

**Unmet need for contraception and its determinants among adolescent girls
in Uganda: Findings from Demographic and Health Survey (2011).**

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Declaration

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Dedication

I dedicate this thesis to my late mother Mauda Muheirwe who taught me how persist in life.

Acknowledgements

I would like express my unreserved appreciation to my supervisor **Dr Olufunke Alaba** for her support and assistance throughout this study and the writing of this thesis.

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All acknowledged persons bear no responsibility for the deficiencies contained herein.

Abstract

Introduction

Worldwide, an estimated 16 million adolescents fall pregnant annually among these; at least three (3) million have unsafe abortions performed. Similarly, in sub-Saharan Africa more than 50% of the pregnancies in adolescents are unintended and of those, more than half of them end in unsafe abortions (Susheela Singh and Jacqueline E. Darroch & Darroch, 2012). 24% of adolescent females get pregnant annually in Uganda, and most of these are unwanted and unintended pregnancies (Atuyambe et al., 2015). These statistics indicate a problem of unmet need for contraception in Uganda, more so among adolescents, and this calls for more impact studies around adolescent unmet needs for contraception if the problem is to be meaningfully mitigated.

Methods

An explorative quantitative secondary data analysis study was conducted to determine the unmet need for contraception and its determinants among adolescent girls in Uganda, based on 2011 Ugandan Demographic and Health Survey (UDHS) data.

Results

Focusing exclusively on female adolescent's aged 15- 19 years (n= 541), STATA software logistic regression was done to test a model on factors that are significantly associated with unmet needs in the target population of the study. A third (30%) of the study population reported having an unmet need for contraception; the study also revealed that the educational status of an adolescent girl was statistically significant ($p=0.002$) and related to unmet needs. Married adolescent girls were four times more likely to have unmet needs than those who were never in a union (OR=4.63; 95% CI: 2.06-10.39; $p < 0.001$). Likewise, those adolescent girls who reported living with a partner were twice as likely to have a higher unmet need compared to those having no partners (OR=2.83; 95% CI: 1.30-6.16; $p=0.009$).

Conclusion

Any efforts to address the unmet need for contraception among adolescents in Uganda would need specific attention on factors influencing the uptake of family planning services, education, marital status and place of residence being key determinant factors.

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Acronyms

AIDS	Acquired Immunodeficiency Syndrome
ANC	Ante-natal Care
FP	Family Planning
HIV	Human Immunodeficiency Virus
ICPD	International Conference on Population and Development
IUCDs	Intra Uterine Contraceptive Devices
LARCS	Long Acting Reversible Contraceptives
LIC	Low Income Countries
LMIC	Low Middle Income Countries
MDG	Millennium Development Goals
MMR	Maternal Mortality Ratio
MOH	Ministry of Health
NDP	National Development Plan
SDG	Sustainable Development Goals
SRH	Sexual and Reproductive Health
SRHR	Sexual and Reproductive Health Rights
STI	Sexually Transmitted Infections
SWOP	State of the World Population Report
TFR	Total Fertility Rate
UDHS	Uganda Demographic Health Survey
UNFPA	United Nations Population Fund

Part A: Study Protocol

1.0 Introduction

1.1 Background to the study

Globally, the need for equitable, accessible and effective contraceptive options remains a key developmental goal in the 21st century, more so, in developing countries. The provision of timely affordable contraception not only saves lives by reducing unsafe abortions, maternal mortality/morbidity, infant and child mortality but has also been proven to improve overall wellbeing in society, in turn, improving the quality of life. As such, key developmental agenda milestones have evolved to include the targets reflective of this. Notably, three (3) of the seventeen Sustainable Development Goals (SDGs) have targets that hinge on the availability of contraceptive options and correct information to improve health and wellbeing, reducing gender disparities and sustainable livelihoods (UN, 2019).

Approximately, 225 million women not desiring to have children are not using contraception (Byass 2015). Among these an estimated 16 million people aged 15-19 years old fall pregnant annually and about 3 million girls aged 15-19 years' experience unsafe abortions (World Health Organization (WHO) 2014). The need for contraception among female adolescents cannot be overemphasized.

Female adolescents face multiple challenges across the globe especially in developing countries. Accessing sexual and reproductive health services is one such challenge. In sub-Saharan Africa, an estimated 11.3 million female adolescents need contraception but only a third of these have access to it (Guttmacher Institute 2016). To date, it is estimated that more than 35% of all pregnancies occurring in adolescents in sub-Saharan Africa are unwanted and/ unintended (Guttmacher Institute 2015). The statistics fall short in recording the actual need for sexual and reproductive health services because in most developing countries abortion (termination of pregnancies) is illegal and culturally unacceptable; it means only a

small proportion of cases are documented and these would most likely be the cases with the worst outcome. Furthermore, the calculations of the perceived contraceptive need may be underreported due to sociocultural barriers that result in female adolescents underreporting sexual activity. In essence this means that the provision of sexual and reproductive health services especially contraception among female adolescents is a priority. More so, in Uganda – the country which is the third fastest growing country in the world in terms of population (Khan et al. 2008).

The unmet need for family planning in Uganda remains high at 34.3%, meaning that on average, three (3) out of every ten sexually active women are not using any contraception and yet they do not wish to be pregnant (UNFPA; 2014). This need is emphasized by the fact that in 2011, 24 percent of adolescents 13-19 years were already mothers or pregnant with their first child in Uganda (ICF International & Uganda Bureau of Statistics 2012). Given that girls become sexually active earlier than boys and tend to miss out on education and career opportunities due to pregnancies, the impetus to look at girls cannot be over-elaborated.

1.2 Statement of the Problem

In Uganda, access to sexual and reproductive health services remains priority for the government in particular, the Ministry of Health (ICF International & Uganda Bureau of Statistics 2012). This is reflected in the Ugandan National Response Strategy to HIV/AIDS and several similar high-level policy and strategy documents (Khan, S. et al., 2008). Studies have shown that adolescent health continues to be threatened by poor access to sexual and reproductive health services (ICF International & Uganda Bureau of Statistics 2012)(Khan, S. et al., 2008) (Clements & Madise 2004). High-unmet need for family planning can lead to high pregnancy rates most which are unwanted, HIV transmission and high teenage school dropout among other consequences (Clements

& Madise 2004). The high-unmet need for family planning in Uganda among reproductive age-group, low contraception prevalence rate (30% by 2010), and low antenatal care coverage; are all pointers to serious issues with access to reproductive health services in Uganda. This problem that is a precursor to high maternal- and infant mortality (ICF International & Uganda Bureau of Statistics 2012). In Uganda, as in other parts of the world, uptake of family planning services has been poor despite high health literacy levels (Clements & Madise 2004). For instance, knowledge of contraception among adolescents aged 15-19 years is reported 92% and 96% for girls and boys respectively but contraceptive prevalence is only 9%. In Uganda, the private sector provides the majority (60%) of contraceptive services with the other provided by public health facilities. A major problem of family planning services has been with the supply chain for which the an innovative strategy called “alternative distribution” to provide supplies more consistently and efficiently to private sector facilities (UMOH, 2012).

2.0 Study Justification

Studies by Health Policy Initiative (HPI) in Uganda show that satisfying unmet need, could directly contribute to reductions in maternal and child mortality (USAID Health Policy Initiative, 2006). There are social and economic benefits associated with family planning at both national and individual levels. These include improved health, economic, and social outcomes for women and families. At the individual-level, benefits for women and children include the prevention of unwanted pregnancies, infant mortality reduction and maternal mortality and morbidity (WHO, 2013). Adolescence is a critical stage in sexual development. Adolescence is characterized by experimentation and exploration. During the adolescent stage girls and boys begin to form patterns of behaviour that tend to last throughout their lifetime. This presents a unique opportunity for socio-behavioural interventions to alter life

choices and risky behavioural patterns (Viner et al. 2012) Klein, McNulty and Flatau (1998). As such the value of this study cannot be overemphasized.

Access to sexual and reproductive health services is a human right applicable to all humans regardless of their living conditions (UNFPA, 2013). Yet sexual and reproductive health services remain unnervingly inaccessible to most females in developing countries, more so, to adolescents (UNFPA, 2013). This study therefore seeks to investigate some of the factors associated with unmet need for contraception among adolescents in Uganda. This will provide a potential to add to the body of knowledge and provide an evidence base to help

Text Box 1: Key study contribution to adolescent health literature

- The study focuses on the a special key population group - 15-19 adolescent females in Uganda, a developing country, most studies of this nature have mainly focused on generally women.
- The study utilises data from the UDHS 2011 which has a nationally representative sample of the Ugandan , which gives an valid opportunity generalise the results of the study to Ugandan adolescents
- The study uses logistic regressions to assess determinants from a range of social economic characteristics, so as to provide evidence based data that can better focusing of family planning programs.
- Each of the factors significantly associated with unmet need for contraception is further regressed separately in order to better understand how such a factor influences unmet needs and individual

curb the menace of unmet need among adolescent girls.

