed elsewhere in sub-Saharan Africa (Warren et al., 2013, Oladapo et al., 2005).
- Having children of the same sex was associated with a higher likelihood of wanting another child (aOR 4.48, 95% CI 3.34-6.01) in comparison to women with children of a mixed sex composition, in multivariate analysis after controlling for all other variables.
- Findings demonstrate that child sex preference was not significantly associated with fertility desire, in both bivariate and multivariate analysis.
- In this study, being Muslim was positively associated with fertility desire in this population (aOR 1.43, 95% CI 1.06-1.93) compared to being Catholic.
- Reporting that the last child was unwanted, having more than the desired number of children or having attained the desired number of children, being unmarried, being illiterate and being unemployed were associated with reduced fertility desire in this population.

Qualitative study participants were purposively selected on the basis of the above quantitative findings. There are a few guidelines as to how one should proceed in selecting cases for qualitative follow–up from quantitative studies. For study's using a mixed methods sequential design, selection of study participants includes identifying statistically significant (or non-significant) differences and anomalous results (Morse, 1991). In this study, key quantitative results served as a means of identifying study participants— women with children of the same sex composition—who were then interviewed using a semi-structured interview guide. In addition, being Muslim was associated with a higher fertility desire in the quantitative sample. This was one of the

reasons as to why Mayuge district—a setting with a high proportion of Muslims was chosen as a study site.

Questions were developed to access the main constructs of the TDIB framework. Based on the research aim and quantitative results showing that desire for another child was highest among women with children of the same sex composition, section two of the in-depth interview guide explored participants' current fertility desire and intentions, followed by a series of probes based on the answers. Follow up questions explored participants' views on role of sex composition of living children in influencing fertility decisions and attitudes of family and friends in their decision. See the interview question:

Interview question to explore fertility desire

Would you like to have more children in the future?

[Yes]

After how long would you like to have the next child? Why that time?

Do you think you will actually have more children in the future?

Would you wish to have children of a particular sex? Why?

Have you discussed this decision with anyone? If yes, who

What things do you think will decide when you have another child?

[No]

Can you tell me what made you decide this?

How do you feel about this?

Chapter 5   Understanding the link between fertility desire and contraceptive behaviour

5.1   Introduction

According to the World Health Organisation, the recommended interval between a live birth and the next pregnancy is 24 months (World Health Organization, 2005), since short birth intervals (<24months) are associated with adverse pregnancy outcomes such as induced abortions, miscarriage, preterm births and maternal depletion syndrome (DaVanzo et al., 2008). Use of effective contraception is critical in prevention of closely spaced pregnancies and meeting the needs of women who want to delay or avoid a subsequent pregnancy. Previous studies showed that contraception can avert more than 30 percent of maternal mortality among women who space their pregnancies more than two years apart (Singh and Darroch, 2012, Cleland et al., 2006). Studies from sub-Saharan Africa examining postpartum women's fertility desire and contraceptive use show that more than two-thirds of women desire to delay or limit their next pregnancy (Peltzer et al., 2018, Atukunda et al., 2018, O'Shea et al., 2015). However, many postpartum women who reportedly want to prevent pregnancy during first two years after delivery, are not using any contraceptive method. For instance, a recent analysis of DHS data from 21 low- and middle-income countries found that 61 percent of women within two years of delivery had an unmet need for family planning, defined as the proportion of women who want to delay or avoid pregnancy but are not using contraception (Moore et al., 2015). The situation in Uganda is also worrying. According to this same study by Moore et al. (2015), unmet need for family planning here is 68 percent, about six in ten women conceive within 24 months following a previous birth and less than a quarter (22%) use a modern method of contraception. Consequently, postpartum women in Uganda are exposed to the dangers of unwanted and unplanned pregnancies—and yet their motivation to avoid pregnancy is high.

The previous chapter examined factors associated with women's fertility desire, showing that most women (92%) reported a desire to postpone or avoid further childbearing, and nearly half of the women (47 %) reported that their most recent pregnancy was unintended. There is evidence from Mozambique indicating that fertility desire is

associated with an individual's contraceptive use (Agadjanian, 2005). There is limited evidence on fertility desire and contraceptive use in Uganda, particularly in the period within 24 months of a delivery. Using data on a subset of women (aged between 15 and 49 years, and had had a live birth in the preceding two years) from the 2016 UDHS, this chapter builds on the limited evidence regarding fertility desire and contraceptive behaviour, by focusing on two research objectives of the PhD (Chapter 1, section 1.3) using a quantitative methodology

- To investigate the association between sex composition of living children and child sex preference and fertility desire among Ugandan women in the extended postpartum period.
- To investigate if women's self-reported fertility desire is associated with a likelihood of using modern contraception among Ugandan women in the extended postpartum period.

Quantifying these associations is an important prerequisite for the development of appropriate recommendations regarding family planning policy for women within the first two years of delivery.

The chapter begins by presenting the basic background characteristics of the study sample (section 5.2). Section 5.3 examines some aspects of contraceptive practice (knowledge, use, method mix and source); how contraceptive use differs by months postpartum; the main variables of interest in this PhD (fertility desire and sex composition of living children) are discussed in section 5.4. This is followed by section 5.5 which presents the factors associated with modern contraceptive use, with results from bivariate and multivariate statistics. A summary of the key findings is presented in section 5.6.

5.2   Sample characteristics

As was mentioned in the previous chapter (section 4.2), 66% of the women were aged 15-29 years, approximately 60% had attained some primary education, and less than a third (30%) secondary or higher education. Most respondents were affiliated with either Protestant or Roman Catholic Churches, were currently married, lived in rural areas and were employed in the agricultural sector. Regarding fertility and postpartum factors, women desired an ideal family size of four or more children in their lifetime, had a mean

number of 3.4 children at the time of the survey, 62% had families with a mixed sex composition, 18.9% of women reported having only boys and 19.2% only girls and 76.8% had resumed sexual activity following childbirth. The median time since delivery was 10 months.

Table 5.1 presents results of additional fertility and postpartum factors that were relevant in influencing contraceptive use and were not covered in section 4.2. Slightly more than a quarter (27.9%) of the women were within six months of childbirth at the time of the survey. More than half (51.3%) of the women reported their menses had not yet returned after childbirth and the majority (84.1%) were currently breastfeeding.

Table 5.1   Fertility-and postpartum factors* of women, UDHS 2016

Variable	Frequency (N=5,088)	Percent (%)
Time since birth		
Median months since birth (IQR)		10 (5-16)
0-2 months	503	9.9
3-5 months	916	18.0
6-11 months	1,493	29.3
12-23 months	2,176	42.8
Return of menstrual period after delivery		
Menses not returned	2,588	51.3
Menses returned	2,500	48.7
Breastfeeding status		
Not currently breastfeeding	809	15.9
Still breastfeeding	4,279	84.1
Resumption of sexual activity since delivery		
Yes	3,906	76.8
No	1,182	23.2
Told about FP at Facility (4,144)[a]		
No	2,062	49.8
Yes	2,082	50.2
Decision maker for using contraception (N=4292)[b]		
Mainly respondent	1,147	26.7
Joint decision	1,896	44.2
Partner/others	1,249	29.1

* Postpartum and fertility-decision factors: [a] applies to only those who visited a health facility in the last 12 months and whether any of health worker talked to the respondent about family planning, [b] denotes women who reported contraceptive use, IQR, Interquartile range

Studies have found a significant association between discussion of family planning with a health care provider and contraceptive use (Wekesa and Coast, 2014b, Nattabi et al., 2012); approximately half of women who visited a health facility within the 12 months preceding the interview reported to have received family planning counselling from a health care provider. In terms of decision-making regarding contraceptive use, 44% of contraceptive users reported that the decision to use contraception was made jointly with their partner.

5.3   Contraceptive knowledge and use

Knowledge of contraceptive methods is an important prerequisite for their use. Information on knowledge of family planning methods was obtained by asking respondents to mention at least one method by which a couple can delay or avoid pregnancy. If the respondent failed to mention the methods spontaneously, the interviewer provided a description of each method and asked them whether they knew of the method.

According to the 2016 UDHS, knowledge of contraceptive methods in Uganda is almost universal with 99% of women aged 15-49 years reporting knowledge of at least one modern method (UBOS and ICF, 2018). In the study presented here, using data on women of reproductive age with a delivery in the preceding two years, the focus is on modern contraceptive use, rather than on traditional methods, which are known to have high failure rates (Che et al., 2003, Polis et al., 2016, Ali, 2012).

Figure 5.1 shows that, although overall contraceptive knowledge was very high, there were variations in respondents' knowledge of methods. The most widely known methods were injectables (98.8%), male condoms (98.3%), pills (96.5%) and implants (95.7%). The Lactational amenorrhoea method and male sterilisation were the least known methods among this sample.

Figure 5.1   Distribution of women by knowledge of any modern contraceptive method, UDHS 2016
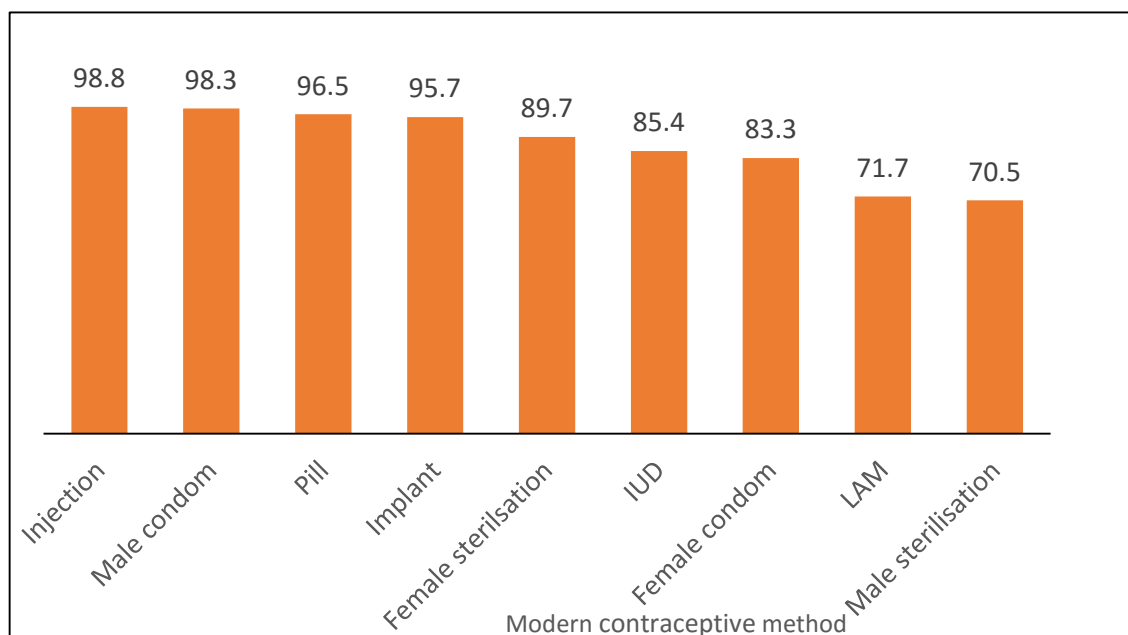
5.3.1   Current use of modern contraception

The primary outcome for this analysis was whether the woman was currently using any modern contraceptive method. The DHS questionnaire reports contraceptive use among women through the following question, 'Are you currently doing something or using any method with any partner to delay or avoid a pregnancy?' Those who responded with a 'yes' were further asked to state the method they were using or their partner was using. The DHS categorises contraception methods into three subtypes: (1) modern (i.e pills, IUD, injectable contraceptives, diaphragm, male and female condoms, male and female sterilisation modern implants, standard days method (SDM), emergency contraception, Lactational amenorrhoea method); (2) traditional (periodic abstinence and withdrawal); (3) folkloric (herbal plant, waist beads and other methods) (UBOS and ICF, 2018). There is disagreement in the literature as to whether the standard days method (SDM) and the Lactational amenorrhoea method are traditional or modern methods; I followed the DHS designations and categorised women who reported using SDM and LAM as modern method users, although their numbers were very few.

Because the study focus was on modern methods, the small proportion of women (3.8%) who used traditional methods (periodic abstinence and withdrawal) and folkloric methods—which are less effective in pregnancy prevention—were combined with non-use of modern contraception. Consequently, the outcome variable, modern contraceptive use, was coded as a binary variable: using a method if a woman or her partner were using modern contraception or non-user if the woman was not using, used a traditional or a folkloric method.

Although the majority of women knew about different methods of family planning, only a third (33.4%, 1,699/5,088) of women reported that they were currently using a modern method of contraception and 3,389 (66.6%) were not. Among current users, the most commonly used method was injectable contraception (59.5%, 1,010/1,699) followed by implants (15.7%, 266/1,699) as shown in Figure 5.2. The popularity of injectables could perhaps be linked to the fact that they are convenient and women's ability to use them covertly from disapproving partners. However, injectable contraception is only effective for a limited time (usually about three months), user –dependent, and is associated with higher failure rates.

By contrast, implants are highly effective, longer-acting reversible hormonal contraception that do not rely on daily compliance nor dependent on correct usage. Given that implants were the second most used method among respondents suggests that there is general awareness and increased access to implants among women in Uganda. Increased use of the implant may also be a result of Uganda Government's commitment to increased financial investment in family planning commodities, especially the long-acting reversible contraceptives, following the 2012 Family planning Summit. For instance, the use of implants among married women increased from 2.7% in 2011 to 6.3 in 2016 (UBOS and ICF, 2018).

The third most popular method was male condoms reported by eight percent (137/1,699). Condom use is one-off, accessible, cheap and with minimal side effects (Adesola et al., 2017), but requires the willingness of a male partner to use one (Protogerou et al., 2014), and to use it correctly. None of the respondents reported use of the female condom despite it being a safe and effective method that increases women's control over their reproductive health given that it is worn by women instead of men (Ananga, Kugbey, Akporlu, & Asante, 2017; Koster, 2010). Non-use of female condoms among this population could be attributed to lack of knowledge on how to use it, partners who disapprove of its use or limited access from health facilities in Uganda.

Figure 5.2   Modern contraceptive method mix among women in the extended postpartum period
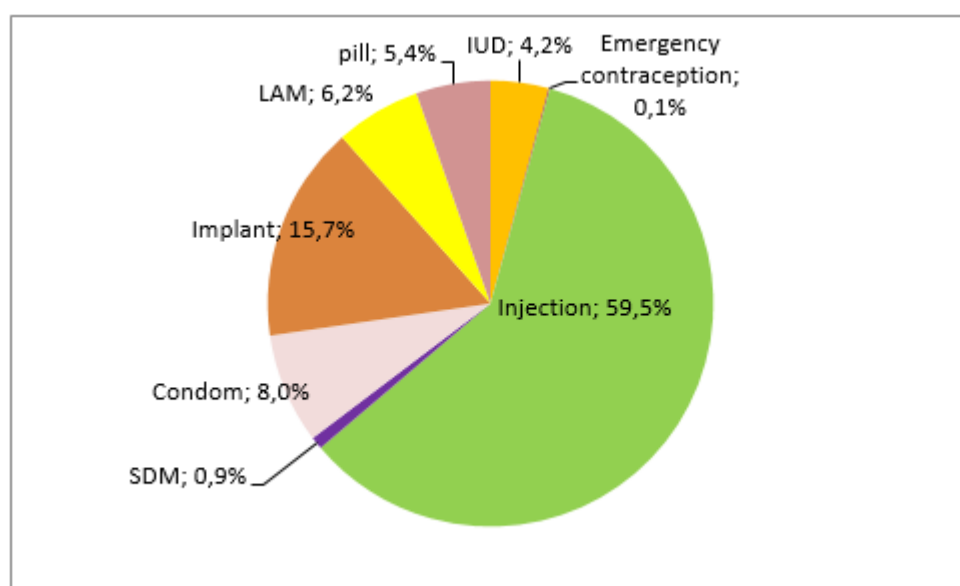
SDM=Standard days method; LAM=Lactational amenorrhoea method; IUD=Intrauterine device

LAM is available for immediate use after delivery, has maternal and child health benefits and contributes to the wider contraceptive method mix. Surprisingly, use of the Lactational amenorrhoea method was very low among this sample (6.2%). The plausible explanation is that women may have some knowledge of LAMs' mechanism of action because: the majority of women had children aged over six months (72%, 3,669 /5,088) which implies less breastfeeding and yet LAM is only effective when the infant is below six months, the mother is exclusively breastfeeding and amenorrhoiec. A very small proportion of women in the sample used either contraceptive pills or IUD (5.4% and 4.2%, respectively). The additional effort required to use the pill may be a consideration. Generally, the pill requires daily uptake and has been associated with higher use-failure rates.

By contrast, the IUD is a highly effective, long-acting (usually about two years) reversible contraceptive (LARC) that is safe for breastfeeding mothers. According to Uganda's national policy guidelines for reproductive health services, an IUD can be inserted immediately or up to 48 hours following delivery, or any time beyond six weeks after delivery (MOH, 2006). Studies elsewhere have indicated that low use of the IUD is in part due to the "myths and rumours" about the IUD— such as its association with infertility (Hubacher, 2002, Russo et al., Asegidew et al., 2017), uncertainty or inadequate information about where to get one, and an inadequate number of providers trained and ready to provide the method (Twesigye et al., 2016). Another plausible reason for low use of the IUD is that it can only be used by women who want to wait at least two years to conceive.

Emergency contraception is taken only in emergencies such as condom slipping off or after rape. In this sample, emergency contraception and the standard days method were the least popular methods with each accounting for less than one percent among current users. None of the women reported they had undergone female sterilisation. This could result from the negative attitudes towards permanent methods. Given the high infant and childhood mortality rates and possibilities of remarriage in case of events such as death of a partner or divorce, women are less likely to adopt sterilisation. On the other hand, since

two-thirds of the sample comprised young women below 30 years who had not attained their desired family size, it is unlikely they would adopt female sterilisation due to its permanent nature and hence low utilisation.

5.3.2 Source of contraceptive methods

I categorised source of contraceptive methods as public facility, private facility or other. Public facilities included government hospitals, government health centres', family planning clinics, community health workers and other public-sector services. Private facilities included private hospital/clinics, pharmacies and other private facilities. Other sources included shops, church, friends and any other source. The most recent source of contraception for current users revealed a strong split between those who rely on private sector sources and those who use public sector sources. The latter provided contraception to 59.4% of current users while the former was a source to 38.9%. Given that the Uganda Government is the leading provider of family planning services, offered free of charge through public health facilities, this pattern is not surprising. By contrast, only 1.7% of women obtained their contraceptive method from "other" sources. For the purposes of this analysis, users of the Lactational amenorrhoea method were excluded since this is not a method that needs to be sourced from a facility. Likewise, users of emergency contraception and standard day's method (less than 1%) were excluded in further analyses.

Table 5.2 presents a description of women's source of currently used contraceptive methods by the time of the survey. Public health facilities were the main source for all LARC—Implants, IUDs and injectables—methods that require the expertise of a health care provider; this could perhaps reflect the availability of competent providers in public health facilities when compared to private facilities or other sources. Likewise, nearly two-thirds of women obtained male condoms from public health facilities. This could suggest that women are aware of the free family planning services provided at the public health facilities, meaning condoms are readily available and freely accessed at public health facilities compared to private or other sources. One could also argue that condoms are provided by community health workers making them more accessible compared to obtaining them from private facilities.

The Uganda national family planning guidelines recommend condom use by couples who need a temporary method while waiting for another method, couples that have irregular sexual intercourse and those that need a backup method (MOH, 2006). This might be the case for women who may be using LAM but also having infrequent sexual intercourse. Private health facilities were the main source for contraceptive pills.

Table 5.2   Source of contraceptive method by method category

	Public (%)	Private (%)	Others (%)
Pill	25.2	73.9	0.9
IUD	68.7	31.3	0.0
Injections	56.0	43.8	0.2
Male condom	64.2	21.9	13.9
Implants	82.0	17.6	0.4

5.3.3   Contraceptive use, breastfeeding practice, amenorrhoeic status and postpartum abstinence by months since delivery

Figure 5.3 shows that within the first three months postpartum, very few women (4.2%) reported contraceptive use. Over 94% were amenorrhoeic and about 80% were postpartum abstinent. Low contraceptive use within the first three months may suggest that women are aware of their insusceptibility to pregnancy if amenorrhoeic or practising postpartum abstinence. The median duration of postpartum abstinence is 2.9 months (UBOS and ICF, 2018). Breastfeeding is very common during the first three months postpartum. Ninety-four percent of the women reported they were breastfeeding.

Within 3 to 5 months post-delivery, there was a sharp decrease in the proportion of amenorrhoeic women and those who were postpartum abstinent. This was matched with an increase in contraceptive use. By contrast, breastfeeding declined slightly to 93.7%. Breastfeeding is expected to be high because women generally introduce complementary feeds when the infant is six months old.

At 6-11 months postpartum, breastfeeding remained high while the proportion of amenorrhoeic and abstinent women continued to drop. The median duration of postpartum amenorrhoea is 9.6 months in Uganda. This perhaps explain why there was a decline from 75.9 to 54.7 among women within 6-11 months postpartum. By contrast, contraceptive use increased from 19.7% to 31%.

By 12-23 months following childbirth, very few women were abstaining and amenorrhoeic. It is possible that the women who were abstaining at 12-23 months

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postpartum were either separated from their partners or were practising postpartum abstinence. Breastfeeding dropped to 71.3% from 93.3%. The drop in breastfeeding at 6-11 months could be attributed to introduction of complementary feeding for babies aged six months. The median duration of breastfeedingin Uganda is 19.8 months. What is striking about the contraceptive use as shown in Figure 5.3 is that contraceptive use was highest within 12-23 months postpartum (47.4%).

Figure 5.3   Duration of breastfeeding, return of menstruation, start of sexual activity and contraceptive use by months since delivery
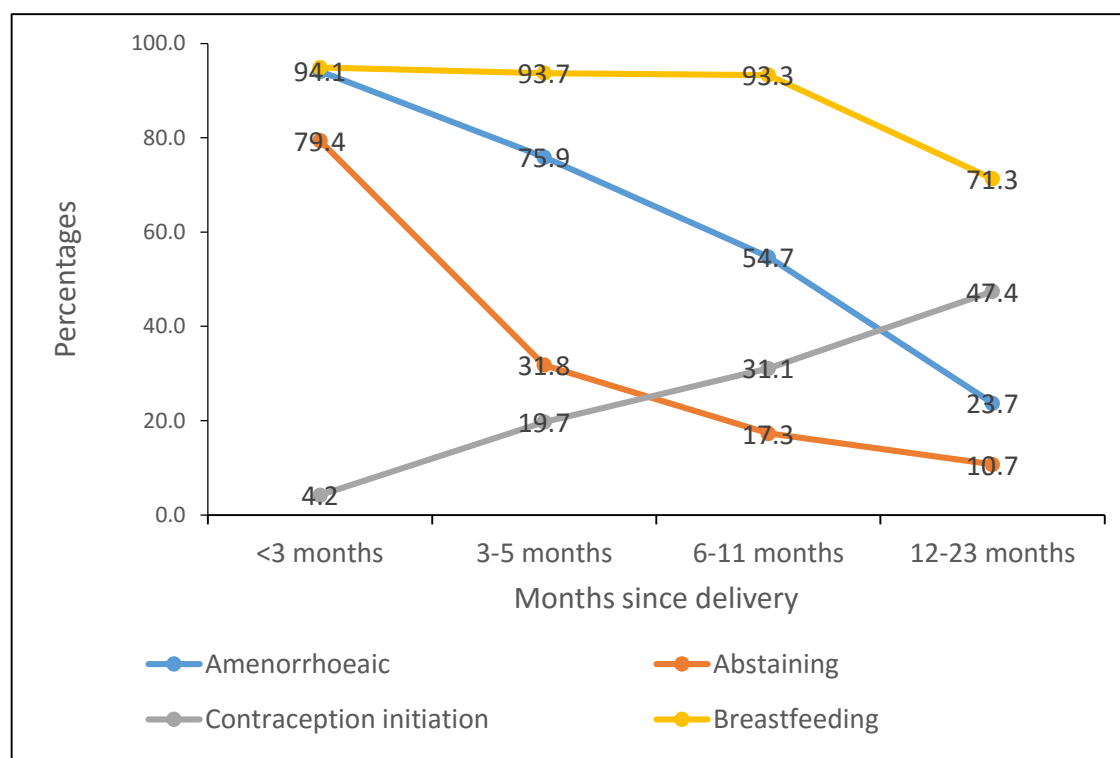
5.3.4   Choice of contraceptive method by time since birth

Choice of contraceptive method varied according to the time since birth (Figure 5.4). Among contraceptive users within the first three months after delivery there was substantial use of injectable contraceptives and LAM, while implant was the least reported method. Use of LAM in the first three months is expected given that women are likely to exclusively breastfeed within the first three months. As shown in Figure 5.3, majority of the women (94.1%) were still breastfeeding and amenorrhoeic within the first three months, which afforded them contraceptive benefits. Use of male condoms was the third most popular method within the first two months. It could be that within the early months postpartum, women prefer to use a non-hormonal method that is less likely to

interfere with breastmilk production. The possible explanation for low use of implants is that the Ugandan Policy on Family Planning does not currently support immediate postpartum implant use for breastfeeding women within six weeks of delivery (MOH, 2006). None of the respondents reported contraceptive pill and IUD use within three months of delivery. This reflects Uganda's Reproductive Health guidelines which

Figure 5.4   Stacked bar graph illustrating contraceptive method use by time since birth
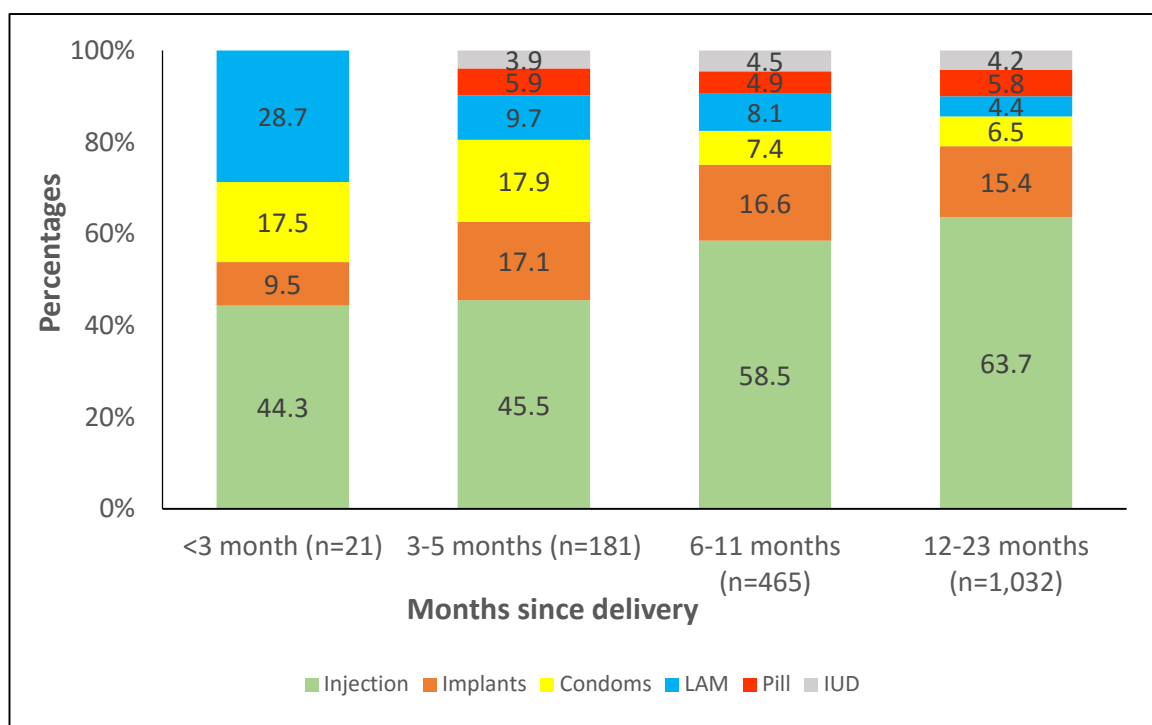
recommend initiation of contraceptive pills at six months postpartum because the risk of using them outweigh the advantages among breastfeeding women (MOH, 2006).

Use of injectables, remained widespread and rose steadily within the next 20 months. As previously mentioned, injectables allow covert use and are more accessible given that they are easily administered by community health workers in the community. On the contrary, use of LAM decreased to less than 9.7% within 3 to 5 months postpartum and to 4% after one year. This data must be interpreted with caution as LAM is only effective for six months after which the contraceptive benefits of breastfeeding diminish. Use of implants was the second most popular method after three months postpartum.

Generally, very few women (less than 5%) relied on the IUD throughout the two years postpartum. This finding may reflect low acceptability of method or method not being available at the health facilities.

5.3.5   Reasons for non-use of contraception

Recent studies in Uganda have shown that illiteracy, poorest wealth status, being Catholic, older age, parity, lack of exposure to family planning messages via media deter women from using modern contraception after delivery (Rutaremwa et al., 2015, Wamala et al., 2017, Anguzu et al., 2018). In the 2016 UDHS, women who were currently not using contraception and yet preferred to wait at least two years or prevent childbearing, were asked why they were not using contraception. Multiple answers were allowed in the survey; women's responses were coded into the 23 categories (Table 5.3).

The most frequently cited reasons for non-use of modern contraception were, being amenorrhoea (23.7%) and currently breastfeeding (15.2%), which supports the importance of fertility variables (Table 5.3) in influencing contraceptive use. However, more than two-thirds (68.8%) of currently breastfeeding women and more than half (53.2%) of amenorrhoea women were more than six months post-delivery and, therefore, potentially at risk of pregnancy. Women reporting amenorrhoea as the most important reason for not using contraception gives a preliminary indication of the role of "return of menses" as a signal to resume contraception following delivery. This may in part be an insistence from family planning providers that women need to prove return of menses before being given a method.

Table 5.3   Reasons for non-use of contraception among women in the extended postpartum period (UDHS 2016)

Reason for non-use	Frequency (N=3,389)	Percent
Fertility-related		
Not married	72	2.6
Not having sex	193	6.9
Infrequent sex	307	11.0
Menopausal	9	0.3
Sub fecund /infecund	25	0.9
Postpartum amenorrhoea	665	23.7
Breastfeeding	427	15.2
Opposition to use		
Respondent opposed	131	4.7
Partner opposed	202	7.2
Others opposed	38	1.4
Religious prohibition	12	0.4
Lack of knowledge		
Knows no method	1	0.03
Knows no source	4	0.1
Method-related reasons		
Fear of side effects	384	13.7
Inconvenient to use	11	0.4
Interferes with body processes	28	1.0
Access		
Lack of access	25	0.9
Costs too much	25	0.9
Preferred method not available	5	0.2
No method available	3	0.1
Other reasons		
Other	111	4.0
Fatalistic	95	3.3
Don't know	30	1.1

Concerns regarding side effects were also a major barrier to adoption of contraception, as were infrequent sexual activity. Despite the fact that more than a third (38.8%) of the respondents were Roman Catholics, a small proportion of women (0.4%) reported influence of religious affiliation on non-use of contraception. The Catholic doctrine does not permit the use of modern contraceptives but rather approves the use of natural methods such as periodic abstinence and rhythm among its followers (Nakiboneka and Maniple, 2008, Srikanthan and Reid, 2008). A note of caution is due here since Pope Emeritus Benedict XVI approved use of condoms in the fight against HIV/AIDS. Given that condoms provide dual protection against pregnancy and HIV, this is an achievement for family planning advocates. This suggests that despite women's religious beliefs, they may prioritise contraceptive use owing to their desire to delay future pregnancies by at least two years. Contraception is free of charge at public health facilities and provided at a low fee at private health facilities; only a small proportion of women (0.9%) reported non-use of contraception due to high costs. Ignorance about the contraceptive methods and source of methods were the least commonly cited reasons for non-use among women.

5.4　Fertility desire and sex composition of children

The main independent variables of interest in this study were the woman's fertility desire and the sex composition of living children (section 4.3.1).

5.4.1　Sex composition of living children and contraceptive use

In most patriarchal societies, male children are required to maintain the family lineage and are a source of support in old age (Caldwell and Caldwell, 1987b, Mwageni et al., 2001). Hence, women are expected to bear male children. There was no statistically significant difference (p=0.619) in contraceptive use between women with children of the same sex composition (those with only girls—32.1%, only boys—35.5%) as shown in Figure 5.5. I hypothesised that not having a son was important in contraceptive use decisions. This hypothesis was found to be true in this sample.

Figure 5.5　Percentage distribution of modern contraception use by sex composition of living children.
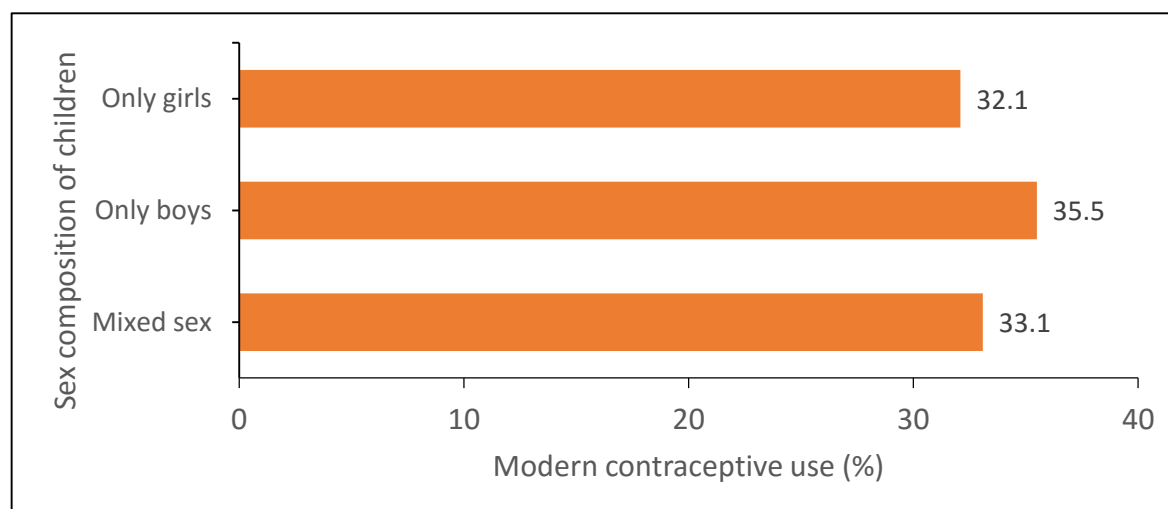
5.4.2　Fertility desire and contraceptive use

Information on fertility desire was computed using responses to the question on whether women would like to have more children in the future. As previously stated in Chapter four, section 4.3, nearly a third (32%) of women reported they want no more children. A few women (8%) reported desire for another child within two years, and 60% reported desire to delay childbearing. Overall, only 33.4% of the women were currently using modern contraception. A 33.4% contraception use level is inconsistent with the 60%

women who reported they would want another child only after two years and the 32% who want to cease childbearing. Standard calculations of unmet need would classify the women who report a desire to postpone pregnancy for at least two years or those who have no desire for more children and were not using contraception as having an unmet need(Bradley et al., 2012). An estimated 66.4% (3,115/4,688) of the women in this sample would thus have had an unmet need (data not shown). The high level of unmet need in this sample is in part attributed to the fact that only a few women (8%) want another child soon (and hence, no need). On the contrary, as shown in Figure 5.6, women who want a child soon were using contraception in almost equal proportions to those who want a child after two years. This is an unexpected result. Sub-analyses showed that the women who want the next child soon were using Injectables (72%), a method that allows for covert use and can easily be stopped when a woman wants to conceive.

Figure 5.6   Distribution of modern contraception use by women's fertility desire.
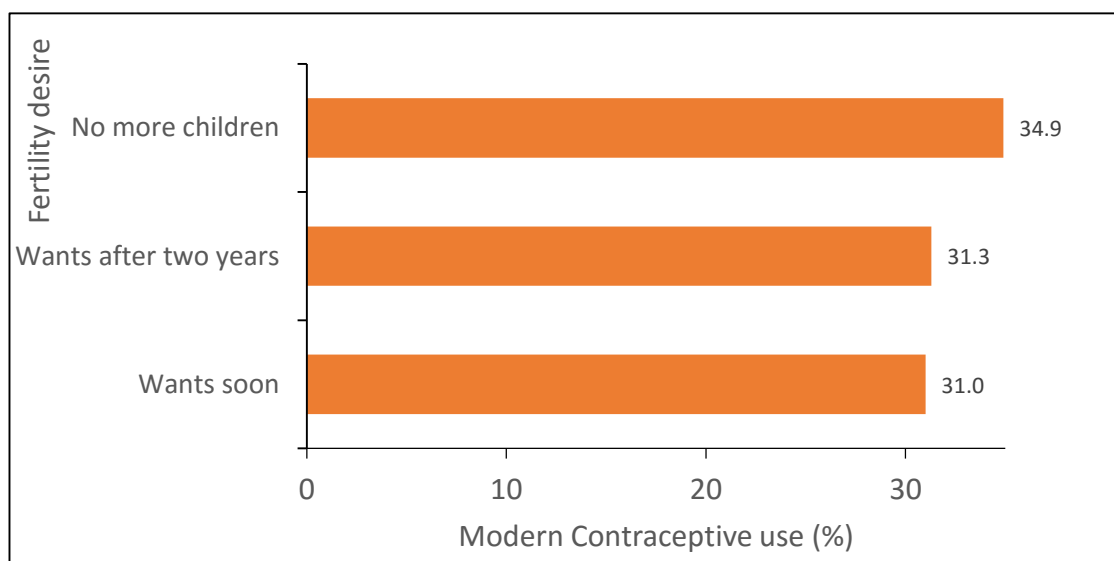
5.5 Factors associated with modern contraceptive use in the extended postpartum period

5.5.1 Bivariate analysis of current use of contraception

Table 5.4 shows women's socioeconomic, demographic and postpartum factors stratified by modern contraceptive use. Contraceptive use patterns differed by age. Women aged 15-29 were more likely to use contraception than women those aged 30-49 years. This might be due to young women being more sexually active than older women.

As expected, women with secondary and above education reported higher contraceptive use than women with lower education. Education exposes women to reproductive health information and empowers them to make appropriate decisions. Educated women are also more likely to earn an income and hold attitudes that are more favourable to small families and family size limitation. As might be expected, married women were more likely to use contraceptives than unmarried women. The plausible explanation for this finding is married women are in regular sexual activity than unmarried women and hence, in need of contraception.

Urban residents were more likely to report contraceptive use than rural residents. Most health facilities are situated in urban areas and are within reasonable distances from women's homes which increases contraceptive accessibility in urban areas. Urban health facilities are likely to be well stocked with family planning commodities compared to facilities in rural settings. Additionally, women in urban areas are more exposed to family planning messages than their rural counterparts.

Postpartum and fertility factors (those who were not breastfeeding, had resumed menstruation, were sexually active, those within 12 to 23 months of delivery, those whose decision to use contraception was mainly their own, those with fewer than two children and those who never discussed family planning with a health care provider within the last 12 months) were more likely to use modern contraception.

Women who had only sons were more likely to use contraception. This finding is in the expected direction given that Uganda is patriarchal—sons are valued over daughters. This would mean that when women's desire for sons is satisfied, they are likely to use contraception to prevent additional births. Women whose menses resumed were more likely to use contraception than amenorrhoeic women. A possible explanation for this result is amenorrhoeic women may have underestimated their risk of pregnancy by assuming they are fully protected from conception (Ndugwa et al., 2011a).

Women with fewer than two living children reported higher contraceptive use. This may be suggestive of preferences for small family sizes among women of low parity which may force them to limit or space births. Surprisingly, women who discussed family planning with a health worker reported lower contraceptive use, suggesting that women's preferred method may not be available at the health facility. As parity increased, the percentage of women using contraception decreased. This is partly explained by the fact that low parity women are likely to be young women who are sexually active and at the peak of their reproductive career while the high parity women are more likely to be premenopausal.

Religious affiliation, fertility desire and sex composition of living children were not significantly associated with contraceptive use.

Table 5.4   Distribution of women by utilisation of modern contraceptive methods, UDHS 2016

Variable	Frequency (N=5,088)	Using modern contraception (N=1,699)	NOT using modern contraception (N=3,389)	P-value[b]
Age categories (years)				**<0.001**
15-29	3,437	1,215 (35.3)	2,223 (64.7)	
30-49	1,651	484 (29.3)	1,167 (70.7)	
Education attainment				**<0.001**
None	487	82 (16.8)	406 (83.2)	
Primary	3,074	940 (30.6)	2,134 (69.4)	
Secondary/Higher	1,527	677 (44.4)	850 (55.6)	
Religion				0.157
Anglican	1,580	565 (35.8)	1,015 (64.2)	
Roman Catholic	1,976	618 (31.3)	1,358 (68.7)	
Muslim	740	248 (33.6)	492 (66.4)	
Other	792	267 (33.7)	525 (66.3)	
Marital status				**<0.001**
Never married	312	69 (22.3)	242 (77.7)	
Married	4,291	1,492 (34.8)	2,800 (65.2)	
Formerly in union	485	137 (28.3)	348 (71.7)	
Place of residence				**<0.001**
Urban	1,085	450 (41.5)	635 (58.5)	
Rural	4,003	1,249 (31.2)	2,755 (68.8)	
Employed in the past 12 months				**<0.001**
Unemployed	938	337 (35.9)	602 (64.1)	
Professional/Clerical	384	694 (37.0)	1,183 (63.0)	
Agricultural sector	2,273	668 (29.4)	1,605 (70.6)	
Fertility desire				0.061
Want soon	1,639	506 (31.0)	1,124 (68.9)	
Want later	400	125 (31.3)	275 (68.7)	
Want no more children	3,059	1,067 (34.9)	1,991 (65.1)	
Sex composition of living children				
Has mixed sex	3149	1,043 (33.1)	2,106 (66.9)	0.337
Has only boys	961	341 (35.5)	620 (64.5)	
Has only girls	979	314 (32.1)	665 (67.9)	
Currently breastfeeding				**<0.001**
No	809	395 (48.8)	414 (51.2)	
Yes	4,279	1,303 (30.5)	2,976 (69.5)	
Return of menses				**<0.001**
Menses returned	2,588	1,276 (49.3)	1,311 (50.7)	
Menses not returned	2,500	422 (16.9)	2,078 (83.1)	
Resumed sexual intercourse				**<0.001**
Yes	3,906	1,570 (40.2)	2,336 (59.8)	
No	1,182	128 (10.9)	1,054 (89.1)	
Time since birth				**<0.001**
0-2 months	503	21 (4.2)	482 (95.8)	
3 to 11months	916	181 (19.7)	735 (80.3)	
6 to 11 months	1,493	465 (31.1)	1,028 (68.9)	
12 to 23 months	2,177	1032 (47.4)	1,145 (52.6)	
Decision maker for using contraception (N=1,676)[c]				0.003
Mainly respondent	492	460 (93.4)	32 (6.6)	
Joint decision	129	114 (88.3)	15 (11.7)	
Mainly husband/others	1,055	918 (87.0)	137 (13.0)	
Number of living children				**<0.001**
0-2	2,220	801 (36.1)	1,419 (63.9)	
3-4	1,510	533 (35.3)	978 (64.7)	
5+	1,358	365 (26.9)	994 (73.2)	
Discussed FP with a health worker (N=4,144)[d]				0.040
No	2,062	708 (34.3)	1,355 (65.7)	
Yes	2,082	637 (30.6)	1,445 (69.4)	

aModern family planning methods included: pills, intra-uterine devices, injectables, male condoms, implants, emergency contraception, Lactational amenorrhoea method and standard day's method
bPearson Chi Square
c Denotes those who reported contraceptive use
d Denotes those who visited a health facility within the last 12 months
Bold means p-value <0.05

5.5.2   Results from Logistic Regression analyses

Table 5.5 shows the unadjusted and adjusted odds ratio and 95% confidence intervals associated with contraceptive use among women. Bivariate analysis showed that contraceptive use was positively associated with not breastfeeding, being sexually active, resumption of menstruation, having secondary or higher education and urban residency. The factors that were negatively associated with contraceptive use were time since birth, having discussed family planning with a provider, having five or more children, being illiterate, being unmarried and being in agriculture-related employment.

Logistic regression was used to quantify the association of fertility desire and contraceptive use, controlling for selected explanatory variables that were significant at bivariate analysis or which were indicated a priori from the literature review. These were breastfeeding status, being sexually active, resumption of menstruation, time since birth, whether the respondent discussed family planning with a provider, number of living children, education, residence, marital status and occupation.

Table 5.5   Association between contraceptive use and fertility, postpartum and socio-demographic factors among women within the first two years of delivery, UDHS 2016

Variable		Bivariate		Multivariate	
	N(5,088)	OR	[95% CI]	or	[95% CI]
Fertility desire					
Want another child soon	400	1.00		1.00	
Do not want another child soon	4,688	1.11	0.84-1.45	**2.25****	1.74-2.91
Sex composition of living children					
Mixed sex composition	3,149	1.00		1.00	
Only boys	961	1.11	0.94-1.32	0.85	0.69-1.05
Only girls	978	0.95	0.80-1.13	**0.67****	0.54-0.83
Breastfeeding					
No	809	**2.18****	1.79-2.66	1.11	0.93-1.34
Yes	4,279	1.00		1.00	
Resumed sexual intercourse					
Yes	3,906	**5.52****	4.35-7.00	**2.67****	2.13-3.36
No	1,182	1.00		1.00	
Resumed menses					
Yes	2,588	**4.79****	4.16-5.53	**2.91****	2.50-3.39
No	2,500	1.00		1.00	
Time since birth (months)					
0-2	503	**0.49****	0.03-0.08	**0.20****	0.13-0.32
3 to 5	916	**0.27****	0.22-0.34	**0.50****	0.41-0.62
6 to 11	1493	**0.50****	0.42-0.59	**0.69****	0.59-0.81
12 to 23	2176	1.00		1.00	
Discussed FP with a health worker					
No	2,062	1.00		1.00	
Yes	2,082	**0.85***	0.72-0.99	1.05	0.91-1.22
Not applicable	944	1.15	0.94-1.40	1.02	0.85-1.22
Number of living children					
0-2	2,220	1.00		1.00	
3-4	1,510	0.96	0.83-1.12	0.91	0.75-1.09
5+	1,358	**0.65****	0.55-0.76	**0.68****	0.54-0.84
Education					
None	488	**0.46****	0.34-0.62	**0.41****	0.32-0.53
Primary	3,074	1.00		1.00	
Secondary/higher	1,527	**1.81****	1.57-2.09	**1.61****	1.38-1.89
Residence					
Rural	1,085	1.00		1.00	
Urban	4,003	**1.56****	1.29-1.90	1.08	0.90-1.28
Marital status					
Married	4,291	1.00		1.00	
Unmarried	797	**0.66****	0.53-0.81	**0.59****	0.47-0.73
Occupation					
Unemployed	939	1.00		1.00	
Professional	1,977	1.05	0.86-1.28	0.90	0.74-1.09
Agriculture	2,273	**0.74***	0.61-0.90	**0.83***	0.68-0.99

Bold (Statistically significant at *p<0.05, **p<0.001); CI: Confidence Intervals; OR: Odds Ratios; aOR: adjusted OR.