3.0 Research Question

What is the magnitude of unmet need for contraception among female adolescents in Uganda and what are its associated determinants or factors?

4.0 Research Objectives

The study seeks to address the following objectives;

1. To investigate the prevalence of unmet need for contraception among female adolescents in Uganda.
2. To explore the determinants of unmet need for contraception.

3. To identify policy and programmatic implications of the study findings for reducing unmet need and improving access to family planning among female adolescents?

5.0 Delimitations of the study

The study will concern itself with prevalence of unmet need for contraception and factors affecting uptake of contraception services among female adolescents in Uganda, by social economic differences across the target group.

6. Methodology

The study will use secondary data analysis of Ugandan adolescent's access to reproductive health services and socio-demographic variables extracted from the Ugandan Demographic and Health Surveys (UDHS) of 2011. The UDHS is a nationally representative cross sectional survey conducted every five (5) years by MEASURE DHS on behalf of the Ugandan ministry of health funded by the United States Agency for International Development. Although there are several UDHS databases available for analysis since the onset of the DHS, the latest dataset (2011) available will be used.

The researcher will acquire the necessary permissions from USAID (Measure DHS) to access and use the UDHS -2011 dataset. A subset containing only data pertaining to the data obtained from female adolescents aged 15 to 19 years will be analysed containing information gleaned from both the household questionnaire and information on women's questionnaire. Data analysis will involve univariate and multivariate logistic regression analysis to identify factors associated with the unmet contraceptive need. Multivariate analysis is defined as examination of relationships between three or more variables (Bryman, 2012). Further variable correlation coefficients and p value statistic will be calculated and interpreted in hypothesis testing and conclusion. Multivariate logistic regression analysis will

run on the following variables: unmet need, contraceptive use and education, residence, wealth index, marital status. The analysis will also apply correlation data analysis, and run tests to be able to deduce evidence (p-values) to accept or reject hypotheses formulated (null).

For the purposes of this study, Stata IC 13.0 will be used to analyse the DHS 2011 dataset filtered on age to draw the target population of the study, which is adolescents. As indicated analysis will be done on the selected variables and attributes of interest using regression and significance tests for hypotheses formulated.

6.2 Sources of Data

The study will utilise 2011 UDHS data, thus the study is based on secondary data analysis of Ugandan adolescent's access to reproductive health services and socio-demographic variables extracted from the. The UDHS is a nationally representative cross sectional survey conducted every five (5) years by MEASURE DHS on behalf of the Ugandan ministry of health funded by the USAID.

6.3 Measuring Unmet need

Using the definition of unmet need presented as an indirect composite measure of the apparent discrepancy between women's reproductive intentions and non-use of family planning (Staveteig 2016). Although definitions in literature portray differences between the unmet need for family planning (Bradley et al. 2012) and the unmet need for limiting and or spacing the term unmet contraceptive need is all encompassing.

6.4 Construction of unmet need measure

By definition, a woman has an unmet need if she is of reproductive age (15-49years and in this study 15-19years) and is constructed using the following criteria:

- unmarried and sexually active or she is married (legally married, cohabiting or in a consensual union);

- she is not using any method of contraception, either modern or traditional;

- she is fecund; and she does not want to have a child (or another child) in the next two years or at all.

a) Questions on “unmet need”

The “unmet need” as assessed in Demographic Health Surveys is a composite variable that is computed by looking at the following variables:

No	Variable	Variable - Question in DHS questionnaire (proxy measure selected)	Variable Code
1	Sexually active	Currently married or never married and sexually active	601, 451
2	Contraceptive Use	Currently not using any contraception	710
3	Pregnant or postpartum amenorrhoeic (period not returned since last live birth in last 2 years)	<ul style="list-style-type: none"> • Did not want current pregnancy/last birth at all (unmet need for limiting) • Wanted current pregnancy/last birth later (unmet need for spacing) 	701,702
4	Fecund	<ul style="list-style-type: none"> • Wants no more children (unmet need for limiting) • Wants next child in 2+ yrs.; wants child and undecided timing, or undecided if wants child (unmet need for spacing) 	704,705
5	Total unmet need	<ul style="list-style-type: none"> • Unmet need for limiting + Unmet need for spacing 	Calculated

b. Independent variables

The study conceptual framework highlights critical variables that explain the unmet need in theory. This study will utilize these theoretical constructs to explore the relations between

unmet need and variables obtained on the household with female adolescents in Uganda specifically looking at the educational status, the socio-economic status, and add to those variables possible confounders such as parity and marital status. The independent variables will be assessed using the following proxy variables:

Access dimension	Question Number (No) in DHS	Variable	Variable - Question in DHS questionnaire (proxy measure selected)
Affordability	1009	Insurance cover	Are you covered by any health insurance?
Availability	324	Availability	Do you know of a place where you can obtain a method of family planning?
Accessibility	1008	Access	Many different factors can prevent women from getting medical advice or treatment for themselves. When you are sick and want to get medical advice or treatment, is each of the following a big problem or not? Getting permission to go to the doctor? Getting money needed for advice or treatment? The distance to the health facility?

			Not wanting to go alone?
Other controlling variables			
Education	104, 105	Education	Have you ever attended school? What is the highest level of school you attended?
Marital Status	8	Marital Status	Current Marital status
Employment status	144	Employment status	Current employment status
Parity	201,202,203,205	Parity (number of biological children)	Have you ever given birth? Do you have any sons or daughters to whom you have given birth who are now living with you? How many sons and daughters?

6.4 Analysis Plan

The statistical software Stata® 12.1 (StataCorp, TX, USA) will be used for data exploration, cleaning and analysis.

Firstly, descriptive statistics for all variables provided will be generated for the study population. These will be presented by way of frequency and percentage tabulations. A univariate analysis will be done for all individual and household level variables to determine which variables to include in the regression analysis.

Univariate and multivariate analysis will be conducted on the dataset selected variables. Since most of the data is dichotomous data, frequencies will be computed. The level of

significance will be set at a probability less than 5% ($P < 0.05$). The researcher will use multivariate logistic analysis to evaluate how the unmet/met need is explained by the identified socio-demographic variables while we control for age and sex, to see if there are significant differences or behaviour in the analysis if controlled for both age and sex as control variables. Logistic regression is being used because the composite outcome of (met/unmet need) is dichotomous.

7. Ethics

The study will utilise secondary data that is already available in the public domain (<https://dhsprogram.com/data/Using-Datasets-for-Analysis.cfm>). The DHS data is available from DHS data administrator, with special permissions for datasets of respective countries. The research acquired permission for the use of the DHS Uganda 2011 dataset (see attached permission letter) Since the study relies on secondary data, no ethical issues are expected to arise. The Health Research Ethics Committee (HREC) of the University of Cape Town reviewed and approved the study before the study was conducted.

8. Stakeholder Reporting and Implementation

The study findings will be published as a journal article and policy brief. The journal article will be submitted for peer review to appropriate journals. It will also be availed to the University of Cape Town's Health Economics Unit, the Ugandan department of statistics and Ugandan ministry of Health.

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Part B: Structured Literature Review

1. 1.0 Introduction to the Literature Review

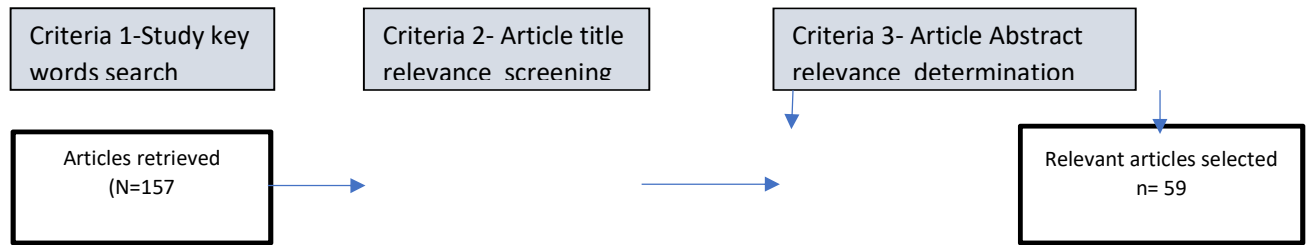
This section presents the structured theoretical, methodological and empirical literature review associated with unmet needs and its determinants among adolescents. Below is a summary of our approach to literature search conducted.

2. 1.1 Literature Search Strategy

Literature for the study was searched with a funnel-drill down strategy, where all related databases and peer-reviewed scientific studies in PubMed, Google Scholar, Measure DHS website publications, Population Reference Bureau, the journal of adolescent health articles and the Guttmacher Institute were all searched. The main search terms were including “unmet need”, “adolescent health”, “sexual and reproductive health”, “family planning”, and “contraception”. The studies to be reviewed were restricted to the last five (Ramiro et al, 2014) years except for articles obtained from the Measure DHS website and the journal adolescent health and contraceptive studies.

The search was restricted to the title and abstract of full text articles. The retrieved articles were screened by reviewing their titles and articles. Titles that were not relevant to the study objectives were excluded. The literature was further screened by going by reading through the abstracts of the identified articles, this then gave the final literature that was reviewed and discussed in depth in this section.

Figure 2: Diagrammatic representation of the literature search process



2.0 Background

2.1 Adolescent health and unmet need for contraception - a global context

It is estimated that about 1.2 billion of the world's population is adolescents aged (Whitaker et al, 2014) to 19. Adolescence is characterized as one of the most rapid phases of human development, and also where biological maturity precedes psychosocial maturity (UN, 2017). The characteristics of both the individual and the environment influence the changes taking place during adolescence. Younger adolescents may be particularly vulnerable when their capacities are still developing, and they are beginning to move outside the confines of their families. The changes in adolescence have health consequence not only in adolescence, but also over the life-course (UN, 2017). The unique nature and importance of adolescence mandates explicit and specific attention in health policy and programs.

In May 2017, WHO published a major report: *Global Accelerated Action for the Health of Adolescents (AA-HA!)*: Guidance to support country implementation (UN, 2017). The AA-HA! Guidance has drawn on inputs received during extensive consultations with Member States, United Nations agencies, adolescents and young people, civil society and other partners. It aims to assist governments in deciding what they plan to do and how they plan to do it as they respond to the health needs of adolescents in their countries. This reference document targets national-level policy-makers and program managers to assist them in planning, implementing, monitoring and evaluation of adolescent health programs.

Overall, WHO carries out a range of functions to improve the health of young people, including: production of evidence-based guidelines to support health services and other sectors; making recommendations to governments on adolescent health and the provision of high quality, age-appropriate health services for adolescents; documenting progress in adolescent health and development; and raising awareness of health issues for young people among the general public and other interested stakeholders (UN, 2017).

Adolescence is the period when many risky behaviors start having a major impact on their health as adults (UN, 2016). On average, developing countries have reported larger proportions adolescents and youth. The Global Health Agenda emphasizes the urgency for availability and access of SRH services to adolescents. This is further reinforced by the sustainable development goals (SDGs) three (Sean et al, 2012, four (Doyle et al, 2012, and five (Ramiro et al, 2014) (UN, 2016).

The reproductive choices made by young women and men have an enormous impact on their health, schooling, employment prospects and overall transition to adulthood. As the largest cohort of young people in history enter their childbearing years, their reproductive behavior will determine the growth and size of the world's population for decades to come. Literature shows that during adolescence, is when most adolescents begin sexual exploring (including unsafe sex) and engage in their first sexual encounters (3-6). Hence, adolescent girls are four (Doyle et al, 2012 times more likely to have an unintended pregnancy compared to other fertile aged populations. However, these young people face many significant sexual reproductive health challenges such as limited access to youth friendly services including information on growth, sexuality, contraception and family planning (Mbeba et al, 2012. This has led youth into risky sexual behaviors resulting to high STI and HIV prevalence, early pregnancy and vulnerability to delivery complications resulting in high rates of death and disability (Mbeba et al, 2012.

Although the amount of family planning interventions and contraceptive options has remarkably increased in the past century, adolescents still face distinct barriers to access these services. Evidence has demonstrated that adolescents need access to quality and youth-

friendly services and information provided under a social context appropriate to them (Mbeba et al 2012)(Bearinger et al, 2007) because inadequate supply of specific and timely SRH services and sexual education for adolescents increases their risk of sexual and reproductive consequences them (Mbeba et al 2012)(Bearinger et al, 2007).

Curbing unintended pregnancies among adolescent girls and young women has been rather topical in the past decade throughout the world them (Mbeba et al 2012)(Bearinger et al, 2007). Conservative and non-conservative societies alike appear to be improving in their outlook on adolescent sexual and reproductive health needs (WHO, 2015). However, the statistics show staggered improvement across the board with the developing countries lagging far behind them (Mbeba et al 2012)(Bearinger et al, 2007).

The provision of correct, consistent, and appropriate contraception to adolescent girls has several benefits. These benefits include saving lives, improving health and wellbeing and improving chances of attaining/completing higher educational qualifications. By spending a dollar for contraceptive services, a \$1.47 of pregnancy related costs will be saved. Similarly, if all female adolescents needing contraceptives used them, there would be 59% annual reduction in unintended pregnancies, a 62% decline in unplanned births, a 57% reduction in unsafe abortions and another 60% decline in miscarriages (Darroch et al, 2016). The benefits of providing SRH services to adolescents are important as their reproductive behaviour will determine the growth and size of the world's future populations for decades to come.

The provision of sexual and reproductive health services to adolescents in and of it is not sufficient. Researchers in different contexts show that there are barriers associated with sociocultural contexts, structural barriers, such as existence of health facilities and systematic barriers such as the attitude of health workers towards adolescents (Mbeba et al 2012)(Bearinger et al, 2007). (Linda, et al (2007), carried out a cross sectional review of publications focused on the reproductive health of adolescents (Bearinger et al, 2007). In this qualitative study, the researchers reviewed sets of studies from the Joint United Nations Programme on HIV/AIDS, WHO, Family Health International and the United Nations, respectively.

To overcome barriers to adolescent health education and services in many countries sound SRH strategies exist. However, they are not implemented, or are only weakly implemented. Many factors contribute to this. One key factor is lack of comfort in dealing with sensitive issues, and biases emanating from attitudes and values that are either personally held or grounded in religion or tradition act as potent barriers in preventing evidence-based recommendations from shaping policies, and in translating sound policies and strategies into action on the ground. Another is lack of capacity in planning, implementing and monitoring activities on adolescent health among government staff, and especially those in positions of authority at sub-national levels e.g. provincial and district levels.

When SRH strategies are not implemented effectively, adolescents and young people are unable to obtain the sexuality and reproductive health education they need in their schools and communities, and sexual and reproductive health services they need from health facilities in their communities. The result is unwanted pregnancies, unsafe abortions and STIs including HIV infection.

Studies have reported on the key areas of adolescent health focal areas: sexual behavior and use of contraceptives, birth and abortion rates, STIs including HIV/AIDS, strategies for prevention and health promotion and global avenues for improving adolescents' sexual and reproductive health them (Mbeba et al 2012)(Bearinger et al, 2007). These studies concluded that adolescents require access to quality youth-friendly services provided by trained clinicians to work with this target population. Sex education programs should offer accurate, comprehensive information while building skills for negotiating sexual behaviors. Girls and boys also need equal access to youth development programs that connect them with supportive adults and with educational and economic opportunities. They concluded that although progress has been made since the 1994 International Conference on Population and Development (ICPD), adolescents continue to be disproportionately burdened by threats to their sexual and reproductive health.

Furthermore, there is a need for community-based research to identify forces that support and oppose the provision of sexuality education and sexual and reproductive health services, and

education/health system research to identify managerial and technical bottlenecks. This needs to be followed by implementation research to overcome community resistance and education/health systems weaknesses, using tailored approaches.

Unmet need is a key proxy indicator of reproductive health services gap (Asiimwe et al, 2017). Adolescents are noted to be at all-time risk of negative health outcome because of many factors including delay marriage for education and career purposes (Bearinger et al, 2007). To address the unmet reproductive health needs, factors influencing adolescents' uptake of these services and those influencing the provisions of the services by the health providers must be explored. These factors constitute the determinants of access to reproductive health services. There are two types of unmet need, the first type is unmet need for limiting which is defined as number of women who are sexually active and do not want to have more children but are not using effective family planning methods. The other is unmet need is for spacing which is when a woman wants to postpone next birth but she is not using an effective method to do so (Machiyama et al, 2017).