The multivariate model included all variables in the table.

Fertility desire and sex composition of living children were included in the multivariate model despite not being significantly associated with contraceptive use. Their inclusion was motivated by: 1) these are the main independent variables of interest in this study; 2) Literature indicates that women's fertility desire and sex composition of living children influence fertility desire (OlaOlorun et al., 2016, Asiimwe et al., 2014, Rai, 2015, Rai, 2017). However, the variable indicating the respondent's age was excluded in multivariate analysis due to its high correlation with number of living children.

Inclusion of time since delivery in multivariate analysis resulted into a slight drop in the odds ratios of all significant key independent and maternal related variables, but statistical significance for all variables remained as before. However, inclusion of time since delivery improved the model fit slightly (Based on the AIC criteria, I compared the four models and found that Model 4, including time since delivery with the lowest AIC result was the best model).

In the adjusted model, fertility factors were salient. Factors that were positively associated with contraceptive use were not wanting another child within two years (aOR 2.25, 95% CI 1.74-2.91), being sexually active (aOR 2.67, 95% CI 2.13-3.36), having resumed menstruation (aOR 2.91, 95% CI 2.50-3.39), and having secondary or higher education (aOR 1.61, 95% CI 1.38-1.89). Factors negatively associated with contraceptive use after adjustment were having only girls (aOR 0.67, 95% CI 0.54-0.83), being within two months of childbirth (aOR 0.20, 95% CI 0.13-0.32) or within 3 to 5 months of childbirth (aOR 0.50, 95% CI 0.41-0.62) or within 6 to 11 months of childbirth (aOR 0.69, 95% CI 0.59-0.81), having five or more children (aOR 0.68, 95% CI 0.54-0.84), not having any education (aOR 0.41, 95% CI 0.32-0.53), being unmarried (aOR 0.59, 95% CI 0.47-0.73) and being employed in agriculture-related employment (aOR 0.83, 95% CI 0.68-0.9). Breastfeeding status, discussion of family planning with a health worker and residence were no longer significantly associated with contraceptive use after adjustment.

The expanded model (Table 5.6) shows that when the two key independent variables were in the same model (Model 1), only fertility desire was statistically associated with contraceptive use. The odds of contraceptive use were significantly higher where the woman did not want

another child soon or did not want any more children (aOR 1.36, 95% CI 1.07-1.71). With postpartum characteristics of the woman, the effect of desire for another child later or no more on contraceptive use increased to 2.22 relative to desire for another child soon, and remained statistically significant (Model 2). The change in the magnitude of the effect was explained by resumption of menstruation and sexual intercourse. In other words, among women who had resumed menstruation and those whose menses had returned, the odds are more likely that not wanting another child soon or wanting no more children influences contraceptive use. When the postpartum characteristics and whether the woman discussed FP with a provider were considered (Model 3), the association between fertility desire and contraceptive use increased slightly to aOR 2.23, 95% CI (1.74-2.89) for those who want another child later or want no more compared to those who want another child soon. In Model 4 (comprising postpartum characteristics, whether the woman discussed FP with a provider and women's demographic characteristics), an association between sex composition of living children and contraceptive use emerged. A negative significant relationship was observed between having only girls and contraceptive use. The odds of using contraception decreased by 33% among women who had only girls compared to women with children of a mixed sex composition. The explanation for this could lie in the fact that Uganda is a patriarchal society—sons are required to maintain the family lineage—hence, women without sons are less likely to use contraception compared to those with only sons or those with children of a mixed sex.

Resumption of sexual activity after child birth was another significant factor. Women who had resumed sexual relations had 2.67 increased odds of using modern contraception than those who had not resumed sexual relations after delivery.

As shown in Table 5.5 and 5.6, resumption of menses was found to be the most important contributor of modern contraceptive use in adjusted analyses. Women who had resumed menstruation after delivery had 2.91 increased odds of using modern contraception than amenorrhoeic women (aOR 2.91, 95% CI 2.50-3.39). This result could be interpreted in two ways: (1) family planning providers avoid offering contraception to amenorrhoeic women and (2) amenorrhoeic women are less inclined to accept or use contraception because they do not

perceive themselves at risk of pregnancy or they underestimate their risk of pregnancy which

implies that both providers and women are unable to accurately predict the return of fertility.

Table 5.6   Adjusted odds of contraceptive use by postpartum, fertility and socio demographic factors of women with a live birth in the preceding two years, UDHS 2016

Variable	N (5,088)	Model 1		Model 2		Model 3		Model 4	
		aOR	[95% CI]	aOR	[95% CI]	aOR	[95% CI]	aOR	[95% CI]
Fertility desire									
Want another soon	399	1.00		1.00		1.00		1.00	
Do not want another soon	2,442	1.36**	1.07-1.71	2.22**	1.74-2.85	2.23**	1.74-2.89	2.25**	1.74-2.91
Sex composition of living children									
Mixed sex	3,149	1.00		1.00		1.00		1.00	
Only boys	961	1.11	0.95-1.29	1.13	0.94-1.36	1.14	0.96-1.34	0.85	0.69-1.05
Only girls	978	0.96	0.82-1.12	0.90	0.75-1.09	0.91	0.76-1.08	0.67**	0.54-0.83
Breastfeeding									
No	809			1.15	0.96-1.37	1.25	0.97-1.38	1.11	0.93-1.34
Yes	4,279			1.00		1.00		1.00	
Resumed sexual intercourse									
Yes	3,906			3.23**	2.61-3.99	3.23**	2.61-4.00	2.67**	2.13-3.36
No	1,182			1.00		1.00		1.00	
Resumed menses									
Yes	2,588			3.12**	2.69-3.62	3.13**	2.70-3.64	2.91**	2.50-3.39
No	2,500			1.00		1.00		1.00	
Time since birth (months)									
0-2	503			0.25**	0.16-0.39	0.25**	0.16-0.39	0.20**	0.13-0.32
3-5	916			0.59**	0.48-0.72	0.58**	0.48-0.72	0.50**	0.41-0.62
6-11	1493			0.76**	0.65-0.88	0.75**	0.65-0.88	0.69**	0.59-0.81
12-23	2176			1.00		1.00		1.00	
Discussed FP with a health worker									
No	2,062					1.00		1.00	
Yes	2,082					1.03	0.89-1.19	1.05	0.91-1.22
Not applicable	944					0.95	0.79-1.13	1.02	0.85-1.22
Number of living children									
0-2	2,220							1.00	
3-4	1,510							0.91	0.75-1.09
5+	1,358							0.68**	0.54-0.84
Education									
None	488							0.41**	0.32-0.53
Primary	3,074							1.00	
Secondary/higher	1,527							1.61**	1.38-1.89

Variable	N (5,088)	Model 1		Model 2		Model 3		Model 4	
		aOR	[95% CI]	aOR	[95% CI]	aOR	[95% CI]	aOR	[95% CI]
Residence									
Rural	1,085							1.00	
Urban	4,003							1.08	0.90-1.28
Marital status									
Married	4,291							1.00	
Unmarried	797							**0.59****	0.47-0.73
Occupation									
Unemployed	939							1.00	
Professional employment	1,977							0.90	0.74-1.09
Agricultural	2,273							**0.83***	0.68-0.99
AIC		**6490**		**5558**		**5561**			**5397**

As expected, time since birth showed a significant association with contraceptive use. The odds of using contraception were significantly lower (0.20, 0.50, 0.69 times) among women within 0-2 months, 3-5 months and 6-11 months of child birth when compared with women within 12-23 months of childbirth.

Possibly surprisingly, discussion of family planning with a health worker during the year preceding the survey was not significantly associated with contraceptive use (Table 5.6). The explanation for this finding is unclear. However, one could argue that after delivery, women may be more preoccupied with the new born rather than evaluating the appropriateness of different contraceptive methods. It could also reflect insufficient priority assigned to postpartum family planning counselling in Uganda. Another plausible reason is that Ugandan women are culturally obliged to practice postpartum abstinence to breastfeed for an extended period (Ntozi and Odwee, 1995) due to the belief that sperms poison breast milk. This practice is likely to deter women from early adoption of contraception, even if they had a family planning discussion with a provider.

The use of contraception decreased with the increase in number of living children. Women who had five or more children were less likely to report contraceptive use (aOR 0.69, 95% CI 0.55-0.85) compared to women with two or fewer children. The plausible reason is women with five and more living children are likely to be older women who may consider themselves infecund and therefore not in need of contraception.

The results also indicate that women's education status was significantly associated with modern contraceptive use. The odds of contraceptive use increased by 61% (aOR 1.61, 95% CI 1.38-1.89) among women with secondary or higher education compared to women with primary education. This may result from the fact that as level of education attainment increases, women are likely to have a better understanding of available contraceptive methods and are aware of the risk of delayed initiation of contraceptive use after childbirth. However, being illiterate was associated with reduced odds of using contraception (aOR 0.41, 95% CI 0.32-0.53).

With regard to marital status, unmarried women were less likely to use contraception compared to married women (aOR 0.59, 95% CI 0.48-0.73). The plausible reason is that married women are more likely to be sexually active and therefore have a need for contraception than their unmarried counterparts. It is also possible that married women

are more capable to afford contraceptives than their unmarried counterparts due to partner support. The study further found that occupation was a significant correlate of contraceptive use. Women who worked in agriculture-related employment were less likely to use contraception than unemployed women.

In order to investigate whether resumption of menses as a trigger to use contraception could be influenced by resumption of sexual activity, I created a new variable comprised of (resumption of menstruation and postpartum abstinence) (Table 5.7, Model 2). This new variable consists of four categories of women: a) women whose menses have returned and are sexually active; b) women whose menses have returned and are not sexually active; c) women whose menses have not returned and are sexually active and d) women whose menses have not returned and are not sexually active. The findings indicate that women who were sexually active and menstruating were more likely to use contraception than their counterparts. This suggests that sexual activity is likely to be a driver of contraceptive use among women whose menses have returned.

In order to test whether resumption of menses was associated with time since delivery in the use of modern contraception, I introduced an interaction term in the model (Model 3). The interaction was not significant which suggests that the variables used here are not interacting.

Table 5.7   Adjusted odds of contraceptive use by selected postpartum, fertility and socio demographic factors

Variable	N(5,088)	Model 1*		Model 2*		Model 3*	
		aOR	[95% CI]	aOR	[95% CI]	aOR	[95% CI]
Fertility desire							
Want another child soon	399	1.00		1.00		1.00	
Do not want another child soon	2,442	**2.25****	1.74-2.91	**2.28****	1.76-2.94	**2.28****	1.77-2.94
Sex composition of living children							
Mixed sex composition	3,149	1.00		1.00		1.00	
Only boys	961	0.85	0.69-1.05	0.85	0.69-1.05	0.86	0.70-1.06
Only girls	978	**0.67****	0.54-0.83	**0.67****	0.54-0.83	**0.68****	0.54-0.83
Breastfeeding							
No	809	1.11	0.93-1.34	1.11	0.92-1.33	1.16	0.96-1.39
Yes	4,279	1.00		1.00		1.00	
Resumed sexual intercourse							
Yes	3,906	**2.67****	2.13-3.36			**2.69****	2.14-3.38
No	1,182	1.00				1.00	
Resumed menses							
Yes	2,588	**2.91****	2.50-3.39			**1.88****	1.51-2.34
No	2,500	1.00				1.00	
Resumption of sex and return of menses							
Return of menses+ sexually active	2,310			1.00			
Return of menses+ not sexually active	278			**0.29****	0.21-0.40		
amenorrhoeic+ sexually active	1,596			**0.32****	0.28-0.38		
amenorrhoeic +sexually active	904			**0.15****	0.11-0.21		
Time since birth							
<2 months	503	**0.20****	0.13-0.32	**0.18****	0.12-0.29	**0.14****	0.08-0.23
3 to 5 months	916	**0.50****	0.41-0.62	**0.50****	0.40-0.61	**0.29****	0.21-0.39
6 to 11months	1493	**0.69****	0.59-0.81	**0.69****	0.59-0.81	**0.42****	0.32-0.55
12 to 23 months	2176	1.00		1.00		1.00	
Discussed FP with a health worker							
No	2,062	1.00		1.00		1.00	
Yes	2,082	1.05	0.91-1.22	1.06		1.06	0.91-1.22
Not applicable	944	1.02	0.85-1.22	1.02	0.85-1.23	1.02	0.85-1.23
Number of living children							
0-2	2,220	1.00		1.00		1.00	
3-4	1,510	0.91	0.75-1.09	0.90	0.75-1.09	0.92	0.76-1.11
5+	1,358	**0.68****	0.54-0.84	**0.67****	0.54-0.83	**0.69****	0.55-0.85
Education							
None	488	**0.41****	0.32-0.53	**0.41****	0.32-0.53	**0.41****	0.31-0.52
Primary	3,074	1.00		1.00		1.00	
Secondary/higher	1,527	**1.61****	1.38-1.89	**1.62****	1.38-1.90	**1.59****	1.36-1.87
Residence							
Rural	1,085	1.00		1.00		1.00	

Variable	N(5,088)	Model 1*		Model 2*		Model 3*	
		aOR	[95% CI]	aOR	[95% CI]	aOR	[95% CI]
Urban	4,003	1.08	0.90-1.28	1.07	0.90-1.28	1.08	0.90-1.28
Marital status							
Married	4,291	1.00		1.00		1.00	
Unmarried	797	**0.59****	0.47-0.73	**0.59****	0.48-0.74	0.59**	0.48-0.73
Occupation							
Unemployed	939	1.00		1.00		1.00	
Professional	1,977	0.90	0.74-1.09	0.89	0.74-1.08	0.89	0.74-1.08
Agricultural	2,273	**0.83***	0.68-0.99	**0.82***	0.68-0.99	**0.82***	0.68-0.99
Time since delivery + Amenorrhoea interaction							
0-2 months*not amenorrhoeic						1.90	0.57-6.38
3-5 months* not amenorrhoeic						2.60	1.71-3.95
6-11 months* not amenorrhoeic						2.06	1.48-2.85

Model 1-has all independent variables; Model 2 includes a new variable comprised of a combination of resumption of sex + return of menses); Model 3 includes all variables in Model 1 and a (time since delivery + amenorrhoea interaction)

5.6   Summary of key findings

This study examined whether women's self-reported fertility desire and sex composition of living children was associated with use of modern contraception, based on secondary data analysis of the 2016 UDHS.

- There is a wide disparity between women's level of knowledge of various modern FP methods, and their use of these methods. Despite 99% of women knowing at least one method of contraception, only 33.4% of women reported they were currently using a modern method of contraception, which is inconsistent with the 60% of women who reported they would want another child only after two years, 32% who reported a desire to stop childbearing and the 8% who reported to want a child within two years (as shown in Chapter Four).

- Unmet need for family planning was relatively high in this population. An estimated 66.4% (3,115/4,688) of the women in this sample had an unmet need for family planning.

- The most common method of contraception was injectable hormonal contraception (60%), followed by implants (15.7%). Lactational amenorrhoea method was used by only 6.2%.

- As hypothesised, women who wanted to either space or prevent births reported more contraceptive use compared with those who wanted more children soon.

- Having only girls was significantly negatively associated with postpartum contraceptive use as compared to having children of both sexes. However, having only boys was not significantly associated with postpartum contraceptive use.

- Overall, resumption of menstruation was the main factor influencing use of modern contraception, followed by time since delivery. Both variables (return of menses and time since delivery) were independently associated with contraceptive use. In order to test whether resumption of menses would be associated with time since delivery in determining the use of modern contraception, I introduced an interaction term in the model (Table5.7, Model 3). The interaction was not significant which suggests that resumption of menses is not associated with time since delivery.

- The study also showed that not breastfeeding, having resumed sexual activity and having secondary or higher education were positively associated with contraceptive use. However, having five or more children, having no education and being unmarried were associated with reduced contraceptive use in this population. The result showing that women with five or more children are less likely to use contraception suggests that contraceptive use is likely to be driven by desire for high fertility rather than an abhorrence of contraceptive use.

Based on the above key findings, I was particularly interested in selecting participants based on factors associated with contraceptive non-use. In quantitative analysis (Table 5.5), contraceptive non-users mostly included women who had only girls, those within one year of child birth, those with five or more children, women who were illiterate, unmarried and those employed in the agricultural sector. Based on these quantitative findings, I selected Mayuge district, a setting with a typically illiterate population, the majority of whom are employed in agriculture. Study findings also indicated that women with only girls and those of high parity (five or more children) had low odds of using contraception. The results from the quantitative analysis indicated the gaps I wanted to explore in the qualitative analysis. Consequently, the qualitative sample included women who had children of the same sex composition and

those with at least five children. Additionally, separate analysis indicated that women from the Busoga region reported the highest ideal family size and one of the lowest contraceptive prevalence rates compared to women from other regions. Based on these quantitative findings, I selected Mayuge district in Busoga region in order to get a detailed understanding of the factors that limit contraceptive use among postpartum women.

Chapter 6   Subsequent childbearing decisions: Insights from women, men and family planning providers

6.1   Introduction

The quantitative results in Chapter four showed that over two-thirds (68%) of the 5,088 postpartum women self-reported to desire another child in future. Of these, the majority (88.4%) did not want a child in the next two years, highlighting the need for effective contraception in this population. Similarly, a facility-based study among postpartum women in Kenya found a comparable rate of 94% among postpartum women who reported no desire for children within the next two years (Achwoka et al., 2017). If these women are not supported in attaining their fertility goals, they are exposed to unintended pregnancies which pose adverse social and health outcomes for mothers and their children. Thus, understanding and assisting postpartum women in their fertility decision-making needs to be prioritised. In order to effectively support postpartum contraceptive use (since most women want to wait for two years before having another child) we need to better understand the factors that influence these desires – which is the focus of the current chapter.

The factors that were positively associated with fertility desire (desire for another child in future) presented in Chapter Four (Table 4.9) were the sex composition of living children and religion. Women who had children of the same sex (OR 4.48, 95%CI 3.34-6.01) and those who practised Islam (OR 1.43, 95% CI 1.06-1.93) were significantly more likely to desire another child independent of other factors. Previous research conducted in sub-Saharan Africa has shown that fertility desire is associated with parity, education, having not attained the desired family size and having a partner who desired future births (Abbawa et al., 2015b, Matovu et al., 2017a, Krashin et al., 2018).

Recent studies have underscored the importance of focusing on men and women's views as a means of understanding childbearing decision-making (Rispel et al., 2011, Hollos and Larsen, 2004, Kawale et al., 2014a). A study conducted in Nigeria found that "fertility-related estimates of unwanted pregnancies or unmet need for contraception may be overstated when based on data collected from one spouse only" (Bankole, 1995). Some studies have found that women who say they want no more children may not protect

themselves from the risk of pregnancy because of their partners' desire to have additional children (Westoff and Bankole, 2000). Even when women are educated and highly motivated to use contraception, they may not do so because of opposition from the partner making it an important cause of unmet need (Labat et al., 2018, Staveteig, 2017). Such findings suggest the need for including the fertility preferences of both men and women in understanding women's motivations for subsequent childbearing.

Thus, this qualitative study complemented the quantitative analysis presented in Chapter Four by going beyond the limited range of information provided by demographic and health survey data, to explore what motivates women to have or not to have additional children, as reported by women, men and family planning providers, an issue that is under-researched in Uganda. This chapter contributes to answering the question: What factors contribute to an explanation of the fertility decisions of postpartum women? What are the barriers to attaining fertility goals among postpartum women? Because sex composition of living children was strongly associated with a desire for more children, this chapter looked more specifically at the role of sex composition of the participants' children in influencing subsequent fertility decisions, with a special focus on women and men with children of the same sex composition.

The chapter presents results of semi-structured in-depth interviews conducted with 29 women who had delivered in the previous two years, and 14 men whose wives had a child in the last two years. To get a wide range of perspectives from different "stakeholders", key informant interviews were conducted with 13 family planning providers in Mayuge district. The key areas of focus were whether participants' desired more children in the future, what influences their decision to have or not to have more children, and forms of support they get from family planning providers regarding decisions to have or not to have more children (see question wording in Appendix D). Given that high fertility reflects a high desired fertility, Mayuge district was selected because of its high total fertility rate-5.8 (Uganda Bureau of Statistics, 2017), which is much higher than the national fertility rate of 5.4 (Uganda Bureau of Statistics & ICF International, 2018), making it ideal to complement the quantitative study.

This chapter begins by presenting a summary of the socio-demographic characteristics of men, women and family planning providers who were interviewed, 56 in total, in section

6.2. This is followed by section 6.3 which provides a description of the major themes drawn from the interviews that relate to factors influencing fertility desire among men and women, using extracts of those interviews that best highlight the themes. Section 6.3 is structured using constructs of the theory of planned behaviour. The chapter concludes with a summary of factors influencing further childbearing decision-making of rural women with a delivery in the preceding two years in section 6.4.

6.2   Women and men's characteristics

Table 6.1 summarises the sociodemographic characteristics of 43 men and women who participated in the study. Participants were recruited from two locations within Mayuge district – Mayuge Town Council and Kigandalo sub-county[10]. Participants were selected based on one main criterion: if they had a child in the last two years. Female participants were younger than male participants. The age range for the female participants was 20 to 39 years and for the males 25 to 52 years. All participants were married, Basoga[11] by ethnicity and had at least three children[12]. The parity range for women was 3 to 12 children, and for men 3 to 18 children.

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[10]Selection of the sub-counties was influenced by the socio-economic setting of the study areas, one representing a purely rural setting and the other a rural site with peri-urban characteristics

[11]Basoga is the predominant ethnic group in Mayuge district

[12]Based on quantitative findings in chapter four, Inclusion criteria was male and female interviewees should have at least three children

Table 6.1   Summary of the socio-demographic characteristics of the 29 women and 14 men interviewed in Mayuge district

Characteristic	Women		Men	
	N=29	Percent	N=14	Percent
Age (Mean age)	Mean age=30.3 years		Mean age=37.1 years	
20-24	2	6.9		
25-29	12	41.4	2	14.3
30-34	7	24.1	4	28.6
35-39	8	27.6	4	28.6
40-44			1	7.1
45+			3	21.4
Average number of children	5.3		6.7	
Residence				
Mayuge Town Council	18	62.1	8	57.1
Kigandalo sub-county	11	37.9	6	42.9
Education				
None	2	6.9		
Some primary education	15	51.7	3	21.4
Some secondary education	12	41.4	9	64.3
Post-Secondary education			1	7.1
Some University education			1	7.1
Occupation				
Peasant farmer	20	69.0	5	35.7
Businessman/ woman	6	20.7	7	50.0
Other	3	10.3	2	14.3
Religion				
Muslim	12	41.4	2	14.3
Anglican	8	27.6	5	35.7
Roman Catholic	2	6.9	4	28.6
Born again Christian	6	20.7	2	14.3
Other	1	3.4	1	7.1
Desire to have children in the future				
Yes	16	55.2	8	57.1
No	11	37.9	5	35.7
Not sure	2	6.9	1	7.1
Type of marriage				
Monogamous	26	89.7	10	71.4
Polygamous	3	10.3	4	28.6
Planned status of last child				
Planned	12	41.4	5	35.7
Unplanned	17	58.6	9	64.3

The women in the study sample had an average number of 5.3 children, which is similar to the national total fertility rate of 5.4 (UBOS and ICF, 2018), while the men reported an average of 6.7 children. Eighteen women (18/29, 62.1%) and eight men (8/14, 57.1%) lived in Mayuge Town Council. Almost all participants, with the exception of two women, had some basic education (at least seven years of primary education). The participant with the highest level of education–a bachelor's degree–was a male participant. Most women (20/29, 69%) practised farming to earn a living while half of the men (7/14, 50%) worked in the informal sector, typically self-employed in trading. Approximately 41.4% of the women were Muslim (12/29) while more than a third of the men (5/14, 35.7%) were

Protestants. In general, men were more likely to report that their most recent child was unplanned.

6.2.1 Family planning provider characteristics

In total, thirteen family planning providers involved in providing FP services to women were interviewed. All family planning providers, except one, were female. Table 6.2 describes the characteristics of FP providers selected for the study. All providers were from the Basoga ethnic group. Most (9/13, 69.2%) of the providers were aged over 40 years with substantial experience in serving women. The FP providers included mentor mothers, village health team members, midwives from both public and private health facilities, traditional birth attendants and district focal persons for family planning. No medical doctors were interviewed, as they do not ordinarily provide family planning services at Uganda's public and private health facilities.

Table 6.2   Summary of the sociodemographic characteristics of the FP providers interviewed

Characteristics	N=13	Percent
Ethnicity		
Basoga	13	100
Age group		
20-29	2	15.4
30-39	2	15.4
40-49	6	46.2
50+	3	23.1
Occupation		
Mentor mother	3	23.1
Village health Team members	2	15.4
Midwives	5	38.5
Traditional Birth attendant	1	7.7
Focal person for FP in the district	2	15.4
Religion		
Muslim	2	15.4
Catholic	4	30.8
Anglican	4	30.8
Born again	3	23.1
Years of experience		
1-5 years	4	30.8
6 -10 years	3	23.1
Over 10 years	6	46.2

Using the Traits-Desires-Intentions-Behaviour framework, I developed an interview guide with questions on the main constructs of the TDIB theory in the context of fertility desire. Based on the research aim and quantitative results showing that desire for another child was highest among women with children of the same sex composition, section two of the in-depth interview guide explored participants' current fertility desire and intentions,

followed by a series of probes based on the answers. Follow up questions explored participants' views on role of sex composition of living children and attitudes of family and friends in influencing fertility decisions.

6.3   Themes influencing fertility desire among postpartum women

Based on Miller's TDIB framework, three overarching themes emerged from participants' narratives about future fertility. The main themes were: (1) Motivational traits towards having more children (2) Desire to have more children, (3) Intention to have more children. We found that these themes were similar across participants from the two study locations, thus, the results presented reflect perspectives of participants from both locations. References to the participants' quotes are bracketed and represented by the participant's gender—female (F) or male (M), interview number –age and –number of children. For instance, a quotation from participant 2 who is female, 32 years old and has six children, is indicated as (F2, 32 years, 6 children).

Theme I: Motivational traits towards having more children

Participants were asked about their pre-conception thoughts prior to having their last child. Participants did not hesitate to openly express their thoughts. These were grouped into biological and socio experiences and personality traits.

Biological and socio experiences
Sex composition of living children (boy preference)
Almost unanimously, participants who had children of the same sex felt the urge to have more children. The argument was that having children of the same sex composition had implications on how couples were treated by community members. This seemed to feature most prominently among individuals with only girls, who displayed frustration due to their inability to bear sons. Mayuge district is a patriarchal setting, where sons are heirs and perpetuate the family line. Daughters on the other hand are seen as inferior to their male siblings because they would eventually be married off into another family. Son preference is embedded in cultural and religious traditions and community norms as well as economic factors.

Consequently, men and women with only girls faced verbal abuse from community members with comments such as "you gave birth to sweet potatoes" (understood to

mean that girls have no value). However, even those who had only sons were criticised by the community members. Thus, a common view among all participants was that a couple should have at least one child of either sex to enjoy the benefits accrued from having both genders. While some participants argued that sons are expected to continue the family lineage, daughters are a source of bride wealth and are likely to support parents in old age compared to sons. As a result, participants with children of the same sex reported existing pressure to have more children than be labelled "failures" and also to save their marriages (13 women and 6 men). One male participant with five daughters described his experience:

> Men are judged according to the sex composition of their children. I am told "ozira manyi gakozesa mukazi" [You don't have enough strength during sexual intercourse to make your wife conceive your desired child sex]. When you have only girls, they say such a parent will never have anybody to keep their legacy. My wife and I won't stop trying. She is already pregnant (M7, 34 years, 5 children).

Another participant commented:

> I wanted to save my marriage by changing the child sex composition. That is from girls to at least one boy. You know boys give security; they marry and bring wives home unlike girls who are instead taken away (F19, 28 years, 5 children).

However, those who had attained their desired sex composition believed they should stop childbearing. For example, a female participant, with eight children, who finally gave birth to a boy after a short inter-birth interval (<24 months) said:

> I had given birth to seven girls and was looking for a boy to also mix and reduce the pressure coming from people. I was lucky. I call myself lucky because I got pregnant quickly [within six months of the previous birth] and gave birth to a boy, which is the child sex I wanted. Since we finally got a son, I don't want to bear any more children (F8, 36 years, 8 children).

Maternal health concerns: previous pregnancy / birth experience

Participants believed that their decision to have or not to have another child was influenced by the woman's previous birth experience. Of the eight women who experienced complicated pregnancies in the past, only two (2/8) wished to have more children in the future. Concerns regarding birth-related complications were mostly expressed by older women (≥35 years old) and those with five or more children. Most personally experienced birth-related complications were obstructed and prolonged labour, breech presentations, delivery complications and near death experiences. It was also common to hear the phrase "my uterus is infected"—this was cited by four out of eight women who wanted no more children. The phrase "my uterus is infected" was understood to mean infections in the uterus that are caused by sexually transmitted infections which may give rise to more medical complications for future pregnancies, if left untreated. Women who reported that they had an infected uterus were often discouraged from further childbearing by FP providers. Pregnancy-related concerns were seen to be heightened for women who had previous complications as women who experienced pregnancy and delivery complications in the past were confident this would be repeated in subsequent pregnancies. Hence they did not wish to have any more children. The quotes below illustrate some of the maternal health concerns pointed out by participants:

> *When I get pregnant, I become so weak. I develop heart pain and the doctors warned me that my uterus is infected. If I get pregnant again, I am likely to face the same problem. We have decided not to have any more children (F14, 25 years, 4 children).*

> *Women go through terrible experiences during childbirth. You can reach an extent of delivering a baby when the uterus is tired and you get complications. At times they suffer from health conditions like having fever, which weakens one's body system and one fails to deliver normally leading a mother to undergo a caesarean section (F28, 32 years, 6 children).*

> *The health worker [midwife at public health facility] advised me to stop childbearing because it is the only way I will avoid another caesarean*

*birth. It was a very bad experience. I almost died (F34, 38 years, 8
children).*

*A woman with many children is always working hard, she looks old and
tired, her uterus becomes weak and so does her body. She even becomes
so forgetful (F21, 39 years, 7 children).*

When asked about any special groups of women specifically targeted for FP counselling,
all FP providers were unanimous in the view that women with a history of birth-related
complications, older mothers (≥ 35years) and those with high parity (≥ 5 children) were a
priority target for FP counselling. Most often these women were advised to stop further
childbearing. For example, one FP provider commented:

*I tell the older women to use permanent methods such as TL [tubal ligation].
These women have over 8 children and some had experienced complications in
the past. Some of them actually insist to have the TL done before they are
discharged following childbirth…… I know one with 9 children, when she had
the TL done, she also requested her uterus to be removed (Midwife, private
health facility).*

In addition, it is important to note that whereas pregnancy and childbirth are viewed
as the responsibility of the woman in sub-Saharan Africa(USAID, 2001, Theuring et al.,
2009), four FP providers reported that men who were present during their wives'
labour and child-delivery (and witnessed their wives traumatic delivery) were more
supportive of their partner's decision to delay or avoid further childbearing.

Child health concerns

Seven women reported that the health of the children one has influenced future
childbearing decisions and how quickly one conceives another child. Participants voiced
concerns of the impact of children's illnesses on the couple's finances. They argued that
having many children was burdensome as children had a tendency to fall sick at the same
time, which presented high financial demands on health care. Hence, it reduced their
desire for more children. One male participant stated that:

If you are not hard working you can fail to treat them when they fall sick which most time happens at a go where all the children fall sick at the same time. You find yourself in dilemma (M12, 35 years, 6 children).

On the other hand, three women who had experienced child death expressed a desire to have another child—to replace the dead child. Similarly, one woman whose child suffered from a chronic illness reported a desire for another child. She argued that:

Since we have a child suffering from a chronic illness, we are not certain of her survival. My husband and I want another child in case she dies (F29, 27 years, 3 children).

Also, one's unsuitable financial or relationship situation was a common theme related to preventing future pregnancies. One elderly male participant who expressed financial hardships as a barrier to having more children said:

No no no, I don't want to produce anymore because, financially, I am crippled, I have very many children whom I have even failed to fend for. It doesn't look good to continue having children. I am unemployed (M35, 50 years, 18 children).

This view was echoed by another participant who said:

I am choosing to stop childbearing because the living conditions have become tough. I am unemployed and also my husband doesn't have a job. The more children you have the more the demands and financial obligations yet we do not have money (F8, 36 years, 8 children).

Number of siblings

Other participants (twelve women and six men) drew on their partners' or their own family compositions when speaking about the family size they wanted for themselves. In most cases they sought for a change from those family structures. For example, a mother of seven said:

…I come from a small family. I want to have many more children than what my mother had. She gave birth to seven children. Of these, only three are living comfortably (F22, 32 years, 7 children).

Maternal age

With respect to cultural beliefs, some misconceptions about limiting births prevailed in the community. For instance, four women expressed concerns about limiting births because they were still too young while others associated limiting births with future complications.

> *People say they have to keep on producing to avoid ebigalanga [uterine fibroids] in the uterus. I have also heard you may get complications such as cervical cancer if you stop (F25, 38 years, 7 children).*

> *I am still young. When you stop producing you may get complications like cancer. Even the man may want to have another woman to bear him more children (F19, 27 years, 3 children).*

Love of children

Participants mentioned the love of children as a factor that may compel them to continue childbearing. For example, one female participant illustrated love of children in the following quote:

> *Basoga women just love to bear children. I have my aunt who had fifteen children. She just wanted to produce until they [children] get finished from her womb (F38, 35 years, 7 children).*

Similarly, a mother of twelve whose husband's desired family size was 20 children said:
> *I still want to give birth because children come with different blessings but also bring joy in a home. My husband actually gave me a target of 20 children (F18, 28 years, 12 children).*

Fear of abandonment

Women spoke of the fear that husbands would abandon them or take another wife if they stopped childbearing. To prevent this from happening, most women chose to continue with childbearing. Thus, most fertility decisions were taken by these women with their husbands in mind. One female participant said:

> *If you insist on stopping to have children, he may think of getting another woman who will be willing to produce children for him. We have this saying*

that if you want favour from a man, bear him as many children as you can (F2, 22 years, 3 children).

I do not want to have any more children, but my husband does not support it. He says he had several siblings but nearly all of them died during childhood. Every time I bring up the talk to stop childbearing, he warns me and threatens to get me a co-wife who will bear children. Yet I am also tired of childbearing (F11, 30 years, 6children)

Theme II: Desire to have more children

Participants were asked whether they would you like to have more children in the future. For those who responded positively, they were asked after how long they would like to wait before having the next child and their reasons for that timing.

Childbearing desires

More than half of both women (16/29, 55.2%) and men (8/14, 57.1%) expressed a desire to have more children in the future (Table 6.1). The women and men who desired to have more children were young (below 30 years), had children of the same sex composition, and had not attained their ideal family size. A few participants stated that they preferred a balanced number of sons and daughters and therefore were willing to continue with childbearing. For example, a mother of five (3 girls and 2 boys) said:

I would like to have an equal number of boys and girls because I already have 3 girls and 2 boys, so, when I get the third boy, I will stop bearing more children (F31, 27 years, 5 children).

Child-number desires

A common view was that it is safer to have many children because each child comes with a special blessing. This view was voiced by nine women and five men. Others spoke of having additional children simply because they love them and that children are a source of company in homes (four women and two men). When explaining the decision to have another child, two interviewees said:

Yes, I would want more children because when you give birth to many children, each child will bring his or her own luck in the family. Some children

may turn out successful and others may be failures in life. The successful ones will take care of me when I grow old (F3, 29 years, 3 children).

There are parents who never get tired of children. Maybe they think that as children grow and leave the home, they still want to see children in their homes. That is why you find women with more than twelve children (F38, 35 years, 7 children).

Having a large family size was described as a source of prestige and security within the marriage. Eleven (11/16) women were concerned that their husbands would either take another wife or divorce them if they stopped bearing children.

Child-timing desires

Of the 16 women who desired a future pregnancy, all wished to delay the pregnancy for 2 to 10 years. Factors that influenced women's decision to delay the next pregnancy were related to maternal well-being and child welfare, as illustrated by the quotes below:

You get a peace of mind when you look after that child to maturity instead of having to look after children of almost the same age at the same time, like twins. You are also able to cater for good feeding of that young child like buying milk, sugar and porridge (F38, 35 years, 4 children).

I think the best time to have another child is after three years. To help this young one grow healthy and even go to school and also for me to gain strength or energy to carry another pregnancy (F5, 31 years, 5 children).

After two years the child is old enough. He or she has started walking and can feed themselves. One can then think of having another child (F35, 39 years, 9 children).

Theme III: Intention to have more children

Participants were asked if they would actually have more children in the future and whether they had discussed this decision with anyone. For those who responded positively, they were further asked about the things they think will influence the decision to have another child? Those who responded negatively, they were asked how they arrived at that decision not to have any more children and how they felt about this.

Men as final decision-makers

In Uganda, there is marked gender inequality; with women occupying subordinate roles and lacking financial and decision-making independence relative to men (Koenig et al., 2004, Wolff et al., 2000a). Study findings revealed that participants' childbearing decisions were mainly driven by spousal influences: the majority (21 women and 12 men) reported that the final decision to stop or delay childbearing rested upon the male partner. In most instances, women reported being told by their partner that they needed to have more children.

With regard to spousal communication about childbearing, only a quarter of the women (8/29) and 14% of the men (2/14) spoke of joint decision-making about fertility with partners. Several reasons were suggested by participants to explain why there was limited or non-existent communication with partners around fertility issues. Firstly, discussing fertility matters was not part of the Busoga cultural norm. Most participants cited the belief that women were expected to submit to their partner. Consequently, women and men rarely discussed childbearing plans. The quote below illustrates this point clearly.

> I don't need to talk to anyone on when, how and where regarding childbearing. This issue is between my wife and I. My wife is expected to be submissive when I go to bed with her and she will only realise she is pregnant when she misses her monthly period (M37, 33 years, 8 children).

Gender roles and relations that privilege male decision making and dominance make sexual negotiation within marriage difficult for women. Even within the context of spousal discussion about childbearing, there was a tendency for a partner's fertility preference to override the woman's preference and those who were unable to negotiate, had to resort to secretly start using contraception. Women stated that they faced pressure from their husbands to continue with childbearing, fearing infidelity or abandonment if they did not do so. Thus, women felt the need to continue with childbearing as a way of sustaining marital harmony. A 32 year old female participant who did not want to bear any more children but for purposes of keeping her marriage chose to continue with childbearing in spite of a friend's advice said:

> At times you talk to a friend who encourages you to stop childbearing. You also feel you should stop. But when the man is the final decision-maker, there

is nothing much you can do. So you give in to bearing children to keep the relationship strong (F11, 32 years, 6 children).

In other instances, a few women argued that they received inadequate support from partners even after they had a discussion about future childbearing.

You may jointly discuss your wish to stop childbearing but he fails to take a decision. Even when you ask him he may think you are forcing him. So, you have to comply and continue bearing children (F38, 35 years, 7 children).

Similarly, a 39 year old mother of 12 children who felt she had more than her ideal family size and desired to stop childbearing said:

I talked to him about it [limiting births] but he still insists on more children. I told him we have more than enough children and I feel tired but he disagreed. What do you do? (F35, 39 years, 12 children).

Family and societal influences

In Busoga region[13], a couple's status and identity are defined by their family size. According to the recent Uganda Demographic and Health survey report, Busoga region has the second highest ideal number of children (6.1) after Karamoja region (7.2) (UBOS and ICF, 2018). The ideal family size among the participants was between six and seven children among women and between eight and ten among men. It was suggested that family members significantly influenced participants' childbearing decisions, positively or negatively. Most times these were verbalised, but in other instances they were merely implied by family members. For example,

The pressure coming from my in-laws is too much. They just want me to bear children anyhow because they say when some die, a good number remains. Even the community members view it [preference to avoid childbearing] negatively (F8, 29 years, 4 children).

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[13] Mayuge district is located within Busoga region

Because of the cultural expectations to have a large family size, women with fewer than the ideal number of children were often stigmatised, criticised and ridiculed as promiscuous by community members as illustrated below:

> *When you have few children, you are looked down upon; you get insults. You are abused for having fewer children and you do not fit within the community. Some people say you are infertile. Women who choose to stop childbearing are called a lot of names like "kikuuzi" [cheats], while others are called "kizaala Igumba" [child spacers] (F31, 25 years, 5 children).*

Conversely, some participants expressed concerns about the social cost that came with bearing many children. Some community members perceived large family sizes as a burden and a source of social problems which was a deviation from the social norm of celebrating large family sizes as quoted below:

> *One of my in-laws built his house facing a different side because my children used to frequent his house and yet he did not like it. All the time I have given birth, community people say things like, "Eh you've got another child? How do you plan to take care of all these children?" Nowadays I stop my children from playing from other people's homes (F6, 36 years, 8 children).*

> *Some people look at it (having many children) badly because they are likely to become the hooligans or thugs in the community when they grow (M13, 43 years, 5 children).*

Interestingly, not all participants stated they should have more children just because community members or the partner were influencing them. Three participants who were uncertain about future childbearing discussed scenarios in which they hoped to delay a pregnancy. One participant with three children of the same sex said:

> *I get comments from other people telling me to have more children. I go with my own decision not what the rest are saying. I have given up on ever getting a boy. I could go up to ten because I am looking for a boy so I have decided to stop (F30, 25 years, 3 children).*

And another commented:

If God blesses me with a boy, I will welcome it but it should not be a big
deal if I don't give birth to a boy. I keep assuring my wife that I am not
bothered by us having only girls and that all children are valuable (M31,
34 years, 6 daughters).

Some family members disapproved further childbearing among certain groups of women and men. Traditionally, women and men from Busoga are discouraged from childbearing after they have become grandparents. They are often teased, indicating that the couple is too old and should stop competing with their children who have started childbearing. Under these socio-cultural circumstances, men and women who had become grandparents often feel embarrassed to continue childbearing as illustrated:

It is a big NO! I am old and some people laugh at me because I have
grandchildren. It doesn't look good to have more children (M34, 50 years,
18 children).

Community members don't want me to have any more children. They say
it is just not right to continue with childbearing after my son's wife has
given birth (F23, 40 years, 7 children).

Influence of polygamy

Among the participants, only a few reported they were in polygamous marriages (2/14 men and 3/29 women) (Table 6.1). Societal norms in Uganda tolerate and condone men undertaking extramarital affairs and multiple partnerships (Ayiga et al., 2013, Koenig et al., 2004), with women accorded little right to question such behaviour (McGrath et al., 1993). The family planning providers' explanations for polygamy in the community ranged from religious and ethnic identity to men's sexual urge.

Mayuge has a lot of Muslims— that is why you will find many polygamous men.
They are fulfilling religious expectations. You can't even talk to them about family
planning (Midwife, Private health facility).

There is a lot of polygamy in Mayuge. I recently met a man who has sixteen wives.
Generally, Basoga men have a high sex urge (Village Health Team Member).

Women in polygamous marriages are said to compete with each other to have as many children as possible as a source of security and to obtain respect from other family members. Commenting on polygamy, two participants said:

There is a lot of competition in this community. If the co-wife has 4 children, and this one has two, she will also try to get to four (Mayuge district FP Focal person).

People in this community believe that "Omwana bwe bufumbo" [childless marriages are considered incomplete] the moment women hear rumours that her husband has been seen with another woman, they quickly plan to conceive (Mentor mother).

For a small number of male participants, lack of support from a partner was a barrier to stop childbearing. For example, one male participant from a polygamous union who wished to stop childbearing said:

You see women are difficult to understand because these ones [his wives] seem to be competing. She may think that you are making her stop to produce when the co-wife is left to continue producing. She may opt to leave that home where she has been told to stop having children and go and get married elsewhere where she can be in position to have more children (M12, 42 years, 5 children).

Role of patient-provider interaction in childbearing decisions

Health protocols call for numerous contacts with maternal health services for new mothers in Uganda: six-day check-up, the six-week check-up, well baby visits and infant vaccination appointments. National guidelines stipulate that family planning is discussed and prescribed at the six-week check-up (Republic of Uganda Ministry of Health, 2016). Health workers are mandated to provide group talks on family planning to women who are waiting to be seen for other maternal and child health visits. Husbands are allowed to attend the counselling session although only a few do so. The session includes encouraging women to wait at least two years before attempting the next pregnancy, timing of sex after delivery, use of the Lactation amenorrhoea method as a contraceptive method and counselling on initiation of postpartum family planning. Talking about this issue, an FP provider said:

We advise them to start using family planning at six weeks; otherwise they can easily get pregnant. In this community most mothers breastfeed for long. They

take as long as two years without seeing their menses. But we can't be sure they
will exclusively breastfeed for the first six months postpartum. That is why we
encourage them to use a method after six weeks (Midwife, Public health
facility).

Although the guidelines require that FP providers discuss future childbearing plans with women and men, only seven women (24.1%) and four men (28.6%) reported that their health care provider had done so. Of these, four women (57.1%) and two men (50%) reported positive or encouraging discussions with the FP providers. One participant commented:

The service providers are not bad except in times when they are overwhelmed
by numbers and you have to wait for long. Even when you have a problem, like
I had continuous bleeding, you can explain to them and a solution is sought
(F31, 27 years, 5 children).

Among the women who had positive discussions with providers, the conversation focused on the desire to change child sex composition. For example, one man with only sons reported that the discussion with the provider focused on devising ways of helping him get a baby girl as reported below:

We used herbs but they did not work, I decided to talk to the midwife to
advise us on how to get a girl. She actually reminded me that medically it
is the man who determines the sex of the child so I should not think of
abandoning my wife (M38, 36 years, 3 children).

For other participants, the discussion with a provider focused on a desire to stop childbearing due to previous birth-related complications. One woman who had experienced complicated childbirth in the past said:

I used to have difficult deliveries so I went and discussed with a health
worker and told her about my intention to stop childbearing. She
reminded me of the poor health conditions I went through during the
previous pregnancies and advised me to stop having children. She advised
me to use contraception and I promised I would (F33, 32 years, 7
children).

In contrast, a few participants (three women and two men) and three FP providers agreed that providers' beliefs negatively influenced participants' childbearing decisions. For example, there is a belief in Mayuge that twins should never be last born children regardless of one's family size. There are special ceremonies organised by clan leaders to appease the ancestors as well as to name the twins. FP providers who adhered to this cultural belief discouraged women with twin births from limiting births to fulfil prevailing cultural demands. The comment below illustrates this practice:

> When I got the twins, I knew I should go for a tubal ligation such that I stop having children. Unfortunately, the FP provider advised us not to use a permanent method. She told us that, culturally, twins should not be last born (F7, 36 years, 7 children).

Another participant, a 45 year old man who wished to stop childbearing recounted how the health worker was more focused at discouraging him from using contraceptives to stop childbearing than assisting him to avoid pregnancy risk-taking behaviours

> My wife and I consulted a health worker about our decision to stop childbearing. He discouraged us from using family planning; that much as family planning is good at spacing and stopping one from having children, it has its side effects. We had nothing to do, she did not give us an alternative method and now my wife is pregnant (M39, 45 years, 9 children).

Although participants perceived postnatal services as being important and routinely provided, FP providers affirmed that only a few women return to the health facility for a postpartum check-up. This was attributed to factors including women feeling healthy and therefore found postnatal care unnecessary, long distances to the health facility and complexity of the postpartum period as reflected in the quotes below:

> We tell women to return for postnatal check-up and many of them never return. It is tricky. Most women say they want to bear all their children during their reproductive life. Such women are not likely to return for postnatal check-ups or to attend any family planning counselling sessions. It is only those who get complications that return (Midwife, public health facility).

> *Some women come from far away to give birth. The issue of distance may prohibit them from returning for PNC (FP Focal Person).*

One mother admitted that due to the demands of having a new-born, she had not had time to return to the health facility for counselling. Following delivery, mothers experience an increase in household chores, tiredness, and responsibilities of looking after both the older children and the new-born as illustrated below:

> *After delivery, I have a lot more to do than before. I have to look after the other children and the new-born, I even have back problems and feel weak. Before I know it the day has ended. It is unlikely I will get the time to return to the facility (F6, 33 years, 3 children).*

They must balance the many demands with other longer term priorities such as avoiding or delaying future pregnancies and the possibility of getting pregnant may not be at the " top of their mind" (Karlan et al., 2016).

Findings revealed that FP providers did not routinely discuss family planning during any other scheduled visits. One woman who reported that she had not gone back to the health facility since delivery stated that at the outreach centre where she takes her child for immunisation, no family planning counselling was offered.

> *Interviewer: So, what kind of advice or counselling have you received about further childbearing since you had your recent child?*
> *Respondent: None*
> *Interviewer: Why is that?*
> *Respondent: Because I have not gone back to the health facility since I delivered*
> *Interviewer: How about where you take the baby for immunisation?*
> *Respondent: Where I immunise from, there is nothing like FP information given to us. It is just an outreach service (F8, 37 years, 4 children).*

However, she qualified her statement by saying that it was her older children who take the infant for immunisation. When asked whether FP providers specifically target male partners for postpartum counselling, all providers reported that they do target men but are only able to attract a few men. Different strategies were being

used to invite husbands to health facilities. For instance, partners were notified by a letter inviting them for counselling with their wives.

Role of religion: Childbearing is up to God

Like in many other African societies, participants often expressed a sense of powerlessness around future fertility, which was linked to the belief that childbearing was controlled by God. This meant that God decides whether one should stop or continue with childbearing. More so, God determines the number and sex composition of the children born to a couple. In addition, religious beliefs discouraged many participants from considering abortion in response to an unplanned pregnancy. Belief in God regarding childbearing decisions was mainly reported by women and men who had children of the same sex composition, as illustrated by the comments below:

> *People talk so much and yet they know that you are not God. It is God who gives children and decides when someone should or should not have children, so you cannot decide on the sex composition of the children. I am waiting on what God will give me (F12, 30 years, 6 children).*

> *We know that it is us (husband and wife) who make children, but we are still putting it on God for not giving us another girl. We were happy we had a taste of both sexes and the community had no reason to talk about us in terms of having one sex in a family, but one girl among four boys to us is still a problem. God willing we shall have another soon (M43, 35 years, 5children).*

> *I want to produce children until God puts an end to it (M37, 33 years, 8 children).*

> *We were not ready for this baby it was an accident, we even wanted to abort the baby but we did not. My religious affiliation [Roman Catholic] is against abortion (F14, 28 years, 3 children).*

About 36 percent of the population in Mayuge is Muslim; Anglican and Catholic religions are second and third with 33 and 23 percent respectively (Mayuge and Government, 2011). Indeed, most participants referred to Mayuge as a "Muslim world". Mazrui (1994) in his study on the African perspective of Islam linked high fertility and low contraceptive

use in Africa to growing Islamic fundamentalism, which reinforces the female role as child bearer and that interfering with childbearing is unacceptable. This was in agreement with findings in this study. For example, one Muslim male participant said:

> *Given my religion [Islam], I am still marrying other women who will have to give birth. I am hoping to have 30 children from 4 wives (M37, 33 years, 8 children).*

This participant's remarks suggest that childbearing decisions are considered through the lens of participants' religious beliefs.

The narrative above provides a plausible explanation for the positive significant relationship between fertility desire and religion. Multivariate results in Table 4.9 show that being Muslim increased the odds of wanting another child by 1.42 times (OR 1.42; 95% CI 1.04-1.93).

"Pregnancy just happens"

Participants on the whole demonstrated that their most recent pregnancy was unplanned (17/29, 58.6% women and 9/14, 64.3% men). Narratives of unintended pregnancy centred on behavioural factors, such as having irregular sex without contraceptive protection (2 women and 1 man) and general lack of pregnancy planning (15 women and 8 men). The comments below illustrate that pregnancy planning was not common among participants as most reported that the pregnancy "just happened" or it was an "accident"

> *I wasn't prepared to have another child. It was just an accident. It caught me off guard (F16, 39 years, 7 children).*

> *I didn't know I would get it [pregnancy]. We had not been having sex with my husband for six months as I was away taking care of my sick mother. When we attempted it the day I returned home, I conceived (F24, 36 years, 10 children).*

In their accounts of the events surrounding unintended pregnancies, family planning providers attributed unintended pregnancies to incorrect and inconsistent use of contraception which applied to mostly pill and injectable hormonal contraception users. As one provider commented:

Women tell us they had "accidental" pregnancies. They forget to take their pills or to return for re-injection, they find themselves pregnant. And most often they are not using a backup method, they conceive (Midwife, Public health facility).

This was reinforced by a small number of participants (4 women and 2 men) who indicated that the unintended pregnancy was due to failure of their existing contraceptive method, which was more often related to inconsistent use of a method. For example, one interviewee said:

I was using injections and I got pregnant. I don't know how it happened. I think I got confused because I was bleeding on and off (F4, 38 years, 12 children).

The majority of the participants agreed that in Mayuge, there is a cultural expectation for couples not to plan for pregnancy and perceptions of low reproductive control among women. Women reported they did not feel they necessarily had any agency over their reproductive outcomes. These views were strongly held by both men and women as illustrated below:

Most women in Busoga especially those in rural areas don't negotiate getting pregnant. You just get pregnant because every day you have sex with your husband, without negotiating. The pregnancy just comes, because sex here is a daily meal (F11, 36 years, 8 children).

One participant blamed her unintended pregnancy to "disappointment from God," while others simply felt that pregnancy was not something that could or should be prevented. One woman explained:

This child came without my knowledge because I was getting my monthly periods much as I was having regular sex with my husband. So, I thought I had stopped bearing children because I was always praying to God to help put an end to my childbearing after the seventh child. I had always prayed and miracles happened but I don't know what happened this time (F34, 38 years, 8 children).

Interestingly, many participants expressed positive feelings / happiness when asked how they felt about the "unplanned" child after it was born. Commenting on this issue, one woman said:

> *I was scared when I found myself pregnant. However, after having the child, I feel a lot of love for her much as she is occupying the time I would have used to run my business to support the family (F34, 38 years, 8 children).*

Five women and one man whose most recent child was unplanned had thoughts of procuring an abortion when they learnt they were pregnant or that their wives were pregnant. Abortion is illegal in Uganda unless performed by a medical doctor who believes that carrying the pregnancy to term would put the woman's life at risk (Moore et al., 2013). None of the participants went ahead to terminate the pregnancy, rather, for certain reasons such as possibility of a change in children's sex composition among participants with children of the same sex composition, the pregnancy was accepted and carried to term. In one case, a female participant with six daughters thought that by carrying the pregnancy to term, she could get a child of her desired sex. She said:

> *I wanted to abort our last child because I had conceived so soon but then I thought it was a baby boy so I did not abort. Unfortunately, I still I got a baby girl (F13, 28 years, 6 children).*

6.4   Summary of key findings

This chapter has explored childbearing decision-making in women within two years of delivery as reported by women, men and family planning providers in a high fertility setting. This study has shown that more than half of women and men desired to have more children in the future. In particular, this study focused on the traits, desires and intentions experienced by women while making childbearing decisions, and generated several noteworthy findings (Figure 6.1).

a) Motivational traits (sex composition of living children, previous experiences of birth related complications, child health concerns and personal factors such as maternal age and financial status.

b) Desire and timing to have another child was influenced by: having a desire to have children of a mixed sex composition among those with children of the same sex, desire to have an equal number of boys and girls, desire to have a large family size, concerns about maternal and child welfare.

c) The intention to have children is affected by situational factors, namely: men as final decision-makers, family and societal influences, role of patient-provider interaction in childbearing decisions and religious reasons.

Figure 6.1   Conceptualisation of qualitative results using constructs of the Traits Desire Intention Behaviour framework as applied to fertility desire
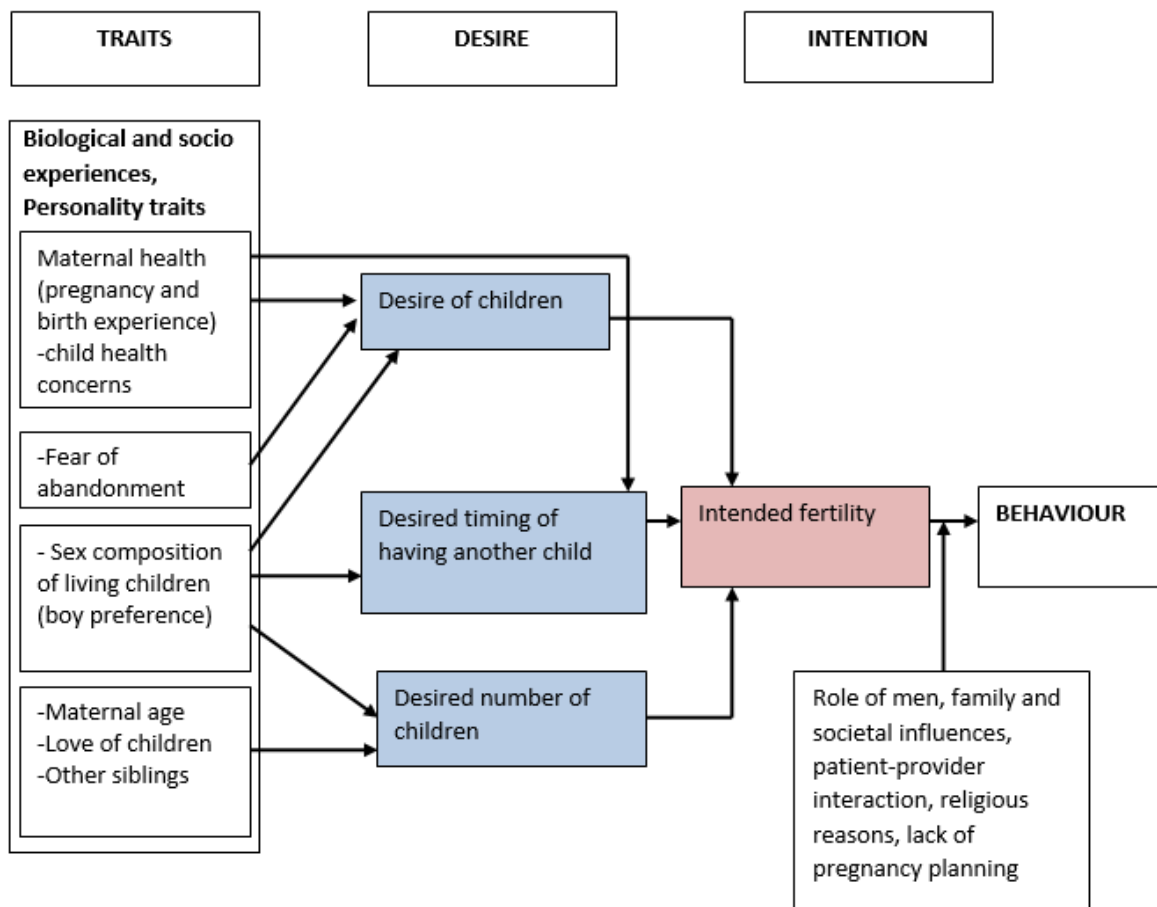
a) The motivational traits that emerged from the interviews were maternal health (previous experiences of birth related complications) and child health concerns, fear of abandonment, sex composition of living children (boy preference), maternal age, love of children and whether the participant had other siblings.

b) In this study, desire had three forms: desire of children, desired timing to have another child and desired number of children.

-Desire of children describes the wish to have another child in relation to maternal health (previous experiences of birth related complications) and child health concerns fear of abandonment and sex composition of living children (boy preference),

-Desired timing to have another child is influenced by maternal health (previous experience of delivery-related complications), child health concerns and the sex composition of living children (boy preference)

-Desired number of children is based on the following factors: sex composition of living children (boy preference), maternal age, love of children and and whether the participant had other siblings.

c) The intention to have children is affected by the desires of men and women, but intended fertility is often different from actual fertility because fertility behaviour is additionally influenced by situational factors, namely: men as final decision-makers, family and societal influences, role of patient-provider interaction in childbearing decisions and religious reasons

The dominant finding was that participants' attitudes towards children's sex composition (boy preference) highlighted the complexity for women without sons to implement their own fertility desire in this patrilineal setting. In such a pronatalist setting, where a woman's identity is defined by the sex composition of her children and with men being key decision-makers, women, especially those of low parity and those with children of the same sex composition, find it difficult to go against the culturally acceptable expectation. The fact that as marriage stability is threatened, women are likely to continue with childbearing which at times may occur much sooner and more often than ideally wanted. Similarly, bad experiences in pregnancy or during childbirth seemed a particularly strong factor in influencing fertility desire. Women with bad experiences of a birth (usually those with many children, but not all) wanted to stop childbearing. Bad experiences of a previous birth instil fear that the same could happen in future pregnancies, and as such may influence desire for further childbearing. Further, the desire for more children was higher among younger women who have just started childbearing compared to older women who desired to limit births. This clearly has an impact on contraceptive behaviour which is explored in the next chapter.

Chapter 7   Contraceptive behaviour during the extended postpartum period: A qualitative exploration

7.1   Introduction

The period after childbirth presents an increased risk of unintended pregnancy (Mayondi et al., 2016, Warren et al., 2013) particularly when several women who wish to delay or avoid childbearing are not using contraception. A Demographic and Health Survey analysis among postpartum women aged 15-49 years from 21 low and medium income countries including Uganda showed that 68% of Ugandan women within two years of childbirth who did not want to become pregnant were not using contraception (Moore et al., 2015). This unmet need for family planning is higher than the 28% among Ugandan women in the general population (UBOS and ICF, 2018). For these women, use of effective contraception would significantly reduce the likelihood of unintended pregnancy and any adverse social and health outcomes for mothers and their children. Apart from the substantial health benefits to the mother and child, research has demonstrated an inverse relationship between birth spacing and child mortality risk (DaVanzo et al., 2008, Conde-Agudelo et al., 2012). Similarly, higher maternal mortality risk has been observed for women with shorter birth intervals (Shachar and Lyell, 2012).

The quantitative results regarding contraceptive behaviour in Chapter Five revealed that knowledge of modern contraceptive methods did not match reported contraceptive use; knowledge among the 5,088 postpartum women was nearly universal, yet only a third (33.4%) of the sample reported use of modern contraception. The most commonly used method during the extended postpartum period was injectable hormonal contraception, accounting for 59.5% among contraceptive users, followed by hormonal contraception implants used by 15.7% (Figure 5.2). A study assessing utilisation of contraception among postpartum Ethiopian women found comparable results: use of injectable hormonal contraception was the most popular method, used by over two-thirds of the sample. Factors that were positively associated with contraceptive use in the quantitative study (Chapter Five) included not breastfeeding (aOR=3.31), having resumed sexual activity (aOR=3.55), having resumed menstruation (aOR=4.05) and having secondary or higher education

(aOR=1.55). In addition, quantitative results in Chapter Five demonstrated that women who desired to have a child after two years and those who wished to stop childbearing had higher odds of using modern contraception (aOR=1.95) than women who wished to have another child soon; implying a possible link between fertility desire and contraceptive behaviour.

Understanding the underlying factors contributing to contraceptive behaviour highlighted in the quantitative analyses is critical to proposing socially and culturally acceptable interventions to address postpartum women's unmet need for family planning. Therefore, I conducted a qualitative study to obtain data exploring contraceptive use, contraceptive use intentions, influences of contraceptive use and family planning support available to Ugandan women within two years of childbirth.

As mentioned in Chapter Six, qualitative interviews were conducted among 29 women, 14 men and 13 family planning service providers in Mayuge district. Mayuge was selected based on its high fertility rate of 5.8 children per woman (Uganda Bureau of Statistics, 2017), which is even higher than the national fertility level of 5.4 (Uganda Bureau of Statistics & ICF International, 2018). Also, Mayuge district has a low contraceptive prevalence rate (25.2) for all modern contraceptive methods, making it ideal for the study on contraceptive behaviour. Additionally, the district ranked among the worst performing districts in terms of maternal health indicators in the district league table (Ministry of Health, 2015).

The current chapter contributes to answering the research question: What considerations do women make when deciding to use contraception after delivery? based on Ajzen's (1991) theory of planned behaviour (Figure 7.1). TPB has been successfully applied in numerous studies modelling the social psychological processes involved in predicting health-related behaviours, including contraceptive behaviour (Kiene et al., 2014, Andrew et al., 2016, Brown et al., 2011, Potard et al., 2012, Godin and Kok, 1996, Albarracin et al., 2001, Fekadu and Kraft, 2001, Rahnama et al., 2013). In each of these studies, the theories' predictions were confirmed and the theories explained a large amount of the variance, making it suitable for understanding contraceptive behaviour. Furthermore, the TPB is more efficient at organising the different aspects and processes behind intention formation than is the

case for TDIB theory. Finally, contraceptive use is a more decisive action which requires planning whereas desire for childbearing is more of a conceptual issue which makes TPB appropriate for contraceptive use and TDIB for childbearing desire. This theory proposes that the most important determinant of behaviour (in this case, contraceptive behaviour) is a person's intention to perform the behaviour. Three variables are identified as determinants of intention: attitude, subjective norm and perceived behavioural control (PBC). Attitudes are an individual's positive or negative evaluation of performing the behaviour. Subjective norms reflect an individual's perceptions of social approval or disapproval for performing the behaviour. PBC represents an individual's perceptions of control over behavioural performance in the face of internal and external barriers. Ajzen (2002) views PBC as a combination of perceived control (PC; i.e., perceptions of external barriers to behavioural performance) and self-efficacy (SE; i.e., confidence that one has the ability to perform behaviour). The theory of planned behaviour also proposes that PBC can act as a predictor of behaviour if it accurately reflects actual control over behavioural performance (Figure 7.1). Prior studies in sub-Saharan Africa report an association between knowledge and contraceptive behaviour (Somba et al., 2014, Muanda et al., 2017, Okanlawon et al., 2010, Bogale et al., 2011), suggesting that knowledge about types of contraception is a necessary pre-requisite for contraceptive use. However, since TPB does not include knowledge as one of its constructs, this study adapted the TPB diagram to include Knowledge. Figure 7.1 shows that knowledge predicts behaviour as a mediator through personal attitudes, norms and perceived behavioural control.

Figure 7.1   Theoretical framework for contraceptive behaviour adapted from the Theory of Planned Behaviour (Ajzen,1991)
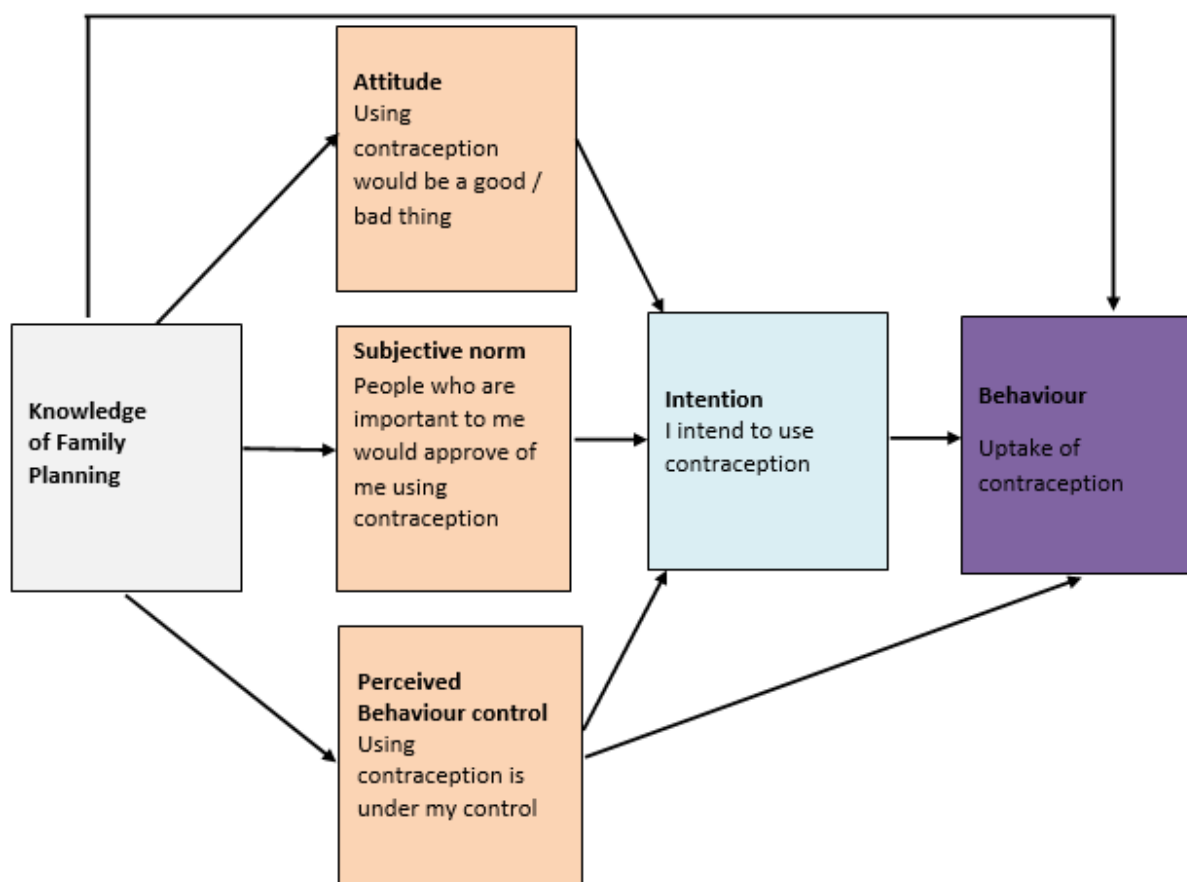
The chapter is divided into three parts. The chapter begins with an overview of the available postpartum contraceptive services and methods in section 7.2. Section 7.3 presents narratives on reasons for reported contraceptive behaviour. The chapter concludes with a conclusion and summary of the key findings in section 7.4.

7.2   Postpartum contraception services and methods

As stipulated in the Uganda National Reproductive health guidelines, post-natal services including counselling and provision of contraceptive methods should happen on a daily basis at all levels of the reproductive health service delivery (MOH, 2006). All family planning counselling services and methods are offered free of charge at the public health facilities, while there is a fee paid at private health facilities. At public health facilities, family planning counselling is typically given to only women, in group sessions lasting about 40 minutes, and one on one talks for special categories of women such as those with closely-spaced births or

those with very high parity (over eight children). The midwife discusses postpartum contraception with women before discharge from the postnatal wards and during routine postnatal visits at around six weeks postpartum.

A range of short and long term contraceptive methods are available for women in the study setting. These include hormonal contraception implants, injectable hormonal contraception, barrier methods, pills, intrauterine devices, including the postpartum intrauterine device (PPIUD), and voluntary permanent methods (tubal ligation and vasectomy). In addition, women are encouraged to use Lactational amenorrhoea method — which is a temporary short term method of contraception that is highly effective for the first six months postpartum, provided the woman exclusively breastfeeds and remains amenorrhoeic. When all three criteria of LAM are met, it is about 98% effective in preventing pregnancy. Because LAM does not offer full protection against pregnancy, women are advised to initiate use of alternative contraception alongside LAM. All except the voluntary permanent methods are available on a daily basis at both public and private health facilities within Mayuge district.

Based on the WHO (2015) guidelines, women who are exclusively breastfeeding and are less than six weeks postpartum are advised not to use combined hormonal contraceptives which include the combined oral contraceptives and combined injectable hormonal contraceptives, mainly because of concerns about possible decrease of breast milk production (Kennedy et al., 1997, Rodriguez and Kaunitz, 1997, Díaz, 2002). It is generally thought that in women, progesterone levels decline rapidly after the delivery of the placenta. Since progesterone withdrawal is the stimulus that initiates breast milk production, if a breastfeeding woman receives progestin –only hormonal contraceptive injection within six weeks postpartum, the artificially elevated progesterone levels may prevent the increase in prolactin levels required to establish lactation and ultimately interfere with milk production (Kennedy et al., 1997, Hartmann et al., 2003).

Injectable hormonal contraceptives are typically administered by facility-based health workers, although some programmes allow community health workers to administer them in users' homes. Injectable hormonal contraceptives are given to users by means of intramuscular injection in the upper arm. They work by preventing ovulation through thickening the cervical mucus, making it a barrier to sperm. There are varieties of injectable

hormonal contraceptives, and they are usually classified according to the duration of their efficacy: three months, two months, or monthly. The most widely used injectable hormonal contraceptive in this study setting, is the long-acting depot medroxyprogesterone acetate (DMPA) or Depo Provera®. One vial of DMPA (150 mg/mL) protects against conception for three months, with two weeks of grace permitted in cases where users are unable to have their shots within three months. Due to the possible effect on breastfeeding performance resulting from the use of combined hormonal contraceptives (CHCs), the Uganda national reproductive health guidelines and WHO (2015) do not recommend use of Combined hormonal contraceptives within six weeks postpartum in women who are breastfeeding. The World Health Organisation categorised Depo Provera® given prior to six weeks as risk level 3 (a condition where the theoretical or proven risks usually outweigh the advantages of using the method) and classified Depo Provera® administration ≥6 weeks postpartum as risk level 1 (a condition for which there is no restriction for the use of the contraceptive method) (WHO, 2015).

Contraceptive implants are a long-acting and reversible contraceptive method that are highly effective, convenient, cost-effective and have high user satisfaction even in the immediate postpartum period. Implants are inserted beneath the skin of the upper arm providing three to five years of protection against pregnancy— depending on the type of implant used (Sivin et al., 2002). Insertion usually takes one to two minutes and removal lasts three to five minutes. Uganda's family planning guidelines do not support immediate insertion of implants for breastfeeding women but rather stipulate that implants are inserted into the woman's arm by a trained health worker when she is more than six weeks postpartum (MOH, 2006).

Renewed interest in the intrauterine device (IUD), a highly effective, long-acting reversible contraceptive that is safe for lactating women, has encouraged some programmes to add the postpartum intrauterine device to their postpartum family planning options (Pfitzer et al., 2015). In 2016, the postpartum intrauterine device was added to the postpartum family planning options in Mayuge district. A postpartum intrauterine device can be either inserted within ten minutes after delivery of the placenta (post placental insertion), up to 48 hours post-delivery (immediate postpartum insertion), or during a caesarean delivery as an effective strategy to prevent unintended pregnancy and improve birth spacing. Postpartum

IUD insertion may avoid discomfort associated with interval insertion (insertion 4 weeks or more after delivery), and bleeding from insertion will be disguised by postpartum lochia (the normal discharge from the uterus after childbirth)(Lopez et al., 2015). In addition, PPIUD insertions are convenient for the participant, provider, and health care system, as they reduce the need for an additional post-discharge family planning visit. Furthermore, insertion prior to discharge from the health facility ensures that the woman is not pregnant at the time of insertion and is protected against pregnancy prior to resuming sexual activity.

Permanent methods are safe and effective methods for individuals who have completed their families or for those who do not wish to have children (WHO, 2015). Permanent methods are not provided directly by the public or private health facilities in Mayuge district. Rather, they are offered using a mobile outreach approach by two Non-Governmental Organisations–Marie Stopes Uganda and Programme for Accessible Health Communication and Education through teams of trained health care providers that bring commodities directly to clients in Mayuge district. Clients are mobilised in advance by community health workers and health care providers, and are advised that they will be contacted once PACE or MSU confirms their outreach dates. Upon arriving at the outreach site, all clients are taken through a group counselling session by a trained health care provider from MSU or PACE, thereafter, special individual counselling procedures are followed to ensure that the client understands the irreversible nature of permanent methods– in order to minimise chances of regret, and to obtain client consent before the procedure. These teams visit outreach sites in Mayuge district based on a regular basis (ranging from every four to six weeks to once per quarter in the hard to reach parts of the district), based on demand for the service and the availability of health care providers to deliver the service.

7.3   Themes influencing contraceptive behaviour

The focus is on the themes that pertain to women with a child less than two years based on the theory of planned behaviour. Hence, this section explores participants' contraceptive behaviour narratives that are related to attitudes, subjective norms, perceived behaviour control and intentions. In this study, contraceptive behaviour was defined as the use of any modern method to prevent a pregnancy. Use of contraception by the spouse was also

considered use by the participant: for example, if the wife of the male participant was using injectable hormonal contraception, he was considered to be using injectable contraception as a contraceptive method. Participants' motivation to use contraception after childbirth was assessed with the following questions: (1) What is your view about contraception use among postpartum women? (2) If currently using contraception, how did you decide to use contraception? What method are you using? Why did you choose that method? (3) For non-users, can you tell me why you are not using any method?

Based on an adapted version of the theory of planned behaviour, five key themes central in influencing contraceptive use emerged: (1) Knowledge of contraceptive methods, (2) attitudes towards contraceptive use, (3) subjective norms: sources of influence regarding contraceptive use, (4) perceived behaviour control: ease or difficulty of using contraception and 5) intention to use contraception.

Theme I: Knowledge about contraceptive methods

Knowledge of contraceptive methods is an important determinant of increased contraceptive uptake (Bongaarts et al., 2012). Among the study participants, knowledge of at least one contraceptive method was universal, and many had learned about contraception through the radio, echoing findings from the 2016 Uganda DHS. According to the 2016 UDHS, 99% of women reported knowledge of at least one method of contraception and 65% of women reported having heard family planning messages via radio. In my study, participants generally knew several methods of contraception and were able to describe their mechanisms of action. However, a few participants (three men and four women) did not have comprehensive knowledge of the stated methods. One woman who had used a contraceptive patch, referred to it as a coil [intrauterine device] as shown in the excerpt below:

> I have ever used the coil (pointing at her upper arm) to prevent pregnancy
> (F25, 37 year old, 3 children).

Similarly, another participant thought that the IUD and implant were used by both men and women. He said:

> *I have heard of injections, capsules [implants], coil [IUD] and implant for both*
> *women and men (M38, 34 years, 5 children).*

The most commonly known contraceptive methods were injectable hormonal contraception, hormonal contraception implants, intrauterine device, condoms and contraceptive pills which confirms 2016 UDHS findings that show modern methods are the most commonly known methods of contraception.

This study found that less than half (12/29, 41.4%) of the women were using contraception to delay or limit further childbearing. This contraceptive use level is slightly higher than the 33% found in the quantitative analyses in Chapter five, section 5.3.1. Among current users of contraception, the most commonly reported contraceptive method was injectables (5/12, 41.7%) followed by implants (4/12, 33.3%). The rest used male condoms (3/12, 25%). Only four men (4/14, 28.6%) reported that either they themselves or their partner were currently using contraception including male condoms (2), injectable hormonal contraception (1) and sterilisation (1). Of the four men, three were from the protestant religion and had secondary or higher education.

With regards to hormonal injectables, majority of female participants mentioned that due to the simplicity of the procedure, ability to use injections covertly from the male partner and their availability in health facilities made hormonal injectables the most preferred method. They also said that hormonal injectable was highly preferred by women, because it acts for short duration and it is easy to stop without seeking help from provider when they want to conceive. One female user who wished to stop further childbearing reported:

> *I am using injectables because if I want to conceive, I just don't go back to the*
> *health facility to help me stop the method, making it easy for me to conceive*
> *when the time comes (F8, 27 years, 4 children).*

The narrative above gives support to the quantitative results (Chapter 5, Figure 5.2) that showed hormonal injectables as the most preferred method among women with three-fifths (59.5%) reporting use of injection. However, a small minority of participants felt that they get inconvenienced when they use hormonal injectables because there is need to return for re-injection. Use of hormonal injectables was also associated with a delayed

return of fertility and menstrual irregularities. This was reported by two women and one FP provider. The provider said:

> *The major complaint is the over bleeding. It is Depo [Injectables] that causes the bleeding (Midwife, Public health facility).*

Implants were liked because they could be used covertly, had a few side effects, associated with an early return of fertility and could be inserted right after childbirth. This may explain why the quantitative results (Chapter five, section 5.3.1) showed that implants were the most popular method after injectable hormonal contraception.

Use of male condoms, particularly among men was reported in this sample. The most commonly cited reason for using condoms was the lack of side effects and their protection against Sexually Transmitted Infections (STIs) rather than as a method of contraception. Another important reason for choosing condoms was their flexibility. Since women are unknowingly exposed to the risk of pregnancy if they rely on breastfeeding and their amenorrhoeic status for contraceptive protection when they resume sexual activity, use of condoms was a culturally appropriate and flexible strategy (for couples having irregular sex) to meet the different needs of breastfeeding or women to avoid unintended pregnancy. As one male participant put it:

> *Another thing that is helping us is that my wife and I live apart. We just meet once in a while and whenever we meet we make sure we have condoms to use (M44, 27 years, 3 children).*

Another participant, F25, a breastfeeding mother said:

> *We have been using condoms ever since I delivered. I intend to have the implant inserted after one year. My husband would become suspicious if I made him wait (abstain) for a year (F25, 37 years, 3 children).*

However, the main drawback to using male condoms was the necessity of a male partner's cooperation. In circumstances where a male partner was ready and willing to use a condom, cooperation was implicitly present; otherwise, condom use was often a point of negotiation. In most cases, female participants were afraid of condom negotiation. In fact, men were

more willing to use condoms if recommended by a trusted source such as an FP provider or male peers. This gave some women leverage to insist on condom use. For example, one FP provider commented:

> *When women come with their husbands for contraception, I advise them to use condoms. If she comes alone and is given condoms at the health facility, she is unwilling to take them because her husband will assume she has started being promiscuous (Midwife, Private Health facility).*

Similar to the quantitative results, none of the participants in the qualitative study reported use of a female condom. When asked about reasons for non-use of the female condom, participants cited availability and acceptability concerns. This was reaffirmed by one FP provider from a public health facility who reported:

> *Previously they were supplying female condoms but nowadays they don't. It's now four months and we have not stocked any female condoms, yet women keep asking for them. It's the male condoms that are always stocked (Midwife, Public health facility).*

In addition, five women and three men reported lack of knowledge of female condoms, suggesting unfamiliarity with the methods. This attitude seemed to stem from the fact that these participants had neither seen nor had they been counselled about female condoms.

Theme II: Attitudes towards contraceptive use

Based on the theory of planned behaviour, attitudes were assessed by asking participants about their thoughts regarding contraceptive use after delivery. Participants held either positive or negative attitudes as detailed below:

Positive attitudes towards family planning

Generally, women expressed positive attitudes towards contraceptive use and recognised numerous advantages to its use compared to men. The question, "What positive things might come out of using contraception after child birth?" centred primarily on maternal well-being, having well-spaced children, and financial benefits resulting from smaller manageable families as illustrated by the quotes below:

> *You get some peace of mind when you space births, instead of having to look after children of almost the same age at the same time, like twins. You are also able to cater for good feeding of that young child like buying milk, sugar and porridge (F38, 35 years, 4 children).*

> *The only reason I am using injections to delay future pregnancy, is because the living conditions have become tough. I don't work and my husband doesn't have a job. The more children you have the more the demands and financial obligations yet we do not have money (F8, 36 years, 8 children).*

Only two men spoke positively about contraception. These happened to be those who had attained their desired family size, those who faced financial difficulties and those who were concerned about their wives deteriorating health resulting from childbearing, and therefore preferred to stop or space future births:

> *I don't want to produce more children because we have more than enough. I am unemployed and not in position to provide food, clothing and school fees to additional children. I discussed with my wife because she is the one who carries the burden of childbearing. My wife has now had a tubal ligation (M35, 52 years, 11 children).*

> *A few men who have seen their wives go through life threatening complications during pregnancy and delivery, are now accompanying their wives to collect contraception at the health facility such that they space births (FP focal person).*

The economic benefits of having fewer children or limiting births seemed to be more important given the financial challenges men faced as providers for their families. Consequently, family planning was seen as a way to improve maternal health, reduce poverty and achieve a higher standard of living through having fewer children.

Negative attitudes towards contraception

Despite some participants expressing support for contraception, participants also discussed the drawbacks of using contraception. A follow-up question after generating the positive responses was, "What are some negative things that might come out of using

contraception?" The overwhelming attitude expressed about using contraceptives was reluctance to use contraception due to potential side effects. Majority of the participants (21/29 women and 12/14 men) highlighted reluctance arising from negative physical experiences they faced or faced by peers while using certain contraceptive methods. Negative experiences were most cited for hormonal methods (especially the injection and the implants), which they described as a deterrent to use. One woman explained,

> *My neighbour was bleeding to death when I went to visit her. She advised me never to use injections because she almost died (F19, 28 years, 5 children).*

Whether experienced first-hand by postpartum women or described by other community members, participants reported that negative side effects frequently led women to avoid future use of hormonal contraceptive methods, discontinue use, switch methods, or use methods incorrectly or inconsistently, which sometimes resulted in unintended pregnancies. As one woman recounted:

> *I was using injections and I got pregnant. I don't know how it happened. I think I got confused because I was bleeding on and off (F4, 38 years, 12 children).*

Women experienced a mix of several physical side effects reported by seven women out of the 17 non-users of contraception. Contraceptives were perceived to cause severe and long –lasting side effects ranging from irregular bleeding, weight change, dizziness, headaches, nausea and fatigue which impaired ability to perform daily work. These experiences varied for different women.

> *I have seen my friends go through many problems, like bleeding heavily while using contraception. I have heard that people who use capsules [implants] have issues with their arms as they get pain yet it is the same arms that you use to work. I do not want this happen to me (F19, 28 years, 5 children).*

In addition to physical side effects, myths and misconceptions about contraceptive use after delivery were common among the participants. Myths and misconceptions such as fear of infertility, cancer (particularly cervical cancer), birth deformities and having the potential to

harm one's internal organs; these prevented them from adapting a method after delivery. For example, one FP provider commented:

> *People say that contraception causes cancer of the uterus. They attribute this cancer to use of the IUD. Others say you may end up getting abnormal children (Mentor mother)*

Another FP provider said:

> *The women believe that the implant can easily disappear in your body, while the IUD can move from its original place to the heart and you die (Village Health team member)*

A female participant said:

> *I am told that contraception burns away all the eggs [ovaries] and the woman becomes infertile though I don't know which particular method does that (F33, 32 years, 9 children).*

While infertility was cited as a possible consequence of most methods, it was most strongly expressed around injectable hormonal contraceptives. This is not surprising because one of the disadvantages of using injectable hormonal contraceptives is delayed return to fertility after discontinuation. According to the WHO (2015), the median delay in return to fertility after the last injection is 10 months, so a woman's pregnancy plans need to be considered when the method is being prescribed. By contrast, all other reversible methods including implants and IUDs, which are highly recommended after childbirth, have a rapid return to fertility upon method discontinuation. One key informant explained:

> *Those that have just had a baby, I encourage them to use the implant and the IUD. Remember that with injectable, "we keep adding hormones in your body" and yet implant and IUD have a high return to fertility. Injectables have that disadvantage of late return to fertility (midwife, public health facility).*

Fear of side effects was in part attributed to inadequate counselling on the methods which made participants unsure about them and affected uptake. Based on friends' experiences

with contraceptive side-effects, some men and women revealed hesitancy to use contraception while others who had a personal experience of side-effects resorted to traditional methods to prevent pregnancy. One woman who was currently using a traditional method said:

> *I am using the withdrawal method [she laughs and shies away]. It is because of the side effects I had with the injection. (F26, 24 years, 5 children).*

While some participants focused predominantly on physical side effects as a reason for switching from modern to traditional contraceptive methods, for others, it was to do with lack of knowledge and reliance on socio-cultural beliefs which hindered modern contraceptive use: One participant said:

> *Some people say that after delivery, a mother gets the newborns umbilical cord and hangs it on the roof of the house. She only removes it when she feels it is time to try for another child (F36, 27 years, 5 children).*

At the same time, some men and women chose not to resume contraceptive use because the times they did, they suffered from side effects which were not readily managed at the health facility due to stock outs. This was reaffirmed by an FP provider who said:

> *Sometimes we don't have the combined oral contraceptive pill (COC) that can be used to stop the bleeding and so we refer the woman to a pharmacy. You know Government things…most times we have stock outs (Midwife, Public Health facility)*

Theme III: Subjective norms: sources of influence regarding contraceptive behaviour

Gender roles and relationships with partners, community, FP providers and religious affiliation were critical factors in shaping women's contraceptive use decisions.

Influence of partner disapproval

Every male and female participant was aware that modern methods of contraception exist, yet partner disapproval factored heavily into contraceptive decision-making. Men generally

opposed the decisions of their wives to use contraception (9/14 men) and about 25% (7/29),
of the women said that partner disapproval prevented them from using contraception, as
exemplified in the quotes below:

> *I have never used family planning and I have discouraged my wife from ever*
> *using it (M37, 33 years, 8 children).*

> *I asked my husband to use condoms but he did not accept. I know many*
> *contraceptive methods. But using any of them is up to my husband. He does*
> *not like any method. I follow what he says (F23, 28 years, 4 children).*

However, many of the women who cited partner disapproval during interviews as the
reason they did not use contraception had not explicitly discussed contraceptive use with
their partner. Poor spousal communication was a common thread amongst women who did
not use contraception. Women argued that discussions with one's partner were hampered
by existing culturally based inequalities in Busoga, which allow male dominance over
household decisions including contraceptive use.

The majority of participants, especially the men aged over 35, believed that men alone
should decide on contraceptive use, claiming that men were heads of their households and
had authority over reproductive decisions. Family planning was a domain in which men
could still wield control within the couple. However, some acknowledged that agreement
regarding family planning was preferable because they believed that women would
ultimately use family planning secretly if they didn't agree. In other instances, for a few
women who discussed contraceptive use with their partners, they reported inadequate
support from partners even after they had a discussion:

> *You may jointly discuss your wish to stop but he fails to take a decision. Even when*
> *you ask him he may think you are forcing him. So, you have to comply and if you*
> *insist on stopping to have children, he may think of getting another woman who will*
> *produce for him (F38, 35 years, 7 children).*

Similarly, a mother of 12 children who felt she had more than her ideal family size and
desired to stop childbearing said:

I talked to him about it [limiting births] but he still insists on more children. I told him we have more than enough children and I feel tired but he disagreed. What do you do? (F35, 39 years, 12 children).

Among other men, a feeling exists that if a woman uses contraceptive methods she is likely to be unfaithful to her husband. Also, men were of the opinion that the campaign against the spread of HIV/AIDS has depicted the use of condoms as a protective measure against STD transmission among prostitutes, rather than as a means of practising family planning. Hence, two men did not correctly identify themselves as 'users' or 'non-users' of contraception. For example, one male participant who used male condoms considered himself a 'non-user' as explained below:

Interviewer: And right now, what are you using?

Participant: Ah, nothing

Interviewer: You said the last child is two years and you wish to have the next one after ten years. Don't you think there is a risk of your wife conceiving before the ten years elapse?

Participant: We use the condom occasionally

Interviewer: Okay, but a condom is a contraceptive method

Participant: I am using the condom to prevent HIV (M43, 27 years, 3 children)

In a setting where men do not approve of contraceptive use, there are consequences for women who resume contraceptive use without their partner's approval. While some women agreed they would use contraception against a partner's wishes, if necessary, women indicated that using a method without partner approval could create a potentially violent situation if discovered. This is a major hindrance to contraceptive use as explained by one provider:

Most men in this community do not value family planning. They want women to keep bearing children and can beat them [wives] up if the discover the woman is using a contraceptive (Midwife, private health facility).