For the purposes of this study the unmet for limiting is the operating unmet definition.

Earlier research in the area focused on determinants at individual level. These include socioeconomic factors (poverty); demographic factors (age, education level, religion, marital status and age of marriage) (Andersen et al, 2007) and psychosocial factors (behavioral change) (Andersen et al, 2007). Researchers also considered the determinants at family and community levels (Andersen et al, 2007). In addition, recent research studies have considered access as between to reproductive health services as interplay between health care system providers and individuals, households, and communities. It is rather apparent that more needs to be explored in terms of understanding female adolescent sexual and reproductive health needs, more specifically, in sub-Saharan Africa, which accounts for over 85% of housing adolescents (UNFPA. et al, 2014).

2.2 Adolescent Unmet need for contraception-sub saharan context

Majority (85%) of the world's adolescent population resides in Sub-Saharan Africa (SSA). Adolescents within this region also constitute a larger proportion of the population (UNFPA, 2014). The UNFPA report (2014) documented that in 15 SSA countries, half the population was under the age of 18 (UNFPA, 2014). Furthermore, according to the New Population Reference Bureau projections, by 2050 Africa's adolescent population will significantly

increase to over 2.6 billion (WHO, 2014). Hence, there is an urgent need to improve the behaviors and health of this target population.

Determining the accurate number and timing of births is crucial for health, population growth and progression for women and girls, their families and communities (Darroch et al, 2014). Addressing the unmet need for family planning or contraception in SSA will have positive benefits, such as improving the financial savings in education and maternal health, whilst deterring maternal deaths during childbirth, abortions and number of pregnancies (Saban et al, 2006). Furthermore, if the unmet need for contraception is achieved, this can reduce the fertility rate. New findings demonstrates that if the unmet need for family planning or contraception is accomplished for all women in developing countries, this can prevent 54 million unintended pregnancies, which includes 21 million unplanned births, 26 million abortions, and 79 000 maternal deaths (Darroch et al, 2014). The Population and Sustainability Network (Wellings et al, 2015) emphasized that simply meeting unmet need for contraception can reduce population growth, while increasing women rights and empowering them and their families.

However, in spite of the above-mentioned advantages, in the developing world, use of contraceptives is considerably lower with high fertility among adolescent girls. In SSA, very small proportions of unmarried, sexually experienced girls aged 15–19 years used contraceptives at most recent sex. Four percent in Benin was reported to use contraceptives, (Whitaker et al, 2014).7 percent in Kenya and (Wellings et al, 2015).4 percent in Mali. According to a report, in SSA, 16 percent of all births each year is reported by older adolescent girls aged 15 to 19 (UNFPA, 2014). Similarly, in LMICs, almost (Whitaker et al, 2014)% of girls become pregnant by age 16, with the highest rates in Sub-Saharan Africa and South Central and Southeast Asia (Morris et al, 2015).

New evidence by the Guttmacher Institute entitled “*Adding It Up: Investing in Contraception and Maternal and Newborn Health, 2017*” shows that contraceptive services and maternal and newborn health services fall far short of needs in developing countries. Findings demonstrate that 214 million women in developing regions want to avoid pregnancy, however, for several reasons are still not using a modern contraceptive method (Guttmacher Institute, 2017). It was further reinforced that abundant women or girls and newborns still lack access to proper sexual and reproductive health services. The study also reported that women in Africa who gave birth in 2017, less than half of these pregnant women receive four

or more antenatal visits and just over half give birth in a health facility (Guttmacher Institute, 2017).

In developing countries, more than (Wellings et al, 2015) million women who are married or in a co-habituating relationship are estimated to have an unmet need for contraception. A recent assessment of unmet need analyzed surveys from 53 countries, mostly conducted between 2000 and 2005 found that 1 in 7 married women and 1 in (DiCenso et al, 2002) never-married women have an unmet need for family planning (Sedgh et al, 2007). Regional averages show women of reproductive age in SSA having a 24 percent unmet need.

The unmet need is higher among married adolescents aged 15–19 compared to among sexually active unmarried adolescents (74% versus 64%). Furthermore, younger adolescents have higher unmet need than do older adolescents: 72 percent of sexually active 15–17-year-olds who want to avoid pregnancy are not using modern contraceptives, compared with 65 percent of those aged 18–19 (Guttmacher Institute, 2017). The need for contraceptives is also disproportionately distributed in sub-Saharan Africa, with the most need being in Middle and East Africa, where Uganda is located.

Evidence from the Demographic and Health Surveys (Sarnquist et al, 2014) from 18 least developed Sub-Saharan African nations, which included 45,054 adolescent girls aged 15-19 years, shows that in this target population exists a mismatch between their desire for contraception and its use; and especially preferred methods are oral and injectable contraceptives. For instance, majority of adolescents (92.4%) surveyed reported not using any method of contraception, whilst 21.6% reported being sexually active (Sarnquist et al, 2014).

2.3 Adolescent health and Unmet need for contraception in Uganda

In 2010, eleven million of Uganda's population of 33.4 million comprised of young individuals aged 10 to 24 (UNFPA, 2014). This number is estimated to increase to 17.9 million by 2025 and to 29.5 million by 2050 (UNFPA, 2014). This number is estimated to increase to 17.9 million by 2025 and to 29.5 million by 2050 (UNFPA, 2014), Uganda has the highest pregnancy rate, where 33 percent of Ugandan women having given birth before the age of 18 years (Renzaho et al, 2017). This high birth rate among adolescents is further exuberated by unmet need for modern contraceptive methods of almost half of the fertile and sexually active women (Renzaho et al, 2017). In this region, approximately 46 percent of all young women between 20 to 24 years of age were married by age 18. In addition, older adolescent girls (15-19 years) reported a (Wellings et al, 2015) percent birth rate annually,

whereas, (DiCenso et al, 2002) percent of married adolescent girls only use a modern method of contraception (UNFPA, 2014).

This current study has noted the urgency to extend the context to incorporate the entire country and to modify the user group to be adolescent’s male and female. The current research also notes that there is an imperative need to extend the service output from family planning to the comprehensive suite of sexual and reproductive health services. This, to the researcher’s knowledge is among the few known analyses of the UDHS with the scope covering adolescent, whole suite of reproductive health as well as both rural and urban Uganda. The methodological section describes how this study intends to evaluate the access to reproductive health services among adolescents in Uganda.

The state of health and SRH services, in particular in Uganda, are not any different than other Sub-Saharan countries (Westoff et al, 2012). This region has a life expectancy at birth male: female ratio of 56:58 in 2010 (UDGS, 2012). Uganda spends only 8 percent of its GDP on health services, which translated to USD 33 per capita on health, similar to other low-income countries; however, extremely lower as compared to Eastern African regions who are in the same GDP bracket (USAID, 2011). Infant mortality rate in Uganda remains high, at 76 per 1,000 live births, although there has been a decline from 85 per 1,000 live births in 1995 (World Bank 2014). The maternal mortality ratio for Uganda has declined significantly in recent years but is still above the Millennium Development Goals (MDGs) 2015 target of 150 deaths per 130,000 live births. As of 2005, Uganda’s Maternal Mortality Ratio (MMR) was estimated to be at 435/150,000 live births down from 527 deaths in 1990 (UDHS, 2006).

Table 1: Uganda’s selected health, sexual and reproductive health comparative statistics

Selected Indicators (Former Name)	Selected Indicators (Name in Database)	Uganda	Sub-Saharan African Countries' Average	Low-Income Countries' Average	Year Data was obtained	Source of Data (Uganda/Averages)
Fertility rate	Fertility rate, total (births per woman)	6.24	5.00	4.70*	2009	WDI 2011

Contraceptive prevalence rate	Contraceptive prevalence (% of women ages	23.70**	20.97	33.00	2009	WDI 2011
Life expectancy at birth	Life expectancy at birth, total	53.07	53.75	58.44	2009	WDI 2011
Under-five mortality	Mortality rate, under-5	98.90	(Wellings et al, 2015)1.23	(Whitaker et al, 2014)7.87	2010	WDI 2011
Maternal mortality ratio	Maternal mortality ratio (modelled)	430	640	590	2008	WDI 2011
Prevalence of HIV total	Prevalence of HIV, total	6.50	5.45	2.57	2009	WDI 2011
	(% of population)					

Source: World Bank, World Development Indicators Database 2011. Note: WDI=World Development Indicators (World Bank). *=2008 Data; **=2006 Data

Uganda's per capita spending on health is significantly lower than other SSA countries. The above data supports stakeholder views that the health sector in Uganda is under-funded, especially in terms of government contributions. The stakeholders include health workers, planners and administrators working in at all levels of the Ugandan health care system. Out-of-pocket (OOP) spending was high at 53 percent in 2009, signifying a burden on the citizens of Uganda (Doyle et al, 2012).

Despite this progress in service availability, significant challenges remain. Most of these challenges pertain to high infant and maternal mortality rates, especially among younger mothers. Majority of women still lack access and availability to essential primary health care services, such as family planning, SRH care and antenatal (Atuyambe et al, 2015).

Availability and accessibility to a variety of contraceptive methods ensures that the process of planning families is less cumbersome and reduces the likelihood of unplanned pregnancies and abortions. The 2001 Uganda Demographic Health Survey (UDHS) findings showed that only 24 percent of currently married women report current use of contraception and 41 percent have an unmet need for family planning (Renzaho et al, 2017). Although between 2001 and 2012, there has been a notable decline to a 34.3% unmet need, this statistic is still relatively high. In 2000-01, the UDHS results revealed that approximately two of every five births were unplanned in the 5 years preceding the survey (UDHS, 2001). Reproductive health contributes to physical, mental and social wellbeing (UNFPA, 2017). The State of

Uganda Population Report (2012) indicates that the sexual and reproductive health care services in Uganda are offered by both public and private sectors (UNFPA, 2017). However, majority of the population still receive these services from government facilities. In a bid to ensure improved access and availability to proper family planning services, the Ugandan government has revised the 1995 National Population Policy (UNFPA, 2017). The national policy currently emphasizes access to sexual and reproductive health education and services as a human right and requires all primary healthcare facilities to provide minimum sexual and reproductive health care services that focus mainly on family planning; thus, aims to reduce the unmet need for family planning (UDHS, 2006). Furthermore, Ugandan policies are favorable for adolescent health and development. However, a main limiting factor is the translation of these policies into practice. “Uganda has Adolescent Health Policy Guidelines and Service Standards, the National Minimum Healthcare Package which includes sexual reproductive health (SRH) and rights for adolescent, and the Health Sector Strategic and Investment Plan (HSSIP) (Renzaho et al, 2017).

2. Theoretical Review

This section will provide the theoretical and empirical motivations underpinning the deprivation measurements. It will also provide a conceptualisation of the relationship between area level deprivation and obesity.

2.1 Types of family planning Unmet need.

There are two types of unmet need, the first type is unmet need for limiting which is defined as number of women who do not want to have more children; but are not using effective family planning methods. Whereas, the other is unmet need for spacing, which is when a woman wants to postpone next birth, but she is not using an effective method to do so (Westoff et al, 2012). UDHS (2001) also showed that currently married women aged 15-49 are more likely to have an unmet need for spacing (25%) than those for limiting (16 %) (UDHS, 2001). Unmet need for spacing is more common among women whom are younger, live in a rural area, and have limited exposure to mass media. This finding further underpins the need to understand the problem of unmet need among the adolescents and is thus a key input into the conceptual framework of this study.

2.2 Measuring unmet need for contraception and its determinants

Several reports and studies have shown that the use of effective contraceptives influences the level of fertility among the population United Nations World Fertility Report (2011 attributes the increasing use of contraception, particularly modern contraceptive methods, as one of the major factors associated with declines in total fertility. However, the 2011). Uganda Demographic and Health Survey (UDHS), states that Uganda has one of the highest total fertility rate (TFR), at 6.7 children per woman in Africa (USAID, 2011). It also has a young population (with 67% of below age 24), as this large cohort of young people entering the childbearing years, without matching supportive economic progress, their reproductive behavior can lead to a poverty driven population growth (Atuyambe et al, 2015). High fertility rate among young women calls for intensive contraceptive programs in Uganda.

According to the series of DHS surveys conducted from 1996 to 2011), Uganda's fertility rates have remained persistently high despite major interventions such as the introduction of free Universal Primary Education – this intervention has reduced child marriages, but the benefits are yet to accrue ensuring contraceptive uptake (Asiimwe et al, 2017). Uganda is still struggling with a low contraceptive prevalence rate (CPR) of 30% (UDGS, 2012). The CPR varies from 21 percent in rural areas to 43 percent in urban areas. Uganda Demographic and Health Survey (UDHS) data show an increase in the unmet need for family planning between 1995 and 2006, estimated at 41 percent in 2006 (Uganda Bureau of Statistics [UBOS] and ORC Macro 2006). This low CPR coupled with a high-unmet need for family planning indicates poor access to reproductive health services (UDHS, 2012).

A study of reproductive health of young adults in Uganda (Khan et al, 2008) showed that Ugandan adolescents are generally knowledgeable about contraceptive methods. Ninety-two (92%) percent of women aged 15-19 and ninety-eight (98%) percent of those aged 20-24 had heard of at least one modern method of contraception (Khan et al, 2008). In this reported study, contraceptive use was lower among younger Ugandan women, with only 9 percent of women aged 15-19 years using some sort of family planning method at the time of the survey. However, by the time women reach age 20-24, levels of contraceptive use are almost as high as among women 25-39 years (Khan et al, 2008). A factor that was associated with individual and household incomes. Another interesting finding of this study was that young women rely more heavily on traditional contraceptive methods. Given the known inefficacy of traditional methods, ensuring that females especially adolescents have access to modern contraceptives is a priority. As such this study looking at the unmet need for contraception among female adolescents in Uganda, will provide the necessary information on the extent

and determinants of the unmet need. Similarly, a study conducted by Asimwe and his colleagues (2014), reported that numerous factors (i.e. socio-economic, perception on distance to health facility, listening to radio and geographical differences, age, education status or employment) are associated with modern contraceptive use among young and older women in Uganda and that there should be a concerted effort to address the differences (Asimwe et al, 2017). To systematically explore the challenge, the researcher will use the Andersen model to examine the factors associated with accessing health services.

2.3 Determinants of Unmet need for contraception among female adolescents

As previously explained an unmet need for family planning refers to the gap amid a woman's reproductive desire to not get pregnant and her contraceptive behavior (Machiyama et al, 2017). For instance, a woman may state that she does want any more children at all or for the next 2 years, but is currently not using any modern method of contraception (Machiyama et al, 2017). Thus, it is rather important to explore the determinants or reasons that hinder a female adolescent's unmet need for contraception and her choice to time and space out her pregnancy (or -ies) as well as the number of children.

There are various determinants that affect the unmet need for contraception and their significance differs across regions. These include demographic factors (i.e. age, education, place of residence); socioeconomic factors (i.e. employment status, wealth index); societal factors (i.e. cultural beliefs or norms, empowerment, exposure to FP messaging); accessibility, availability and acceptability of sexual and reproductive health care services, education awareness or uptake of these services and service provider-related factors.

The sections to follow will provide more information on each of these determinants and its association to the unmet need for contraception among female adolescents, but more specifically to Uganda.

2.3.1 Demographic and socio-economic determinants of unmet need for contraception

As mentioned previously, Uganda has the highest birth in the world, which is suggestive of early sexual activities in the absence of contraceptive use. Furthermore, a Ugandan study conducted among female adolescents reported that 1 out of 4 female adolescents were aware that they would become pregnant after their first sexual encounter.

In Uganda as in many other countries, some of the major determinants associated with contraceptive use include women's age, education, place of residence and socioeconomic status. Studies have reported findings that support this statement (UDHS, 2012).

Education is significantly associated with contraceptive use. According to the Uganda DHS (Lopez et al, 2013). Ugandan females who were more educated and more wealthier were more likely to use a method of contraception as compared to those that with little or no education and poorer (UDHS, 2012). This is because the former are better informed and usually more articulate. Educated women also tend to communicate more with their husbands/partners, to be more involved in family decisions and more able, in other words, to plan what happens in their lives, therefore, they have a high motivation for fertility control. Similar studies have shown this . “As expected the influence of education on reproductive health indicators is of great importance to monitor birth outcomes and health status of women” (Kabagenyi et al, 2016). Furthermore, education plays an imperative role is empowering a young girl or woman. Generally, if a woman is more educated, she has more access to knowledge, likelihood of being employed and hence this affects the way she sees the world and her empowerment and her decision-making.