Besides becoming violent, a few women reported that if they take a decision and use contraception without permission from their opposing partner, their partners are unlikely to meet the medical expenses involved in case they suffered from side effects.

Other women stated that they faced pressure from their husbands to continue with childbearing, fearing infidelity or abandonment if they did not do so. Several women discussed men's desire to have multiple children without being concerned about adequate birth spacing. One 30 year old woman who preferred to stop childbearing but lacked the husband's support said:

> *Every time we talk about stopping childbearing, he warns me against using family planning to stop having children. He says if he finds out I am using family planning, he will get rid of me and replace me with another woman willing to bear a child every year (F11, 30 years, 6 girls).*

Men who opposed their wives contraceptive use often cited religious prohibition followed by side effects. Religious prohibition was mostly reported by Roman Catholic and Muslim men. These two religious groups offered a range of messages to their followers. While Catholics promoted only natural methods, Muslim leaders prohibited all family planning use, as illustrated in the quote below from a Muslim participant:

> *My religion does not allow this (contraceptive use). FP to me is "family killing", which is a sin. I want to produce children until God puts an end to it (M37t, 36 years, 5 children)*

This quote reflects women's lack of control over their own fertility that was found among several female participants. Women managed partner disapproval of contraception through a variety of ways. Some women preferred covert contraceptive methods such as injectable hormonal contraceptives and hormonal contraception implants. However, women were not always successful in using the implant covertly, for example:

> *With the "capsules" [implant] the men keep checking their wives' arms [upper arm]. They can easily feel them to ascertain whether the wife is using any contraception (Midwife, Public health facility).*

Others spoke with the FP provider or returned to the health centre to switch methods. Nonetheless, not all partners were entirely against contraceptive use, a few men were generally responsive to the physical distress their partners experienced from using hormonal contraception. Such men supported their wives by reminding them to go for a

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contraception re-fill as a way of avoiding unintended pregnancy. For example one male participant in a polygamous marriage reported:

> *At times I remind them [two wives] to go for the injections. I even opted to go for vasectomy instead of nagging them because there are at times when they complain of the side effects. When I realised they had such issues I decided to ask them to stay and I go for vasectomy. Then they said "no we shall keep going for the injections" (M14, 42 years, 5 children)*

While this quote illustrates partner support and spousal communication regarding contraceptive use, this way of thinking "no, we shall keep going for injections" speaks to women's concerns about the sexual functioning and physical strength of their husband after the procedure [vasectomy] as has been reported in past studies (Bunce et al., 2007, Ruminjo, 1999).

Religious opposition to contraceptive use

While religious support could clearly be helpful or even conducive to initiating use of contraception, religious opposition was also an important reason for contraceptive non-use. Among the male non-users of contraception (10/14), all except one were neither using nor intending to use contraception in the future. These men cited religious reasons that prohibit them from using contraception. Mayuge is a deeply religious district, with 36% of the population Muslim, 56% Catholic and Anglican and 8% belonging to other religious groups including Pentecostals, driving mostly conservative norms that stigmatise contraceptive use. Indeed, study participants tended to cite their traditional, fundamentalist Christian faith or Muslim faith as being opposed to family planning. Muslims oppose contraceptive use as Islam requires that Muslims should be prolific and that Allah will take care of the children, regardless of the economic situation of the parents. According to Islam, the use of contraception is likened to murder of innocent unborn children—which in itself is a sin and yet only God should be responsible for limiting births. Therefore, ardent followers would heed to the preaching of their religious leaders. These conservative norms seem to be stricter for men than women. As one 33 year-old Muslim male participant explained:

According to my faith, we are not supposed to use contraception and neither should our wives. Contraception is killing Allah's children. I want to produce children until Allah puts an end to it. Allah doesn't tell people to stop or space children (M36, 38 years, 8 children)

Similarly, another Muslim man explained:

I am a Muslim and that is why I don't use contraceptives; people forget that it is God who gives children and decides when someone should or should not have children, so I am waiting for God's time (M39, 30 years, 4 children).

One midwife from a private health facility said:

There are many Muslim families in Mayuge yet Muslim have a tendency of marrying four wives. Such women are just competing to have children. For instance, 'If my co wife has 4 children, I should also produce four.

These results confirm the quantitative findings (Chapter 4) which showed that Muslim women were more likely to want another child compared to Roman Catholic respondents. Being Muslim was significant at both bivariate (Table 4.9) and multivariate analysis (Table 4.13). Muslim women were 1.42 times more likely to report desire for another child, other things held constant in the Multivariate model.

Among Christians, prohibition of use of modern contraceptive methods by the Catholic Church was a deterrent to contraceptive use. One male participant who almost lost his wife during the delivery of the index child, had wanted to go against his religion by having a provider insert an IUD in his wife. He later changed his mind, even though he had discussed with the health worker:

I had a discussion with the doctor to insert a coil [IUD] in my wife so that she can space the children. I saw my wife struggle while giving birth to the third child. However, I later stopped him [doctor] from performing the procedure, because I am a strong Catholic and my faith does not allow us to use modern contraception (M1, 28 years, 3 children).

Furthermore, the only hospital in Mayuge district, St. Francis Hospital Buluba, commonly known as Buluba hospital—a Non-Governmental Hospital (NGO)—is owned and operated by the Roman Catholic Church. The Catholic Church is against use of modern family planning methods but encourages use of natural family planning methods such as moon beads. The health providers at Buluba Hospital provide counselling on the various natural family planning methods— which are based on identifying a woman's fertile period. This means, all women who would like to leave with a modern contraceptive method after delivery will not do so. However, anecdotal information from the family planning focal person at the district revealed that health providers at Buluba also provide counselling on modern contraception methods although they do not provide the modern method as shown in the excerpt below:

> *The FP providers at Buluba Hospital give information about various methods of FP such as injections and pills, but they never provide modern methods. They refer women to other public health facilities. Buluba offers natural methods such as moon beads which are costly. Moon beads cost 15,000 Uganda shillings (£3). This is a paying hospital. This is a private not for profit hospital. They will perform the TL [tubal ligation] only when a woman has had complicated childbirth. Administering TL may also depend on the ideology of the medical worker attending to the woman.*

Though not statistically significant, religious differences in reporting contraceptive use are observed in the quantitative analysis (Chapter 5). Roman Catholics reported the least contraceptive use while the Anglicans reported higher contraceptive use in the bivariate analysis (Table 5.4).

Role of community beliefs

The community itself was shown to play an important role in disseminating negative views about contraceptive use after childbirth. These presented distinct barriers which influenced contraceptive uptake. Quantitative results found higher contraceptive use among women who had resumed their menses in both bivariate (Table 5.4) and multivariate (Table 5.5) analysis. Those whose menses had returned were four times more likely to use contraception than those whose menses had not returned (OR: 4.05) (Table 5.5). What might explain this result?

A predominant community belief was that women should not use contraception prior to resumption of menstruation. Some community members believed that use of contraception before return of menses would result into poor child development or ill health, a phenomenon in informal Lusoga commonly known as "lwenyanja". One female participant stated:

> *When your menses have not returned and you use contraception, the child suffers from a condition called Lwenyanja. He/she becomes weak and fails to grow at the expected rate. Also, the baby girl's labia's turn reddish and there is reddening between the buttocks (Midwife, public health facility).*

In the view of the district focal person for family planning, poor child development is attributed to malnutrition which is highly prevalent in Mayuge district. Malnutrition is likely to be caused by poor feeding of the mother which results into reduced breast milk supply:

> *There is a lot of poverty in the area, people sell off the food they grow. Others rent out their land for sugarcane farming. Even when the mother would love to breast feed for two years, she's unable to do so because of the "poor feeding" resulting into reduced milk supply (District focal person).*

Further, participants displayed an attachment to traditional practices that encouraged early resumption of sexual intercourse during the postpartum period (for example, some clans in Busoga expect women to engage in sexual intercourse a few days after delivery) to celebrate the arrival of the new baby. This can be as short as four days, as exemplified in the quotes below:

> *In some clans, women are expected to resume sex within the first four days after delivery, if not, the husband denies paternity of the baby (Midwife, private facility)*

> *Some people say that the child dies if you do not follow the clan instructions, while in other cases the child may become mentally-retarded. They say "omwana bamubuuka" when they see such a child (F33, 32 years, 9 children).*

Some people actually believe that soon after delivery, the couple has to resume sex within the first six days to celebrate the new baby. This still holds in the villages. They are supposed to have sex as a cultural practice (Village Health team member).

Another important belief is that women abstain from sex until the new-born's umbilical cord falls off. The degree with which this tradition was followed varied between clans. One village health team member said:

Some cultural beliefs forbid women from engaging in sexual intercourse when the new-born's umbilical cord [stump] is still attached to the new-born. This stops the infant from becoming mentally-retarded, but once it [stump] falls off, then they resume sex.

Early resumption of sexual activity most of which is unprotected exposes women to an increased risk of unintended pregnancy. Contrary to the qualitative narratives above, the quantitative results found that women who resumed sexual intercourse were more likely to use contraception than those who had not resumed sexual activity. Resumption of sexual activity was significant at both the bivariate (Table 5.4) and multivariate analysis (Table 5.5). Those who had resumed sexual activity were almost four times (OR: 3.55) more likely to use contraception than women who were practising postpartum abstinence.

Another commonly held perception across community members was that hormonal methods induce side effects such as excessive bleeding and general body weakness, which leads to laziness. This perception caused community members to gossip about suspected contraceptive users, thereby discouraging uptake. One woman explained:

I have heard rumours about implants, at times women get pain in their arms and yet it's the arms they use to work in gardens. So, how will a woman work when she has issues with her arm? (F6, 30 years, 5 children).

These myths and misconceptions often stemmed from the spread of inaccurate information through the participants social network, including friends, relatives and neighbours. Generally, information relayed by the social network had a direct influence on contraceptive decisions for many women and men.

Family planning providers' attitudes

Family planning providers' attitudes deterred some participants from initiating contraception after delivery as they did not give women and men adequate information on contraception. One male participant expressed frustration, saying,

> *We consulted a health worker who discouraged us from using FP; that much as FP is good for spacing and stopping childbearing, it has side effects. In the end she did not give us anything (M39, 45 years, 9 children).*

A few family planning providers did not provide methods to certain categories of women. This did not comply with the Uganda national guidelines stipulating that sexually active females in need of contraception are eligible for family planning services provided that: they have been educated and counselled on all available family-planning methods and choices and that attention has been paid to their current medical, obstetric contra-indications and personal preferences. For instance, there is a belief in Mayuge district that twins should never be last born children regardless of one's family size. As such, there are special ceremonies organised by clan leaders to appease the ancestors as well as to name the twins. FP providers who adhered to this cultural belief discouraged women with twin births from limiting births to fulfil prevailing cultural demands. The comment below illustrates this practice:

> *When I had the twins, I knew I should go for sterilisation such that I stop having children. Unfortunately, the health provider advised me not to go for a permanent method. The provider told me that, culturally, twins should not be last born (F34, 27 years, 5 children)*

Nonetheless, all family planning providers had favourable views toward sterilisation and were clear in stating that it was appropriate only for women who were certain they had achieved their desired family size. However, a few men and women who were motivated to adopt a method but did not trust the family planning providers (especially providers from public health facilities) sought contraceptives from other private facilities. Women were afraid that the providers would inform their disapproving husbands about their

contraceptive use. This was confirmed by one midwife from a public health facility who explained that:

> *This being a small community, women have at times seen their husbands speaking to FP providers. We usually have community outreaches and it looks like the women are afraid we might report them to their husbands. This instils fear among women who worry that we will report women's contraceptive behaviour to their partners. As a result, women resort to drug shops where they self-prescribe inappropriate methods*

Furthermore, FP providers do not conduct blood tests to screen for contraindications for all contraceptive methods such as oral contraceptives prior to prescribing them. Rather, they use the WHO Medical eligibility criteria wheel (WHO, 2015) that guides FP providers in recommending safe and effective contraception methods for women with medical conditions or medically relevant characteristics. The wheel guides family planning providers in recommending safe and effective contraception methods for women with medical conditions or medically-relevant characteristics. For example, women are asked if they have ever used hormonal contraceptives and suffered complications such as dizziness, confusion or irregular bleeding. Based on one's history, women who report they suffered from certain side effects in the past, are told that their "blood" does not match with any method. One male participant said:

> *Immediately after birth, we wanted to choose a method but unfortunately we didn't get one. The nurses told my wife that her a 'blood' doesn't match with any method (M37, 36 years, 3 sons).*

Three women whose menses had not returned but had resumed sexual activity were told to have a pregnancy test before being offered a method as the FP provider needed to be reasonably certain that the woman was not pregnant. Most of the times, pregnancy tests are not carried out at public health facilities because of stock-outs of the pregnancy test strips. In such instances, women are referred to drug shops to purchase the pregnancy testing strips and thereafter return to the facility for a method after confirming that they are not pregnant. One key informant reported concerns about availability of fake testing strips

on the market which result into classifying a pregnant woman as not being pregnant and therefore posing consequences to the woman's health.

> *The only way we can rule out pregnancy is requesting an amenorrhoeic woman who has resumed sex to take a pregnancy test. It is unfortunate we never have pregnancy test kits. We are concerned about the many fake testing strips on the market— a fake pregnancy strip gives false results (Midwife, Public health facility).*

Attitudes of and information from one's social network may be considered more reliable and convincing than information from health care providers, particularly with regard to contraceptive side effects. Some health providers reported that during health talks, some women in attendance, who may have experienced side effects – persuade the rest not to use those particular methods, as expressed in the comment below:

> *Even after a health talk, one woman who may have experienced side effects, can stand up and speak negatively about FP to the rest of the women in attendance (Midwife public health facility).*

However, some participants expressed a more cordial relationship with their service providers. Some providers clearly supported the right of couples to make informed and voluntary choices about planning or avoiding pregnancy. One woman said;

> *The service providers are not bad. The time I over bled when using injections, I explained to them and it was resolved (F31, 27 years, 5 children).*

Discussions about postpartum contraception with FP providers emphasised use of LARC-particularly implants which made women more open to this option. At the time of the interviews, the Postpartum IUD was in the early stages of being rolled out (introduced in 2016) in Mayuge district and a few midwives had undergone training on PPIUD insertion. However, one provider noted the skill gap of insertion and removal of IUDs even after training:

> *Right now the Postpartum Intrauterine device is on board. This is supposed to be given immediately after birth. But, the coverage is very small. It is not widely known*

and some providers are unable to provide it even after they have been trained and
oriented (Mayuge district FP focal person)

However, increased knowledge about LARCs did not result in uptake among women. Only a few women chose LARCs. This was attributed to some Institutional barriers. According to the 2011 Mayuge District Local Government report, LARCs can only be provided by trained providers and yet Mayuge district has a limited number of technical staff (Mayuge and Government, 2011). The available staff at most of the public health facilities easily administer methods such as injectable hormonal contraception which do not require technical staff. This could perhaps explain why injectables are the most popular methods in the district. Relatedly, Postpartum IUD is not widely known and generally women have a negative attitude towards PPIUD. One health provider mentioned that:

> *Women have a negative attitude towards IUD. The conventional IUD that is known*
> *is the one given at 6 weeks. Even the FP providers do not know the PPIUD (Midwife,*
> *Public health facility)*

Providers emphasised that during FP counselling, they encourage women to wait at least two years before attempting the next pregnancy, provide counsel on timing of sex after delivery, use of the Lactational amenorrhoea method and initiation of postpartum family planning. In addition, women are told to exclusively breastfeed their infants for at least six months. Talking about this issue, an FP provider said:

> *We advise them to start using family planning at six weeks; otherwise they can*
> *easily get pregnant. In this community most mothers typically breastfeed for up to*
> *two years. This means some take as long as two years without seeing their menses.*
> *But we can't be sure they will exclusively breastfeed for the first six months*
> *postpartum. That is why we encourage them to use a method after six weeks*
> *(Midwife, Public health facility).*

Further, findings revealed that FP providers did not routinely discuss family planning during any other scheduled visits. Field notes from programme managers in Nigeria too indicate that postpartum FP is not routinely discussed during antenatal or postnatal visits (Unumeri and Ishaku, 2015). In this study, none of the participants had received such information from a provider after delivery. One woman who reported that she had

not gone back to the health facility since delivery stated that at the outreach centre where she takes her child for immunisation, no family planning counselling was offered.

> *Interviewer: So, what kind of advice or counselling have you received about further childbearing since you had your recent child?*
>
> *Participant: None*
>
> *Interviewer: Why is that?*
>
> *Participant: Because I have not gone back to the health facility since I delivered*
>
> *Interviewer: How about where you take the baby for immunisation?*
>
> *Participant: Where I immunise from, there is nothing like FP information given to us. It is just an outreach service (F8.37 years, 4 children).*

Clearly, there are many missed opportunities for providing women with postpartum family services given that there are multiple points of contact with the health system – at, delivery, postnatal care, growth monitoring, and immunisation, that are not well utilised.

When asked whether FP providers specifically target male partners for postpartum counselling, all providers reported that they target men but managed to attract only a few. Different strategies were being used to invite husbands to health facilities. For instance, partners were notified by a letter inviting them for counselling with their wives.

Low perception of pregnancy risk

When asked about the best time to resume contraceptive use after delivery, more than half of the women (18/29) and only one man (1/14) reported that resumption of contraception use after delivery depended on either resumption of menstruation or resumption of sexual activity.

Postpartum amenorrhoea

The period of postpartum amenorrhoea is generally a time when a woman is protected from a subsequent pregnancy and thus has a reason to postpone initiation of contraceptive use regardless of her future childbearing desire. However, previous studies have shown that

pregnancy can occur prior to return of menses (Gray et al., 1990, Becker and Ahmed, 2001), implying that amenorrhoea should not be relied on. The median duration of amenorrhoea among women in Uganda is 9.6 months (UBOS and ICF, 2018). In this study, the duration of postpartum amenorrhoea ranged between nine months and fourteen months which is in range with the national median duration. Nearly all women believed that they were completely protected from pregnancy while amenorrhoeic suggesting a lack of awareness of the risk of pregnancy. Women believed they should commence menstruation before resuming contraceptive use highlighting a lack of knowledge regarding return to fertility after childbirth. It was common practice for FP providers to ask women to return for contraception after resumption of menstruation as stated below:

> Before dispensing contraceptives, some FP providers request amenorrhoeic women who are more than six weeks postpartum to wait for the return of menses or to take a pregnancy test to rule out pregnancy (midwife, private health facility).

However, three women were aware that pregnancy could precede resumption of menstruation. This kind of pregnancy is locally referred to as "dhanakumu". Of the seven women who initiated contraception after resumption of menses, four admitted there was a personal risk of conceiving without menses being seen (dhanakumu). This was based on their past experience with an unplanned pregnancy while amenorrhoeic. In addition, there was a belief that this trend could repeat itself after subsequent pregnancies. As one participant said:

> I also know it [amenorrhoea] protects women from conception but for me it has not worked because for some of my children, I conceived within three months after delivery and yet I had not resumed menstruation (F37, 39 years, 12 children).

Surprisingly, three women (3/4) who had ever experienced conception without resumption of menses, reported they were not using contraception. Some FP providers confirmed that indeed, fecundity returns without menses being seen. As such, they encouraged all women to adopt a family planning method at six weeks postpartum, because by this time, some women, who are still amenorrhoeic but have resumed sexual activity, are at risk of unplanned pregnancy. Among the four amenorrhoeic

women, only one reported that they were using a "back up" short term contraceptive method as they waited for the resumption of menses, based on clinical advice. Once their menses returned, there was a tendency to switch to a more effective contraceptive method obtained from the health facility.

> *At the health facility, they advise us to use a method soon after delivery, as we wait for our period to return. They say you can get pregnant. We started off with condoms. My menses returned at 10 months. Thereafter, I got the implant (F11, 27 years, 5 children).*

Resumption of sexual intercourse after delivery

When asked about resumption of sex after childbirth, the timing varied among participants. Only four women (4/29) reported they were practising postpartum abstinence. All men, except one had resumed sexual activity. Of the 25 women who had resumed sexual relations, postpartum abstinence ranged from at least three weeks postpartum, and rarely exceeded six months suggesting early resumption of sex in this sample. Those who abstained for six months or longer (two women, 2/4) tended to either have had a birth-related complication or did not live with their partners. One woman who had a caesarean delivery and had not resumed sexual intercourse said:

> *(Laughs) You see since I delivered this baby [7 month old baby] by caesarean section, I have taken my time and I have not had sex since. I feel I am still unwell. I am waiting for clearance from a health worker then I will do it. I still fear I may get a problem (F19, 33years, 6 children).*

Those without serious complications after delivery were advised to resume sexual intercourse after six weeks after delivery to allow cessation of lochial loss and healing of perineal tears. This is in line with the Uganda Ministry of Health guidelines that recommend mothers to abstain from sexual intercourse for at least six weeks after delivery (Republic of Uganda Ministry of Health, 2016). The health workers also believed that by six weeks, the woman's uterus has returned to its pre-pregnancy state and would not be "disturbed" by sexual intercourse as reported by a midwife from a private health facility in the excerpt below:

> *Interviewer: After how long should women resume sexual intercourse following childbirth?*
>
> *Participant: After six weeks because a woman has healed properly, the uterus is back to its position and it won't get disturbed by sexual activity.*

For those that had a complicated delivery (eg caesarean birth), it depended on the gravity of the complication; they were advised to wait at least three months for the scar to heal. Regarding this issue, one participant attributed her vaginal tear to early initiation of sexual intercourse after delivery:

> *I resumed sex after two months but it gave me problems. I got a tear because I had not healed properly (F33, 27 years, 5 children)*

However, some women argued that it was impossible for men to abstain from sexual activity for such a long time (six weeks). Men would possibly have extra- marital affairs to meet their sexual needs, consequently risking contracting HIV and other STDs. Indeed, postpartum abstinence is perceived as being against natural human sexuality and is likely to result into extra-marital affairs (Makanani et al., 2010, Zulu, 2001).

Women, as shown in the excerpts below, attributed early resumption of sex to their partners' demands, whom they felt were impatient and could not wait for them to 'heal' and as such resumed sexual relations earlier than desired.

> *Women should resume contraceptive use when the child is one to two months old because some women can conceive during that time. There is a woman I know who conceived before the baby was four months old. Some men are impatient [demand sex soon after delivery]. They cannot wait for their partner to heal fully (F37, 35 years, 7 children)*
>
> *Women should use contraception immediately or at least a week after delivery. We have a neighbour who had sex within a month after delivery and by the end of the second month she was pregnant. Right now the children look like twins (F36, 27 years, 5 children).*

We resumed sex after three months. It was my husband who initiated it. I had not thought about it (F35, 39 years, 12 children)

At the same time, women had a tendency to adopt modern contraceptives only after the resumption of sexual activity. The practice of abstinence is closely connected with a belief that resumption of sexual intercourse prior to weaning has a detrimental effect on both the quality and quantity of the mother's milk. This detrimental effect is believed to be caused primarily by the entry of semen into the womb. This belief was held by three women.

Time since delivery also contributed to contraceptive non-use. A few participants (2/29 women, 3/14 men) mentioned that they had not initiated contraceptive use because their last child was still very young. These participants had children aged less than one month old indicating a positive relationship between time since birth and contraceptive use. One man in a polygamous union, whose last child was one month old but was motivated to use contraception, said that he had intentions of accompanying his wife to the health facility for a family planning method when the child is three months old. He said:

I always take my wives for FP. One of my wives is using capsule [Implant] and the other has just had a baby but I plan to take her at three months so they can put the Implant (M33, 35years, 8 children)

Breastfeeding status

During FP counselling sessions, FP providers encourage women to exclusively breastfeed their infants for up to six months, which is in line with the WHO guidelines(World Health Organization, 2005). Beyond six months postpartum, supplementation is initiated as breastfeeding no longer provides what the infant needs in terms of micro and macro nutrients. All women, except two were still breastfeeding at the time of the interview. Generally, the primary motive for breastfeeding was to nurse the new-born. Women were reluctant to initiate contraceptive use while breastfeeding citing concerns of inhibition of lactation attributed to use of contraception (Kennedy et al., 1997, Hartmann et al., 2003). Only five women were aware of the positive effect of breastfeeding on birth spacing. Of these, three women confessed having inadequate knowledge on how breastfeeding

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protects them from conception. Commenting on the effects of breastfeeding on contraceptive use, four participants said:

Most mothers believe if they use contraception they will starve their babies because their breast milk production will be affected. That is the reason some women take about a year without having sex for fear of getting pregnant when the baby is still breastfeeding. They believe delaying sex will sustain the body supply of breastmilk (F30, 35 years, 5 children).

Contraception does not have any effect on my breastfeeding, though one of my friends told me her breast milk reduced while on the injection (F27, 39 years, 4 children).

I am still breastfeeding, I will resume family planning when the baby is weaned. Because of continuous breastfeeding, the reproductive system is infertile, at times I do not see my periods until the baby stops breastfeeding. Now I know I can't get pregnant.

I am currently breastfeeding but I do not know the dynamics of breastfeeding and how it prevents pregnancy. What I know is when I breastfeed I never conceive up until when the child stops breastfeeding (F38, 35 years, 7 children)

A recurrent theme in the interviews was a sense among women that they are expected to exclusively breastfeed their infants for the first six months as advised by their FP providers. By contrast, none of the male participants knew about the fertility-inhibiting effect of breastfeeding. Men considered breastfeeding a woman's domain and confessed lack of knowledge on how breastfeeding works. Doubts were expressed when the participants were asked if exclusive breastfeeding (EBF) was feasible. There were some views that the mothers' nutritional status was inadequate which implied that EBF was not well practised in this community. In fact, some women reportedly gave cow milk, millet porridge, soups and smashed Irish potatoes to infants younger than six months of age. For example, three participants said:

These women are supposed to breastfeed for two years. That's what we tell them. However, it depends. There is a lot of poverty in the area, people sell off

the food they grow. Even when the mother would love to breast feed for two years, she's unable to do so because of the bad feeding resulting into reduced milk supply (Midwife, Public health facility).

Two women reported discontinuation of breastfeeding due to pregnancy citing concerns that breastfeeding while pregnant would affect the infant's health. Generally, cessation of breastfeeding was influenced by cultural beliefs, myths and misconceptions as illustrated in the quotes below:

Women have a belief that once she conceives, she needs to stop breastfeeding. They believe that the infant will get diarrhoea because the breast milk gets diluted and loses nutritional value. No wonder we have a lot of malnutrition in this area (FP focal person, Mayuge district).

When a mother is pregnant, her body temperature increases and if the baby is put on the mother's body to breastfeed, they believe the temperature will burn the baby and fall sick (Midwife, public health Facility).

To get the older baby used to solid food early enough prior to the next birth (F6, 29 years, 3 children).

In this community people say the pregnant mother is irritable and has no passion for the baby, since breast feeding needs passion, they stop breastfeeding that is why they normally take the child to the grandmother (F13, 31 years, 5 children).

Theme IV: Perceived behaviour control: ease or difficulty of using contraception

Accessibility and availability of quality family planning services

Despite national gains in availability of contraceptives over the past decades, participants recounted many barriers that inhibited wide spread access to quality family planning services. These included long wait times upon arrival at the health facility and lack of diversity in the contraceptive methods available at public health facilities. Having a wide range of methods available allows women and men to select a contraceptive that best fits

their lifestyle and need. A strong programme also ensures accurate information is disseminated such that individuals understand the relative effectiveness, mode of action and side effects of different methods which enables them to make an informed choice.

Long distances to the health facility and complexity of the postpartum period impacted the quality of services women received, which made going to the health facility prohibitive for women, as reflected in the quote below:

> *Some women come from far away to give birth. The issue of distance may prohibit them from returning for postnatal care (FP Focal Person).*

Generally, after childbirth, mothers experience an increase in household chores, tiredness, and responsibilities of looking after both the older children and the new-born. One mother admitted that due to the demands of having a new-born, she had not had time to return to the health facility for counselling:

> *After delivery, I have a lot more to do than before. I have to look after the other children and the new-born, I even have back problems and feel weak. Before I know it the day has ended. It is unlikely I will get the time to return to the facility (F6, 33 years, 3 children).*

While public health facilities in Uganda provide family planning services free-of-charge, it appeared that some women lacked sufficient information about whether all methods are free. Some women mentioned that there were expectations to make payments for some family planning services. For instance, one woman who was currently using injectables but preferred a permanent method said:

> *I don't want to give birth any more but I chose to use injections which are short term. I don't have money to pay for a tubal ligation (F30, 36 years, 8 children).*

Another female participant who had never used contraception explained that:

> *I hear most family planning methods are available at the health facility and they are free, but the IUD has a problem. They [FP providers] ask for money to remove it (F32, 41 years, 9 children).*

Indeed, anecdotal reports indicated that women pay 30,000 Uganda shillings (equivalent to £6) to have the IUD removed. These hidden costs could perhaps explain the low uptake of IUD among women as shown in the quantitative results (Figure 5.2). Figure 5.2 showed that only 4.2% of women reported IUD use.

The WHO's *Medical Eligibility Criteria for Contraceptive Use* recommends the use of different contraceptives in the first year postpartum depending on whether the woman is breastfeeding or not and the time since delivery. From birth up to six months afterwards, a woman who is exclusively breastfeeding can use the Lactational amenorrhoea method. Other options for breastfeeding women include IUD and female sterilisation. However, permanent methods (male and female sterilisation) are not provided directly at any of the health facilities within Mayuge district. They are offered using an outreach approach by two Non-Governmental Organisations–Marie Stopes International Uganda and Programme for Accessible Health Communication and Education (PACE) that serve the whole population in Mayuge district. Upon arriving at the outreach site, all clients are taken through a group counselling session, followed by individual counselling and thereafter written informed consent for the procedure. One key informant said:

> *The programmes people [PACE and Marie Stopes] perform sterilisation on certain days. So, it is not a method that is available at the facility on a daily basis. If a woman requests for a TL [tubal ligation], we have to give it a bit of time as we wait for Marie Stopes or PACE to come to the facility. In the meantime, we advise the women to use some short term methods as she waits (Midwife, Public health facility).*

One woman who wished to be sterilised said:

> *I very much want to get sterilised. I was told the Marie Stopes' team will be coming for the outreach in the community but they have not yet come (F18, 39 years, 4 children).*

These occasional outreach mobile services were unable to meet the needs of women who wished to limit their family sizes and could perhaps explain why none of the women reported they had undergone sterilisation as found in the quantitative results (section 5.3.1)

Women's autonomy/decision making

Autonomy focused on women's ability to take decisions irrespective of other influences or attitudes. A few women who were currently using contraception reflected their own control over the decision.

Theme V: Intention to use contraception in future

Study findings indicated that the majority of both women (17/29) and men (10/14) for various reasons, were not using contraception at the time of the interview. These were asked whether they had an intention to use contraception in the future as Intention to use contraception is a major step in the process of initiating contraceptive use after childbirth. Four women (4/17, 23.5%) and one man (1/10, 10%) reported an intention to use contraception in the future. Female sterilisation was the most commonly reported planned contraceptive method, followed by implants and condoms. Sterilisation was preferred because it is a highly effective permanent contraceptive method. Also, sterilisation was mostly reported by participants with very high parity (over 8 children) as stated below by a mother of 9 children who wished to use sterilisation in future:

> *I do not want to have any more children. I already have so many. I want a permanent solution. I will go for sterilisation (F35, 39 years, 12 children)*

However, there were some gender dynamics exhibited in choosing to use some contraceptive methods. For example, among couples who chose to use a permanent method in future, it was often the women to take it up rather than the men. As one participant said:

> *I discussed with my wife, about not having any more children. We agreed that she should be the one to go for sterilisation (M39, 45years, 9 children)*

When probed about their reasons for not choosing a vasectomy but rather have their wives take up sterilisation, one man reported concerns of poor sexual functioning and physical strength after the procedure. Low acceptance of sterilisation by males has been reported in an earlier study among potential and actual sterilisation clients in Tanzania (Bunce et al., 2007).

Familiarity with a method is clearly important and may help explain why some methods dominate use or future use. For instance, most participants (particularly women) who mentioned sterilisation as a planned contraceptive method also knew someone close to them who was sterilised and had favourable results as evidenced in the excerpt below:

> *I advised my mother to get sterilised. It is now 10 years and she is not complaining. I feared the side effects they normally talk about, but she has reported none. She has been doing her housework without any issues. I hope to go for the same (F30, 35 years, 5 daughters).*

The most frequently stated reasons for lack of intention to use contraception in future, among those who had never used any contraceptives were: religious beliefs and fear of side effects.

7.4   Summary of key findings

- All participants had good knowledge of contraception. This did not, however, directly lead to contraceptive use. Less than half of women (12/29) and 28.6% (4/14) of men reported contraceptive use. The fear of side effects, perceived low risk of pregnancy, partner opposition and religious considerations were key factors that contributed to contraceptive non-use.

- The chapter findings on attitudes show that majority of the participants (especially men) held negative views towards using contraception. Narratives of side effects attributed to a contraceptive method are memorable and powerful—they influence uptake and continuation of contraception. The most strongly expressed feeling was that fear of side effects (whether real or perceived) is an important determinant of their acceptability. These fears stemmed from an overall lack of knowledge and/or inadequate counselling from FP providers.

- With regard to subjective norms, this chapter brought to the forefront the crucial role that partners play towards contraceptive behaviour. Partners were reported to oppose, force, threaten and use violence to discourage contraceptive use.
  -This study found that religious affiliation has a strong negative influence on general attitudes towards contraceptive behaviour, particularly among Catholics and

Muslims. Muslim men believed that using family planning was a sin, while Catholics disapproved use of any modern contraceptive method.

- This study also highlighted challenges faced by women in accessing postpartum family planning services. It also revealed the control that men have over women's decisions to use FP.

- The majority of non-users of contraception had low intentions to use contraception. Low intention to use contraception was related to fears of side effects, partner and religious opposition.

Despite programmes to promote contraceptive use, partner opposition, religious beliefs and side effects remain key impediments to uptake of contraception among postpartum women. These results confirm those obtained from other studies in sub-Saharan Africa (Ndugwa,2011; Keogh 2010; Keesara 2013), which suggests that these old influences are still a challenge in most African settings including rural Uganda.

Chapter 8   Discussion, conclusions, and policy implications

8.1   Introduction

Although some research has been conducted on Ugandan women within the postpartum period (Gutin et al., 2014, Rutaremwa et al., 2015, Litwin et al., 2015, Sileo et al., 2015), no single mixed method study exists which investigated fertility desire and contraceptive use among Ugandan women in the extended postpartum period. This study sought to obtain data to address this research gap by extending our understanding of how Ugandan women in the extended postpartum period make decisions about further childbearing and contraceptive use. It is hoped that the findings of this research will assist the Government of Uganda and other relevant bodies in developing appropriate policies and programmes aimed at reducing high fertility in Uganda and lend support for the need to strengthen the provision of postpartum family planning to this population.

In this final chapter, I interpreted and summarised the findings of this research, drawing on relevant literature and concepts to conceptualise the results. Section 8.2 of this chapter presents an overview of the research questions, how each one was answered, and the study design. Section 8.3 presents a discussion of the main findings and how these relate to the literature. This is followed by section 8.4 highlighting policy implications and recommendations based on the study findings. Finally, limitations of the study and contribution to knowledge are outlined in section 8.5 and 8.6 respectively and suggestions offered for future research in section 8.7.

8.2   Overview of the research questions and the research design

This study was driven by the overall research question: How do Ugandan women within the extended postpartum period make decisions about further childbearing and contraceptive use? To answer this question, I used two frameworks, the Traits-Desires-Intentions-Behaviour framework and the theory of planned behaviour (refer to Chapter 2, figure 2.1 and 2.2 respectively) to derive the following five research questions:

1) To what extent does the sex composition of living children and child sex preference influence the desire for another child among Ugandan women in the extended postpartum period?

2) Do women's expressed fertility desire correspond with their actual contraceptive use?

3) What are the motivations for subsequent childbearing among women who have had a birth within the last two years?

4) What considerations do women make when deciding to use contraception after childbirth?

5) What family planning services and support are offered by health providers to Ugandan women within two years of childbirth?

The first set of questions (Question 1 and 2) were addressed using quantitative data from the 2016 Uganda Demographic and Health Survey, utilising information from 5,088 women who were non-pregnant, fecund and had a live birth within the two years preceding the 2016 UDHS. This was a young population (below 30 years, 66.6%), most of the respondents had only seven years of education (60%), were Christians (70%), married (84%) and resided in rural areas (78.7%). Fewer than half (44.7%) of the respondents were employed in agriculture-related employment. On average the respondents had 3.4 children and a mean ideal number of 4.8 children.

The second set of questions (Question 3, 4 and 5) were answered using qualitative data. In-depth interviews were conducted with 14 men and 29 women who had a child in the two years preceding the interview, in Mayuge district, located in Eastern Uganda. Mayuge was purposively selected based on its very high fertility rate of 5.8 children per woman (Uganda Bureau of Statistics, 2017), which is even higher than the national total fertility rate of 5.4 (Uganda Bureau of Statistics & ICF International, 2018). In addition, interviews were conducted with 13 family planning providers whose remit includes postpartum women. Similar to the quantitative sample, the qualitative sample comprised participants who were not highly educated, many were engaged in peasant farming or business activities, and most were Muslim. On average the women had 5.3 children while the men had 6.7 children (Table 6.1). Majority of the participants were in monogamous marriages and some few were in polygamous

unions. Thematic analysis was used to identify key themes and patterns as shown in Chapter six and seven.

Overview of the research design

The desire to have more children and contraceptive use decision-making among postpartum women is a complicated process influenced by a multitude of factors. This study adopted a mixed methods design in order to answer this question holistically. The quantitative study based on 2016 UDHS data was designed to provide information on the factors that were associated with women's fertility desire and contraceptive use. In isolation, the survey research would have been unable to offer much in providing the answers to these questions and interpreting the findings (Creswell and Creswell, 2017). For example the survey did not provide insight into why respondents' desire for more children was high and why only a third of the women reported contraceptive use (Chapter 4 and 5). The qualitative component of the study provided more in-depth knowledge on the fertility decision-making and contraceptive use among this population. The purpose of the mixed methods approach was to enhance understanding of fertility desire and contraceptive use by looking at it from different viewpoints, to compare and triangulate the results and to corroborate the findings. This complementary feature of the study methods deepened our understanding of fertility desire and contraceptive use by enhancing completeness of the data, providing the context for interpreting the research findings, and offsetting the weakness in one approach with a more nuanced understanding provided by the other.

Completeness

In this study, the qualitative data highlighted important gaps in information obtained using the quantitative methods. For example, the qualitative methods revealed important themes not covered in the DHS questionnaire, such as structural barriers to contraceptive use and quality of postnatal care received by clients. These themes explained why only a small proportion of postpartum women reported contraceptive use despite their nearly universal knowledge about how to prevent further pregnancies. Qualitative data also revealed that family planning programmes inadvertently targeted women, many of whom were not able to make unilateral family planning decisions. The findings thus explained why there had been low uptake of family planning services among postpartum women

and provided evidence for recommending policies such as targeting of men in order to enhance use of family planning services among postpartum women.

Explanation of findings

The qualitative findings also provided insight into some of the statistically significant associations found in the quantitative data. For example, the quantitative data showed that women with children of the same sex composition were more likely to desire more children than those with children of a mixed sex composition. In-depth interviews confirmed that women with children of the same sex desired more children due to the socio cultural benefits arising from having children of both genders. There were feelings of anger and distress among women and men, who were criticised by community members for having children of the same sex, especially when girls. Their narratives gave the impression that couples with children of the same sex are forced to follow the cultural norm of having at least one child of either sex to fit in the community.

With regard to low contraceptive use, men held the power in decision-making; therefore, when they wished to use contraceptives, they had the power to act upon it. This was not the case for many women who were often unable to negotiate contraceptive use. Together these findings illustrated the strong patriarchal influence on female reproductive behaviour in Uganda. This knowledge can be used to shape future interventions that seek to assist postpartum women in meeting their reproductive needs.

Providing Context

One of the most important contributions of the qualitative arm of this study was providing contextual information about fertility desire and contraceptive use among postpartum women. Using a mixed methodology enhanced understanding of the cultural context in which women made decisions to continue to have children despite their vulnerability to unintended pregnancy. Based on the study's quantitative findings, of the 3,059women who said they did not desire to have any more children, 34.9% were not using any form of contraception: The qualitative findings revealed that some women were unable to prevent unwanted pregnancies despite their wishes not to have any more. This was in part attributed to inaccessible methods such as sterilisation which is offered using an outreach approach. In fact, some women who wanted to use long-acting and permanent methods turned topless effective methods to limit their fertility. The context in which postpartum women made these decisions was critically important as it

enabled a better understanding of the fertility desire and utilisation of family planning methods and services in this sample.

Having presented an overview of the research questions and the study design, the next section presents the key findings framed within the Traits-Desires-Intentions -Behaviour framework for the first section on fertility desire and the Theory of Planned behaviour for the section on contraceptive use followed by a discussion of how the findings relate to the literature.

8.3   Discussion of the main findings

In total, the quantitative study comprised a sample of 5,088 women. Largely a young population, most women had primary education, many were Roman Catholic, married and resided in rural areas. Respondents had a median number of three children and majority had children of a mixed sex composition. The qualitative sample comprised 29 women, 14 men and 13 family planning providers. All participants were married, Basoga by ethnicity and had at least three children. Most participants were not highly educated, many were peasant farmers, majority were in monogamous relationships while some few were in polygamous relationships.

8.3.1   Fertility desire among postpartum women

The objective of this study was to examine the determinants of fertility desire among postpartum women using a mixed methods approach. Drawing the qualitative and quantitative data together, this study found a high level of desire to have children among this postpartum population. The quantitative findings revealed that more than two thirds (68%) of the respondents desired more children in the future. The qualitative results painted a similar picture. More than half (56%, n=24 of 43) of the study participants said they still wanted to have children. Moreover, majority of the women in the qualitative and quantitative sample desired to wait at least two years before attempting another pregnancy or stop childbearing altogether. This observation is further supported by findings from previous studies on fertility desire among postpartum women which showed that over 90% of postpartum women did not wish to become pregnant within two years of childbirth (Moore et al., 2015, Ross and Winfrey, 2001b). One plausible reason for this finding is that postpartum women are aware that waiting for at least two

years helps the woman to fully recover from the stress of the previous pregnancy, thus improving her health status. These data suggest that the postnatal period is a critical time to address family planning needs considering that many postpartum women do not wish to be pregnant within two years of childbirth or wanted to avoid childbearing.

The high fertility desire in this study (68% and 56% from the quantitative and qualitative results respectively) is consistent with findings from other studies in sub-Saharan Africa (Oladapo et al., 2005, Warren et al., 2013) but contrasts recent cross-sectional studies which reported lower rates of desire for children among postpartum women in sub-Saharan Africa. Gutin et al. (2014) in their study on fertility desire among 403 women receiving postnatal care at an urban health facility in Kampala, Uganda reported that 35% of women within 4 to 12 weeks of delivery wanted more children. Of these, 25% wanted another child within 2 years and 75% within 3 years or more. Similarly, Mayondi et al. (2016) reported that only 24% of women within seven days of delivery, at two sites in Southern Botswana wanted more children.

The higher fertility desire in this quantitative sample was partly due to the fact that this was a young cohort (median age 26, Table 4.1) and more than three quarters (86.2%) of the sample regarded four or more children as their ideal family size yet approximately 60% had fewer than four living children at the time of the survey (Table 4.2). This result is confirmed by the qualitative findings which showed that young women who had not yet attained their ideal family size desired more. This finding confirms other Ugandan studies that found increased fertility desire among women who had not yet achieved their desired family size (Maier et al., 2009, Matovu et al., 2017a, Kipp et al., 2011).

Furthermore, the quantitative findings showed that 8% of the respondents desired to have a child within two years of delivery. For postpartum women, having a subsequent pregnancy within two years of the previous birth (short birth to pregnancy interval) exposes the woman, new-born and unborn child to adverse maternal and child health outcomes including mortality. However, a strong desire for childbearing among postpartum women makes the risk of a short birth to pregnancy interval and adverse health outcomes a secondary concern.

The quantitative study revealed that the factors that were significantly associated with an increased desire to have another child were: having children of the same sex composition

and being Muslim. Factors that were associated with less desire for children included: reporting that the most recent child was unwanted, having more than her desired number of children or having attained her desired family size, being unmarried, having no education and being unemployed.

To illuminate the dynamics of fertility desire in this study, the discussion is framed using Millers Traits-Desire-Intention-Behaviour framework. The Traits-Desire-Intentions-Behaviour framework comprises a series of steps that ultimately influence reproductive behaviours including childbearing decisions. This framework views the desire to have children as an outcome of traits and thereafter desires are activated into intentions to have or not to have children. According to Miller (1994), Traits are mental structures that guide behaviour based upon biological characteristics and social experiences. Traits are activated into specific childbearing desires including number of children and the ideal time to have a child. Intentions are shaped by the context in which one lives, and this step in the fertility decision-making model most directly translates into what decisions one will ultimately make. I proceed to discuss the results based on the components of the Traits-Desires-Intention-Behaviour theory.

Motivational traits towards having more children

Similar to previous research (Keogh et al., 2012, Yaya et al., 2018, Dibaba, 2009, Milazzo, 2014, Adebowale and Palamuleni, 2015a), the study findings showed that the most striking result that emerged from the multivariate analysis was that having children of the same sex was associated with a higher likelihood of wanting another child in comparison to women with children of a mixed sex composition. Women with children of the same sex composition were 4.48 times more likely to desire children than those with children of a mixed sex composition after controlling for education, religion and employment. This finding suggests that both sons and daughters are desired in Uganda.

Narratives from the qualitative study revealed that preference to enjoy benefits accrued from having both genders was the most common reason reported for wanting children of a mixed gender. Sons were valued for purposes of continuing the family lineage and as sources of financial support during old age while daughters were preferred for their assistance in household chores and as sources of bride wealth. Ugandan marriage practices demonstrate that daughters have an important economic value for the family

because parents are given bride wealth after marriage (Bantebya et al., 2014, Muthegheki et al., 2012).