Further secondary analysis of the data from the 2011 UDHS by Habaasa and Rutarema (2016), whom examined the actual factors of contraceptive use from a proportion of 3692 young Ugandan females, reported that important factors determining contraceptive use in this target group were age at first birth, history of previous birth, current age, and place of residence, education and socioeconomic status (Kabagenyi et al, 2016). The study found that greater than half of all females were aged 15-19 years and majority had reported first births in this age group. Furthermore, majority of these females lived in rural areas, were not married and with only primary education completed (Kabagenyi et al, 2016). Likewise, those aged below 15, who had given birth, were more likely to use contraceptive as a result of behavioral change, when were much older as compared to those who had no ever, but were sexually

active. Perhaps the reason is because these young adolescents realize their mistakes and forces a change of thought. This study is evident enough that young people have irregular use of contraceptives and only consider the option, once they have given birth, hence how age is a contributing factor to the high fertility rate in Uganda

Place of residence has been a predictor of contraceptive use. Evidence suggests women (young or old) who reside in rural areas have a higher unmet need for contraception as compared to those residing in urban regions . This could be attributed to the fact that women in urban areas have, among other things, more access and higher availability to contraceptives and that those in rural areas desire to have more children. It is worth mentioning that almost 80 percent of the Ugandan population resides in rural areas (Kabagenyi et al, 2016). Hence, a larger proportion of this younger female population resides here and who are in child-bearing reproductive years may not have proper sufficient access to SRH and family planning services etc.

Furthermore, wealth index has been an important contributing factor on women's use of contraception. Findings from studies in Uganda have found that females who were richer used contraceptives compared to their poorer counterparts . This implies that females in the former have more access to the desired services such as SRH or family planning services and thus, have more knowledge about contraception or in general family planning. This in turn, affects or guides thinking processes regarding child-bearing.

Hence, it is rather apparent information discussed above that various demographic and socio-economic variables does influence a young female's unmet need for contraceptive use.

2.3.2 Other determinants influencing the unmet need for contraception

Sexual and reproductive health and rights (SRHR) implies that a human right to their sexual and reproductive needs and health are met. In order for a young female adolescent or woman to maintain her SRH, she requires access to accurate information (e.g. seek, receive, and impart information related to sexuality and reproduction) and availability of these services and a choice of safe, effective, affordable contraception options are important role players.

Although, Uganda has a national adolescent health policy that incorporates adolescent health concerns at a government level and with the goal to improve young people's quality of life and standard of living, its impact on SRH needs of young people has been less than adequate. Evidence from previous studies conducted in SSA have reported that the young population in Uganda and other SSA regions as having lacked knowledge of contraception with limited access to contraception, and a lack of staff trained to address the SRH needs and education gaps. Thus, the fact that fewer young female adolescents in SSA use contraception is indicative a female can only use a contraceptive if they know about it and how to use it. Information and knowledge of any modern method of contraception is strongly associated with availability. Therefore, this is proof enough to say that women in SSA lack of knowledge means that contraceptives are not readily available to utilize and more needs to be done.

A study conducted by Asiimwe and his colleagues (2014) in Uganda using data from the 2011 UDHS investigated what factors were associated with modern contraceptive use among young and older women in Uganda (Asiimwe et al, 2017). The researchers reported that important factors, such as perception on distance to health facility, listening to radio and geographical differences are associated with modern contraceptive use and these differed among young and older married women aged 15–24 and 25–34, respectively (Asiimwe et al, 2017). Hence, this implies that mass media does indirectly influence SRH needs.

Another qualitative study using in-depth interviews carried out in Kenya among females aged 15-24 years, both users and non-users of contraceptives investigated the barriers to modern uptake of contraceptives among this target group (Ochako et al, 2015). Findings from the study provided insight that these females were aware of modern contraceptives and had knowledge or experience of at least one modern contraceptive. It is quite interesting that majority of participants did not consider condom as a method of contraception. In addition, the most important barriers to using modern contraceptives among younger females were side effects, myths and misconceptions. Many reported that their biggest fear was a specific contraceptive method would make them infertile. Young women learn about both true side effects and myths from their social networks (Ochako et al, 2015). Thus, these insights provide valuable information about how social networks or communities influence family planning, apart from personal beliefs or cultural practices.

In another study in Mtwara district of Tanzania which has the highest number of teenagers, whom begin childbearing at an early age, however, who rarely use SRH care services (Mbeba et al, 2012). Researchers undertook a qualitative study using focus group discussions, facility assessment interviews and case studies to investigate the barriers to utilization of SRH services among young people in this region. Reported findings suggest that variable as lack of youth friendly services, gender disparity and unfavourable socio-cultural practices may impact on accessing adolescent SRHS and rights (Mbeba et al, 2012). Therefore, this emphasizes the urgency to integrate youth friendly services in health facilities and promote behavioural change.

3.0 Conceptual Framework

3.1 Conceptual review

This section will provide a brief explanation of health seeking behavior and what are the different models that can be used to conceptualize the study on unmet need among adolescent. Thereafter, identify best fitting theoretical model that is suitable to develop the study's conceptual framework and how it relates to unmet need for adolescents.

3.1.1 Health seeking behaviour and health access models

Health seeking behaviour is defined as any action carried out by persons who perceive themselves to have a health issue so that they can be treated accordingly (Oberoi et al, 2016).

Health seeking behaviour is “preceded by a decision-making process that is further governed by individuals and/or household behaviour, community norms, and expectations as well as provider-related characteristics and behaviour” (Oberoi et al, 2016).

Health seeking behaviour can be explained by several models, such as health access models, health belief models, diffusion theory, and the Andersen Behaviour etc. Although the study acknowledges the existence of a wide-range of models, the researcher focuses mainly on the Andersen Behaviour Model.

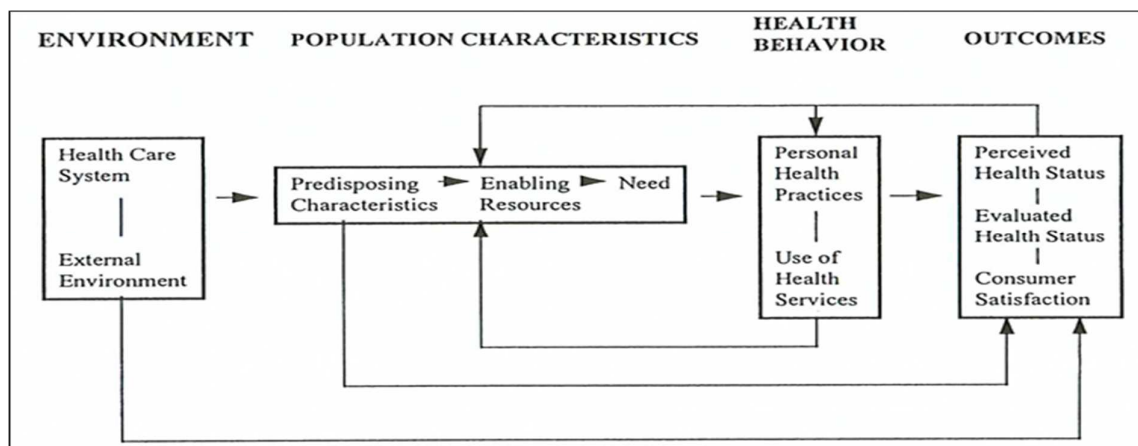
3.1.2 Andersen’s Behavioural Model

The behavioural model that health services primarily use, was initially developed by Ronald Andersen in 1968, and is one of the most commonly used framework to understand individuals’ access to health care (Andersen et al, 2007). Also, known as known as the “socio-behavioural model”, it considers an individual’s use of health services to be a function of three types of factors: (UN, 2017) predisposing factors, such as demographics, health beliefs, and other individual characteristics; (UN, 2016) enabling factors, such as health insurance and income and other personal, family, and (Sean et al 2011)(Wellings et al, 2015) community resources; and illness level or need factors, such as health (Andersen et al, 2007).

Andersen defines potential access as simply the presence of enabling resources, asserting that more enabling resources provide the means for use, and increase the likelihood that use will take place. He further has described realized access as the actual use of services, while equitable and inequitable access are defined by which predictors of realized access are dominant. He explained that equitable access occurs when demographic and need variables, account for most of the variance in utilization (Andersen et al, 2007). He further explained that inequitable access occurs when social structures as ethnicity and health beliefs and enabling resources as income determine, who gets medical care or treatment.