Another plausible explanation for a higher desire for another child among women with children of the same sex composition might be that the Ugandan culture is evolving—women in Uganda want to have at least one daughter and one son rather than a family that consists of only sons or only daughters, indicating that patriarchal structures and cultural norms regarding fertility desire and children's sex composition are changing. This finding reflects those of Snow et al. (2013) in their study on fertility desires, who also found that the ideal family sex composition of Ugandan women is two sons and two daughters.

There is however some underlying son preference because a high proportion of women with more sons than daughters in the quantitative sample reported that their last pregnancy was unintended. Also, qualitative data revealed that women who had only sons felt "lucky" and were under less pressure to bear more children compared to those with only daughters. This is an important finding that is less often stressed. Most studies examining the effect of sex composition on fertility desire just compound everything and report same sex composition rather than disaggregating actual sex composition (whether only sons or only daughter). Son preference in this typical patriarchal system is consistent with findings in previous studies conducted in sub-Saharan Africa and elsewhere where son preference has been reported (Rossi and Rouanet, 2015, Ndu and Uzochukwu, 2011, Milazzo, 2014, Beyeza-Kashesya et al., 2010c) and contrasts studies in matrilineal contexts where preference for daughters is the norm (Adebowale and Palamuleni, 2015a, Fuse, 2010).

Consistent with previous research conducted in sub-Saharan Africa that highlighted men and community members crucial role in women's childbearing decisions (Mohlala et al., 2011, Ezeh et al., 1996, Ijadunola et al., 2010, Lasee and Becker, 1997), the qualitative study findings revealed that women's fertility desire was largely shaped by their partners and community members. A woman is more likely to desire more children if she believes that the community members/ partner desire a certain sex of children. Community members are often eager to see couples bear children of a mixed sex and are part of the

decision making process, highlighting the influence of one's social environment on women's fertility behaviours.

Surprisingly and contrary to the study hypothesis, and studies elsewhere (Mwageni et al., 2001, Kastor and Chatterjee, 2018, Edmeades et al., 2011, Adebowale and Palamuleni, 2015a), no significant association was found between child sex preference and fertility desire in multivariate analysis. This was an unexpected result. The explanation for this result may lie in the meaningfulness of the response to the question on fertility desire in the Demographic and Health Survey. In the DHS, women are asked, "Would you like to have (a/another) child, or would you prefer not to have any (more) children?" According to Miller (1994) TDIB framework, preferences are "wishes" which may not be strongly held. It can thus be suggested that other factors (such as, love of children, male authority in family size decisions and fear of abandonment) beyond child sex preference, operate at a more proximal level to influence fertility desire among women.

Maternal health concerns were also an important motivational trait. The qualitative sample revealed that women and men whose wives had birth-related complications expressed a desire to avoid further childbearing. These complications were common among women of high parities (≥ 5 children) and those of advanced maternal age (≥35 years old) which puts them at increased risk of pregnancy complications such as eclampsia, postpartum haemorrhage, gestational hypertension, still births and preterm births (Ben-David et al., 2016, Waldenström, 2016, Verma, 2009, Ngowa et al., 2013, Dixon-Mueller and Wasserheit, 1991). This is an indication that participants were aware of the elevated obstetric risk associated with higher-order births. It is also possible that women recognised the possibility of experiencing similar complications with subsequent pregnancies. Furthermore, the narratives showed that women who had birth-related complications were more likely to return to the health facility for a routine check- up after the complication, which may have exposed them to discussions on birth limitation with a provider.

In line with this result, previous studies have reported that experience of a delivery-related complication is a risk factor for lowered fertility, complications in the next pregnancy and birth and adverse health outcomes for the next infant (Waterstone et al., 2003, Hemminki, 1996). Consequently, having a history of complicated births and

deliveries reduced women's desire for further childbearing. Relatedly, It is also possible that a woman could desire another child if one of her living children was considered sickly, especially if suffering from birth defects meaning the couple is in dire need of a healthy child.

Age was another key trait influencing fertility desire. Generally, younger women were more likely to want more children compared to their older counterparts as highlighted in the qualitative data. The plausible explanation for this finding is that younger women are more likely to have fewer than their desired number of children and therefore desire more, compared to older women. Another reason could be that young, employed and educated women may wish to have frequent births and thereafter focus on their careers. This finding corroborates those of other studies which found that younger women were more likely to want more children than older women (Kimani et al., 2015, Heys et al., 2009, Johnson et al., 2009, Kawale et al., 2014b). This relationship between age and fertility desire has a significant consequence on unintended pregnancies that are most prevalent among young adults.

Desire to have more children

The finding that women who had more children than their desired family size and those who had attained their desired family size had a lower desire for children compared to their counterparts with fewer than their desired family size revealed the importance of desired family size on future childbearing decisions. Other Ugandan studies have also found that women with fewer than their desired number of children have a higher fertility desire (Matovu et al., 2017a, Gutin et al., 2014, Kipp et al., 2011, UBOS and ICF, 2018). In other words, if the ideal number of children is high, fertility desire will increase to match with the high ideal number of children. Qualitative findings showed that having fewer than the community ideal number of children (6-7 and 8-10 among women and men respectively) is frowned upon in the community. Women with few children are presumed to be infertile and are often stigmatised. Additionally, marriage stability is threatened if women choose to have fewer than the ideal number of children because large family sizes are a source of prestige. By contrast, participants who had more than or those who had attained their desired number of children stated a desire to stop childbearing for various reasons including financial constraints.

Intention to have more children

Patient-provider interactions after childbirth have the potential to contribute to addressing maternal and child health problems by assisting women to make informed childbearing decisions (WHO, 2013b, Ahmed et al., 2013, Sines et al., 2007, Finger, 1997). However, for some women, discussions with FP providers did not significantly influence fertility decisions. Whereas the FP providers reported that they discussed future fertility plans with the women after childbirth, only seven women (7/29) and four men (4/13) reported that their FP provider had done so. Low patient-provider interaction was in part attributed to lack of awareness about the importance of postnatal care services, long distances to the health facility and lack of integrated services which are in line with previous studies elsewhere (Mrisho et al., 2009, Nabukera et al., 2006, Chakraborty et al., 2002). Long distances to the health facilities highlight the need for health services to be brought closer to the women who are in most cases preoccupied with household chores and nursing the newborn as well as attending to their older children. Another reason for the low provider-patient interaction is the fact that postpartum women are more interested in their child's wellbeing rather than future fertility plans as most are practising postpartum abstinence and hence not at risk of conception.

A previous qualitative study among discordant couples in Uganda reported that health workers had not given sufficient advice about childbearing (Beyeza-Kashesya et al., 2009). Another study (Aglaêr et al., 2007)showed that health professionals' advice does not affect the decision to have children because the participants believe that health professionals will be negative towards childbearing. Indeed, discouraging provider attitudes also influenced childbearing decision-making by participants interviewed in this study. For example, there is a belief in Uganda that twins should never be last born children regardless of one's family size. There are special ceremonies organised by clan leaders to appease the ancestors as well as to name the twins. Family planning providers who adhered to this cultural belief discouraged women with twin births from limiting births in order to fulfil prevailing cultural demands. This finding suggests that providers may be unfamiliar with postnatal care guidelines and, therefore, reluctant to support limiting births among some groups of women.

Findings also indicated that religion had a statistically significant effect on fertility desire, with Muslims being more likely to want another child than others. This finding was in agreement with previous studies in Ghana and Nigeria (Gyimah, Adjei, & Takyi, 2012; Izugbara & Ezeh, 2010; Oyediran, 2006) that found Muslim women were more likely to want more children than those affiliated to other religions. Desire for another child was associated with a 43% increased likelihood of fertility desire in multivariate analysis among Muslims as opposed to Roman Catholics. The qualitative findings revealed that Islam—the most prevalent religion in Mayuge district, permits men to marry up to four wives in order to form large families (Audu et al., 2008, Baschieri et al., 2013). This translates into competition for childbearing which is common among co-wives which may explain the difference in fertility desire between Muslims and their non-Muslim counterparts. In addition, there is widespread belief that having many children is a way of preserving the community and a religious duty among Muslims. A study by Heaton (2011) that examined religious differences in fertility in developing countries found that social characteristics and proximate determinants such as education, type of residence and marriage account for the differences in fertility between Muslims and Roman Catholics. Heaton's study reported that Muslims are less educated, have a low socio-economic status and are against the use of contraception. Another study investigating Muslims and Sharia implementation in Northern Nigeria noted that Muslim women are expected to submit to their husband's desire for sex and give birth to as many children as they can (Bawa, 2017). Qualitative findings corroborated the above findings and revealed that Muslims preferred a large family size. In a setting where women are more religious and more submissive to their husbands compared to women from other religious sects, have lower autonomy and socio-economic status, the implication of these religious doctrines is that Muslim women are likely to have less control over their reproductive life. For example, their reported fertility desire is likely to be their partner's preference, highlighting the importance of strengthening women's decision making autonomy to reduce fertility.

In summary, within the context of Miller (1994) TDIB framework, as used in this study, indicators of TDIB constructs (traits, desires, intentions and behaviour) capture the key items relevant for fertility desire among postpartum women in Uganda. This study has shown that the decision –making process around having or not having more children is

highly complex, taking into account many social pressures at community and family level as well as women's own desire. Consistent with Miller's TDIB framework, both biological and social experiences (for example having other siblings and sex composition of living children) and individual traits (such as maternal age) influence fertility desire, desired timing and desired number of children.

Although the bigger picture points to high fertility desire among postpartum women, fertility desire is likely to be influenced by more than one broad category in Miller's framework. The key factor that is likely to influence women to desire another child is the sex composition of her living children (especially when girls). This study has shown that in striving for a particular goal, in this case, childbearing, people may be faced with socio-cultural obstacles such as a partner who desires more children, or financial problems which may ultimately make the woman revise her desire either upwards or downwards. The usefulness of the TDIB framework is that it allows the development of strategies that would address the desire to have children in a sequential manner. It is also important to understand the interdependence of factors on individual behaviour. This in turn allows a holistic, more comprehensive and more effective approach to developing solutions to reproductive health problems.

8.3.2   Contraceptive behaviour among postpartum women

Studies on contraceptive behaviour among postpartum women worldwide have found a range of methods used and a variety of factors associated with use. Contraceptive use during the postpartum period is crucial for optimal birth spacing which can improve maternal and infant health. Despite the benefits of using postpartum contraception, results from both quantitative and qualitative analyses point to low levels of contraceptive use. When asked whether they were currently using modern contraception, only one third (33%) of the women in the survey responded positively. This result is similar to the rate observed in a recent study conducted among 1,385 women within 12-14 months postpartum recruited from sixteen health facilities in Western Uganda, which found a contraceptive prevalence rate of 32% (Ayiasi, Muhumuza, Bukenya, & Orach, 2015). However, the qualitative results revealed that slightly more women (41.4%) were using contraception while fewer men (28.6%)

reported that either they themselves or their partner was using contraception. Nevertheless, contraceptive use was low in both the survey and the qualitative study.

The low level of contraceptive use in this sample is a cause of concern. In fact, this rate is much lower than the contraceptive prevalence rate (CPR) reported in other studies in sub-Saharan Africa (Achwoka et al., 2017, Pasha et al., 2015, Gizaw et al., 2017, Dasgupta et al., 2016, Ndugwa et al., 2011a) whose CPR among postpartum women ranged from 47% to 86%. The variation between the present study and other studies in sub-Saharan Africa can be explained by the difference in methodologies adopted in the highlighted studies. For instance the study by Achwoka et al. (2017) that found 62% of Kenyan women using postpartum contraception was health-facility based; therefore, the study population could have been self-selected for respondents with better healthcare seeking behaviour compared to the current study's household-based sample. A study among postpartum women from urban slums in Kenya found a CPR of 63% (Ndugwa et.al.,2011a). Higher contraceptive use in Ndugwa et al. (2011a) study could be explained by the increased access to sexual and reproductive health services in urban settings compared to this study's rural setting.

Similar to previous research that assessed contraceptive behaviour among women in Kenya, the qualitative findings revealed that nearly half of the women (47.1%) reported that their last pregnancy was unintended. Among women with unintended pregnancies, majority reported using short term contraceptive methods—which have been found elsewhere to be associated with greater risk of unintended pregnancies (Warren et al., 2013, Wall KM, 2013). This finding suggests that challenges still exist with regard to helping postpartum women avoid unintended pregnancies.

Using an adapted version of the theory of planned behaviour (Ajzen, 1991)—which posits that intentions to perform a specific behaviour are formed with the contribution of three sets of factors; attitudes, subjective norms and perceived behavioural control, I identified determinants of contraceptive use at multiple levels of the theory to place knowledge, attitudes, subjective norms and perceived behaviour control associated with contraceptive use in a broader context.

Knowledge about contraception

Having good knowledge of family planning methods is vital for reducing maternal morbidity and mortality resulting from unintended pregnancies and unsafe abortions. This study showed that knowledge of modern contraceptives was high in the study setting. In addition, the majority of participants reported that modern family planning methods were available at the nearest health facility with most participants reporting stocks to be adequate. Furthermore, participants reported that a variety of contraceptive methods including Injectables, oral contraceptive pills, condoms, intrauterine devices and contraceptive implants are available at health facilities. However, despite the universal awareness of the different methods of contraception, and that these methods are readily available, more than half of the sample (both qualitative and quantitative) reported not using any of these methods. This finding is similar to results found in several other studies conducted in Uganda and elsewhere which found high knowledge levels about contraception but low contraceptive use (Chipeta et al., 2010, Ochako et al., 2015, Agyei and Migadde, 1995, Nsubuga et al., 2016, Obisesan K.A, 1998, Orji E.O and Onwudiegwu, 2000). This implies that knowledge and availability of the modern family planning methods alone does not determine use of these services and that other factors influence decisions on whether or not to adopt a postpartum contraceptive method.

Both the qualitative and quantitative sample demonstrated a heavy reliance on Injectables (60%). A recent study of Kenyan postpartum women in a hospital in rural Kenya found injectables to be the most commonly known contraceptive in that population (Jalang'o et al., 2017). This finding is also consistent with a recent Demographic and Health Survey analysis of 21 low and middle income countries, which showed that women who adopt modern contraceptive methods in the postpartum period are likely to opt for short term hormonal methods including injectables (Moore et al., 2015). Narratives from the qualitative study revealed that injectables were popular because of their availability or acceptability within the community, can easily be discontinued without involving the provider and can be used covertly from spouses who oppose the use of contraception. Similar findings on covert use among women whose partners oppose contraceptive use have been reported in other studies elsewhere (Castle et al., 1999, Eliason et al., 2014, Maharaj and Cleland, 2005). This finding could also suggest that FP advice received from providers is dominated by "injectable" messages.

Similar to previous studies (Chipeta et al., 2010, Hindin et al., 2014, Mprah et al., 2017, Ankomah et al., 2011) that explored misinformation of family planning in Nigeria and Ghana, this study found that some participants were misinformed about the mechanism of action of some contraceptive methods. Inadequate knowledge and misinformation can lead to poor acceptance and wrong use of contraceptive methods which pose barriers to uptake. This finding underscores the fact that provision of quality care in postpartum family planning services, including quality of information provided is critical to support higher levels of contraceptive uptake.

Attitudes towards contraceptive use

Overall, negative accounts dominated participants' experiences in this study and were the main reason for discontinuation of contraceptive use for those that had stopped use, switched methods or used incorrectly and inconsistently. Inconsistent use can result in high rates of unintended or mistimed pregnancies that are potentially harmful to postpartum women and their unborn children. Participants were nevertheless motivated by the lure of smaller planned families, lack of finances to support additional children, experience of pregnancy or delivery complications during previous pregnancies, the desire to maintain good maternal health and psychological benefits, to continue using contraception. This finding suggests that participants were aware of the benefits of modern family planning. This result is comparable to the findings of another study that was conducted in Nigeria which found that improved standard of living, children's education, strength and beauty of the mother were the main factors influencing contraceptive use (Moronkola O, 2006).

The negative influence of partners, unsatisfied friends and community members were a deterrent to continued use of contraception. Narratives about perceived or actual negative experiences from one's social network complicated women's initiation or continued use of contraceptives. Studies in Uganda have consistently showed that fear of side effects is the leading reason for non-use of contraception even among women with an expressed need for family planning (Sedgh et al., 2007, Kibira et al., 2015, UBOS and ICF, 2018). In a study conducted by Nalwadda et al. (2010) exploring reasons for low contraceptive use among Ugandan youth, women and men expressed fear of cancer, fibroids, reproductive morbidities and infertility which served as obstacles to initiation

and continuation of contraceptive use. The reported fear of infertility reflects the inherent need to have children and the importance that society places on child bearing in Uganda. In another qualitative study that investigated perspectives of using Injectables in Uganda, men indicated concerns regarding excessive bleeding, menstrual irregularities, and lowered sexual desire among women (Hyttel M, 2012). It is possible to speculate, based on findings from the present study, that women's strong desire for children in combination with their misconceptions and concerns about side effects may negatively impact their contraceptive behaviour.

Furthermore, quantitative study findings revealed that reporting a desire to space or prevent births was strongly associated with use of modern contraception, lending support to a growing body of evidence demonstrating an association between fertility desire and contraceptive use. This finding with cross-sectional data strengthens those from longitudinal data (OlaOlorun et al., 2016) and other cross-sectional studies (Speizer, 2006, Speizer et al., 2009) which found that women's fertility desire was associated with their reported contraceptive use. However, a Kenyan study examining factors associated with contraceptive use among HIV positive women found a mismatch between fertility desire and contraceptive use (Magadi and Magadi, 2017). Lack of significance in the Magadi study could be due to the lower contraceptive uptake among women living in HIV – prevalence settings as reported in other studies among persons living with HIV (Heys et al., 2009, Myer et al., 2007a, Maier et al., 2009). These studies indicated that HIV positive women were more likely to want more children due to fear of not reaching a desired family size before the onset of AIDS, and thus were less likely to use contraception. Another possible explanation for high fertility among populations with a high incidence of HIV/AIDS is due to switching from the most effective methods such as the Norplant or IUD to less effective methods such as the condom. In contrast to the quantitative results, the qualitative findings revealed that most participants had fertility desires that did not match their contraceptive behaviour. Reasons for this mismatch are described in the next section.

Subjective norms: Sources of influence regarding contraceptive use

Key influential people in women's contraceptive use journey emerged as important in this study. One of the main factors that discouraged women from using modern family

planning methods was husband's disapproval. In several other studies (Prata et al., 2017, Keesara et al., 2018, Bietsch, 2015, Chipeta et al., 2010), husbands approval was also found to influence women's contraceptive use. The finding is further indication of how deep-seated the influence of male partners is on the decision of women in SSA to initiate or continue using contraception.

The qualitative study highlighted limited spousal communication about family planning which fuelled the uncertainty or indifference many women reported regarding perceived partner approval of contraceptive use. This posed a barrier to initiation or continued use of contraception. Spousal communication about family planning is often limited in many low-resource settings. Nonetheless, some researchers caution that frequent spousal communication should not be assumed to be associated with approval of contraceptive use (Dodoo et al., 2001). Moreover, many women regarded fertility as a matter outside their control because of gendered cultural structures. These results underscore how conventional gender inequalities in terms of decision making for contraceptive use are major obstacles to women's contraceptive uptake.

Influence of FP providers

Surprisingly, discussion of family planning was not significantly associated with contraceptive use at multivariate analysis. This finding is consistent with findings from a DHS analysis that examined the associations between seeking postnatal care services and contraceptive use, with a focus on Kenyan and Zambian women (Do and Hotchkiss, 2013). These results contrast with studies elsewhere that found women who discussed family planning during postnatal care sessions were more likely to use effective contraception (Elul et al., 2009, Achwoka et al., 2017).The lack of significance highlighted in the quantitative study could be attributed to misinformed family planning providers which results into mistrust from the local population. Indeed, the qualitative results revealed that health workers were reported to negatively influence contraceptive use especially when they provided inadequate counselling coupled with selective services. Negative provider attitudes serve as obstacles to initiation as well as to continuation of modern contraceptive methods among clients as demonstrated in other studies across sub-Saharan Africa (Seiber EE, 2007, Ross R, 2002). FP providers' contradictive messages such as lack of clarity as to when to resume contraceptive use after childbirth alongside social

norms that discourage contraceptive use among some categories of women, imply that postpartum women get mixed messages. This ultimately affects initiation and continued use of contraception.

Low perception of pregnancy risk

Traditionally, women in Uganda as is the case in most of sub-Saharan Africa relied mainly on prolonged breastfeeding and postpartum sexual abstinence to space their births. The quantitative study revealed that resumption of menstruation was the most important factor that influenced contraceptive use among women. Women whose menses had returned were more likely to use contraception (aOR 2.91) compared to amenorrhoeic women. The qualitative study confirmed these findings: the resumption of menses following childbirth was seen as an indicator of renewed risk of pregnancy. This finding supports recent research which found that resumption of menses is an important factor influencing initiation of contraceptive use in Uganda (Odar et al., 2003, Kouyaté and Mwebesa, 2011) and elsewhere (Rossier and Hellen, 2014, Ndugwa et al., 2011a, Becker and Ahmed, 2001, Gebreselassie et al., 2008). However, this result contrasts with findings from a cross-sectional study among 340 postpartum women at a child welfare clinic in Nigeria that found low contraceptive use among women including those whose menses had resumed (Anzaku and Mikah, 2014).

Unlike other studies (Chebet et al., 2015a, Sedgh and Hussain, 2014, Darroch et al., 2011, Adeyemi et al., 2005) that found a significant association between breastfeeding status and contraceptive use, the quantitative study did not find a significant association suggesting that breastfeeding did not have any effect on initiation of contraception. Qualitative data paint a similar picture. Only two women reported breastfeeding as a barrier to modern contraceptive use. The probable explanation for this finding is that breastfeeding durations are long in Uganda and almost all women who initiate contraceptive use do so while still breastfeeding their child. Breastfeeding is not therefore in itself an obstacle to adoption of contraception. This finding is unexpected. Evidence indicates that breastfeeding delays the return of fertility up to six months postpartum among women who exclusively breastfeed their infants and are amenorrhoiec (Kennedy et al., 1989). Hence, for mothers who meet this criteria, it is reasonable for them not to use modern contraception. However, the 2016 UDHS indicated that 66% of children

under six months are exclusively breastfed (Uganda Bureau of Statistics & ICF International, 2018). As a result, the natural protection provided by breastfeeding diminishes. Consequently, women may unknowingly get exposed to the risk of pregnancy if they rely on non-exclusive breastfeeding. According to the qualitative narratives, non-exclusive breastfeeding was due to the high prevalence in poverty in Mayuge district resulting into increased and early complementary feeding which also remains high in Uganda (UBOS and ICF, 2018).

Similar to previous studies (Odar et al., 2003, Adanikin et al., 2014, Desgrées-du-Loû and Brou, 2005), this study found a high rate of early resumption of postpartum sexual intercourse (76% in the quantitative study) relative to the traditional practice of long postpartum sexual abstinence. This finding suggests declining postpartum sexual abstinence after childbirth, which had been deeply rooted in the Ugandan context. Women cited many reasons as to why they resumed sexual intercourse early. The demand by husbands was an important factor because mothers who resumed early reported that their husbands demanded to have sex. Culture is another important factor for early resumption of sex since some women who resumed sexual relations did so because they were fulfilling cultural demands. For example, among the Banyankole ethnic group in Western Uganda, spouses were culturally obliged to resume sexual intercourse within the first week of delivery so as to help in the "healing" of perennial tears, as semen is believed to have healing properties (Ntozi and Odwee, 1995). Another explanation is that late resumption of sex raises concerns about infidelity during periods of prolonged postpartum abstinence (fears that men would engage in extra marital affairs to meet their sexual need). Consequently, some women resumed sexual intercourse prior to healing of the perineal tears for purposes of marital harmony.

Not surprisingly, women who had resumed sexual activity were more likely to use contraception than those who were practising postpartum abstinence. Similar results have been reported in previous studies in sub-Saharan Africa (Adeyemi et al., 2005, Rossier and Hellen, 2014). Qualitative findings revealed that when women resume postpartum sexual relations, they perceive themselves at risk of pregnancy which implies higher motivation to initiate contraceptive use among this subgroup.

Narratives from the in-depth interviews revealed that most female participants were aware of the contraceptive benefits of postpartum amenorrhoea and perceived themselves as being at low risk of pregnancy. While amenorrhoea affords contraceptive protection to some women, other scholars have argued that there is a substantial risk of pregnancy prior to return of menses in a sizable proportion of women (Gray et al., 1990, Becker and Ahmed, 2001). Thus, if women remain dependent on return of menses as a signal to initiate contraceptive use, a percentage of them are at risk of unintended pregnancy without ever experiencing their first postpartum menstruation. Consequently, family planning providers advised women to initiate a contraceptive method as they "wait" for the menses to return. This is in line with current World Health Organisation guidelines that recommend offering women contraception within six weeks of childbirth—even if their menses have not returned (World Health Organisation, 2013).

For the two women who reported non-use of contraception while breastfeeding, they were concerned about the negative effect of hormonal contraception on breast milk production which has also been reported elsewhere (Chebet et al., 2015a, Mbekenga et al., 2011b, Desgrées-du-Loû and Brou, 2005, Rossier and Hellen, 2014). Indeed, concerns of using of progestin-only methods in breastfeeding women have been raised owing to their impact on breast milk supply and quality, adverse neonatal outcomes and maternal safety risks (Rodriguez and Kaunitz, WHO, 2015). Consequently, these women opted not to use a contraceptive method while breastfeeding. In light of this view, reluctance to initiate contraception soon after childbirth was reasonable.

Perceived behavioural control

Despite 44.2 % of women (Table 5.1) reporting joint decision-making with regard to contraceptive use, the husband had the final say. This finding was also supported by the qualitative results. Similar findings have been reported elsewhere (Bogale et al., 2011, Haile and Enqueselassie, 2006, Shahabuddin et al., 2016). Women's need to seek husband's permission to use contraceptives suggests gender inequality and lack of female autonomy. Only a few women could take a decision to use contraception without the partner's approval. Most of these were women who lacked partner support in raising children and felt they should stop childbearing. Male partner's resistance to family planning forced women to take decisions to use contraceptive methods covertly. Covert

use demonstrates the capacity of women to take action in contexts where social norms prevent women from using contraceptives. This shows that some women are able to take deliberate decisions and efforts to use contraceptives. They manoeuvre and find ways to use contraceptives despite the gender power inequalities and opposition from the partner. Unfortunately concealing contraceptive use generally contributes to short duration of use and high discontinuation rates (Blanc AK, 2009).

Among the non-users of contraception who had intention to use a method in the future, some, particularly those above 35 years, expressed intention to use permanent methods because they had attained their desired family size. However, participants revealed that permanent contraceptive methods were not readily available and accessible to potential clients. This perhaps explains why none of the respondents reported use of female sterilisation or vasectomy in the quantitative study.

Lack of integration between programmes as found in this study is a surprising result. Within Mayuge's public health facilities, family planning services are in principle integrated with maternal and child health services at various intervention points. These points include: HIV testing and treatment, antenatal care, delivery, postnatal visits, and child immunisation. The finding that a few women received fragmented services at an outreach immunisation site may have something to do with the quality of outreach services or it could be that other individuals such as older children rather than the mothers are the ones that take infants for immunisation. Lack of integration presents a missed opportunity for family planning services for women who would potentially have accessed the services to prevent closely-spaced and unwanted pregnancies. Long-acting reversible methods of contraception (such as intrauterine devices and implants) and permanent methods (female and male sterilisation) are the most effective method for prevention of unintended pregnancies because they are less vulnerable to user error and discontinuation. Also, Long-acting reversible contraceptives are well suited for postpartum women due to their ability to be inserted immediately postpartum and breastfeeding compatibility (WHO, 2015). In spite of the benefits of using LARCs, only 16% relied on implants and the proportion was much smaller for intrauterine devices (4.2%) in the quantitative study. This finding is consistent with a study conducted in five low income countries, which showed that the uptake of long-acting reversible contraceptives among postpartum women is low (Pasha et al., 2015). The qualitative results revealed

that low use of LARCs is attributed to lack of information and access barriers. It was also reported that the cost for some contraceptive commodities, made it prohibitive, especially for those without a disposable income. For example, one participant reported that a friend had to pay labour costs for IUD removal. Such hidden costs may explain why the IUD is not commonly used compared to the Injectable. The quantitative results indicated that only 4.2% of women reported IUD use (Figure 5.2). Such structural impediments negatively affect contraceptive use rates among postpartum women. Other research studies have also noted how costs affect use (Atuyambe L, 2008, Touane M, 2004).

Qualitative findings draw particular attention to barriers to postpartum initiation of sterilisation. Quantitative results indicated that none of the respondents reported current use of sterilisation (Figure 5.2). Narratives from the qualitative study revealed that cultural beliefs and attitudes against a permanent procedure such as losing respect in the society, made them unwilling to use the method. This finding was also reported by (Hubert et al., 2016) who also found cultural factors as barrier to prevalence of vasectomy among Latino men. Additionally, due to lack of trained FP providers and surgical equipment at the health facilities in Mayuge district, sterilisation was not offered by the public health facilities but rather offered using an outreach approach through services offered by two Non-Governmental Organisations.

Given that a large share of Mayuge residents identify as Muslims, they may be more likely than participants from other religious groups to oppose contraceptive use (Izugbara and Ezeh, 2010, Mazrui, 1994). Most participants were aware that Islam prohibits the use of modern contraception. In fact, some providers reported that Muslim women only seek health care during childbirth but never return for other maternal and child health services.

Lastly, the high rate of unmet need for family planning reported in both the quantitative and qualitative studies (66.4%) points to an important gap in service provision. Thus, making LARCs available to this population could result in a reduction of unintended pregnancies. The fact that LARCs can be used without partner awareness for a very long duration—makes them an important option in Uganda where women are less likely to

return for postpartum care after childbirth and gender norms hinder women's autonomy and ability to seek maternal health services (Tibaijuka et al., 2017, Kabagenyi et al., 2016).

In summary, the results presented in this section strengthen the message of the theory of planned behaviour and provide a rich understanding of women's contraceptive behaviour. According to Ajzen (1991), although attitude towards behaviour, subjective norm and perceived behaviour control, together shape an individual's intentions and behaviour, I added another construct (knowledge) which is also crucial in contraceptive use. This is because, knowledge about contraception can either predict behaviour both directly and as a mediator through personal attitudes, norms and perceived behavioural control. On the other hand, it is also possible that since the theory of planned behaviour depicts only purposeful actions, study findings have shown that contraceptive use is not always in line with the TPB logic of clear and purposeful planning. For example a woman may have positive attitudes towards using contraception but for reasons such as having a partner who opposes contraceptive use, her uptake is affected.

8.4 Policy implications and recommendations

By identifying determinants of fertility desire and contraceptive use among postpartum women in Uganda, study findings have policy and practical implications for strengthening postpartum family planning.

Sex composition of living children and pregnancy intervals

One of the most interesting findings from this thesis was that having children of the same sex had the largest effect on the desire for another child. A major implication of this is that it drives continued childbearing—even beyond a reported desired family size (Bongaarts, 2001). Efforts to fulfil this desire expose women to negative maternal and child health outcomes, including infant, child and maternal mortality (Conde-Agudelo et al., 2005, Conde-Agudelo et al., 2006, Rutstein, 2005) resulting from rapid repeat pregnancies (defined as pregnancy onset within two years of the previous pregnancy). In the sample used for the quantitative analysis, 8% of the respondents reported desire for a pregnancy within two years of childbirth (Figure 4.2), and although the percentage is small, this contradicts the WHO recommendation for women to wait at least two years to initiate a new pregnancy, suggesting a need to provide pregnancy counselling early in the

postpartum period to prevent the risk of adverse maternal and child outcomes associated with short birth intervals. This will involve postpartum care home visits such as which have been tested in Bangladesh, Malawi and Nepal (Sitrin et al., 2013). Such pregnancy counselling should include messages on the benefits of optimally spaced pregnancies and suitable and effective methods of contraception for postnatal use (Shadab et al., 2017).

Desire for more children based on sex composition of living children leads to higher fertility than would be the case if couples never had a sex preference, and is thus an impediment to fertility reduction efforts. At the same time, a desire for more children among women with children of the same sex, especially when girls, may have a negative impact upon women's social development in settings where son preference is strong and women's status is generally low. In this setting, women's security and status depends upon producing sons; the more sons she produces, the higher her security and status among her family and community. Moreover, previously, infant and child mortality was high in sub-Saharan Africa and having many children stemmed from either a replacement effect following an infant death or an insurance effect in anticipation of such deaths (Bongaarts and Casterline, 2013). Children were also a source of labour and prestige (Caldwell and Caldwell, 1987a). However, infant and child mortality has reduced significantly because of immunisation, better nutrition and sanitation. Consequently, there's been an increase in the demand for contraception, which has thus contributed to declining fertility. The focus for the Ministry of Health should now be on promoting small family sizes which would be less of a burden on the woman and her family.

These findings suggest the need for programmes to be sensitive to the needs of women so as to challenge attitudes towards family sex composition by focusing on women with children of the same sex composition. This will require altering social norms and people's attitudes, as documented in studies from Tanzania and India (Mwageni et al., 2001, Malhi et al., 1999), as well as improving women's status (particularly their access to higher education). Altering people's attitudes toward child sex composition may not be easy since desire for a balanced sex composition is embedded within sub-Saharan Africa societies. However, educating individuals about the advantages of small family sizes and encouraging them to re-evaluate traditional gender roles that place a higher value on having both sons and daughters is extremely important in reducing fertility desire based on family composition. Proponents of female education argue that that female education

depresses child sex preference due to increased female autonomy, paths to employment and higher socioeconomic status as documented elsewhere (Jayachandran, 2017; Jejeebhoy, 1995). Policies and programmes should include mechanisms to make daughters more valuable to families and to remove gender differences within households through family planning, education and social programmes. As suggested by Bose and South (2003), educated mothers should value daughters more than less educated mothers because they are not solely dependent on their sons for status and economic support, nor do they believe that daughters are only liabilities. Such measures will assist individuals in reconsidering their desired family sizes, reduce biases towards one sex, minimise marital disharmony and improve women's status. Efforts to reduce fertility in Uganda will be hampered, however, if couples maintain child preference based on sex composition of children.

Religion and engaging religious leaders

All participants identified with a religion and considered religion to be very important to them, with the majority adhering to religious practices. In particular, the evidence points to affiliation to Islam as being prominent in fertility decisions, echoing other studies showing that being Muslim was significantly associated with high fertility desire (Mohammed and Assefa, 2016, Ntoimo and Mutanda, 2017). This finding speaks to a general need for family planning programmes to focus on couples affiliated to Islam with programmes and interventions to lower fertility in Uganda since large family sizes are a social norm among Muslims. Engaging Muslim leaders as potential change agents is crucial for creating positive change. As suggested in Adedini's study exploring the role of religious leaders in promoting contraceptive use in Nigeria, one way of involving religious leaders is encouraging them to incorporate family planning messages in their sermons and reminding household heads about their responsibilities for the welfare of the members of their families, provided accurate and comprehensive information is given. Both government and NGOs should continue to find a way to facilitate dialogue and work with religious organisations for the common goal of helping postpartum women prevent unwanted pregnancy and promote optimal birth spacing. However, the government needs to engage with the religious leaders in a meaningful way so that the religious ideas do not conflict with contraception/fertility advice. It would be important to discuss how high fertility was needed in the past, with many children dying – now that is no longer

needed, high maternal mortality has come to the fore as an issue. The findings from this study, therefore, underscore the importance of enlisting religious leaders in fertility reduction efforts in Uganda.

Low contraceptive uptake and misperceptions about postpartum return to fertility

The low level of postpartum contraception uptake in this study is troubling. From the quantitative analysis, resumption of menstruation was the most prominent facilitator of initiation of postpartum contraception. The qualitative findings revealed that both women and family planning providers used return of menses as a trigger to initiate contraceptive use after childbirth. In other words, most women perceived no risk of pregnancy during amenorrhoea, and yet reliance on amenorrhoea has limitations. For women who are breastfeeding, which was the case in this sample, pregnancy can occur within 45 days postpartum even before the return of menses, and among women who are exclusively or almost exclusively breastfeeding, around a quarter (28%) are at risk of pregnancy before six months postpartum (Jackson and Glasier, 2011). The finding that most women adopted contraception only after resumption of menses suggests a lack of awareness regarding return of fertility. Therefore, creating awareness and educating women to improve understanding of the fertile period and the risk of pregnancy prior to return of menses is paramount.

At the same time, participants reported perceived eligibility requirements which were a barrier to postpartum initiation of contraception. Participants reported that providers sometimes turn away women who are not menstruating during the FP visit. This practice exposes postpartum women to unplanned pregnancies and might discourage method initiation. This evidence supports DHS data analyses showing higher contraceptive prevalence among postpartum women whose menses have returned than among women whose menses have not returned (Borda and Winfrey, 2010). It is also consistent with multi-country data on menstruation requirements being an important barrier to family-planning access (Stanback et al., 1997). This calls for a need for the Ministry of health to distribute postpartum care guidelines among health workers and upgrade postpartum care knowledge and skills through training (Duysburgh et al., 2015).

According to the quantitative and qualitative findings presented in this thesis, the majority of women were currently breastfeeding, though not exclusively so for those

within the first six months of childbirth. One key informant reported that due to poverty and poor nutrition, there was reduction of breast milk production which led to early initiation of complementary feeding. This finding, as well as those of (Cleland et al., 2015) suggest a need to promote postpartum family planning use in order to increase inter birth durations such that women are less burdened to take care of children. In a setting where most women exclusively breastfeed for less than three months—which means postpartum amenorrhoea is only effective for three months, early uptake of contraceptives should be promoted without hesitation. This can be done through provision of postpartum family planning information, education, and counselling materials about fertility and periods of pregnancy risk before the woman is discharged home from the health facility. Also, given that only a few women engage in family planning discussions with FP providers, family planning counselling could start during antenatal care visits as six in ten women report attending at least four ANC visits (UBOS and ICF, 2018) are discharged within hours of childbirth so there is not much time to counsel women on contraception. Pfitzer et al. (2015) describe the scale-up of facility-based postpartum family planning services in six countries in which family planning counselling and contraceptive services were integrated into three health system contact points: antenatal care, labour, and postpartum. Counselling could also be linked to the six week childhood immunisation visit where the mother usually attends too (Mumah et al., 2015). This is critical in increasing uptake of postpartum contraception as documented elsewhere (Bolam et al., 1998).

In addition, some myths about using contraception while amenorrhoeic were reported by women in this study. Myths need to be dispelled by FP providers, and knowledge imparted in respectful and reassuring ways. The World Health Organisation "Programming strategies for postpartum family planning" report reiterates lack of knowledge about fertility return as a key reason for non-use of postpartum family planning. This report suggests a need for providers to reach women before they are at risk for an unintended pregnancy with information about return of fertility, their options to space or limit future pregnancies, and the benefits to their own and their new-born's health of doing so.

Further, researchers elsewhere in sub-Saharan Africa have argued that low contraceptive uptake among postpartum women is attributed to them practising postpartum

abstinence for long periods after child birth (Dasgupta et al., 2016), suggesting that they were not at high risk of pregnancy. Therefore, FP providers must consider fertility-related factors such as being postpartum abstinent or amenorrhoeic which may influence non-use, as documented in studies from Kenya, Ethiopia and Ghana (Ndugwa et al., 2011b, Berta et al., 2018, Eliason et al., 2018). Seen in this light, FP providers should promote early uptake of highly effective long-acting reversible contraception, counsel women about Lactational amenorrhoea method and urge contraceptive adoption at six months or earlier which is in accord with established postpartum protocols, as recommended elsewhere (Cleland et al., 2015).

Men as key decision-makers

The critical role that male partners play in women's reproductive health has been recognised for several years. In this study, men were reported to be key-decision-makers at household level, and often acted as obstacles to women's utilisation of contraception, highlighting the influence that males exert on the reproductive health decisions of Ugandan women. This underscores the need for family planning providers to encourage the involvement of men in discussions emphasising the positive benefits of contraception and small family size, as documented in a recent Nigerian study (Ani et al., 2016). Linking these benefits to the responsibilities men feel for their wife's health and family's finances may encourage engagement. Emphasising benefits of healthy, well-spaced children, including healthier mothers and healthier communities may also resonate. As the ability to fend for few children was a source of pride for participants, including a discussion on the ability to educate fewer children might be a powerful consideration for men. Given the sensitivity of fertility issues, engaging influential men such as religious leaders, local leaders and male community health workers in advocating that strong men support their wives in adopting contraception may be beneficial. Increasing the contraceptive uptake in Uganda is necessary for impacting the country's high fertility, infant mortality, and maternal mortality rates.

While many men tried to maintain their control over family planning decisions, some reported a preference for joint decision-making around reproductive issues and most agreed that decisions about family size should be made jointly. Capitalising on these beliefs, more male-centred programmes could help shift men's approval of joint decision-

making around family size to other reproductive domains, such as family planning in general. If male family planning approval was seen as more acceptable by their peers, this might encourage more men to openly accept it. A similar strategy has been successfully used in Malawi where male peer educators were used to reach men with activities to challenge gender norms and promote contraceptive use (Shattuck et al., 2011). Moreover, previous research demonstrates the high desirability for and importance of childbearing among men in Uganda (Kabagenyi et al., 2016). It is possible to speculate, based on findings from the present study, that men's strong desire for children in combination with their opposition of contraception may negatively impact their support of partners' use of contraception in Uganda. Another initiative implemented in Benin by local organisations used drama to persuade men to be more supportive of their wives' desire to use contraception. This approach contributed to a significant decrease in the numbers of children reportedly desired by both men and women in Benin (Greene et al., 2006). Such innovative approaches need to be explored in Uganda to engage men in a positive reproductive health decision making process and change them to facilitators for women's contraceptive use.

Family planning provider attitudes

Literature on postpartum family planning utilisation emphasises the role of providers in influencing fertility decisions and contraceptive use. The qualitative findings on postpartum family planning services revealed that only about a quarter (24.1%) of the women and 28.6% of the men discussed their future fertility desire with the providers. This low level of interaction with family planning providers inhibits women and partners from making informed fertility decisions and drawing informed understanding about family planning. Study findings also revealed compromised quality of care when clients sought family planning services from providers. This manifested in inadequate counselling due to poor technical competence, as was experienced by one male participant or failure to provide the method when requested by the potential user. These accounts speak to the substandard quality of care received by postpartum women. Similar challenges concerning the provision of integrated services including postnatal care in Mubende and Katakwi district in Uganda have been established by Ahumuza et al. (2016). Thus our findings further emphasise the potential for health system strengthening in the realm of

family planning quality of care to assist Ugandan women to realise their reproductive agency.

Also, efforts to promote more engagement between providers and their clients require bringing health messages to communities via community health workers and also encouraging more discussion prior to discharge from the health facility. Family planning programme managers could ensure that some contraceptive methods such as postpartum IUDs are offered immediately after delivery rather than post-discharge because only a few women return for postnatal check-ups, as documented by Gaffield et al. (2014). Childhood immunisation visits could provide an additional contact point. In Liberia and Rwanda, progress is being made in linking postpartum family planning counselling and referrals with routine immunisation (Cooper et al., 2015, Dulli et al., 2016). Evidence from five countries in sub-Saharan Africa demonstrated that reaching postpartum women through immunisation contacts could decrease overall unmet need for family planning by 3.8 to 8.9 percentage points (Gavin et al., 2011). It is also pertinent for providers to learn the current protocols on women's eligibility for postpartum family planning methods, and for their knowledge to be continually updated as these protocols evolve as suggested by Spagnoletti et al. (2018) in their study exploring reproductive experiences of Indonesian women within two years of childbirth.

<u>Fear of side effects</u>

Perceived and experienced side effects of hormonal contraceptives influenced women's attitudes towards contraceptive use and consequently affected women's decisions to begin or continue using contraception after delivery. Nationally representative surveys highlight that adverse side effects are a leading reason for contraceptive discontinuation reported by Ugandan women (35%) (UBOS and ICF, 2018).Some of the concerns pointed out by men and women included fear of infertility, menstrual irregularities and poor management of side effects by providers. Addressing concerns about side effects is therefore critical to achieving the Ugandan government's goal of increasing modern contraceptive prevalence rate from 35 to 50 (Uganda Ministry of Health, 2015). One way of ensuring contraceptive continuation in light of the reported side effects is providing high quality family planning services, which should include counselling on the effective

management of side effects, and that providers place emphasis on concerns involving sterility in such settings where large family sizes are desired.

Barriers to seeking postnatal care services

The finding that only a few participants had a talk with a family planning provider after childbirth has important policy implications. Firstly, it demonstrates a lack of awareness about the importance of seeking postpartum care as it was evident that women felt the postnatal care visit was unnecessary which undermined prompt seeking of care. Elsewhere in sub-Saharan Africa, despite higher rates of reported postnatal care awareness, utilisation also remains low (Hill et al., 2015). Low utilisation of postnatal care services has been related to women's lack of knowledge about its importance and their lack of perceived need especially if they are feeling well (Ugboaja et al., 2013). In addition, some participants raised concerns that negative provider attitudes were a barrier to utilising postnatal care services. To increase demand, women need to see value in postpartum care and feel respected by providers.

Secondly, the fact that some women never return for postnatal care due to the complexity of the postpartum period, postnatal care services should be made available at community level including introduction of postpartum care home visits, strengthening postpartum outreach services, integration of postpartum care with child immunisation clinics. In addition, more Voluntary Health Team (VHT) members should be trained in providing postpartum family planning services to supplement postnatal care service provision by health facilities (Namukwaya et al., 2015). Namukwaya's study found that use of peers, community lay persons and VHT members led to a significant increase in the six-week postnatal follow up. It is possible that participants are more likely to identify with VHTs as they live in the community and are likely to be more understanding of women's barriers to health facility utilisation (Okuga et al., 2015, Comfort et al., 2016). According to the Uganda clinical guidelines, mothers should be visited at home at least twice during the postnatal period by health workers (within six days after delivery and six weeks after delivery) (Republic of Uganda Ministry of Health, 2016).