Herein, this study’s conceptual framework has been adopted from a combination of Anderson’s latest behavioural model (emerging model) in conjugation with Di McIntyre’s dimensional access model. The Andersen conceptual framework is summarized in Figure 1 below (Andersen et al, 2007):

Figure 3: Andersen’s conceptual framework explaining the influences of health behaviour



The Andersen Behavior Model has been applied in several contexts – one such being the Argentinian study (Jahangir et al, 2012) that explored the association between utilization of clinical preventive services with need, enabling, predisposing, and behavioral factors. Findings revealed that whilst predisposing and need determinants were associated with utilization, other enabling factors needed to be in place for effective intervention. Therefore, as contraceptives maybe available at health care facilities, other factors could hamper accessibility especially among adolescents.

The Andersen model theoretically explains the factors associated with health care service uptake (Andersen et al, 2007). In this study, we use the Andersen model to fully conceptualize access to sexual and reproductive health care services. However, given the unique needs of adolescents, the study conceptual framework model will further examine other determinants, more specifically those that pertain to the unmet need. The section that follows presents the study's conceptual framework model.

3.1.2 Conceptual Model for Unmet need among adolescents

Adolescent reproductive health is a state of complete physical, mental and social reproductive well-being and not merely the absence of disease (Asiimwe et al, 2017). To fully understand sexual and reproductive health access for this target population one needs to look at access in its entirety as a multidimensional concept that is based on the interaction between health care systems and individuals that require the services. Understanding constraints, barriers and enablers that influence health care seeking behavior of different individuals in different settings is critical in understanding the concept of access. The access dimensions of availability (physical access), affordability (financial access), and acceptability interact distinctively in individuals to determine accessibility.

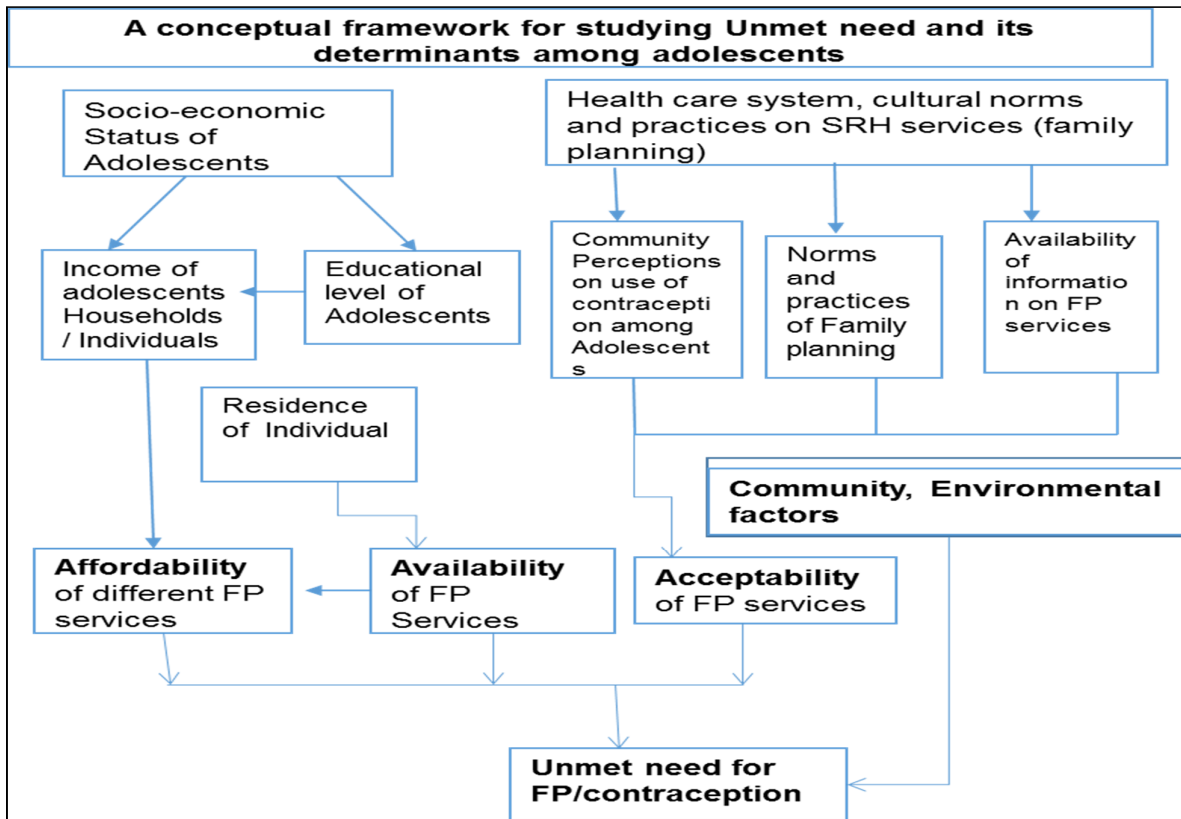
Individuals interact with many environmental circumstances and factors, mainly social economic and systemic in the process of accessing or not accessing health services. Several studies have shown that cultural norms and practices of a community affect perceptions of individuals towards sexual and reproductive health care services (17, 20, 45, 49). The scoping article by Wulifan *et al.* (2016) presents a conceptual framework that better encapsulates the complexity of the multidimensionality of unmet need for contraceptive (Wulifan et al, 2007). Wulifan *et al.* (2016) identify five levels that influence contraceptive uptake, and these include individual woman (user), partner level, couple level, household and community level, and health service level, respectively (Wulifan et al, 2007). Likewise, Asiimwe *et al* (2014) surveyed both the direct and indirect factors that influence modern contraceptive use among young and older Ugandan women (USAID, 2011). Their findings reveal that major factors associated with contraceptive use are age, ducation and socio-economic status (Asiimwe et al, 2017).

Understanding constraints, barriers and enablers that influence health care seeking behavior of different individuals in different settings in critical in understanding the concept of access. On the other hand, the state of the health care system of a country directly impacts on availability of services supply wise and how the sexual and reproductive health information flows and is available to target populations like adolescents, this in turn affects uptake and utility of services.

At an individual level, social economic factors mainly income, education levels and geographical location directly impact on two main dimensions of access namely affordability and availability to some extent. Roy Penschansky and J. William Thomas in their barrier focus model of 1981, asserts that use of services depends largely on the degree of “fit” between individuals (clients) and the health care system. They point out this fit can be measured in terms of availability, accessibility, and affordability of health care services to potential clients, as well as the degree to which the health care system is organized to accommodate clients.

Accessibility and affordability of sexual and reproductive health services will determine the access and thus use of sexual and reproductive health services by adolescents. This conceptual framework, adopts critical components from the Andersen model

Figure 3: Study conceptual framework



Therefore, this research study seeks to explore the unmet need for contraceptives among female adolescents in Uganda using the above-mentioned conceptual framework to systematically synthesize findings from the UDHS of 2011.

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Part C: Journal Article

Unmet need for contraception and its determinants among adolescent girls in Uganda: Findings from Demographic and Health Survey (2011).

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Abstract

Purpose

Approximately, 225 million women not desiring to have children are not using contraception. This has been referred to in the literature as unmet need for contraception and has significant implications for the development of adolescent girls. The purpose of this study, therefore, was to estimate the prevalence and determinants of unmet need for contraception use among adolescent girls.

Methods

An explorative quantitative secondary data analysis was conducted to determine factors associated with unmet need for contraception among adolescent girls in rural and urban areas of Uganda. Data used was the 2011 Ugandan Demographic and Health Survey (UDHS) data.

Results

About a third (31%) of the study population reported having unmet need for contraception. Factors that were significantly associated with unmet need for contraception among adolescents included; being in any form of marital union, having an educational level of secondary school or above, having a female household head and being in the richest category of wealth index, availability of family planning source and having ever tried to get pregnant.

Conclusions

Any efforts to address unmet need for contraception among adolescents in Uganda would need specific attention to factors influencing the uptake of family planning services. Education, parental control, marital status and wealth being key factors.

Key words: Unmet Need, Contraception, Adolescents, Family Planning, Uganda

Key Findings

- ✓ Unmet need for contraception remains a problem in Uganda among adolescents aged 15-19 with up to 31% reporting unmet need for contraception.
- ✓ Generally, adolescent girls in a marital union (married or cohabiting) were 73% less likely to have unmet need for contraception than those who were not married.
- ✓ In the urban areas, the odds of having unmet need for girls who had attended school were statistically more than for those girls with no education at all.
- ✓ In the urban areas, the odds of having unmet need was higher for girls with a female household head compared to a male household head.
- ✓ In the urban areas, the odds of having unmet need was higher for girls in the poor household compared to those in the richest households.