8.5   Limitations of the study

- The major limitation of this study lies in its cross-sectional design, which prevented causality from being determined. It is difficult to ascertain the association between the explanatory variables and the outcome variables since they were measured at one point in time. Since decision-making is a process, and decisions made may change over time, this design limited the ability to track changing fertility desire and contraceptive behaviour.

- Another limitation is that it was difficult to gauge the level of meaning women attach to responses on questions about fertility desire in the DHS. The DHS question, "would you like to have another child, or would you prefer not to have any more children?" assumes that there is rational decision-making. However, in view of Uganda's low contraceptive prevalence rate and low participation of women in reproductive decision-making, the concept of planning seems to apply more to empowered, highly educated and urban women who have access to modern contraception. This DHS question is hypothetical and requires women to think through the responses they give. Therefore, it was difficult to gauge whether the response given reflects individual preferences or societal and / or partner expectations. Since this study used a mixed method design, the qualitative component helped the researcher to gain a deeper understanding of fertility decision-making.

- While the DHS is a good source for family planning information, it provides very little information about access, availability and quality of family planning services, and yet this could have a direct or indirect influence on fertility desire and contraceptive use. For example, there is limited information on postpartum care services compared to antenatal care services available in the UDHS. Details including the content and quality of postpartum care services, as well as whether it is a woman's choice to receive postpartum care services, are not asked in the DHS. Additionally, health providers' attitudes and perceptions are not included in the DHS and yet, these have a direct or indirect influence on fertility desire among women (Achwoka et al., 2017). Including structural components of the service environment would be important. These were addressed in the qualitative study.

- The quantitative study is limited by the absence of male partner views in spite of the essential role played by men in reproductive decision-making. This limited the ability to assess couple dynamics around fertility desire and contraceptive uptake. This was addressed in the qualitative study. Male perspectives on fertility desire and contraceptive uptake were obtained from the men's in-depth interviews.

- Another limitation of the qualitative study is that the participants were recruited from a rural community setting, with data drawn from a limited number of men, women and family planning providers. The recruitment of these participants was purposeful, which could potentially have introduced a selection bias in the identification of participants (Willig, 2013). This limits the ability to generalise these results to urban settings in Uganda where women tend to have better socio-economic backgrounds. However, the characteristics of women in the qualitative study reflect the national DHS to a large extent and the issues raised during the interviews were in line with the quantitative analyses, although they may pertain more to women in rural than urban areas. It could be argued that these women may still be at higher risk for short birth-to pregnancy interval, and therefore, information on this specific population is important.

- Fertility desire and contraceptive use measures used in this analysis are based on self-reports, using face-to-face interviews, which is subject to social desirability bias(Bowling, 2005). Participants might have responded with answers that were desirable in regard to contraceptive use, optimal birth spacing and postpartum care attendance.There might have been some courtesy bias, in which participants do not wish to speak negatively of the family planning services provided at the health facility. Although these biases were minimised by use of trained interviewers, who built a strong rapport and assured participants of the confidential nature of the interview and the importance of their own perspectives—their effect cannot be completely eliminated in the qualitative study.

8.6   Contribution to knowledge and strength of the study

In spite of the limitations, this thesis makes numerous important contributions to the empirical literature on fertility decision-making among women in the extended postpartum period—an under researched population. First, it contributes to the ongoing

debate on the role of effective contraceptive use in reducing unmet need for family planning in women in the postpartum period(Pasha et al., 2015; Ross & Winfrey, 2001; Rossier, Bradley, Ross, & Winfrey, 2015). It provides the most up-to date figures on fertility desire and contraceptive use among women in the extended postpartum period using the most recent 2016 Uganda DHS survey. The qualitative study took place in a high fertility setting with low contraceptive use which made it an ideal site for understanding fertility decision-making among women. Most studies on fertility desire and contraceptive behaviour focus on women (Achwoka et al., 2017; Mayhew et al., 2017; Sileo, Wanyenze, Lule, & Kiene, 2015) perhaps because childbearing is within the women's domain. Also, by including men in the qualitative study, this study allowed assessment of gender differences in fertility desire and contraceptive behaviour.

Recruitment of participants from the community was also a strength of this study. Most studies on postpartum women recruit participants from heath facilities (Gutin, Namusoke, Shade, & Mirembe, 2014; O'Shea et al., 2015; Peltzer et al., 2018). Participants recruited from a health facility setting are more likely to have access to family planning information and methods, which limits the generalisability of the findings.

Additionally, since Uganda is in the second stage of the demographic transition, characterised by falling mortality rates and persistently high fertility rates, factors that can decrease fertility among women, must be given adequate attention. This mixed method study allowed these to be explored and contributed to expanding knowledge on the relationship between fertility desire and contraceptive use. Finally, this analysis was restricted to both married and unmarried women, in the 24 months following delivery, and excluded contraceptive methods with high failure rates, such as withdrawal and rhythm.

These results reveal important areas on which to focus further educational efforts. First, women who want a child soon and yet they are within the extended postpartum period, are at risk of having negative pregnancy outcomes. These women, should be counselled against trying to conceive soon. The second category to focus on is illiterate and Muslim women. Study findings revealed that uneducated women were less likely to use modern contraception while Muslim women desired to have more children.

8.7 Recommendations for future research

This study identified some research priorities:

- The cross-sectional nature of this study limited its ability to track changing fertility desire with contraceptive use. Thus, a longitudinal study that follows the same respondents over time is recommended. It would be interesting to understand the direction of the sequence of events that lead to fertility desire and contraceptive behaviour among women in the extended postpartum period.

- Fertility-and postpartum-related factors were an emerging theme across all analyses, suggesting that they are the main factors associated with fertility decision-making among postpartum women. Therefore, more in-depth quantitative and qualitative analysis is needed to examine the complex pathways between fertility desires, contraceptive use, postpartum related factors and fertility outcomes. At the same time this thesis draws attention to and calls for more in-depth research on the possible sex and reproductive health implications embedded within this complex interplay.

- The finding that women with children of the same sex have a higher fertility desire than women with children of a mixed sex was surprising given that Uganda is largely a patriarchal society. Other studies could draw on the existing research in shedding light on the fertility behaviour in sub-Saharan-African countries with similar family structures

- Discussion of family planning with a provider was not associated with contraceptive behaviour among women. Additional research is recommended to improve understanding of this aspect. It would be interesting to explore other strategies that can be used to increase postpartum family planning uptake, especially among Muslims and uneducated women.

8.8 Significance of this study

This study was the first of its kind to examine fertility desire and contraceptive use among Ugandan women in the extended postpartum period, using a mixed methods design. Various studies on fertility desire and contraceptive use have been carried out in Uganda

and elsewhere, but their focus has been on a general population of women. It was deemed important to specifically examine the fertility and contraception desire of postpartum women, given their vulnerability to unintended and rapid repeat pregnancies which pose adverse health risks to the mother and the new-born. This study provided insights into the fertility desires and contraceptive use of women using the 2016 UDHS dataset and participants (family planning providers, women and men whose wives had a child in the last two years) from a rural Ugandan setting. It has contributed to the discourse about postpartum women, their desires and the influence significant others such as the partner and community members have on women's fertility and contraception choices. This study has shown that broader cultural factors, such as the stronger role of men in relationships and contraceptive use decision making, and how the pressure to bear children contributes largely to contraceptive uptake, or lack thereof. Many of the other studies on desires and contraceptive use among postpartum women have concentrated mainly on women in the general population in the context of HIV. This study explored the desire of both male and females to have children, and this is especially important in a strongly patriarchal society like Eastern Uganda.

The mixed-methods approach and the use of the two frameworks, Traits-Desires-Intentions and Behaviour and the theory of planned behaviour were also of great significance. They allowed the multi-factor analysis of these two concepts (fertility desire and contraceptive use) enhance understanding of the complexity around fertility decision –making among postpartum women. The study can be considered significant on the basis of the following findings:

- Sex composition (having children of one sex) particularly girls, influences high fertility desire
- Child sex preference was not significantly associated with fertility desire, in both bivariate and multivariate analysis. This finding suggests that other factors (such as love of children) beyond sex preference operate at a more proximal level to influence desire.
- Overall, resumption of menstruation was the main factor influencing use of modern contraception among postpartum women.
- Maternal and child health concerns (previous pregnancy/birth experience) were key factors in influencing women's future fertility desire.

- Having only girls was negatively associated with postpartum contraceptive use as compared to having children of both sexes.

- This research adds to literature and highlights that, in addition to commonly cited gender inequities and power dynamics that strongly impact women's contraceptive behaviour, concerns about adverse health outcomes among women pose an important barrier to family planning uptake that must be further studied.

8.9   Conclusion

Addressing high fertility is an important challenge for national Governments and the international community if progress is to be made in reducing high fertility. A review of the demographic literature and findings from this thesis demonstrate that high fertility is likely to persist, in line with prevailing social norms. While socio-economic growth is likely to have some positive impact, any real progress to achieve a decline in fertility is likely to depend on changing attitudes favouring child sex preference, especially a preference for sons. That way, investments in interventions that promote appropriate care to postpartum women—a target population whose pregnancy risk escalates during the extended postpartum period— will have an effect on fertility. Lastly, family planning programmes under the leadership of the Government can be most effective in reducing fertility and increasing contraceptive use among postpartum women if they concentrate educational efforts on Muslims, those who want a child soon and amenorrhoeic women.

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Appendix A: Study protocol

1. Briefly describe the rationale, study aims and the relevant research questions of your study

Studies on fertility desire and contraceptive uptake among women within two years of delivery in sub-Saharan Africa are limited (O'Shea et al., 2015, Mayondi et al., 2016, Sofolahan-Oladeinde et al., 2017, Gutin et al., 2014). Specifically, few attempts have been made to examine the interrelated issues of fertility desire, contraceptive use and family planning service environment in one study. Previous studies have revealed rapid resumption of sexual activity after delivery (Hyde et al., 1996, Adanikin et al., 2014, Ndugwa et al., 2011a) and high unmet need for family planning among women within two years of delivery. Hence, the assumption that women within two years of childbirth are sexually abstinent and not in need of contraception is not tenable.

Clearly, this group of women is at risk of having unintended pregnancies and therefore interventions to meet their fertility goals are warranted. This study will add to the emerging body of evidence on fertility desire and contraceptive behaviour of women in a sub-Saharan Africa setting. This thesis pays important attention to Uganda due to its distinct characteristics.

Uganda has one of the highest fertility rates in the world (5.4 births per woman) and a faster population growth rate (2.9% per year) than other countries in the East African region (UBOS and ICF, 2018, PRB, 2017). The high fertility rate is partly attributed to low contraceptive use among women ages 15–49 (UBOS and ICF, 2018). Paradoxically, knowledge of at least one method of contraception among all women is almost universal (99%); and yet only 35% of married women use modern contraception (UBOS and ICF, 2018). Overall, 28% women indicate unmet need for family planning, of whom 18.3% would like to space and 10.1% to limit births (UBOS and ICF, 2018). According to the 2016 Uganda Demographic and Health Survey report, more than four in 10 births are unplanned, 9% of births occur within 18 months of a previous birth while a quarter occur within 24 months. Thus in Uganda, most unplanned pregnancies may be associated with short birth intervals. In this context, the period following delivery is particularly important

for initiating contraception to avert unintended pregnancies and increase birth spacing (Cleland et al., 2006).

Aim of the study

The overall aim of this study is to investigate the individual, household and community level factors that influence fertility desire and contraceptive behaviour of Ugandan women who had a live birth within the last two years. The two-year period is in line with the World Health Organisation recommendation for spacing of births between a live birth and an attempt to the next pregnancy.

More specifically, this study has the following objectives:

1) To quantify the associations between socio-demographic factors, self-reported behavioural and child sex preferences and self-reported further childbearing desire.

2) To address a possible inconsistency between self-reported fertility desire and extent of reliable contraceptive use.

3) To understand how community norms (such as ideal number of children, attitudes towards contraception and sex preference of children) shape women's fertility desire in Uganda

Research questions 1 and 2 in the table below address the two quantitative objectives of the study, while questions 3, 4, 5, 6 and 7 address the third objective.

Table 1 showing data collection methods and target population by research question.

Research question	Methods	Target Population
1) Does the sex composition of living children influence the desire for another child?	Secondary analysis to examine the association between sex composition, child sex preference and women's fertility desire (allowing for other factors known	Women of reproductive age15-49 years, who had a birth in the last two years from the 2016 Ugandan DHS.

Research question	Methods	Target Population
	to be associated with fertility desire).	
2) Does desire to either stop childbearing or delay childbearing translate into contraceptive use?	Secondary analysis to examine the association between women's fertility desire and modern contraceptive use (allowing for other factors known to be associated with contraceptive use).	Women of reproductive age 15-49 years, who had a birth in the last two years from the 2016 Ugandan DHS.
3) How is the concept of "ideal number of children" understood by men and women in this community?	In-depth Interviews	-Women who had a birth within the last two years and have at least two children -Men whose wives had a birth within the last two years
4) How do recently delivered women decide to have or not have additional children?	In-depth Interviews	-Women who had a birth within the last two years and have at least two children -Men whose wives had a birth within the last two years
5) What are recently delivered women's attitudes and perceptions towards modern contraceptive use?	In-depth Interviews	-Women who had a birth within the last two years and have at least two children. -Men whose wives had a birth within the last two years
6) When are contraceptive methods provided to	Key informant Interviews	-Family Planning Providers/counsellors -Community health workers,

Research question	Methods	Target Population
recently delivered women? Why that time?		-Village health team members, -Traditional birth attendants (TBAs).
7)What is the content of the counselling received by recently delivered women? When is it delivered and who does the counselling?	Key informant Interviews	-Family Planning Providers/counsellors Community health workers, -village health team members, -Traditional birth attendants (TBAs).

2. Describe the design of your study

The present study uses a qualitative methodology. The study will use a mix of semi structured interview guides to collect information through in-depth interviews and key informant interviews. IDIs will be conducted to capture women and men's 'lived experiences' in detail. Key informant interviews will be conducted with knowledgeable individuals with a vested interest and involvement in contraceptive provision, family planning counselling and fertility issues to offer various perspectives on the supply side of contraceptive, barriers or facilitators of attaining fertility goals within the study site.

Study site

The interviews will be conducted in Mayuge district, which has been purposively selected from the 112 districts in Uganda. Selection of Mayuge district has been based on; 1) It is located in Eastern Uganda, the region with the highest total fertility in the country (7.5 children per woman), which is even higher than the national fertility level, 2) Mayuge district is predominantly rural (93%) and is ranked among the worst performing districts in terms of maternal health indicators in the district league table (Ministry of Health Uganda, 2015). In terms of organisational structure, each parish falls under a sub–county while a sub–county falls under a county which is under a district. Mayuge district is sub divided into 12 sub counties and one town council. Two sub-counties will be purposively selected from

the list of 12. One representing a purely rural setting and the second will be a rural site with peri-urban characteristics–the intention being that such differences would provide a point of contrast in terms of change and persistence in social norms around fertility and contraceptive use. Thereafter one parish will be randomly selected form each sub–county within which data will be collected.

In-depth Interviews

Female IDIs

A total of 28 in-depth interviews will be conducted in two parishes (14 IDIs in each parish)-refer to the distribution of respondents by screening characteristics table below. The target population will be women aged 20 to 49 years. The in-depth interviews with women will be conducted by the research assistants.

Distribution of respondents by screening characteristics

Parish 1		Parish 2	
Same sex children* **(8)**	Only girls (4)	Same sex children **(8)**	Only girls(4)
	Only boys(4)		Only boys (4)
Small/ Large family size **(6)**	More than **5 children*** (3)	Small/Large family size **(6)**	More than 5 children (3)
	Fewer than 5 children (3)		Fewer than 5 children (3)

***5 children** is the national average ideal number of children

* **Same sex children**- women with at least three children of the same sex composition

Male IDIs

In addition to this, ten male participants (whose wives had a child within the last two years) will be purposively selected and interviewed. Since the study focus is about understanding women's perspectives, women are the most relevant study population, which justifies why the study has more IDIs comprising females. The few men IDIs will serve to discuss in particular insights about fertility desire and contraceptive use among women from men who are in general the primary decision–makers in reproductive health matters within this setting. The in-depth interviews with men will be conducted by the research assistants.

Key informant Interviews

The target group for the key informant Interviews will be knowledgeable persons (with divergent opinions and perspectives) about the fertility situation in the study area. The relevant groups from which to draw the key informant interviewees are, family planning providers, community health workers, village health team members, traditional birth attendants (TBAs). The study target is ten key informants but this will depend on the number of eligible participants existing in the study areas. The KIIs will be conducted by the researcher.

Recruitment and training of research assistants

Two research assistants (female and male) will be recruited to help the researcher conduct the interviews and transcribe the qualitative data.

The qualified and experienced research assistants will be recruited by the researcher through the following procedure:

a) Placement of an advertisement on noticeboards of social science research Departments of Makerere University Department of Population studies, Makerere Institute of Social Research (MISR) and Faculty of social sciences. The advertisement will specify the academic qualifications and research experience of potential candidates.

b) Shortlisting of candidates who have relevant experience (have data collection experience and familiar with the context) as assessed according to their curriculum vitae

c) Interviewing of shortlisted candidates

Prior to fieldwork, research assistants will be trained for a period of two days by the researcher on the study protocol including research questions, sample selection procedures and research process. As a matter of course, different aspects of ethical consideration will be addressed, including the confidentiality of the information obtained and the privacy of the research participants, obtaining informed consent (voluntary participation, right to withdraw), explaining the purpose of study, risks and benefits of the study and doing no harm. The aim of the training is to ensure that data collection is done ethically and that power imbalance between the research team and the respondents is minimised. Following these procedures will also ensure that data is of high quality.

The interviews will be conducted in the native language, Lusoga which is the predominant language spoken in Mayuge district. The IDIs will be conducted in Lusoga and transcribed in English; while for the KIIs, the interview may be conducted in English or Lusoga depending on the language the key informant is comfortable with. Interviews will be audio recorded with the participant's consent. Audio recording will give the research team an opportunity to go back over the interview and will enable the researcher to concentrate, listen and respond better during the interview. Additionally, handwritten notes will be taken to capture nonverbal behaviours for instance facial expressions and gestures which suggest strong emotions and cannot be captured by recording. A handwritten record is also useful in case there is a technical failure with the audio recorder.

1. **Who are the research participants?**

The study has three sets of participants;

a) All women aged 20-49 years who had a child in the last two years and reside in Mayuge district will be included in the study. Since median age at birth in Uganda is 18 years, minimum age for this sample has been set at 20 years to give a chance to women who are early in their reproductive career and those who are late into their reproductive career. Women in the age group 15-19 years have been excluded because they are at the beginning of their reproductive career, are low parity women and may have insufficient information about the study topic.

b) All men aged 18-54 years (whose wives had a child within the last two years) and currently reside in Mayuge district will be purposively selected and interviewed. The age group 18-54 years is comparable to the adult age category of interviewed men used in the Demographic and Health Surveys.

c) At programme level the participants will include service providers of family planning methods such as family planning counsellors/ providers from public health facilities, village health team members, community health workers, traditional birth attendants and providers from private facilities.

2. **If you are going to analyse secondary data, from where are you obtaining it?**

The quantitative part of the study uses the publicly available 2016 Uganda Demographic and Health Survey data, accessed with permission from the DHS Programme upon providing a brief description of the study via their website (MEASUREDHS, 2016).

3. **If you are collecting primary data, how will you identify and approach the participants to recruit them to your study?**

Recruitment of participants will occur at both health facility and community level. Identification of respondents for the In-Depth interviews

<u>Female participants</u>

IDI participants will be recruited from the health facility during the well-baby clinic days at a level three health centre (HC III) within Mayuge district. Authorisation to recruit participants will be got from the heath facility Director (see copy of letter attached). The district has only five Government owned HC IIIs. Each HC III serves a catchment population of 20,000 and offers in-patient health services, outpatient, laboratory and maternity services including family planning counselling. Majority of the cross-sectional studies targeting women postpartum women rely on convenience samples from accessible health facilities (Clouse et al., 2014, Rossier and Hellen, 2014, Ayiasi et al., 2015). This is partly due to lack of up to date registries of populations living within communities which is likely to be the case in Mayuge district. Consequently, recruitment of IDI participants for this study adopted a similar approach.

In-depth interview participants will be recruited from the health facility during the well-baby clinic days using an exit recruitment approach. During the well-baby clinic days, the research team (myself and the research assistants) will provide women with information about the study and will ask women to approach the research team on their exit if they are interested or want more information. Potential participants will be briefed about the aims of the study and the characteristics of the people the study would like to interview, hence the need for certain personal information. The potential participant who meets the study sampling criteria (had a child within the last two years and has at least two children) will be asked about the sex composition and number of children they have. A potential participant will then be invited to an agreed meeting place, date and told the time for the interview. It is likely that the interview will be conducted at the respondent's house or they will have the option to choose a place of their convenience.

<u>Male participants</u>

Participants for the male interviews who fit the eligibility criteria (in section 9) will be recruited from one randomly selected parish with the help of a local field guide. Men will be approached at public places such as churches, market days and bus stations. Once a participant has been identified, the research team (myself and the research assistants) will provide men with information about the study and the characteristics of the men that are eligible to take part in the study. A potential participant will then be invited to an agreed meeting place, date and told the time for the interview. It is likely that the interview will be conducted at the respondent's house or they will have the option to choose a place of their convenience.

Identification of Key informant interview participants

The research team will consult knowledgeable persons to prepare a list of the possible key community members who are involved in family planning service provision to women. These will include community health workers, traditional birth attendants, Village health team members, Family planning providers/counsellors at the public health facility, Family planning Providers/counsellors from the private sector. The initial contact of participants will be by telephone or in person (see copy of the text that that will be used to approach KIIs). A potential participant will be briefed about the aims of the study and once a positive response has been received, an appointment will be made to set up an interview.

4. **Will participants be taking part in your study without their knowledge and consent at the time (e.g. covert observation of people)? If yes, please explain why this is necessary.**

No, the study will not involve any covert research. Participants will be fully aware of their involvement in the study as their consent will be sought before taking part in the study.

5. **If you answered 'no' to question 13, how will you obtain the consent of participants?**

   Please upload a copy of the consent form if you are using one – or if you are not using one please explain why.

As mentioned earlier, participants will be briefed verbally regarding the purpose of the study and what the interview will involve when they are recruited, and this will be reiterated at the onset of the interview. A pre-designed written participant information

sheet and consent form will be used as part of the informed consent process. Information will also be given verbally (see Informed consent forms, Appendix C) to ensure that participants who are illiterate fully understand their role in the study and consent to taking part in the study. Once the participant has orally consented to participation in the study, the participant will be asked to put a thumbprint on the consent form.

6. **Is there any reason to believe participants may not be able to give full informed consent? If yes, what steps do you propose to take to safeguard their interests?**

There is no reason to believe that participants wont give full informed consent. In the event that there are some illiterate participants, having experienced research assistants that are fluent in English and Lusoga (local language spoken in Mayuge district) will make the comprehension process easier for such participants. The participants will be fully informed about the research procedure and made aware that participation in the study is voluntary. The respondents will have the option to refuse to take part in the study or to withdraw at any time without fear of being penalised. Participants will also be assured of complete confidentiality of all information shared. These elements will ensure that individuals freely and rationally participate in the study.

7. **If participants are under the responsibility or care of others (such as parents/carers, teachers or medical staff) what plans do you have to obtain permission to approach the participants to take part in the study?**
Such participants will not be part of this study.

8. **Describe what participation in your study will involve for study participants. Please attach copies of any questionnaires and/or interview schedules and/or observation topic list to be used**

For the in-depth interviews, participants will be invited to a convenient location or meet at their homes and engage in a one to one interview. The interview will take approximately 40 minutes. For the key informant interviews, the researcher will visit the key informants at their work place or a convenient location as agreed by the key informant. The interview will take approximately 40 minutes. Compensation for the participant's time and effort will be in the form of a drink and snack. This is culturally expected in the study setting and is a sign of respect for their participation. Interview guides will be used during all interviews.

9. **How will you make it clear to participants that they may withdraw consent to participate at any point during the research without penalty?**

Participation in the study will be voluntary and participants will be assured that refusal to participate will not lead to any adverse consequences. The option for participants to withdraw consent, without penalty, will be clearly specified in the consent form which is to be read or explained to every participant. At the conclusion of the interview the participant will be informed that it has been completed and asked whether they are still happy for the conversation to be used as part of the research.

12.   Detail any possible distress, discomfort, inconvenience or other adverse effects the participants may experience, including after the study, and you will deal with this.

The interview questions are semi structured which gives the research team the flexibility to change to another topic if the participant is uncomfortable with certain questions.

The sensitive nature of some topics such as "ideal number of children" may have potential to cause distress for some participants. Distress will be minimised through use of trained research assistants who will reiterate the participant's right to refuse to respond to any specific questions that may result in psychological disturbance. Once signs of distress (such as participant becoming upset) are noted, the research assistant will pause the interview to allow establish the cause of distress. If the participant feels able to carry on, the interview will resume. If the participant is unable to carry on, the interview will be discontinued. In addition, the research assistants will be trained psychosocial counsellors capable of providing immediate counselling support to the distressed participant as needed.

13.   How will you maintain participant anonymity and confidentiality in collecting, analysing and writing up your data?

Anonymity

Any personal and identifying information that participants may make reference to during the course of the interview will be replaced with pseudonyms in transcripts/analysis while preserving meaning of the participant's words. General identifiers, such as "Participant 1, sex, age" will be used. Similarly, generic titles such as "Provider 1", will be used when quoting verbatim so that key informants and events described cannot be identified.

Confidentiality

In-depth interviews:

In the case of in depth interviews which are most likely to occur at the participants home, the researcher will pause the interview for a while or move to another location in case of any intrusions.

Key informant Interviews: Interviews with key informants will be conducted at a private room at the health facility or a comfortable location identified by the key informant. Where possible, the participant will be kindly requested to place a polite notice stating "Interviews in progress, please do not disturb" on the door. This will ensure that there will be no disturbances or interferences from other people.

During analysis, the research team, will work in a private room when transcribing the notes and recodes and thereafter kept in a lockable filing cabinet for safe keeping in case they have not finished transcribing. Only members of the research team will have access to the records. All electronic files will be kept on a password protected computer for at least ten years as recommended by the University of Southampton research data management policy and thereafter destroyed once the stated period has expired.

Research assistants will sign a confidentiality agreement and be fully briefed prior to and following interviews, which will include clarifying confidentiality agreements.

14. How will you store your data securely during and after the study?

The University of Southampton has a Research Data Management Policy, including for data retention. The Policy can be consulted at http://www.calendar.soton.ac.uk/sectionIV/research-data-management.html

Data will be stored in accordance with the Data protection Act of 1998, and University of Southampton policies for a minimum period of 10 years.

The digital recorder will store the recordings as electronic files which will then be downloaded directly to a computer, saved on a password protected computer drive and backed up on a password protected USB. Paper records for example field notes and consent forms will be kept in a locked cabinet. Immediately after the transcription, the files will be retrieved from the note takers and stored on the researchers laptop whose logging in details are password protected and only accessible to the researcher. The files once transferred, will be deleted from the recorder. This will also apply to the typed notes. Likewise, any back up of the files will be password protected and stored in a secure environment such as locked up office drawers at the University of Southampton to avoid

breach of data security. All hard copies will be destroyed once the researcher is satisfied that they are no longer needed for cross checking.

15. Describe any plans you have for feeding back the findings of the study to participants.

The researcher will prepare a poster in both English and Lusoga with a summary of the findings which will be made available for participants to view at the health facility or community hall. This will be made clear to the participants before the consent. The findings will be presented in bullet form for easy reading and understanding.

16. What are the main ethical issues raised by your research and how do you intend to manage these?

Some participants may feel uncomfortable sharing personal information such as "ideal number of children" that they don't usually share. Participants will be made aware that they do not have to answer questions they are not comfortable with and can always terminate the interview if they feel uncomfortable with the interview questions. The researcher will ensure that potential participants are well informed about the purpose of the research they are being asked to participate in. In addition, the use of trained research assistants will help alleviate their fears and concerns.

There could be the possibility of bystanders curious about the conversation in the Interviews; the interviews will be conducted in a private, comfortable and quiet room, far from disturbances to limit access to those not involved in the study. A relatively quiet location will not only make the environment more relaxing, but will also reduce the likelihood of problems with the audibility of the audio recordings. It will, therefore be vital that respondents are asked where they would like to be interviewed, although of course the personal safety of the researcher and the research assistants is also an important part of the ethical obligation of the study and so these factors will also be carefully considered. All the information provided by the research participants will be treated as confidential.

Appendix B: Ethics approval letter

UNIVERSITY OF
Southampton

To Whom it may concern

Project Reference: 20764
Project Title: Fertility desire among Ugandan women who had a live birth in the last two years

Investigator: Patricia Ndugga

The protocol for this project was reviewed and approved by the Faculty of Social, Human and Mathematical Sciences ethics committee on 10th November 2016 and by the Research Governance Office on 16th January 2017.

Please contact rgoinfo@soton.ac.uk if you require further information regarding the project.

Yours sincerely

Trudi Bartlett
Research Governance Officer
Research Integrity and Governance Office
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Appendix C: Informed consent forms

C.1: Participant Information Sheet—Women

Introduction

Good morning/afternoon Sir/Madam. I am part of a team conducting a study to understand the decision-making regarding family size and use of modern contraception among mothers in Mayuge district. This study is being conducted by Patricia Ndugga, a research student at the University of Southampton in the United Kingdom and a Lecturer from Makerere University in Kampala, Uganda. This research forms part of her training which will lead to a PhD in Demography and Social Statistics. Patricia is working under the supervision of Professor Nyovani Madise and Professor Marie-Louise Newell from the University of Southampton. The research is funded by the Commonwealth Scholarship Commission.

Why have I been chosen?

The study participants are women aged 20 to 49 years who had a live birth in the last two years and reside in Mayuge district. Study participants are women who have more than /fewer than five children. You have been chosen because you fit these criteria and you are likely to have valuable knowledge about the study topic.

What will happen to me if I take part?

You have been selected to take part in a one to one interview. The interview will be conducted at a venue convenient for you or at your home. Participation in this interview is voluntary and it will not cost you anything to take part. The interview will take approximately 40 minutes and will consist of topics on fertility and contraception guided by a researcher. We are interested in your thoughts and opinions.

Are there any benefits in my taking part?

Although this information collected may not be beneficial to you as an individual, indirect benefits in terms of increased awareness about motivations for fertility desire is likely, and would be beneficial in such a high fertility setting. In addition, the results of the study should help the Government formulate policies to assist people achieve their desired number of children. The researcher will prepare a poster with a summary of the findings,

which will be made available for participants to view at the health facility. Compensation for your time and effort will be in the form of a bar of washing soap.

Are there any risks involved?

There are no anticipated risks to you. If you are at all uncomfortable with some of the discussion topics or questions we will ask about, you are free to not answer or to skip to the next question.

Will my participation be confidential?

The interview will be tape recorded so that we can later on review what we discussed, however, only the research team will listen to the recording. Only the researcher team will be present at the time of the interview and there will be no disclosure of research information except to a member of the research team. Your name will not be associated with the information that you provide. Only pseudonyms will be used such that no one will ever know who the information is from. All the recordings will be stored on a password-protected computer.

What happens if I change my mind?

If you agree to participate at the beginning of the study and later change your mind, you can stop whenever you want and this will not have an effect on any of your rights. Following your withdrawal, any data collected up to that point will be retained.

What happens if something goes wrong?

If you have questions about your rights to participate in this research, or if you feel that you have been placed at risk, you may contact: The Head of Research Governance, University of Southampton on the following contacts: +44 2380595058, and email: rgoinfo@soton.ac.uk or locally, Dr. Joseph Ochieng, Vice Chairperson National HIV/AIDS Research Committee (NARC), P. O. Box 6884, Kampala - Uganda. Tel: +256414705500.

Do you agree to participate in this interview?

Yes   (Continue below)

No   (Thank you for your time)

Acceptance

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and the questions have been answered to my satisfaction. I consent voluntarily to be a participant in this study. I understand that I have the right to withdraw from the interview at any time without any problem.

Name of participant …………………………………

Signature of participant/thumbprint……………………………….

Name of witness   …………………………………….
Signature of the witness …………………………
Name of person administering consent………………………………

Signature of person administering consent………………………….

Date ……………

Informed consent forms–Women *(Lusoga version)*

Study Title: Fertility desire among Ugandan women with a live birth within the preceding two years

Nkusaba osome obubaka buno bulungi nga okaali kwenhigira mu kunoonereza kuno. Bwoba musanhufu okwenhigiramu oidha kusabibwa ote omukono ku kiwandiiko ekiwa olukusa

Okwandhula

Wasuze otya/osiibye otya Ssebo, Amaina gange niinze……………………………………Ndi ku kibiinja ekiri kukola okunoonereza okumanha engeri ey'okusalawo kubigema ku bungi bw'abaana era n'enkozesa y'enkola edhitangira okuzaala edhiri ku mulembe mu ba maama mu Mayuge. Okunoonereza kuno kuli kukolebwa Patricia Ndugga, omusomi okuva mu itendekero lya Southampton, Bungereza era omu kubakozi mu itendekero lya Makerere, Kampala.

Lwaki nnondeibwa?

Abali kwenhigira mu kunoonereza n'abakyaala ab'emyaaka abiri (20) okutuuka ka ana n'omwenda (49) abazaalaku mu myaaka ebiri egyibiseewo era nga buti baba mu disiturikiti ey'e Mayuge.

Ki ekinaatukawo singa ndikiriza okwenhigiramu?

Oidha kwenhigira mu kubuuzibwa ebibuuzo eby'omulala ku mulala okumala edakiika ana. Oidha kubuuzibwa bwa bibuuzo era tiwaabe kukeberebwa kwonakwona kugya kukukolebwaaku. Wabula, okwenhigira mu kunoonereza kuno kwa kyeyendeire era osobola okukomya okubuuzibwa ekiseera kyonakyona. Era oli waidembe okusalawo obutenhigira mu kunoonereza era ezira agya kukutaaku nsonga kubanga okwenhigiramukwo kwakyeyendeire. Nandienze okubuuzaaku ebibuuzo ebiiriganwaaku ku ngeri y'okola okusalawo ku bigema ku bunene bw'amaka n'okukozesa enkola ey'entegeka y'eizaire, okusingira irala ky'olowooza ni ky'oidhukira mubulambukukufu. Okubuuzibwa kwiidha kugemebwa mu maloboozi ng'owaire olukusa.

Eriyo okuganhulwa kwonakwona nze okwenhigiramu?

Ezira kuganhulwa kwa buligho oba kusasulwa lwa kwenhigira mu kunoonereza kuno. Wabula, ng'okubuuza kuwoire, oidha kuweebwa omuti gwa sabuuni nga akasiimo ak'okwebaza. Ndidha kwiiza amawulire ku binaava mu kunoonereza eri abenhigiiremu mu ngeri y'ebipande ku irwaliro. Amawulire aganasolozebwa gaidha kukozesebwa okuyamba ba mama okutukiriza ebigendererwa byaibwe ku bungi bw'abaana.

Eriyo obuzibu bwonabwona

Ezira buzibu bwesubirwa eri ighe

Okwenhigiramu kwange kunaaba kwa kyaama?

Buli mawulire ganasolozebwa gaidha kukuumibwa nga kyaama. Abo bonka abali ku kibiinja ekinoonereza n'abanetuukiriza amawulirego. Fairo dhonadhona edirimu amawulire ag'omuntu dhiidha kukuumiibwamu nga tidimanhiibwa nga amawulire galoongosebwa.

Kakiikoki akanoonereza akaakasa okunoneereza kino?

Okunoonereza kuno kwafuna okukakasibwa okuva mu NARC okukakasa nti eneyisa mu kunoonereza kuno, eidembelyo n'okubisibwa obukalamu nga ey'enhigirimu bigobererwa mu bwiidhuvvu.

Olinaku ebibuuzo byonabyona ebijgema ku kunoonereza?

Bwoba olina ebibuuzo byonabyona ku kunoonereza kuno, osobola okutuukirira:

Akulira okunoonereza: Patricia Ndugga

Department of Population Studies, Makerere University

P.O Box 7062, Kampala, Uganda. Tel: +256 772 828986, Email: patnduggab@yahoo.com

REC Chair: Chairperson National HIV/AIDS Committee (NARC), P. O. Box 6884, Kampala - Uganda.Tel: +256414705500.

Oikiriza okwenhigira mu kubuuzibwa kuno?

Yii ………. (Weyongereyo wansi)   *Bbe………….. (Webale olw'ebiseerabyo)*

Okwiikiriza

Nsomye obubaka obuviireku, oba bunsomeirwa. Nfunie omukisa okubuuza ebibuuzo ebikigemaku era n'ebibuuzo biiribwamu mu kumatira kwange. Ndikiriza kyeyendeire okwenhigira mu kunoonereza kuno. Ntegeera nti eidembe nninalyo okuva mu kubuuzibwa kuno ekiseera kyoonakyoona aghazira buzibu.

Amaina ag'eyenhigiremu ………………………………

Omukono/ekinkumu eky'eyenhigiremu……………………………………………

Amaina ag'omuntu abairewo…………………………………………

Omukono ogw'omuntu abairewo……………………………………..

Amaina ag'omuntu alikusaba olukusa ……………………………

Omukono ogw'omuntu alikusaba olukusa…………………………………………

Enaku edh'omwezi………………………..

C.2: Participant Information Sheet—Men

Introduction

Good morning/afternoon Sir/Madam. I am part of a team conducting a study to understand the decision-making regarding family size and use of modern contraception among mothers in Mayuge district. This study is being conducted by Patricia Ndugga, a research student at the University of Southampton in the United Kingdom and a Lecturer from Makerere University in Kampala, Uganda. This research forms part of her training which will lead to a PhD in Demography and Social Statistics. Patricia is working under the supervision of Professor Nyovani Madise and Professor Marie-Louise Newell from the University of Southampton. The research is funded by the Commonwealth Scholarship Commission.

Why have I been chosen?

The study participants are men aged 18 to 54 years whose wives had a birth in the last two years and currently reside in Mayuge district. You have been chosen because you fit these criteria and you are likely to have valuable knowledge about the study topic.

What will happen to me if I take part?

You have been selected to take part in a one to one interview. The interview will be conducted at a venue convenient for you or at your home. Participation in this interview is voluntary and it will not cost you anything to take part. The interview will take approximately 40 minutes and will consist of topics on fertility and contraception guided by a researcher. We are interested in your thoughts and opinions.

Are there any benefits in my taking part?

Although this information collected may not be beneficial to you as an individual, indirect benefits in terms of increased awareness about motivations for fertility desire is likely, and would be beneficial in such a high fertility setting. In addition, the results of the study should help the Government formulate policies to assist people achieve their desired number of children. The researcher will prepare a poster with a summary of the findings, which will be made available for participants to view at the health facility. Compensation for your time and effort will be in the form of a bar of washing soap.

Are there any risks involved?

There are no anticipated risks to you. If you are at all uncomfortable with some of the discussion topics or questions we will ask about, you are free to not answer or to skip to the next question.

Will my participation be confidential?

The interview will be tape recorded so that we can later on review what we discussed, however, only the research team will listen to the recording. Only the researcher team will be present at the time of the interview and there will be no disclosure of research information except to a member of the research team. Your name will not be associated with the information that you provide. Only pseudonyms will be used such that no one will ever know who the information is from. All the recordings will be stored on a password-protected computer.

What happens if I change my mind?

If you agree to participate at the beginning of the study and later change your mind, you can stop whenever you want and this will not have an effect on any of your rights. Following your withdrawal, any data collected up to that point will be retained.

What happens if something goes wrong?

If you have questions about your rights to participate in this research, or if you feel that you have been placed at risk, you may contact: The Head of Research Governance, University of Southampton on the following contacts: +44 2380595058, and email: rgoinfo@soton.ac.uk or locally, Dr. Joseph Ochieng, Vice Chairperson National HIV/AIDS Research Committee (NARC), P. O. Box 6884, Kampala - Uganda. Tel: +256414705500.

Do you agree to participate in this interview?

Yes	(Continue below)
No	(Thank you for your time)

Acceptance

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and the questions have been answered to my satisfaction. I consent voluntarily to be a participant in this study. I understand that I have the right to withdraw from the interview at any time without any problem.

Name of participant ……………………………………

Signature of participant/thumbprint………………………………

Name of witness………………………………………..
Signature of the witness ……………………………..

Name of person administering consent………………………………

Signature of person administering consent………………………….

Date ………………………………………

Informed consent forms–Men *(Lusoga version)*

Study Title: Fertility desire among Ugandan women with a live birth within the preceding two years

Nkusaba osome obubaka buno bulungi nga okaali kwenhigira mu kunoonereza kuno. Bwoba musanhufu okwenhigiramu oidha kusabibwa ote omukono ku kiwandiiko ekiwa olukusa

Okwandhula

Wasuze otya /osiibye otya Ssebo, Amaina gange niinze………………………………Ndi ku kibiinja ekiri kukola okunoonereza okumanha engeri ey'okusalawo kubigema ku bungi bw'abaana era n'enkozesa y'enkola edhitangira okuzaala edhiri ku mulembe mu ba maama mu Mayuge. Okunoonereza kuno kuli kukolebwa Patricia Ndugga, omusomi okuva mu itendekero lya Southampton, Bungereza era omu kubakozi mu itendekero lya Makerere, Kampala.

Lwaki nnondeibwa?

Abenhigira mu kunoonereza n'abaami ab'emyaaka eikumi n'omunaana (18) okutuuka ku ataanu (50) nga abakazi baibwe bazaalaku mu myaaka ebiri egyibise era nga buti baba mu disiturikiti ey'e Mayuge. Olondeibwa kubanga otukaana emitendera gyino era nga obonekera okuba n'amawulire ag'omugaso ku mulamwa oguli kunoonerezebwaku.

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Ki ekinaatukawo singa ndikiriza okwenhigiramu?

Oidha kwenhigira mu kubuuzibwa ebibuuzo eby'omulala ku mulala okumala edakiika ana. Oidha kubuuzibwa bwa bibuuzo era tiwaabe kukeberebwa kwonakwona kugya kukukolebwaaku. Wabula, okwenhigira mu kunoonereza kuno kwa kyeyendeire era osobola okukomya okubuuzibwa ekiseera kyonakyona. Era oli waidembe okusalawo obutenhigira mu kunoonereza era ezira agya kukutaaku nsonga kubanga okwenhigiramukwo kwakyeyendeire. Nandienze okubuuzaaku ebibuuzo ebiiriganwaaku ku ngeri y'okola okusalawo ku bigema ku bunene bw'amaka n'okukozesa enkola ey'entegeka y'eizaire, okusingira irala ky'olowooza ni ky'oidhukira mubulambukukufu. Okubuuzibwa kwiidha kugemebwa mu maloboozi ng'owaire olukusa.

Eriyo okuganhulwa kwonakwona nze okwenhigiramu?

Ezira kuganhulwa kwa buligho oba kusasulwa lwa kwenhigira mu kunoonereza kuno. Wabula, ng'okubuuza kuwoire, oidha kuweebwa omuti gwa sabuuni nga akasiimo ak'okwebaza. Ndidha kwiiza amawulire ku binaava mu kunoonereza eri abenhigiiremu mu ngeri y'ebipande ku irwaliro. Amawulire aganasolozebwa gaidha kukozesebwa okuyamba ba mama okutukiriza ebigendererwa byaibwe ku bungi bw'abaana.

Eriyo obuzibu bwonabwona

Ezira buzibu bwesubirwa eri ighe

Okwenhigiramu kwange kunaaba kwa kyaama?

Buli mawulire ganasolozebwa gaidha kukuumibwa nga kyaama. Abo bonka abali ku kibiinja ekinoonereza n'abanetuukiriza amawulirego. Fairo dhonadhona edirimu amawulire ag'omuntu dhiidha kukuumiibwamu nga tidimanhiibwa nga amawulire galoongosebwa.

Kakiikoki akanoonereza akaakasa okunoneereza kino?

Okunoonereza kuno kwafuna okukakasibwa okuva mu NARC okukakasa nti eneyisa mu kunoonereza kuno, eidembelyo n'okubisibwa obukalamu nga ey'enhigirimu bigobererwa mu bwiidhuvvu.

Olinaku ebibuuzo byonabyona ebijgema ku kunoonereza?

Bwoba olina ebibuuzo byonabyona ku kunoonereza kuno, osobola okutuukirira:

Akulira okunoonereza: Patricia Ndugga

Department of Population Studies, Makerere University

P.O Box 7062, Kampala, Uganda. Tel: +256 772 828986, Email: patnduggab@yahoo.com

REC Chair: Chairperson National HIV/AIDS Committee (NARC), P. O. Box 6884, Kampala - Uganda. Tel: +256414705500.

Oikiriza okwenhigira mu kubuuzibwa kuno?

Yii ………….. (Weyongereyo wansi)   Bbe………….. (Webale olw'ebiseerabyo)

Okwiikiriza

Nsomye obubaka obuviireku, oba bunsomeirwa. Nfunie omukisa okubuuza ebibuuzo ebikigemaku era n'ebibuuzo biiribwamu mu kumatira kwange. Ndikiriza kyeyendeire okwenhigira mu kunoonereza kuno. Ntegeera nti eidembe nninalyo okuva mu kubuuzibwa kuno ekiseera kyoonakyoona aghazira buzibu.

Amaina ag'eyenhigiremu …………………………………

Omukono / ekinkumu eky'eyenhigiremu……………………………………………

Amaina ag'omuntu abairewo…………………………………………

Omukono ogw'omuntu abairewo…………………………………………..

Amaina ag'omuntu alikusaba olukusa ………………………………

Omukono ogw'omuntu alikusaba olukusa…………………………………………

Enaku edh'omwezi………………………

C.3: Participant Information Sheet—Family planning providers

Introduction

Good morning/afternoon Sir/Madam. I am part of a team conducting a study to understand the decision-making regarding family size and use of modern contraception among mothers in Mayuge district. This study is being conducted by Patricia Ndugga, a research student at University of Southampton in the United Kingdom and a Lecturer from Makerere

University in Kampala, Uganda. This research forms part of her training which will lead to a PhD in Demography and Social Statistics. Patricia is working under the supervision of Professor Nyovani Madise and Professor Marie-Louise Newell from the University of Southampton. The research is funded by the Commonwealth Scholarship Commission.

Why have I been chosen?

The study participants are men aged 18 to 54 years whose wives had a birth in the last two years and currently reside in Mayuge district. You have been chosen because you fit these criteria and you are likely to have valuable knowledge about the study topic.

What will happen to me if I take part?

You have been chosen because of your expert knowledge on this research topic and your involvement in provision of Family Planning services to women within Mayuge district

Are there any benefits in my taking part?

Although this information collected may not be beneficial to you as an individual, indirect benefits in terms of increased awareness about motivations for fertility desire is likely, and would be beneficial in such a high fertility setting. In addition, the results of the study should help the Government formulate policies to assist people achieve their desired number of children. The researcher will prepare a poster with a summary of the findings, which will be made available for participants to view at the health facility.Compensation for your time and effort will be in the form of a bar of washing soap.

Are there any risks involved?

There are no anticipated risks to you. If you are at all uncomfortable with some of the discussion topics or questions we will ask about, you are free to not answer or to skip to the next question.

Will my participation be confidential?

The interview will be tape recorded so that we can later on review what we discussed, however, only the research team will listen to the recording. Only the researcher team will be present at the time of the interview and there will be no disclosure of research information except to a member of the research team. Your name will not be associated with the information that you provide. Only pseudonyms will be used such that no one will

ever know who the information is from. All the recordings will be stored on a password-protected computer.

What happens if I change my mind?

If you agree to participate at the beginning of the study and later change your mind, you can stop whenever you want and this will not have an effect on any of your rights. Following your withdrawal, any data collected up to that point will be retained.

What happens if something goes wrong?

If you have questions about your rights to participate in this research, or if you feel that you have been placed at risk, you may contact: The Head of Research Governance, University of Southampton on the following contacts: +44 2380595058, and email: rgoinfo@soton.ac.uk or locally, Dr. Joseph Ochieng, Vice Chairperson National HIV/AIDS Research Committee (NARC), P. O. Box 6884, Kampala - Uganda. Tel: +256414705500.

Do you agree to participate in this interview?

Yes   (Continue below)

No   (Thank you for your time)

Acceptance

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and the questions have been answered to my satisfaction. I consent voluntarily to be a participant in this study. I understand that I have the right to withdraw from the interview at any time without any problem.

Name of participant …………………………………

Signature of participant/thumbprint…………………………….

Name of witness……………………………….

Signature of the witness ……………………………..

Name of person administering consent……………………………………

Signature of person administering consent…………………………….

Date………………………

Appendix D: In-depth interview guides

D.1: In-depth interview guide—Women

Participant information

- How old are you?

- What is your highest level of education?

- What is your marital status?

- What is your religion?

- What work do you do?

- How many children have you had? sex composition

SECTION A: *Experiences around previous births*

1. To start with, can you think back to when you had your first child,

   Did you choose to become pregnant or did it just happen? If you chose it, why? If it just happened –what do you feel about this?

   Now let's talk about your most recent child,

   - **Did you choose to become pregnant or did it just happen?** If you chose it, why? If it just happened –what do you feel about this?

SECTION B: *Future childbearing plans*

2. Do you want to have a child/ more children in the future? Why/ Why not? (PROBE)

   - If yes, after how long would you like to have the next child? Why that period?

   - Would you wish to have children of a particular sex? Why/ why not?

3. Have you discussed this decision with anyone? If YES, (Probe for health provider, partner, friends, and relatives.) For each person mentioned probe reasons for discussing this decision with them. What was their reaction?
   If No, why haven't you discussed it with anyone?

4. In your opinion why do you think some women who had a birth recently still want more children?

   - What is the view of the community concerning women having more children? Probe—after delivery, how soon are women expected to attempt having another child?

5. In your opinion why do you think some women who had a birth recently want to stop childbearing?

- What is the view of the community concerning women stopping childbearing? (probe for local names they use to describe women who want to stop childbearing)

6. What kind of advice or counselling have you received about further childbearing ever since you had your last child?

SECTION C: *Contraception use*

In some communities, women use various methods to delay or stop having children.

7. **What is your view about contraception use among women who had a birth recently?**

   - When is the best time to resume contraception use after delivery?

   - Why that time?

8. **What is the view of the community concerning women using contraception?**

   - **Probe for community beliefs** surrounding contraception use in the following delivery

   - When are women expected to start using contraception after delivery

   - Why that time?

9. **CURRENT USE OF CONTRACEPTION**

   - Are you currently using any FP? **YES / NO**………………. If NO…go to Qn. 10

     YES (skip question 11)

   - Why are you using contraception now? How did you decide to use contraception?

   - **At what point did you resume contraception use? Why that time?**

   - **What method are you using now?**

   - Why are you using this method?

   - How much does the method cost?

   - What is the source of the method? Public or private facility?

   - Why this particular source?

   - Have you encountered any challenges with using contraception? Which ones?

10. **NON USER OF CONTRACEPTION:**

    - Can you tell me why you are not using any method?

      Probe,

      - currently breastfeeding,

      - abstinence,

      - menstruation has not returned

      **probe further for whether they have good info about how those three work.

    - What do you think about using contraception in the future?

Intention to use contraception

   If yes,

- When do you intend to start using contraception? Why the timing?
- Which method do you intend to use?
- Why that method?
- What is the source of that method?
- Why?

If No,

- Can you tell me why you do not intend to use contraception in the future?

11. Have you ever heard people say that women who had a birth recently **are not at risk of conceiving because: they are breastfeeding or that their menses have not returned?** What do you know about this? Have you used these methods before and not conceived? Who told you about them?

12. You said, you have resumed sex following the birth of your last child, right?

   If Yes

   - When did you resume sexual intercourse following birth? Why that time?

   If No

   - Why haven't you had sex since the birth of your last child? (probe for health reasons, cultural beliefs)

SECTION D: family Planning support

Women who have had a birth recently are in regular contact with the health system for various reasons: it could be for postnatal care, it could be for the infant's immunisation or FP support.

13. **What kind of discussion or advice have you received about family planning ever since the birth of your last child?**

   What were you told? (probe from whom and when advice was received, Family Planning methods discussed)

- How long was the discussion?
- Where did this take place?
- Was it group or one to one discussion?
- Who initiated this discussion?
- How many times since delivery have you discussed FP with any FP provider?
- Are there any requirements women are supposed to meet before being served by the provider?

14. What is your experience with seeking FP support? (Probe for provider attitudes towards women who had a birth recently, distance to the facility, cost of service, availability of FP methods)

15. **Barriers to use of contraception**

Based on your experience, what factors make it difficult for women to use contraception?

Probe for any cultural reasons (anything they could have heard about in the community)

16. As I conclude, given your own experiences, what would you like to add to our discussion about women meeting their fertility goals and using contraception?

I would like to thank you for your time

In-depth interview Guide-Women *(Lusoga version)*

Amawulire agagema ku yenhigiiremu

- Oli wa myaaka emekka?
- Wasomaku mpaka ku idaalaki?
- Oli mufumbo?
- Oli wa idiniki?
- Okola mulimuki?
- Wakazaala abaana bameka? Amaina, emyaaka, ekikula

SECTION A: *Childbearing experience*

1. Bwofumitilizamu okuva bwewazaala omwana wo asooka,
   - Wasalawo otya okufuuna omwana?
   - Ng'okaali kufuna mabunda, wayogeraku n'omuntu yeenayeena ku by'okuzaala omwana?
   - Kyakutwaalira eibbanga okufuna amabunda?
   - Ani gwewayogeraku naye? Mwayogera kuki?
   - Mbeeraki/ngeriki mwemwayogerera ku bino?
   - Wayenda okufuna omwana wewafunira amabunda? Lwaki/ lwaki bbe?
   - Wawulira nga oli ku buwalirize bwonabwona okuzaala omwana asooka? Oba yyi, lwaki?
   - Ani eyali akuwaliriza?
   - Wayendaku okuzaala omwana ow'ekikula kyonakyona? Oba yali tinsonga kaabe mulenzi oba muwala?
   - Oba yali nsonga, wayenda mwana kikulaki? / Oba tiyali nsonga, lwaki?
   - Lwaki wayenda ekikula eky'omwana ekyo okusinga ekindi?
     Ng'omwana amaze okuzaalibwa

     Byeweesubira byaatuukirira?

     Buuliriza,
   - Yali kikula kya mwana gwewayenda?
2. Buti katwogere ku mwana gwewali wakamala okuzaala. Wabita muki okumuzaala?
Buuliriza,

   - Emyaaka gy'omwana oba olunaku lweyazaalibwa

- Wayogeraku n'omuntu yeenayeena ku ky'okuzaala omwana ng'okaali kulinda? Ani gwewayogera naye? Mwayogera ku ki?
- Mbeeraki/ngeriki mwemwali n'okughaya kuno?
- Wayenda okuzaala omwana wewafunira amabunda? Lwaki/ lwaki bbe?
- Wawulira nga oli ku buwalirize bwonabwona okuzaala omwana asooka? Oba yyi, lwaki?
- Ani eyali akuwaliriza?
- Wayendaku okuzaala omwana ow'ekikula kyonakyona? Oba yali tinsonga kaabe mulenzi oba muwala?
- Oba yali nsonga, wayenda mwana kikulaki?
- Lwaki wayenda ekikula eky'omwana ekyo okusinga ekindi?

SECTION B:

SECTION B: *Twogere ku byobiseemu mukuzaala abaana abawala / abalenzi bonka.*

Mu bitundu ebindi abakazi ababa n'abaana abalenzi/abawala bonka babita mu mbeera edhitategeerekeka.

3. Kifaanana kitya okuba maama w'abaana ab'ekikula ekirala (abalenzi oba abawala bonka)?
- Bintu ki abakazi abali n'abaana abekikula ekirala byebabitamu mu kitundu kino?
- Iwe ogeraageranya otya byobitamu n'abakazi abandi mukitundu?
- Embera dhino abakazi badhigemaganya batya mu kitundu kino?
- Iwe kululwo, embera dhino odhigemaganya otya?
- Birungi ki byosubira okuba mukuba nabana abalenzi/ abawala bonka?
- Wandyenze okwongerayo okuzaala abaana abandi? Oba yi, lwaki? **If no …. Go to question 4**
- Wayogeraku kukusalawo kwo n'omuntu owundi? Naani oyo? Era lwaki?
- Buti iwe nga bwolina abaana abalenzi/abawala bonka, wandyenze okuzaalayo omwana omuwala/omulenzi?
- Obaire owalirizibwa okuzaala omwana omulenzi/omuwala? Ani/baani abaire akuwaliriza? Era lwaki?......... **GO TO SECTION C**
4. Lwaki tiyenda kwongera /kwiramu kuzaala baana?

Oliyo n'omuntu yewakyogeramu naye mu kusalawo kwo? Naani era lwaki?

Obaire owlirizibwa okulekera awo okuzaala? Baani ababaire bakuwaliriza, era lwaki?

SECTION C: *Twogere ku nkozesa y'enkola edhiziyiza okuzaala edh'enaku dhino.*

Mu bitundu ebindi, abakazi bakozesa engeri nhingi okulwa oba okukoma okuzaala abaana.

Wawuliraku ku kuziyiza okuzaala? Ki kyewaali owulire ku kuziyiza okuzaala?

5. Waali okozeisaku engeri yonayona eyekizaala igumba?
   Buuliriza,
   - Yali nkolaki?

- Nsongaki eyavaaku okukozesa enkola eyo omulundi ogwasooka?
- Wayogera ku n'omuntu yeenayeena oba omuntu yeenayeena yayogeraku niiwe ng'okaali kukozesa mulundi guno ogwasooka?
- Ani yewayogera naye?
- Mwayogera ku ki?
- Mbeeraki/ngeriki edhaliwo mukughaya kino?
- Omulundi ogwasooka wagyikozesa kumala ibbangaki?

6. Lwaki walekera okugyikozesa?
7. Olinenkola yonayona yoli kukozesa buti?
   Buuliriza,

   - Nkolaki gy'oli kukozesa buti?
   - Lwaki oli kukozesa enkola eno buti?
   - **MISMATCH** Lwaki okozesa enkola ekusobozesa okwiramu okuzaala nga ate oyenda okulekera awo okuzaala?

8. Bwoba toli kukozesa buti: lwaki toli kukozesa nkola buti?

Bwaba takozesa nkola yonayona

9. *Lwaki tokozesangaku nkola yoonayoona? Ensonga eyindi yoonayoona?*
Buuliriza,

   - Nsonga dha nfuna/dhabuliidho/**BUGHANGWA**
   - Wayogera n'omuntu yeenayeena oba omuntu yeenayeena yayogeraku niiwe ku nkola dhino*?*
   - Ani gwewayogera naye?
   - Mwayogera ku ki?
   - Mbeeraki/ngeriki mwemwali n'okughaya kuno?
   -

10. Oyinza okunkoberaku lwaki okaali kulowooza kukozesa nkola yoonayoona*?*
okumaliriza okubuuza

Wano wetukomiiza olughayo lwaife. Eriyooku byoyogeraku, ensonga dhonadhona, oba ebirowoozo byoyinza okulowoozaaku nga titubyogeireku olwa leero byetuteekwa okulowoozaaku mu kugezaaku okuyamba abakazi abaazalaku mu myaka ebiri egyibise?

Nnenda okwebaza olw'ebiseerabyo.

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D.2: In-depth interview guide—Men

Participant information

- How old are you?
- What is your highest level of education?
- What is your marital status?
- What is your religion?
- What work do you do?
- How many children have you had?

SECTION A: *Childbearing experience*

1   Can you think back to when your wife had your first child,

Probe, Before having the child

- How did you decide to have this child?
- Did you ever talk to anyone prior to having this child?
- Who did you talk to? What did you talk about?
- Under what circumstances/ context did you have this talk?
- Did you want to have the child at the time your wife conceived? Why?/ why not?
- Did you feel you were under any pressure to have the first child? If Yes, Why?
- Who was pressuring you?
- Did you wish to have a child of a particular sex? Or it did not matter whether it was a son or daughter?
- If it mattered, what was your preferred child sex?
- Why did you prefer this child sex over the other?

After the child was born

- Were your expectations met? What feelings did you have after the child was born?

  Probe,

- Was it a child of your preferred sex?

2.Now let us talk about your most recent child?

Probe,

- Age of child or date of birth

- Did you ever talk to anyone prior to this pregnancy about having a child? Who did you talk to? What did you talk about?

- Under what circumstances/ context did you have this talk?

- Did you want to have the child at the time your wife conceived? Why?

- Did you feel you were under any pressure to have the first child? If Yes, Why?

- Who was pressuring you?

- Did you wish to have a child of a particular sex? Or it did not matter whether it was a son or daughter?

- If it mattered, what was your preferred child sex?

- Why did you prefer this child sex over the other?

SECTION B: *Let us talk about the child sex composition*

In some communities, men without children of the preferred child sex composition go through various unique experiences,

10. What are the experiences of men who do not have the preferred child sex composition in this community?

Probe,

- How do men deal with these challenges?

- How do you deal with these challenges?

- Would you like to have any more children? If yes, why? **If NO… go to question 4**

- Have you discussed this decision with anyone? Who? Why? Who else?

- **After how long would you like to have another child?**

11. Why don't you wish to have any more children?

- Have you discussed this decision with anyone? Who? Why? Who else?

- What did you discuss?

- Have you been under pressure to stop having children? From whom and why? Who else?

In some communities, couples in which a wife had a child recently use various methods to delay or stop having children. Have you heard about contraception? What is it that you have heard about contraception use among women?

Are you or your wife currently using any method? **If yes …continue. If No..Go to QN. 7**

If Contraceptive user

12. What method are you using?   (short/long term method)

   At what point did you start using this method following delivery?

   - Why did you choose this method?
   - What was the reason for using a method following delivery?
   - What is the source of this method?
   - Did you talk to anyone or did anyone talk to you prior to using this method?
   - Who did you talk to?
   - What did you talk about?
   - Under what circumstances/ context did you have this talk?
   - **MISMATCH:** (Probe why they have long term reproductive goals and yet they use short term methods?)

If Contraceptive non user

   a) Why aren't you using any method currently? Any other reason?

   Probe,

   - Breastfeeding/ amenorrhoea / cultural reasons
   - Have you talked to anyone or did anyone talk to you about not using a method following delivery?
   - Who did you talk to?
   - What did you talk about?
   - Under what circumstances/ context did you have this talk?
   - At what point would you consider using a method following delivery?

Concluding the interview

This marks the end of our discussion. Are there any other comments, concerns, or ideas that you can think of that we did not talk about today that we should think about in trying to help women who had a birth within the last two years?

I would like to thank you for your time

In-depth Interview Guide-Men *(Lusoga version)*

Amawulire agagema ku yenhigiiremu

- Oli wa myaaka emekka?
- Wasomaku mpaka ku idaalaki?
- Oli mufumbo?
- Oli wa idiniki?
- Okola mulimuki?

Wakazaala abaana bameka? Amaina, emyaaka, ekikula

SECTION A: Ideal number of children and fertility desire

1. Olowoza amaka gandibayilemu abaana bameeka?

   - Mwana ki omuntu gwalina okuba naye? Omuwala/omulenzi?

2. Abaami babona batya abaana baano abassana okuba mu maka? Baangi oba nabwo?

3. Mufuna mutya ekilowozo kino kubana abasaana okuba mu maka?

4. Neyiira abantu babanga nibaano abaana oba eriyo ekyikyusemu? Kyikyusomu kitya? Kiki ekileteyire enkyukakyuka enu? / Ki kyisigaire kityo?

5. Ki olowozza nti abaana bano nabasaniira?

6. Omukyala waba tazayilize baanha baanha abwo abisibwaatya?

7. Abandhi ki ba zaala abaanha abaswikka mwabo bemwankobye?

SECTION B: Sex composition of living children and child sex preference

8. Mukyalo kino, basinga kwend'abalenzi ob' abawala?

9. Abaami bakola bintu ki okufun'omulenzi oba omuwala?

10. Abaami abatasoboile okufuna omwana gwe benze, bafuna bizibu ki mu maka oba mukyalo?

11. Ekizibu eky'obutafuna omwana gwayenze, omusadha a kibitamu atya?

SECTION C: Attitudes towards contraceptive use

12. Nsonga ki edikozesa abasadha ''okwend'okulinda emyaka ebiri'' oba ''obutailamu okuzaala?''

13. Abasadha abalina abakakazi abakazaala bakola batya obutailamu okuzaala oba okulwiisa? Waliwo byo wuliileku bye bakozesa?

14. Ekiseera ki kye batandika okukozesa engeri edi balemesa okuzaala?

15. Abasadha abamazze okuzaala abaana bebenze, bamala bakozesa eidagala elimalemesa okuzaala, obutailamu okufuna abaana abandi? Tukobere ensonga ekulowozesa etyo.

16. Abasadha mukitundu kino batolawa amagezi nokufuna amagezi agokwewala obutazala?

   - Bintu ki byebenda ne byebatenda mukifo kino?

Okumaliriza okubuuza

Wano wetukomiiza olughayo lwaife. Eriyooku byoyogeraku, ensonga dhonadhona, oba ebirowoozo byoyinza okulowoozaaku nga titubyogeireku olwa leero byetuteekwa okulowoozaaku mu kugezaaku okuyamba abakazi abaazalaku mu myaka ebiri egyibise?

Nnenda okwebaza olw'ebiseerabyo.

D.3: Key informant interview guide

Participant information

- What is your job title at this facility/ community?

- What does your job involve?

- How long have you served at this position?

- How old are you?

- Marital status

- Religion

FAMILY PLANNING SERVICE ENVIRONMENT

1. What family planning services do you offer postpartum women at this Health facility/ community?

   For each service,

   - Is there a particular group of women that you target? Probe (adolescents, married, age groups)

   - Who initiates the process? [client/provider]

2. What family planning information do you give women who had a birth recently?

   - At what point do you give the information?

   - What information do you give them? [probe for materials, guidelines, all possible topics covered during counselling] Probe for whether they advise women on how soon they should have the next child

   - How is FP information provided? Is it individual/group talks/leaflets

   - How often? (Any particular days?)

   - To which categories of women?

     ➢ Do you also target these women's husbands?

     ➢ Do you target women based on the number of children they have?

     ➢ What information do you give them?

3. How is Family Planning service provision to postpartum women prioritised at this health facility/ community? Probe in terms of budget, procurement, FP days, space (designated area), staff

4. What FP methods are provided to postpartum women at this health facility?

Probe

- Why these methods?

- Do you also offer long term methods? (if not mentioned)

- What are the women's reasons for using a method (contraceptive goals)

- Do they find the methods they want? Yes/ No

  If No why not? [Probe for stock outs, preferred methods, distance, cost]

- If women wanted a method and it is not available at the facility, what would they do?

- Who determines the choice of method? (Provider/ client) Why?

- Do you recommend any long term methods to some of these women? Yes/ no

- If yes, to which categories of women?

  If no, do you offer a referral?

  Where do they go?

  Who meets the cost?

- At what point do you recommend women to start using family planning? Why this timing? (probe, age, medical, partnership)

- Are there any kind of requirements women are expected to meet prior to receiving family planning methods? If yes, which requirements?

ATTITUDES TOWARDS FAMILY PLANNING USE

5. In your opinion, how do postpartum women perceive use of contraception after delivery if it is provider initiated? Why?

- In situations where contraceptive demand is client initiated, which groups of women are more likely to demand for contraception following delivery? Why?

- Is there any criteria followed in regards to who receives a family planning method following delivery? Why?

CHALLENGES FACED IN FAMILY PLANNING SERVICE DELIVERY

6. In your opinion, what are some of the challenges you face in family planning service delivery within this community?

Probe,

- What stops postpartum women from using contraception? (probe for community factors, cultural attributes)

Concluding the interview

This marks the end of our discussion. Are there any other comments, concerns, or ideas that you can think of that we did not talk about today that we should think about in trying to help women who had a birth within the last two years.

Appendix E: Woman's Questionnaire

FORMATTING DATE: 16 June 2016
ENGLISH LANGUAGE: 1 June 2016

2016 UGANDA DEMOGRAPHIC AND HEALTH SURVEY
WOMAN'S QUESTIONNAIRE

UGANDA
UGANDA BUREAU OF STATISTICS

IDENTIFICATION

EA NAME _____

NAME OF HOUSEHOLD HEAD _____

CLUSTER NUMBER . . . .

HOUSEHOLD NUMBER . . . .

NAME AND LINE NUMBER OF WOMAN _____

CHECK COVER PAGE OF HOUSEHOLD QUESTIONNAIRE: HOUSEHOLD SELECTED FOR MAN'S SURVEY? (1=YES, 2=NO)

CHECK HOUSEHOLD QUESTIONNAIRE SL12: WOMAN SELECTED FOR DV MODULE? (1=YES, 2=NO) . . . .

INTERVIEWER VISITS				
	1	2	3	FINAL VISIT
DATE	_____	_____	_____	DAY
				MONTH
				YEAR
INTERVIEWER'S NAME	_____	_____	_____	INT. NO.
RESULT*	_____	_____	_____	RESULT*
NEXT VISIT: DATE	_____	_____		TOTAL NUMBER OF VISITS
TIME	_____	_____		

*RESULT CODES:
1 COMPLETED   4 REFUSED
2 NOT AT HOME   5 PARTLY COMPLETED   7 OTHER_____
3 POSTPONED   6 INCAPACITATED   SPECIFY

LANGUAGE OF QUESTIONNAIRE** `0` `1`   LANGUAGE OF INTERVIEW**   NATIVE LANGUAGE OF RESPONDENT**   TRANSLATOR USED (YES = 1, NO = 2)

LANGUAGE OF QUESTIONNAIRE** **ENGLISH**_____

**LANGUAGE CODES:
01 ENGLISH   06 NGAKARIMOJONG
02 LUGANDA   07 RUNYANKOLE/RUKIGA
03 LUO   08 RUNYORO/RUTORO
04 LUGBARA   09 LUSOGA
05 ATESO   96 OTHER _____
                            (SPECIFY)

SUPERVISOR		CAPI MANAGER		
NAME NUMBER		NAME NUMBER		

INTRODUCTION AND CONSENT

Hello. My name is _____. I am working with Uganda Bureau of Statistics. We are conducting a survey about health and other topics all over Uganda. The information we collect will help the government to plan health services. Your household was selected for the survey. The questions usually take about 30 to 60 minutes. All of the answers you give will be confidential and will not be shared with anyone other than members of our survey team. You don't have to be in the survey, but we hope you will agree to answer the questions since your views are important. If I ask you any question you don't want to answer, just let me know and I will go on to the next question or you can stop the interview at any time.

In case you need more information about the survey, you may contact the person listed on the card that has already been given to your household.

Do you have any questions?
May I begin the interview now?

SIGNATURE OF INTERVIEWER _____   DATE _____

RESPONDENT AGREES
TO BE INTERVIEWED . .   1

RESPONDENT DOES NOT AGREE
TO BE INTERVIEWED . .   2 ⟶ END

SECTION 1. RESPONDENT'S BACKGROUND

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	RECORD THE TIME.	HOURS . . . . ▢▢ MINUTES . . . . ▢▢	
102	How long have you been living continuously in (NAME OF CURRENT CITY, TOWN OR VILLAGE OF RESIDENCE)? IF LESS THAN ONE YEAR, RECORD '00' YEARS.	YEARS . . . . ▢▢ ALWAYS . . . . 95 VISITOR 96	⟶ 105
103	Just before you moved here, did you live in a city, in a town, or in a rural area?	CITY . . . . 1 TOWN . . . . 2 RURAL AREA 3	
104	Before you moved here, which district did you live in?	DISTRICT CODE . . . . ▢▢▢ OUTSIDE OF UGANDA 996	
105	In what month and year were you born?	MONTH . . . . ▢▢ DON'T KNOW MONTH . . . . 98 YEAR . . . . ▢▢▢▢ DON'T KNOW YEAR 9998	
106	How old were you at your last birthday? COMPARE AND CORRECT 105 AND/OR 106 IF INCONSISTENT.	AGE IN COMPLETED YEARS . . . . ▢▢	
107	Have you ever attended school?	YES . . . . 1 NO 2	⟶ 111
108	What is the highest level of school you attended: primary, "O" level, "A" level, tertiary or university?	PRIMARY . . . . 1 "O" LEVEL . . . . 2 "A" LEVEL . . . . 3 TERTIARY . . . . 4 UNIVERSITY 5	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
109	What is the highest [CLASS/YEAR] you completed at that level? IF COMPLETED LESS THAN ONE YEAR AT THAT LEVEL, RECORD '00'.	[CLASS/YEAR] . . . . ☐☐	
110	CHECK 108: PRIMARY OR ☐ "O" OR "A" LEVEL ↓ HIGHER ☐		➤ 113

111	Now I would like you to read this sentence to me.
	
	SHOW CARD TO RESPONDENT.
	
	IF RESPONDENT CANNOT READ WHOLE SENTENCE,
	PROBE: Can you read any part of the sentence to me?
		CANNOT READ AT ALL 1
		ABLE TO READ ONLY PART OF
		   THE SENTENCE 2
		ABLE TO READ WHOLE SENTENCE 3
		NO CARD WITH REQUIRED
		   LANGUAGE _____ 4
		             (SPECIFY LANGUAGE)
		BLIND/VISUALLY IMPAIRED 5	

112	CHECK 111: CODE '2', '3' ☐ CODE '1' OR '5' ☐ OR '4' CIRCLED CIRCLED ↓		➤ 114
113	Do you read a newspaper or magazine at least once a week, less than once a week or not at all?	AT LEAST ONCE A WEEK . . . . 1 LESS THAN ONCE A WEEK . . . . 2 NOT AT ALL 3	
114	Do you listen to the radio at least once a week, less than once a week or not at all?	AT LEAST ONCE A WEEK . . . . 1 LESS THAN ONCE A WEEK . . . . 2 NOT AT ALL 3	
115	Do you watch television at least once a week, less than once a week or not at all?	AT LEAST ONCE A WEEK . . . . 1 LESS THAN ONCE A WEEK . . . . 2 NOT AT ALL 3	
116	Do you own a mobile telephone?	YES . . . . 1 NO 2	➤ 118
117	Do you use your mobile phone for any financial transactions?	YES . . . . 1 NO 2	
118	Do you have an account in a bank or other financial institution that you yourself use?	YES . . . . 1 NO 2	
119	Have you ever used the internet?	YES . . . . 1 NO 2	➤ 122
120	In the last 12 months, have you used the internet? IF NECESSARY, PROBE FOR USE FROM ANY LOCATION, WITH ANY DEVICE.	YES . . . . 1 NO 2	➤ 122
121	During the last one month, how often did you use the internet: almost every day, at least once a week, less than once a week, or not at all?	ALMOST EVERY DAY . . . . 1 AT LEAST ONCE A WEEK . . . . 2 LESS THAN ONCE A WEEK . . . . 3 NOT AT ALL 4	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
122	What is your religion?	NO RELIGION .... 10 ANGLICAN .... 11 CATHOLIC .... 12 MUSLIM .... 13 SEVENTH DAY ADVENTIST .... 14 ORTHODOX .... 15 PENTECOSTAL/BORN AGAIN/EVANGELICAL 16 BAHA'I .... 17 BAPTIST .... 18 JEWISH .... 19 PRESBYTERIAN.......................... 20 MAMMON .... 21 HINDU .... 22 BUDDHIST .... 23 JEHOVAH'S WITNESS .... 24 SALVATION ARMY .... 25 TRADITIONAL .... 26 OTHER _____ 96 (SPECIFY)	
123	What is your tribe?	TRIBE CODE .... ☐☐☐ OTHER _____ 996 (SPECIFY)	
124	In the last 12 months, how many times have you been away from home for one or more nights?	NUMBER OF TIMES .... ☐☐ NONE 00	→ 201
125	In the last 12 months, have you been away from home for more than one month at a time?	YES .... 1 NO 2	

SECTION 2. REPRODUCTION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
201	Now I would like to ask about all the births you have had during your life. Have you ever given birth?	YES .... 1 NO 2	→206
202	Do you have any sons or daughters to whom you have given birth who are now living with you?	YES .... 1 NO 2	→204
203	a) How many sons live with you? b) And how many daughters live with you? IF NONE, RECORD '00'.	a) SONS AT HOME .... ☐☐ b) DAUGHTERS AT HOME .... ☐☐	
204	Do you have any sons or daughters to whom you have given birth who are alive but do not live with you?	YES .... 1 NO 2	→206
205	a) How many sons are alive but do not live with you? b) And how many daughters are alive but do not live with you? IF NONE, RECORD '00'.	a) SONS ELSEWHERE .... ☐☐ b) DAUGHTERS ELSEWHERE ..... ☐☐	
206	Have you ever given birth to a boy or girl who was born alive but later died? IF NO, PROBE: Any baby who cried, who made any movement, sound, or effort to breathe, or who showed any other signs of life even if for a very short time?	YES .... 1 NO 2	→208
207	a) How many boys have died? b) And how many girls have died? IF NONE, RECORD '00'.	a) BOYS DEAD .... ☐☐ b) GIRLS DEAD .... ☐☐	
208	SUM ANSWERS TO 203, 205, AND 207, AND ENTER TOTAL. IF NONE, RECORD '00'.	TOTAL BIRTHS .... ☐☐	
209	CHECK 208: Just to make sure that I have this right: you have had in TOTAL _____ births during your life. Is that correct? YES ☐ NO ☐ PROBE AND CORRECT 201-208 AS NECESSARY.		
210	CHECK 208: ONE OR MORE ☐ NO BIRTHS ☐ BIRTHS		→226

| 211 | Now I would like to record the names of all your births, whether still alive or not, starting with the first one you had. RECORD NAMES OF ALL THE BIRTHS IN 212. RECORD TWINS AND TRIPLETS ON SEPARATE ROWS. IF THERE ARE MORE THAN 10 BIRTHS, USE AN ADDITIONAL QUESTIONNAIRE, STARTING WITH THE SECOND ROW. |

212	213	214	215	216	217 IF ALIVE:	218 IF ALIVE:	219 IF ALIVE:	220 IF DEAD:	221
What name was given to your (first/ next) baby? RECORD NAME. BIRTH HISTORY NUMBER.	Is (NAME) a boy or a girl?	Were any of these births twins?	On what day, month, and year was (NAME) born?	Is (NAME) still alive?	How old was (NAME) at (NAME)'s last birthday? RECORD AGE IN COMP-LETED YEARS.	Is (NAME) living with you?	RECORD HOUSEHOLD LINE NUMBER OF CHILD. RECORD '00' IF CHILD NOT LISTED IN HOUSEHOLD.	How old was (NAME) when (he/she) died? IF '12 MONTHS' OR '1 YR', ASK: Did (NAME) have (his/her) first birthday? THEN ASK: Exactly how many months old was (NAME) when (he/she) died? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS; OR YEARS.	Were there any other live births between (NAME OF PREVIOUS BIRTH) and (NAME), including any children who died after birth?
01	BOY 1 GIRL 2	SING 1 MULT 2	DAY ☐☐ MONTH ☐☐ ☐☐☐☐ YEAR	YES 1 NO 2 ↓ (SKIP TO 220)	AGE IN YEARS ☐☐	YES 1 NO 2	HOUSEHOLD LINE NUMBER ☐☐ ↓ (NEXT BIRTH)	DAYS 1 ☐☐ MONTHS 2 ☐☐ YEARS 3 ☐☐	
02	BOY 1 GIRL 2	SING 1 MULT 2	DAY ☐☐ MONTH ☐☐ ☐☐☐☐ YEAR	YES 1 NO 2 ↓ (SKIP TO 220)	AGE IN YEARS ☐☐	YES 1 NO 2	HOUSEHOLD LINE NUMBER ☐☐ ↓ (SKIP TO 221)	DAYS 1 ☐☐ MONTHS 2 ☐☐ YEARS 3 ☐☐	YES 1 (ADD BIRTH) NO 2 (NEXT BIRTH)
03	BOY 1 GIRL 2	SING 1 MULT 2	DAY ☐☐ MONTH ☐☐ ☐☐☐☐ YEAR	YES 1 NO 2 ↓ (SKIP TO 220)	AGE IN YEARS ☐☐	YES 1 NO 2	HOUSEHOLD LINE NUMBER ☐☐ ↓ (SKIP TO 221)	DAYS 1 ☐☐ MONTHS 2 ☐☐ YEARS 3 ☐☐	YES 1 (ADD BIRTH) NO 2 (NEXT BIRTH)
04	BOY 1 GIRL 2	SING 1 MULT 2	DAY ☐☐ MONTH ☐☐ ☐☐☐☐ YEAR	YES 1 NO 2 ↓ (SKIP TO 220)	AGE IN YEARS ☐☐	YES 1 NO 2	HOUSEHOLD LINE NUMBER ☐☐ ↓ (SKIP TO 221)	DAYS 1 ☐☐ MONTHS 2 ☐☐ YEARS 3 ☐☐	YES 1 (ADD BIRTH) NO 2 (NEXT BIRTH)
05	BOY 1 GIRL 2	SING 1 MULT 2	DAY ☐☐ MONTH ☐☐ ☐☐☐☐ YEAR	YES 1 NO 2 ↓ (SKIP TO 220)	AGE IN YEARS ☐☐	YES 1 NO 2	HOUSEHOLD LINE NUMBER ☐☐ ↓ (SKIP TO 221)	DAYS 1 ☐☐ MONTHS 2 ☐☐ YEARS 3 ☐☐	YES 1 (ADD BIRTH) NO 2 (NEXT BIRTH)

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES		SKIP
LINE NO.	**233** In what month and year did the preceding such pregnancy end?	**234** How many months pregnant were you when that pregnancy ended?	**235 (1)** Since January 2011, have you had any other pregnancies that did not result in a live birth?	
01		☐☐ NUMBER OF MONTHS	YES .... 1 NO 2	→ NEXT LINE → 236
02	☐☐ ☐☐☐☐ MONTH YEAR	☐☐ NUMBER OF MONTHS	YES .... 1 NO 2	→ NEXT LINE → 236
03	☐☐ ☐☐☐☐ MONTH YEAR	☐☐ NUMBER OF MONTHS	YES .... 1 NO 2	→ NEXT LINE → 236
04	☐☐ ☐☐☐☐ MONTH YEAR	☐☐ NUMBER OF MONTHS	YES .... 1 NO 2	→ 236
236	**C** FOR EACH PREGNANCY THAT DID NOT END IN A LIVE BIRTH IN 2011-2016 OR LATER, ENTER 'T' IN THE CALENDAR IN THE MONTH THAT THE PREGNANCY TERMINATED AND 'P' FOR THE REMAINING NUMBER OF COMPLETED MONTHS OF PREGNANCY. IF THERE ARE MORE THAN FOUR PREGNANCIES THAT DID NOT END IN A LIVE BIRTH, USE AN ADDITIONAL QUESTIONNAIRE STARTING ON THE SECOND LINE.			
237	Did you have any miscarriages, abortions or stillbirths that ended before 2011?	YES .... 1 NO 2		→ 239
238	When did the last such pregnancy that terminated before 2011 end?	MONTH .... ☐☐ YEAR .... ☐☐☐☐		
239	When did your last menstrual period start? _____ (DATE, IF GIVEN)	DAYS AGO .... 1 ☐☐ WEEKS AGO .... 2 ☐☐ MONTHS AGO .... 3 ☐☐ YEARS AGO .... 4 ☐☐ IN MENOPAUSE/ HAS HAD HYSTERECTOMY .... 994 BEFORE LAST BIRTH .... 995 NEVER MENSTRUATED 996		
240	From one menstrual period to the next, are there certain days when a woman is more likely to become pregnant?	YES .... 1 NO .... 2 DON'T KNOW 8		→ 242
241	Is this time just before her period begins, during her period, right after her period has ended, or halfway between two periods?	JUST BEFORE HER PERIOD BEGINS.......... 1 DURING HER PERIOD .... 2 RIGHT AFTER HER PERIOD HAS ENDE .... 3 HALFWAY BETWEEN TWO PERIODS .... 4 OTHER _____ 6 (SPECIFY) DON'T KNOW 8		
242	After the birth of a child, can a woman become pregnant before her menstrual period has returned?	YES .... 1 NO .... 2 DON'T KNOW 8		

326

301	Now I would like to talk about family planning - the various ways or methods that a couple can use to delay or avoid a pregnancy. Have you ever heard of (METHOD)?		
01	Female Sterilization. PROBE: Women can have an operation to avoid having any more children.	YES .... 1 NO 2	
02	Male Sterilization. PROBE: Men can have an operation to avoid having any more children.	YES .... 1 NO 2	
03	IUD. PROBE: Women can have a loop or coil placed inside them by a doctor or a nurse which can prevent pregnancy for one or more years.	YES .... 1 NO 2	
04	Injectables. PROBE: Women can have an injection by a health provider that stops them from becoming pregnant for one or more months.	YES .... 1 NO 2	
05	Implants. PROBE: Women can have one or more small rods placed in their upper arm by a doctor or nurse which can prevent pregnancy for one or more years.	YES .... 1 NO 2	
06	Pill. PROBE: Women can take a pill every day to avoid becoming pregnant.	YES .... 1 NO 2	
07	Condom. PROBE: Men can put a rubber sheath on their penis before sexual intercourse.	YES .... 1 NO 2	
08	Female Condom. PROBE: Women can place a sheath in their vagina before sexual intercourse.	YES .... 1 NO 2	
09	Emergency Contraception. PROBE: As an emergency measure, within three days after they have unprotected sexual intercourse, women can take special pills to prevent pregnancy.	YES .... 1 NO 2	
10	Standard Days Method/Moon Beads. PROBE: A woman uses a string of colored beads to know the days she can get pregnant. On the days she can get pregnant, she uses a condom or does not have sexual intercourse.	YES .... 1 NO 2	
11	Lactational Amenorrhea Method (LAM). PROBE: Up to six months after childbirth, before the menstrual period has returned, women use a method requiring frequent breastfeeding day and night.	YES .... 1 NO 2	
12	Rhythm Method. PROBE: To avoid pregnancy, women do not have sexual intercourse on the days of the month they think they can get pregnant.	YES .... 1 NO 2	
13	Withdrawal. PROBE: Men can be careful and pull out before climax.	YES .... 1 NO 2	
14	Have you heard of any other ways or methods that women or men can use to avoid pregnancy?	YES, MODERN METHOD _____ A (SPECIFY) YES, TRADITIONAL METHOD _____ B (SPECIFY) NO .... Y	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
307	In what facility did the sterilization take place? PROBE TO IDENTIFY THE TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	**PUBLIC SECTOR** GOVERNMENT HOSPITAL . . . . 11 GOVERNMENT HEALTH CENTEF . . . . 12 FAMILY PLANNING CLINIC . . . . 13 MOBILE CLINIC . . . . 14 OTHER PUBLIC SECTOR _____ 16 (SPECIFY) **PRIVATE MEDICAL SECTOR** PRIVATE HOSPITAL/CLINIC . . . . 21 PRIVATE DOCTOR'S OFFICE . . . . 22 MOBILE CLINIC . . . . 23 OTHER PRIVATE MEDICAL SECTOR _____ 26 (SPECIFY) OTHER _____ 96 (SPECIFY) DON'T KNOW 98	
308	In what month and year was the sterilization performed?	MONTH . . . . □□ YEAR . . . . □□□□	→ 310
309	Since what month and year have you been using (CURRENT METHOD) without stopping? PROBE: For how long have you been using (CURRENT METHOD) now without stopping?	MONTH . . . . □□ YEAR . . . . □□□□	
310	CHECK 308 AND 309, 215 AND 231: ANY BIRTH OR PREGNANCY TERMINATION AFTER MONTH AND YEAR OF START OF USE OF CONTRACEPTION IN 308 OR 309 NO □ YES □ GO BACK TO 308 OR 309, PROBE AND RECORD MONTH AND YEAR AT START OF CONTINUOUS USE OF CURRENT METHOD (MUST BE AFTER LAST BIRTH OR PREGNANCY TERMINATION).	

311	CHECK 308 AND 309:		

YEAR IS 2011-2016 ☐

C ENTER CODE FOR METHOD USED IN MONTH OF INTERVIEW IN THE CALENDAR AND IN EACH MONTH BACK TO THE DATE STARTED USING.

THEN CONTINUE

↓

YEAR IS 2010 OR EARLIER ☐

C ENTER CODE FOR METHOD USED IN MONTH OF INTERVIEW IN THE CALENDAR AND EACH MONTH BACK TO JANUARY 2011.

THEN ⌐

(SKIP TO 324) ◄─┘

312	I would like to ask you some questions about the times you or your partner may have used a method to avoid getting pregnant during the last few years.

C USE CALENDAR TO PROBE FOR EARLIER PERIODS OF USE AND NONUSE, STARTING WITH MOST RECENT USE, BACK TO JANUARY 2011. USE NAMES OF CHILDREN, DATES OF BIRTH, AND PERIODS OF PREGNANCY AS REFERENCE POINTS.

		COLUMN 1	COLUMN 2	COLUMN 3
312A	MONTH AND YEAR OF START OF INTERVAL OF USE OR NON-USE.	MONTH ☐☐ YEAR ☐☐☐☐	MONTH ☐☐ YEAR ☐☐☐☐	MONTH ☐☐ YEAR ☐☐☐☐
312B	Between (EVENT) in (MONTH/YEAR) and (EVENT) in (MONTH/YEAR), did you or your partner use any method of contraception?	YES .... 1 NO .... 2⌐ (SKIP TO 312I) ◄─┘	YES .... 1 NO .... 2⌐ (SKIP TO 312I) ◄─┘	YES .... 1 NO .... 2⌐ (SKIP TO 312I) ◄─┘
312C	Which method was that?	METHOD CODE .. ☐	METHOD CODE .. ☐	METHOD CODE .. ☐
312D	How many months after (EVENT) in (MONTH/YEAR) did you start to use (METHOD)? CIRCLE '95' IF RESPONDENT GIVES THE DATE OF STARTING TO USE THE METHOD.	IMMEDIATELY ..... 00⌐ MONTHS .. ☐☐ (SKIP TO 312F) ◄─┘ DATE GIVEN 95	IMMEDIATELY ..... 00⌐ MONTHS .. ☐☐ (SKIP TO 312F) ◄─┘ DATE GIVEN 95	IMMEDIATELY ..... 00⌐ MONTHS .. ☐☐ (SKIP TO 312F) ◄─┘ DATE GIVEN 95
312E	RECORD MONTH AND YEAR RESPONDENT STARTED USING METHOD.	MONTH ☐☐ YEAR ☐☐☐☐	MONTH ☐☐ YEAR ☐☐☐☐	MONTH ☐☐ YEAR ☐☐☐☐
312F	For how many months did you use (METHOD)? CIRCLE '95' IF RESPONDENT GIVES THE DATE OF TERMINATION OF USE.	MONTHS .. ☐☐ (SKIP TO 312H) ◄─┘ DATE GIVEN 95	MONTHS .. ☐☐ (SKIP TO 312H) ◄─┘ DATE GIVEN 95	MONTHS .. ☐☐ (SKIP TO 312H) ◄─┘ DATE GIVEN 95
312G	RECORD MONTH AND YEAR RESPONDENT STOPPED USING METHOD.	MONTH ☐☐ YEAR ☐☐☐☐	MONTH ☐☐ YEAR ☐☐☐☐	MONTH ☐☐ YEAR ☐☐☐☐
312H	Why did you stop using (METHOD)?	REASON STOPPED ..... ☐	REASON STOPPED ..... ☐	REASON STOPPED ..... ☐
312I		GO BACK TO 312A IN NEXT COLUMN; OR, IF NO MORE GAPS, GO TO 313.	GO BACK TO 312A IN NEXT COLUMN; OR, IF NO MORE GAPS, GO TO 313.	GO BACK TO 312A IN NEW QUESTIONNAIRE; OR, IF NO MORE GAPS, GO TO 313.

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
313	CHECK THE CALENDAR FOR USE OF ANY CONTRACEPTIVE METHOD IN ANY MONTH NO METHOD USED ☐ ANY METHOD USED ☐		→ 315
314	Have you ever used anything or tried in any way to delay or avoid getting pregnant?	YES .... 1 NO 2	→ 326
315	CHECK 304: CIRCLE METHOD CODE: IF MORE THAN ONE METHOD CODE CIRCLED IN 304, CIRCLE CODE FOR HIGHEST METHOD IN LIST.	NO CODE CIRCLED .... 00 FEMALE STERILIZATION .... 01 MALE STERILIZATION .... 02 IUD .... 03 INJECTABLES .... 04 IMPLANTS .... 05 PILL .... 06 CONDOM............................... 07 FEMALE CONDOM .... 08 EMERGENCY CONTRACEPTION .... 09 STANDARD DAYS METHOD/MOON BEADS..... 10 LACTATIONAL AMENORRHEA METHOD........ 11 RHYTHM METHOD .... 12 WITHDRAWAL .... 13 OTHER MODERN METHOD .... 95 OTHER TRADITIONAL METHOD 96	→ 326 → 319 → 327 → 323
316	You first started using (CURRENT METHOD) in (DATE FROM 308 OR 309). Where did you get it at that time? PROBE TO IDENTIFY THE TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	**PUBLIC SECTOR** GOVERNMENT HOSPITAL................ 11 GOVERNMENT HEALTH CENTER.......... 12 FAMILY PLANNING CLINIC .... 13 MOBILE CLINIC .... 14 COMMUNITY HEALTH WORKER/VH .... 15 OTHER PUBLIC SECTOR _____ 16 (SPECIFY) **PRIVATE MEDICAL SECTOR** PRIVATE HOSPITAL/CLINIC .... 21 PHARMACY/DRUG SHOP .... 22 PRIVATE DOCTOR .... 23 MOBILE CLINIC .... 24 COMMUNITY HEALTH WORKER .... 25 OTHER PRIVATE MEDICAL SECTOR _____ 26 (SPECIFY) **OTHER SOURCE** SHOP .... 31 CHURCH .... 32 FRIEND/RELATIVE .... 33 OTHER _____ 96 (SPECIFY)	
317	CHECK 304: CIRCLE METHOD CODE: IF MORE THAN ONE METHOD CODE CIRCLED IN 304, CIRCLE CODE FOR HIGHEST METHOD IN LIST.	IUD .... 03 INJECTABLES .... 04 IMPLANTS .... 05 PILL .... 06 CONDOM............................... 07 FEMALE CONDOM .... 08 EMERGENCY CONTRACEPTION .... 09 STANDARD DAYS METHOD/MOON BEADS..... 10 OTHER MODERN METHOD .... 95 OTHER TRADITIONAL METHOD 96	 → 323 → 322 → 323

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
318	At that time, were you told about side effects or problems you might have with the method?	YES .... 1 NO 2	→ 321 → 320
319	When you got sterilized, were you told about side effects or problems you might have with the method?	YES .... 1 NO 2	→ 321
320	Were you ever told by a health or family planning worker about side effects or problems you might have with the method?	YES .... 1 NO 2	→ 322
321	Were you told what to do if you experienced side effects or problems?	YES .... 1 NO 2	
322	CHECK 318 AND 319: ANY ☐ OTHER ☐ 'YES' ↓ ↓ a) At that time, were you told about other methods of family planning that you could use? b) When you obtained (CURRENT METHOD FROM 315) from (SOURCE OF METHOD FROM 307 OR 316), were you told about other methods of family planning that you could use?	YES .... 1 NO 2	→ 324
323	Were you ever told by a health or family planning worker about other methods of family planning that you could use?	YES .... 1 NO 2	
324	CHECK 304: CIRCLE METHOD CODE: IF MORE THAN ONE METHOD CODE CIRCLED IN 304, CIRCLE CODE FOR HIGHEST METHOD IN LIST.	FEMALE STERILIZATION .... 01 MALE STERILIZATION .... 02 IUD .... 03 INJECTABLES .... 04 IMPLANTS .... 05 PILL .... 06 CONDOM................................. 07 FEMALE CONDOM .... 08 EMERGENCY CONTRACEPTION .... 09 STANDARD DAYS METHOD/MOON BEADS..... 10 LACTATIONAL AMENORRHEA METHOC........ 11 RHYTHM METHOD .... 12 WITHDRAWAL .... 13 OTHER MODERN METHOD .... 95 OTHER TRADITIONAL METHOD 96	→ 327 → 327 → 327

332

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
325	Where did you obtain (CURRENT METHOD) the last time? PROBE TO IDENTIFY THE TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	**PUBLIC SECTOR** GOVERNMENT HOSPITAL . . . . 11 GOVERNMENT HEALTH CENTEF . . . . 12 FAMILY PLANNING CLINIC . . . . 13 MOBILE CLINIC . . . . 14 COMMUNITY HEALTH WORKER/VH . . . . 15 OTHER PUBLIC SECTOR _____ 16 (SPECIFY) **PRIVATE MEDICAL SECTOR** PRIVATE HOSPITAL/CLINIC . . . . 21 PHARMACY/DRUG SHOP . . . . 22 PRIVATE DOCTOR . . . . 23 MOBILE CLINIC . . . . 24 COMMUNITY HEALTH WORKER . . . . 25 OTHER PRIVATE MEDICAL SECTOR _____ 26 (SPECIFY) **OTHER SOURCE** SHOP . . . . 31 CHURCH . . . . 32 FRIEND/RELATIVE . . . . 33 OTHER _____ 96 (SPECIFY)	→ 327
326	Do you know of a place where you can obtain a method of family planning?	YES . . . . 1 NO 2	
327	In the last 12 months, were you visited by a Community Health Worker/VHT?	YES . . . . 1 NO 2	→ 329
328	Did the Community Health Worker/VHT talk to you about family planning?	YES . . . . 1 NO 2	
329	CHECK 202: LIVING CHILDREN YES☐ NO☐ a) In the last 12 months, have you visited a health facility for care for yourself or your children? b) In the last 12 months, have you visited a health facility for care for yourself?	YES . . . . 1 NO 2	→ 401
330	Did any staff member at the health facility speak to you about family planning methods?	YES . . . . 1 NO 2	

401	CHECK 224:
	ONE OR MORE BIRTHS ☐ NO BIRTHS IN ☐ ─────────────→ 648 IN 2011-2016 ↓ 2011-2016

402	CHECK 215. RECORD THE BIRTH HISTORY NUMBER IN 403 AND THE NAME AND SURVIVAL STATUS IN 404 FOR EACH BIRTH IN 2011-2016. ASK THE QUESTIONS ABOUT ALL OF THESE BIRTHS. BEGIN WITH THE LAST BIRTH. IF THERE ARE MORE THAN 2 BIRTHS, USE LAST COLUMN OF ADDITIONAL QUESTIONNAIRE(S). Now I would like to ask some questions about your children born in the last five years. (We will talk about each separately.)

		LAST BIRTH	NEXT-TO-LAST BIRTH
403	BIRTH HISTORY NUMBER FROM 212 IN BIRTH HISTORY.	BIRTH HISTORY NUMBER . . . . ☐☐	BIRTH HISTORY NUMBER . . . . ☐☐
404	FROM 212 AND 216:	NAME _____ LIVING ☐↓ DEAD ☐↓	NAME _____ LIVING ☐↓ DEAD ☐↓
405	When you got pregnant with (NAME), did you want to get pregnant at that time?	YES . . . . 1⌐ (SKIP TO 408) ← NO 2	YES . . . . 1⌐ (SKIP TO 426) ← NO 2
406	CHECK 208: ONLY ONE ☐⌐ MORE THAN ONE ☐⌐ BIRTH↓ BIRTH↓ a) Did you want to have a baby later on, or did you not want any children? b) Did you want to have a baby later on, or did you not want any more children?	LATER . . . . 1 NO MORE/NONE . . . . 2⌐ (SKIP TO 408) ←	LATER . . . . 1 NO MORE/NONE . . . . 2⌐ (SKIP TO 426) ←
407	How much longer did you want to wait?	MONTHS . . . . 1 ☐☐ YEARS . . . . 2 DON'T KNOW 998	MONTHS . . . . 1 ☐☐ YEARS . . . . 2 DON'T KNOW 998
408	Did you see anyone for antenatal care for this pregnancy?	YES . . . . 1 NO . . . . 2⌐ (SKIP TO 414) ←	
409	Whom did you see? Anyone else? PROBE TO IDENTIFY EACH TYPE OF PERSON AND RECORD ALL MENTIONED.	HEALTH PERSONNEL DOCTOR . . . . A NURSE/MIDWIFE . . . . B MEDICAL ASSISTANT/ CLINICAL OFFICER . . . . . C NURSING AIDE/ASST. . . . . . D OTHER PERSON TRADITIONAL BIRTH ATTENDANT . . . . E COMMUNITY/ VILLAGE HEALTH WORKER . . . . F OTHER _____ X (SPECIFY)	

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
433	When was the decision made to have the caesarean section? Was it before or after your labor pains started?	BEFORE .... 1 AFTER 2	BEFORE .... 1 AFTER 2
434	Immediately after the birth, was (NAME) put directly on the bare skin of your chest?	YES .... 1 NO .... 2 DON'T KNOW 8	YES .... 1 NO .... 2 DON'T KNOW 8
434A	CHECK 430: PLACE OF DELIVERY	CODE 11, 12, OR 96 ☐ OTHER CIRCLED ☐ (SKIP TO 449) ◄—	
435	I would like to talk to you about checks on your health after delivery, for example, someone asking you questions about your health or examining you. Did anyone check on your health while you were still in the facility?	YES .... 1 NO .... 2┐ (SKIP TO 438) ◄—	
436	How long after delivery did the first check take place? IF LESS THAN ONE DAY, RECORD HOURS; IF LESS THAN ONE WEEK, RECORD DAYS.	HOURS .... 1 DAYS .... 2 WEEKS .... 3 DON'T KNOW 998	

437	Who checked on your health at that time?
	
	PROBE FOR MOST QUALIFIED PERSON.
		HEALTH PERSONNEL
		  DOCTOR 11
		  NURSE/MIDWIFE 12
		  MEDICAL ASSISTANT/
		    CLINICAL OFFICER 13
		  NURSING AIDE/ASST. 14
		OTHER PERSON
		  TRADITIONAL BIRTH
		    ATTENDANT 21
		  COMMUNITY/
		    VILLAGE HEALTH
		    WORKER 22
		
		OTHER _____ 96
		      (SPECIFY)	

438	Now I would like to talk to you about checks on (NAME)'s health after delivery – for example, someone examining (NAME), checking the cord, or seeing if (NAME) is OK. Did anyone check on (NAME)'s health while you were still in the facility?	YES .... 1 NO .... 2┐ (SKIP TO 441) ◄—┤ DON'T KNOW .... 8┘	
439	How long after delivery was (NAME)'s health first checked? IF LESS THAN ONE DAY, RECORD HOURS; IF LESS THAN ONE WEEK, RECORD DAYS.	HOURS .... 1 DAYS .... 2 WEEKS .... 3 DON'T KNOW 998	

335

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____

440	Who checked on (NAME)'s health at that time?
	
	PROBE FOR MOST QUALIFIED PERSON.
		HEALTH PERSONNEL
		DOCTOR 11
		NURSE/MIDWIFE 12
		MEDICAL ASSISTANT/
		   CLINICAL OFFICER 13
		NURSING AIDE/ASST. 14
		OTHER PERSON
		TRADITIONAL BIRTH
		   ATTENDANT 21
		COMMUNITY/
		   VILLAGE HEALTH
		   WORKER 22
		
		OTHER _____ 96
		      (SPECIFY)	

441	Now I want to talk to you about what happened after you left the facility. Did anyone check on your health after you left the facility?	YES . . . . 1 NO . . . . 2┐ (SKIP TO 445) ←	
442	How long after delivery did that check take place? IF LESS THAN ONE DAY, RECORD HOURS; IF LESS THAN ONE WEEK, RECORD DAYS.	HOURS . . . . 1 DAYS . . . . 2 WEEKS . . . . 3 DON'T KNOW 998	

443	Who checked on your health at that time?
	
	PROBE FOR MOST QUALIFIED PERSON.
		HEALTH PERSONNEL
		DOCTOR 11
		NURSE/MIDWIFE 12
		MEDICAL ASSISTANT/
		   CLINICAL OFFICER 13
		OTHER PERSON
		TRADITIONAL BIRTH
		   ATTENDANT 21
		COMMUNITY/
		   VILLAGE HEALTH
		   WORKER 22
		
		OTHER _____ 96
		      (SPECIFY)	

444	Where did the check take place?
	
	PROBE TO IDENTIFY THE TYPE OF SOURCE.
	
	IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE.
	
	_____
	(NAME OF PLACE)
		HOME
		HER HOME 11
		OTHER HOME 12
		
		PUBLIC SECTOR
		GOVERNMENT HOSPITAL . . 21
		GOVERNMENT HEALTH
		   CENTER 22
		OTHER PUBLIC SECTOR
		
		_____ 26
		      (SPECIFY)
		
		PRIVATE MEDICAL SECTOR
		PRIVATE HOSPITAL/
		   CLINIC 31
		OTHER PRIVATE
		   MEDICAL SECTOR
		
		_____ 36
		      (SPECIFY)
		
		OTHER _____ 96
		      (SPECIFY)	

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
445	I would like to talk to you about checks on (NAME)'s health after you left (FACILITY IN 430). Did any health care provider or a traditional birth attendant check on (NAME)'s health in the two months after you left (FACILITY IN 430)?	YES .... 1 NO .... 2⌐ (SKIP TO 457) ◄──┤ DON'T KNOW .... 8⌐	
446	How many hours, days or weeks after the birth of (NAME) did that check take place? IF LESS THAN ONE DAY, RECORD HOURS; IF LESS THAN ONE WEEK, RECORD DAYS.	HOURS .... 1 ☐☐ DAYS .... 2 ☐☐ WEEKS .... 3 ☐☐ DON'T KNOW 998	

447	Who checked on (NAME)'s health at that time?
	
	PROBE FOR MOST QUALIFIED PERSON.
		HEALTH PERSONNEL
		  DOCTOR 11
		  NURSE/MIDWIFE 12
		  MEDICAL ASSISTANT/
		    CLINICAL OFFICER 13
		  NURSING AIDE/ASST. 14
		OTHER PERSON
		  TRADITIONAL BIRTH
		    ATTENDANT 21
		  COMMUNITY/
		    VILLAGE HEALTH
		      WORKER 22
		
		OTHER _____ 96
		       (SPECIFY)	

448	Where did this check of (NAME) take place?
	
	PROBE TO IDENTIFY THE TYPE OF SOURCE.
	
	IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE.
	
	_____
	(NAME OF PLACE)
		HOME
		  HER HOME .... 11⌐
		  OTHER HOME .... 12┘
		
		PUBLIC SECTOR
		  GOVERNMENT HOSPITAL.. 21⌐
		  GOVERNMENT HEALTH
		    CENTER .... 22┤
		  OTHER PUBLIC SECTOR
		
		  _____ 26┤
		       (SPECIFY)
		
		PRIVATE MEDICAL SECTOR
		  PRIVATE HOSPITAL/
		    CLINIC .... 31┤
		  OTHER PRIVATE
		    MEDICAL SECTOR
		
		  _____ 36┤
		       (SPECIFY)
		
		OTHER _____ 96┤
		       (SPECIFY)
		
		     (SKIP TO 457) ◄──┘	

449	I would like to talk to you about checks on your health after delivery, for example, someone asking you questions about your health or examining you. Did anyone check on your health after you gave birth to (NAME)?	YES .... 1 NO .... 2⌐ (SKIP TO 453) ◄──┘	

337

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
450	How long after delivery did the first check take place? IF LESS THAN ONE DAY, RECORD HOURS; IF LESS THAN ONE WEEK, RECORD DAYS.	HOURS .... 1 ☐☐ DAYS .... 2 ☐☐ WEEKS .... 3 ☐☐ DON'T KNOW 998	

451	Who checked on your health at that time?
	
	PROBE FOR MOST QUALIFIED PERSON.
		HEALTH PERSONNEL
		  DOCTOR 11
		  NURSE/MIDWIFE 12
		  MEDICAL ASSISTANT/
		    CLINICAL OFFICER 13
		  NURSING AIDE/ASST. 14
		OTHER PERSON
		  TRADITIONAL BIRTH
		    ATTENDANT 21
		  COMMUNITY/
		    VILLAGE HEALTH
		    WORKER 22
		
		OTHER _____ 96
		     (SPECIFY)	

452	Where did this first check take place?
	
	PROBE TO IDENTIFY THE TYPE OF SOURCE.
	
	IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE.
	
	_____
	(NAME OF PLACE)
		HOME
		  HER HOME 11
		  OTHER HOME 12
		
		PUBLIC SECTOR
		  GOVERNMENT HOSPITAL.. 21
		  GOVERNMENT HEALTH
		    CENTER 22
		  OTHER PUBLIC SECTOR
		
		  _____ 26
		    (SPECIFY)
		
		PRIVATE MEDICAL SECTOR
		  PRIVATE HOSPITAL/
		    CLINIC 31
		  OTHER PRIVATE
		    MEDICAL SECTOR
		
		  _____ 36
		    (SPECIFY)
		
		OTHER _____ 96
		    (SPECIFY)	

453	I would like to talk to you about checks on (NAME)'s health after delivery – for example, someone examining (NAME), checking the cord, or seeing if (NAME) is OK. In the two months after (NAME) was born, did any health care provider or a traditional birth attendant check on (NAME)'s health?	YES .... 1 NO .... 2⌐ (SKIP TO 457) ◄ DON'T KNOW .... 8⌐	

454	How many hours, days or weeks after the birth of (NAME) did the first check take place?
	
	IF LESS THAN ONE DAY, RECORD HOURS;
	IF LESS THAN ONE WEEK, RECORD DAYS.
		HOURS AFTER
		  BIRTH ..... 1 ☐☐
		DAYS AFTER
		  BIRTH ..... 2 ☐☐
		WEEKS AFTER
		  BIRTH ..... 3 ☐☐
		
		DON'T KNOW 998	

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____

455	Who checked on (NAME)'s health at that time?
	
	PROBE FOR MOST QUALIFIED PERSON.
		HEALTH PERSONNEL
		DOCTOR 11
		NURSE/MIDWIFE 12
		MEDICAL ASSISTANT/
		  CLINICAL OFFICER 13
		NURSING AIDE/ASST. 14
		OTHER PERSON
		TRADITIONAL BIRTH
		  ATTENDANT 21
		COMMUNITY/
		  VILLAGE HEALTH
		  WORKER 22
		
		OTHER _____ 96
		(SPECIFY)	

456
(2)
	Where did this first check of (NAME) take place?
	
	PROBE TO IDENTIFY THE TYPE OF SOURCE.
	
	IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE.
	
	_____
	(NAME OF PLACE)
		HOME
		HER HOME 11
		OTHER HOME 12
		
		PUBLIC SECTOR
		GOVERNMENT HOSPITAL . . 21
		GOVERNMENT HEALTH
		  CENTER 22
		OTHER PUBLIC SECTOR
		
		_____ 26
		(SPECIFY)
		
		PRIVATE MEDICAL SECTOR
		PRIVATE HOSPITAL/
		  CLINIC 31
		OTHER PRIVATE
		  MEDICAL SECTOR
		
		_____ 36
		(SPECIFY)
		
		OTHER _____ 96
		SPECIFY	

457	During the first two days after (NAME)'s birth, did any health care provider do the following:
	
	a) Examine the cord?
	b) Measure (NAME)'s temperature?
	
	c) Counsel you on danger signs for newborns?
	d) Counsel you on breastfeeding?
	
	e) Observe (NAME) breastfeeding?
		YES NO DK
		
		a) CORD 1 2 8
		b) TEMP. 1 2 8
		
		c) SIGNS 1 2 8
		
		d) COUNSEL
		   BREAST-
		   FEED 1 2 8
		e) OBSERVE
		   BREAST-
		   FEED 1 2 8	

458	Has your menstrual period returned since the birth of (NAME)?	YES . . . . 1 (SKIP TO 460) ◄— NO . . . . 2 (SKIP TO 461) ◄—	
459	Did your period return between the birth of (NAME) and your next pregnancy?		YES . . . . 1 NO . . . . 2 (SKIP TO 463) ◄—
460	For how many months after the birth of (NAME) did you not have a period?	MONTHS . . . . □□ DON'T KNOW 98	MONTHS . . . . □□ DON'T KNOW 98

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____

612	Where did you seek advice or treatment?
	
	Anywhere else?
	
	PROBE TO IDENTIFY THE TYPE OF SOURCE.
	
	IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE(S).
	
	_____
	(NAME OF PLACE(S))
		PUBLIC SECTOR
		GOVERNMENT HOSPITAL .. A
		GOVERNMENT HEALTH
		   CENTER .... B
		OUTREACH/
		   MOBILE CLINIC C
		   FIELDWORKER/VH˙........ D
		OTHER PUBLIC SECTOR
		
		_____ E
		(SPECIFY)
		
		PRIVATE MEDICAL SECTOR
		PRIVATE HOSPITAL/
		   CLINIC .... F
		PHARMACY/DRUG SHOP .. G
		PRIVATE DOCTOR .... H
		MOBILE CLINIC I
		FIELDWORKER .... J
		OTHER PRIVATE
		   MEDICAL SECTOR
		
		_____ K
		(SPECIFY)
		
		OTHER SOURCE
		SHOP L
		TRADITIONAL
		   PRACTITIONER .... M
		MARKET .... N
		
		OTHER _____ X
		(SPECIFY)
			PUBLIC SECTOR
			GOVERNMENT HOSPITAL .. A
			GOVERNMENT HEALTH
			   CENTER .... B
			OUTREACH/
			   MOBILE CLINIC C
			   FIELDWORKER/VH˙........ D
			OTHER PUBLIC SECTOR
			
			_____ E
			(SPECIFY)
			
			PRIVATE MEDICAL SECTOR
			PRIVATE HOSPITAL/
			   CLINIC .... F
			PHARMACY/DRUG SHOP .. G
			PRIVATE DOCTOR .... H
			MOBILE CLINIC I
			FIELDWORKER .... J
			OTHER PRIVATE
			   MEDICAL SECTOR
			
			_____ K
			(SPECIFY)
			
			OTHER SOURCE
			SHOP L
			TRADITIONAL
			   PRACTITIONER .... M
			MARKET .... N
			
			OTHER _____ X
			(SPECIFY)

613	CHECK 612:	TWO OR ONLY
		MORE ONE ☐
		CODES CODE
		CIRCLED CIRCLED
		   ☐ (SKIP TO 615) ←
			TWO OR ONLY
			MORE ONE ☐
			CODES CODE
			CIRCLED CIRCLED
			   ☐ (SKIP TO 615) ←

614	Where did you first seek advice or treatment? USE LETTER CODE FROM 612.	FIRST PLACE .... ☐	FIRST PLACE .... ☐

615	Was (NAME) given any of the following at any time since (NAME) started having the diarrhea:
	
	a) A fluid made from a special packet called daloozi?
	
	c) A government-recommended homemade fluid (salt, sugar, and water)?
	
	d) Zinc tablets or syrup?
		YES NO DK
		a) FLUID FROM
		   ORS
		   PACKET .. 1 2 8
		c) HOMEMADE
		   FLUID 1 2 8
		d) ZINC 1 2 8
			YES NO DK
			a) FLUID FROM
			   ORS
			   PACKET .. 1 2 8
			c) HOMEMADE
			   FLUID 1 2 8
			d) ZINC 1 2 8

616	CHECK 615:
	
	ANY 'YES' ☐ ALL 'NO' ☐
	               OR 'DK'
	a) Was anything b) Was anything
	   else given to given to treat the
	   treat the diarrhea?
	   diarrhea?
		YES 1
		NO 2
		   (SKIP TO 618) ←
		DON'T KNOW 8
			YES 1
			NO 2
			   (SKIP TO 618) ←
			DON'T KNOW 8

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____

461	CHECK 226: IS RESPONDENT PREGNANT?	NOT PREGNANT ☐
		PREGNANT ☐ OR
		          UNSURE
		         (SKIP TO 463) ◄──	

462	Have you had sexual intercourse since the birth of (NAME)?	YES .... 1 NO .... 2 ┐ (SKIP TO 464) ◄──	
463	For how many months after the birth of (NAME) did you not have sexual intercourse?	MONTHS .... ☐☐ DON'T KNOW 98	MONTHS .... ☐☐ DON'T KNOW 98
464	Did you ever breastfeed (NAME)?	YES .... 1 ┐ (SKIP TO 466) ◄── NO 2	YES .... 1 NO 2
465	CHECK 404: IS CHILD LIVING?	LIVING ☐ DEAD ☐ (SKIP TO 470) ◄──┘ (SKIP TO 471) ◄──	
466	How long after birth did you first put (NAME) to the breast? IF LESS THAN 1 HOUR, RECORD '00' HOURS; IF LESS THAN 24 HOURS, RECORD HOURS; OTHERWISE, RECORD DAYS.	IMMEDIATELY .... 000 HOURS .... 1 ☐☐ DAYS 2	
467	In the first three days after delivery, was (NAME) given anything to drink other than breast milk?	YES .... 1 NO 2	
468	CHECK 404: IS CHILD LIVING?	LIVING DEAD ☐ ☐ (SKIP TO 471) ◄──	LIVING DEAD ☐ ☐ (SKIP TO 471) ◄──
469	Are you still breastfeeding (NAME)?	YES .... 1 NO 2	
470	Did (NAME) drink anything from a bottle with a nipple yesterday or last night?	YES .... 1 NO .... 2 DON'T KNOW 8	YES .... 1 NO .... 2 DON'T KNOW 8
471		GO BACK TO 405 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 501A.	GO BACK TO 405 IN NEXT-TO-LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 501A.

341

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
701	Are you currently married or living together with a man as if married?	YES, CURRENTLY MARRIED .... 1 YES, LIVING WITH A MAN .... 2 NO, NOT IN UNION 3	→ 704 → 702
701A	What kind of marriage are you in?	CIVIL MARRIAGE .... A CUSTOMARY MARRIAGE .... B RELIGIOUS MARRIAGE C	→ 704
702	Have you ever been married or lived together with a man as if married?	YES, FORMERLY MARRIED .... 1 YES, LIVED WITH A MAN .... 2 NO 3	→ 712
703	What is your marital status now: are you widowed, divorced, or separated?	WIDOWED .... 1 DIVORCED .... 2 SEPARATED 3	→ 709
704	Is your (husband/partner) living with you now or is he staying elsewhere?	LIVING WITH HER .... 1 STAYING ELSEWHERE 2	
705	RECORD THE HUSBAND'S/PARTNER'S NAME AND LINE NUMBER FROM THE HOUSEHOLD QUESTIONNAIRE. IF HE IS NOT LISTED IN THE HOUSEHOLD, RECORD '00'.	NAME _____ LINE NO. .... ☐☐	
706	Does your (husband/partner) have other wives or does he live with other women as if married?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 709
707	Including yourself, in total, how many wives or live-in partners does he have?	TOTAL NUMBER OF WIVES AND LIVE-IN PARTNERS .... ☐☐ DON'T KNOW 98	
708	Are you the first, second, ... wife?	RANK .... ☐☐	
709	Have you been married or lived with a man only once or more than once?	ONLY ONCE .... 1 MORE THAN ONCE 2	
710	CHECK 709: MARRIED/ ☐ MARRIED/ LIVED WITH A ☐ LIVED WITH A MAN MAN MORE ONLY ONCE ▼ THAN ONCE ▼ a) In what month and year did you start living with your (husband/partner)? b) Now I would like to ask about your first (husband/partner). In what month and year did you start living with him?	MONTH .... ☐☐ DON'T KNOW MONTH .... 98 YEAR .... ☐☐☐☐ DON'T KNOW YEAR 9998	→ 712
711	How old were you when you first started living with him?	AGE .... ☐☐	

342

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
712	**CHECK FOR PRESENCE OF OTHERS. BEFORE CONTINUING, MAKE EVERY EFFORT TO ENSURE PRIVACY.**		
713	Now I would like to ask some questions about sexual activity in order to gain a better understanding of some important life issues. Let me assure you again that your answers are completely confidential and will not be told to anyone. If we should come to any question that you don't want to answer, just let me know and we will go to the next question. How old were you when you had sexual intercourse for the very first time?	NEVER HAD SEXUAL INTERCOURSE .... 00 AGE IN YEARS .... ☐☐	→ 730A
714	I would like to ask you about your recent sexual activity. When was the last time you had sexual intercourse? IF LESS THAN 12 MONTHS, ANSWER MUST BE RECORDED IN DAYS, WEEKS OR MONTHS. IF 12 MONTHS (ONE YEAR) OR MORE, ANSWER MUST BE RECORDED IN YEARS.	DAYS AGO .... 1 ☐☐ WEEKS AGO .... 2 ☐☐ MONTHS AGO .... 3 ☐☐ YEARS AGO .... 4 ☐☐	→ 716 → 727

		LAST SEXUAL PARTNER	SECOND-TO-LAST SEXUAL PARTNER	THIRD-TO-LAST SEXUAL PARTNER
715	When was the last time you had sexual intercourse with this person?		DAYS AGO .. 1 WEEKS AGO .. 2 MONTHS AGO .. 3	DAYS AGO .. 1 WEEKS AGO .. 2 MONTHS AGO .. 3
716	The last time you had sexual intercourse with this person, was a condom used?	YES .... 1 NO .... 2 ¬ (SKIP TO 718)	YES .... 1 NO .... 2 ¬ (SKIP TO 718)	YES .... 1 NO .... 2 ¬ (SKIP TO 718)
717	Was a condom used every time you had sexual intercourse with this person in the last 12 months?	YES .... 1 NO 2	YES .... 1 NO 2	YES .... 1 NO 2
718	What was your relationship to this person with whom you had sexual intercourse? IF BOYFRIEND: Were you living together as if married? IF YES, RECORD '2'. IF NO, RECORD '3'.	HUSBAND .... 1 LIVE-IN PARTNER ..... 2 BOYFRIEND NOT LIVING WITH RESPONDENT ..... 3 CASUAL ACQUAINTANCE .. 4 CLIENT/SEX WORKER .. 5 OTHER _____ 6 (SPECIFY)	HUSBAND .... 1 LIVE-IN PARTNER ..... 2 BOYFRIEND NOT LIVING WITH RESPONDENT ..... 3 CASUAL ACQUAINTANCE .. 4 CLIENT/SEX WORKER .. 5 OTHER _____ 6 (SPECIFY)	HUSBAND .... 1 LIVE-IN PARTNER ..... 2 BOYFRIEND NOT LIVING WITH RESPONDENT ..... 3 CASUAL ACQUAINTANCE .. 4 CLIENT/SEX WORKER .. 5 OTHER _____ 6 (SPECIFY)
719	How long ago did you first have sexual intercourse with this person?	DAYS AGO .. 1 WEEKS AGO .. 2 MONTHS AGO .. 3 YEARS AGO .. 4	DAYS AGO .. 1 WEEKS AGO .. 2 MONTHS AGO .. 3 YEARS AGO .. 4	DAYS AGO .. 1 WEEKS AGO .. 2 MONTHS AGO .. 3 YEARS AGO .. 4
720	How many times during the last 12 months did you have sexual intercourse with this person? IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE. IF NUMBER OF TIMES IS 95 OR MORE, RECORD '95'.	NUMBER OF TIMES	NUMBER OF TIMES	NUMBER OF TIMES .....
721	How old is this person?	AGE OF PARTNER DON'T KNOW 98	AGE OF PARTNER DON'T KNOW 98	AGE OF PARTNER DON'T KNOW 98
722	Apart from this person, have you had sexual intercourse with any other person in the last 12 months?	YES .... 1 ¬ (GO BACK TO 715 IN NEXT COLUMN) NO .... 2 ¬ (SKIP TO 724)	YES .... 1 ¬ (GO BACK TO 715 IN NEXT COLUMN) NO .... 2 ¬ (SKIP TO 724)	
723	In total, with how many different people have you had sexual intercourse in the last 12 months? IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE. IF NUMBER OF PARTNERS IS 95 OR MORE, RECORD '95'.			NUMBER OF PARTNERS LAST 12 MONTHS .. DON'T KNOW 98

344

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
724	CHECK 106: AGE 15-24 ☐ AGE 25-49 ☐		➤ 727
725	CHECK 701: NOT ☐ CURRENTLY MARRIED/ ☐ IN A UNION LIVING WITH A MAN		➤ 727
726	In the past 12 months have you had sex or been sexually involved with anyone because he gave you or told you he would give you gifts, cash, or anything else?	YES .... 1 NO 2	
727	In total, with how many different people have you had sexual intercourse in your lifetime? IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE. IF NUMBER OF PARTNERS IS 95 OR MORE, RECORD '95'.	NUMBER OF PARTNERS IN LIFETIME .... ☐☐ DON'T KNOW 98	

728	CHECK 716, MOST RECENT PARTNER (FIRST COLUMN):
	
	        NO, ☐
	YES, ☐ CONDOM
	CONDOM USED NOT USED NOT ☐
	             ASKED
			➤ 730A
			
			➤ 730A

729	You told me that a condom was used the last time you had sex. What is the brand name of the condom used at that time? IF BRAND NOT KNOWN, ASK TO SEE THE PACKAGE.	PROTECTOR .... 01 CONDOM O .... 02 ENGABU .... 03 TRUST .... 04 LIFE GUARD .... 05 GOVT BRAND .... 06 NO BRAND .... 07 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	

730	From where did you obtain the condom the last time?
	
	PROBE TO IDENTIFY TYPE OF SOURCE.
	
	IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE.
	
	_____
	(NAME OF PLACE)
		PUBLIC SECTOR
		GOVERNMENT HOSPITAL 11
		GOVERNMENT HEALTH CENTEF 12
		FAMILY PLANNING CLINIC 13
		MOBILE CLINIC 14
		COMMUNITY HEALTH WORKER/VH 15
		OTHER PUBLIC SECTOR
		
		_____ 16
		       (SPECIFY)
		
		PRIVATE MEDICAL SECTOR
		PRIVATE HOSPITAL/CLINIC 21
		PHARMACY/DRUG SHOP 22
		PRIVATE DOCTOR 23
		MOBILE CLINIC 24
		COMMUNITY HEALTH WORKER 25
		OTHER PRIVATE MEDICAL SECTOR
		
		_____ 26
		       (SPECIFY)
		
		OTHER SOURCE
		SHOP 31
		CHURCH 32
		FRIEND/RELATIVE 33
		STREET VENDOR 34
		LODGE 35
		
		OTHER _____ 96
		       (SPECIFY)
		DON'T KNOW 98	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
801	CHECK 304: NEITHER ☐ NOT ☐ HE OR SHE ☐ STERILIZED ↓ ASKED ↓ STERILIZED		→ 813
802	CHECK 226: PREGNANT ☐ NOT PREGNANT ☐ ↓ OR UNSURE		→ 804
803	Now I have some questions about the future. After the child you are expecting now, would you like to have another child, or would you prefer not to have any more children?	HAVE ANOTHER CHILD .... 1 NO MORE .... 2 UNDECIDED/DON'T KNOW 8	→ 805 → 812
804	Now I have some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any (more) children?	HAVE (A/ANOTHER) CHILD .... 1 NO MORE/NONE .... 2 SAYS SHE CAN'T GET PREGNANT .... 3 UNDECIDED/DON'T KNOW 8	→ 807 → 813 → 811

805	CHECK 226:
	
	NOT PREGNANT ☐ PREGNANT ☐
	OR UNSURE ↓ ↓
	
	a) How long would you b) After the birth of the
	like to wait from now child you are expecting
	before the birth of now, how long would
	(a/another) child? you like to wait before
	                           the birth of another
	                           child?
		MONTHS .... 1 ☐☐
		
		YEARS .... 2 ☐☐
		
		SOON/NOW 993
		SAYS SHE CAN'T GET PREGNANT 994
		AFTER MARRIAGE 995
		
		OTHER _____ 996
		         (SPECIFY)
		DON'T KNOW 998
			→ 811
			→ 813
			
			→ 811

806	CHECK 226: NOT PREGNANT ☐ PREGNANT ☐ OR UNSURE ↓		→ 812
807	CHECK 303: USING A CONTRACEPTIVE METHOD? NOT ☐ CURRENTLY ☐ CURRENTLY USING USING ↓		→ 813
808	CHECK 805: '24' OR MORE MONTHS ☐ NOT ☐ '00-23' MONTHS ☐ OR '02' OR MORE YEARS ↓ ASKED ↓ OR '00-01' YEAR		→ 812

809	CHECK 714:
	
	                     YEARS ☐
	                     AGO
	DAYS, WEEKS OR ☐ NOT ☐
	MONTHS AGO ↓ ASKED
			→ 811
			→ 811

346

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP

810	CHECK 804:
	
	WANTS TO HAVE ☐ WANTS NO MORE/ ☐
	A/ANOTHER CHILD NONE
	
	a) You have said that you b) You have said that you
	do not want (a/another) do not want any (more)
	child soon. Can you tell children. Can you tell
	me why you are not me why you are not
	using a method to using a method to
	prevent pregnancy? prevent pregnancy?
	
	Any other reason? Any other reason?
	
	RECORD ALL REASONS MENTIONED.
		NOT MARRIED .... A
		
		FERTILITY-RELATED REASONS
		   NOT HAVING SEX .... B
		   INFREQUENT SEX C
		   MENOPAUSAL/HYSTERECTOMY.......... D
		   CAN'T GET PREGNANT .... E
		   NOT MENSTRUATED SINCE
		        LAST BIRTH .... F
		   BREASTFEEDING .... G
		   UP TO GOD/FATALISTIC .... H
		
		OPPOSITION TO USE
		   RESPONDENT OPPOSED I
		   HUSBAND/PARTNER OPPOSED .... J
		   OTHERS OPPOSED .... K
		   RELIGIOUS PROHIBITION L
		
		LACK OF KNOWLEDGE
		   KNOWS NO METHOD .... M
		   KNOWS NO SOURCE .... N
		
		METHOD-RELATED REASONS
		   SIDE EFFECTS/HEALTH
		        CONCERNS .... O
		   LACK OF ACCESS/TOO FAR .... P
		   COSTS TOO MUCH .... Q
		   PREFERRED METHOD
		        NOT AVAILABLE .... R
		   NO METHOD AVAILABLE .... S
		   INCONVENIENT TO USE .... T
		   INTERFERES WITH BODY'S
		        NORMAL PROCESSES............... U
		
		OTHER _____ X
		              (SPECIFY)
		DON'T KNOW .... Z	

811	CHECK 303: USING A CONTRACEPTIVE METHOD?
	
	   NOT ☐ NO, NOT ☐ YES, ☐
	   ASKED CURRENTLY USING CURRENTLY USING
			➤ 813

812	Do you think you will use a contraceptive method to delay or avoid pregnancy at any time in the future?	YES .... 1 NO .... 2 DON'T KNOW 8	

813	CHECK 216:
	
	HAS LIVING ☐ NO LIVING ☐
	CHILDREN CHILDREN
	
	a) If you could go back to b) If you could choose
	the time you did not exactly the number of
	have any children and children to have in your
	could choose exactly whole life, how many
	the number of children would that be?
	to have in your whole
	life, how many would
	that be?
	        PROBE FOR A NUMERIC RESPONSE.
		NONE 00
		
		NUMBER .... ☐☐
		
		DON'T KNOW/FATALISTIC 95
		
		OTHER _____ 96
		              (SPECIFY)
			➤ 815
			
			➤ 815
			
			➤ 815

814	How many of these children would you like to be boys, how many would you like to be girls and for how many would it not matter if it's a boy or a girl?	BOYS GIRLS EITHER NUMBER .. ☐☐ ☐☐ ☐☐ OTHER _____ 96 (SPECIFY)	

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NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
815	In the last few months have you: a) Heard about family planning on the radio? b) Seen anything about family planning on the television? c) Read about family planning in a newspaper or magazine? d) Received a voice or text message about family planning on a mobile phone?	YES NO a) RADIO .... 1 2 b) TELEVISION .... 1 2 c) NEWSPAPER OR MAGAZINE .... 1 2 d) MOBILE PHONE 1 2	

817	CHECK 701:
	
	    YES, ☐ YES, ☐ NO, ☐
	 CURRENTLY LIVING NOT IN A UNION
	  MARRIED ▼ WITH A MAN ▼
			➤ 901

818	CHECK 303: USING A CONTRACEPTIVE METHOD?
	
	                              NOT
	  CURRENTLY ☐ CURRENTLY ☐
	   USING ▼ USING
	           NOT ☐
	        ASKED
			➤ 820
			
			➤ 822

819	Would you say that using contraception is mainly your decision, mainly your (husband's/partner's) decision, or did you both decide together?	MAINLY RESPONDENT .... 1 MAINLY HUSBAND/PARTNER .... 2 JOINT DECISION .... 3 OTHER _____ 6 (SPECIFY)	➤ 821
820	Would you say that not using contraception is mainly your decision, mainly your (husband's/partner's) decision, or did you both decide together?	MAINLY RESPONDENT .... 1 MAINLY HUSBAND/PARTNER .... 2 JOINT DECISION .... 3 OTHER _____ 6 (SPECIFY)	

821	CHECK 304:
	
	    NEITHER ARE ☐ NOT ☐ HE OR SHE ARE ☐
	    STERILIZED ▼ ASKED ▼ STERILIZED
			➤ 901

822	Does your (husband/partner) want the same number of children that you want, or does he want more or fewer than you want?	SAME NUMBER .... 1 MORE CHILDREN .... 2 FEWER CHILDREN .... 3 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
901	CHECK 701: CURRENTLY MARRIED/ ☐ LIVING WITH A MAN ↓	NOT IN ☐ UNION	→ 909
902	How old was your (husband/partner) on his last birthday?	AGE IN COMPLETED YEARS .... ☐☐	
903	Did your (husband/partner) ever attend school?	YES .... 1 NO 2	→ 906
904	What was the highest level of school he attended: primary, "O" level, "A" level, tertiary or university?	PRIMARY .... 1 "O" LEVEL .... 2 "A" LEVEL .... 3 TERTIARY .... 4 UNIVERSITY .... 5 DON'T KNOW 8	→ 906
905	What was the highest [CLASS/YEAR] he completed at that level? IF COMPLETED LESS THAN ONE YEAR AT THAT LEVEL, RECORD '00'.	[CLASS/YEAR] .... ☐☐ DON'T KNOW 98	
906	Has your (husband/partner) done any work in the last 7 days?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 908
907	Has your (husband/partner) done any work in the last 12 months?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 909
908	What is your (husband's/partner's) occupation? That is, what kind of work does he mainly do?	_____ _____ _____	
909	Aside from your own housework, have you done any work in the last seven days?	YES .... 1 NO 2	→ 913
910	As you know, some women take up jobs for which they are paid in cash or kind. Others sell things, have a small business or work on the family farm or in the family business. In the last seven days, have you done any of these things or any other work?	YES .... 1 NO 2	→ 913
911	Although you did not work in the last seven days, do you have any job or business from which you were absent for leave, illness, vacation, maternity leave, or any other such reason?	YES .... 1 NO 2	→ 913
912	Have you done any work in the last 12 months?	YES .... 1 NO 2	→ 917
913	What is your occupation? That is, what kind of work do you mainly do?	_____ _____ _____	

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NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
914	Do you do this work for a member of your family, for someone else, or are you self-employed?	FOR FAMILY MEMBER . . . . 1 FOR SOMEONE ELSE . . . . 2 SELF-EMPLOYED 3	
915	Do you usually work throughout the year, or do you work seasonally, or only once in a while?	THROUGHOUT THE YEAR . . . . 1 SEASONALLY/PART OF THE YEAR . . . . 2 ONCE IN A WHILE 3	
916	Are you paid in cash or kind for this work or are you not paid at all?	CASH ONLY . . . . 1 CASH AND KIND . . . . 2 IN KIND ONLY . . . . 3 NOT PAID 4	
917	CHECK 701: CURRENTLY ☐ MARRIED/LIVING WITH A MAN ▼ NOT IN UNION ☐		→ 925
918	CHECK 916: CODE '1' OR '2' ☐ OTHER ☐ CIRCLED ▼		→ 921

919	Who usually decides how the money you earn will be used: you, your (husband/partner), or you and your (husband/partner) jointly?	RESPONDENT 1
		HUSBAND/PARTNER 2
		RESPONDENT AND
		   HUSBAND/PARTNER JOINTLY 3
		
		OTHER _____ 6
		                (SPECIFY)	

920	Would you say that the money that you earn is more than what your (husband/partner) earns, less than what he earns, or about the same?	MORE THAN HIM . . . . 1 LESS THAN HIM . . . . 2 ABOUT THE SAME . . . . 3 HUSBAND/PARTNER HAS NO EARNINGS . . . . 4 DON'T KNOW 8	→ 922

921	Who usually decides how your (husband's/partner's) earnings will be used: you, your (husband/partner), or you and your (husband/partner) jointly?	RESPONDENT 1
		HUSBAND/PARTNER 2
		RESPONDENT AND
		   HUSBAND/PARTNER JOINTLY 3
		HUSBAND/PARTNER HAS
		   NO EARNINGS 4
		
		OTHER _____ 6
		                (SPECIFY)	

922	Who usually makes decisions about health care for yourself: you, your (husband/partner), you and your (husband/partner) jointly, or someone else?	RESPONDENT . . . . 1 HUSBAND/PARTNER . . . . 2 RESPONDENT AND HUSBAND/PARTNER JOINTLY . . . . 3 SOMEONE ELSE . . . . 4 OTHER 6	
923	Who usually makes decisions about making major household purchases?	RESPONDENT . . . . 1 HUSBAND/PARTNER . . . . 2 RESPONDENT AND HUSBAND/PARTNER JOINTLY . . . . 3 SOMEONE ELSE . . . . 4 OTHER 6	

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