2.0 Introduction

Approximately, 225 million women not desiring to have children are not using contraception (Byass 2015). This means they have an unmet need for contraception. Among these an estimated 16 million people aged 15-19 years old fall pregnant annually and about 3 million girls aged 15-19 years' experience unsafe abortions (World Health Organization (WHO) 2014). The need for contraception among female adolescents cannot therefore be overemphasized.

Female adolescents face multiple challenges across the globe especially in developing countries. Accessing sexual and reproductive health services is one such challenges. In sub-Saharan Africa, an estimated 11.3 million female adolescents need contraception but only a third of these have access to it (Guttmacher Institute 2016). To date, it is estimated that more than 35% of all pregnancies occurring in adolescents in sub-Saharan Africa are unwanted and or unintended (Guttmacher Institute 2015). The statistics fall short in recording the actual need for sexual and reproductive health services because in most developing countries abortion (termination of pregnancies) is illegal and culturally unacceptable. This means only a small proportion of cases are documented and these would most likely be the cases with the worst outcome. Furthermore, the calculations of the perceived contraceptive need may be underreported due to sociocultural barriers that result in female adolescents underreporting sexual activity. In essence, this means that the provision of sexual and reproductive health services especially

contraception usage among female adolescents is a priority. This is even more important for Uganda, a country whose population is growing at a very fast rate recently. (Khan et al. 2008).

The unmet need for family planning in Uganda remains high at 34.3%, meaning that on average, three (3) out of every ten sexually active women are not using any contraception and yet they do not wish to be pregnant (UNFPA; 2014). This need is emphasized by the fact that in 2011, 24 percent of adolescents aged 13-19 years in Uganda were already mothers or pregnant with their first child. (ICF International & Uganda Bureau of Statistics 2012). Given that girls become sexually active earlier than boys and tend to miss out on education and career opportunities due to pregnancies, the impetus to look at girls cannot be overelaborated. A number of studies have looked at the wide populations and studied factors that affect uptake of family planning services. Using secondary analysis of the data from the 2011 UDHS, Habaasa and Rutarema (2016), examined the actual factors of contraceptive use from a proportion of 3,692 Ugandan females. The results showed that, factors determining contraceptive use were age at first birth, history of previous birth, current age, place of residence, education and socioeconomic status. (Khan, 2017).

Sexual and reproductive health services remain inaccessible to most females in developing countries, more so, to adolescents (UNFPA, 2013). This will provide a potential to add to the body of knowledge and provide an evidence base to help curb the menace of unmet need among adolescent girls. The purpose of this study, therefore, was to estimate the prevalence of unmet need for contraception use among adolescence girls aged 15 – 19 and to explore the factors associated with unmet need.

3.0 Methods

3.1 Data Source

The findings presented in this report are based on the data from the Ugandan Health and Demographic Surveys (UDHS, 2011) conducted in Uganda which is the current and most recent survey.

The UDHS is a nationally representative cross-sectional survey conducted every five (5) years by MEASURE DHS on behalf of the Ugandan Ministry of health and funded by the United States Agency for International Development. Although there are several UDHS databases available for analysis since the onset of the DHS, the latest dataset (2011) available was used. The study focused on adolescent girls aged 15-19 years. All respondents who responded to the unmet need questions were considered in this study.

3.2 Data Consideration

The UDHDS survey collects information from nationally representative samples of women of reproductive age (15–49 years old) on fertility; family planning; reproductive, maternal and child health; and other health issues. The Ugandan Health and Demographic Survey uses some tested and standardized questionnaires which the program has developed and refined over the past three decades. It is designed by U.S. Centers for Disease Control and Prevention and with partnership with the Multiple Indicator Cluster Surveys conducted by the United Nations Children's Fund (UNICEF).

3.3 Data Limitations

Readers should bear in mind several considerations when reviewing the data presented in this report. First, our analysis of the reasons for unmet need for contraception follows the categories established and reported by the Ugandan Health and Demographic Survey (UDHDS, 2011). Some of the reasons listed would benefit from more in-depth investigation which most include direct interview with most participants. Second, although the focus group (i.e. adolescence girls aged 15 – 19) were allowed to indicate multiple reasons for their unmet need (nonuse), most were restricted according to the UDHDS 2011 report to stop after giving one reason, which could result in underreporting of some barriers to using contraceptives. Third, the survey data provide a snapshot of all women's exposure to pregnancy and contraceptive needs at one point in time—at a population level. The data are not meant to predict how any individual sexual behavior or needs might change over time. A particular woman might move in and out of the categories studied (i.e., a user or nonuser of contraception; sexually active or not; wanting a pregnancy or not).

3.4 Ethical issues:

The study received ethical clearance from the University of Cape Town human research ethics committee. Approval for the study use of the data was obtained from the Demographic and health Survey program who are the custodians of the data.

3.5 Statistical Analysis

Data were filtered, cleaned, explored and analyzed using the statistical software Stata® 13 (Stata Corp, TX, USA) software. Contingency tables and percentages were used to assess the relationship between unmet need and relevant sociodemographic and other variables. A univariate logistic regression analysis was used to determine the association of various variables with unmet need for contraception. For the multivariate logistic regression, all explanatory variables deemed to have an association with unmet

need for contraception in the univariate models were included in the model. The analysis was done for the whole dataset as well as for rural and urban disaggregation.

4.0 Findings and Interpretation

4.1 Prevalence of Unmet need for contraception

Based on this operating definition of unmet need status, a total of 514 sexually active adolescent girls aged 15 to 19 years were included in the final analysis. Majority (39%) were aged 19 years and the least majority (4%) were aged 15 years. Out of the total number of participants, an estimated 31% with 95% CI (0.2689,0.3488) reported having unmet need for contraception.

4.2 Socio-demographic characteristics by unmet need status

Participants in the age group of 15-17 years had higher unmet need (35.5%) compared to the other age groups of 18 years with an unmet need of (31.1%) and 19 years with an unmet need of (26.9%). Urban residents also had a slightly higher unmet need compared to rural residents. With respect to marital status, adolescents who reported to be in a union had a higher unmet need (32.4%) than those who were not in any union (25.4%). Those with partners who had an educational level of secondary or above had the highest unmet need (35.5%) compared to those whose partners had primary education (29.8%). (Table 2)

Table 2 also shows that unmet need was higher among those who had never tried avoiding any pregnancy before (39.1%) compared to those who had ever tried to (17.3%). Adolescents who knew any source of a family planning method rather had a higher unmet (45.2%) need compared to those who knew no source of family planning method (28.2%). Also, a higher proportion of participants who listened to the media had unmet need (33%) compared to those who did not listen to any media (TV, print, radio) outlet (26.3%). There were slight differences in unmet need among workers (32.3%) and non-workers (28.6%) as well as among those who had no problem accessing a health facility (32.4%) compared to those who had a problem doing so (27.9%). With respect to wealth index groups, unmet need was slightly higher among the rich compared to the poor.

Table 1: Adolescents characteristics by unmet need status

Variable	Unmet need for contraception			
	Unmet need(N=158)	95% CI	No unmet need(N=356)	95% CI
	N(%)		N(%)	
Age				
15-17	54(35.5)	[28.3,43.5]	98(64.5)	[56.5,71.7]
18	50(31.1)	[24.4,38.6]	111(68.9)	[61.4,75.6]
19	54(26.9)	[21.2,33.4]	147(73.1)	[66.6,78.8]
Residence				
Urban	47(33.6)	[26.2,41.8]	93(66.4)	[58.2,73.8]
Rural	111(29.7)	[25.3,34.5]	263(70.3)	[65.5,74.7]
Marital status				
Single	31(25.4)	[18.5,33.9]	91(74.6)	[66.1,81.5]
In a union	127(32.4)	[27.9,37.2]	265(67.6)	[62.8,72.1]
Highest educational status				
Secondary and above	40(32.5)	[24.8,41.3]	83(67.5)	[58.7,75.2]
Below secondary	118(30.2)	[25.8,34.9]	273(69.8)	[65.1,74.2]
Husband/Partner's Education Level				
Below secondary	74(29.8)	[24.5,35.8]	174(70.2)	[64.2,75.5]
Above secondary	54(35.5)	[28.3,43.5]	98(64.5)	[56.5,71.7]
Missing information	30(26.3)	[19.0,35.2]	84(73.7)	[64.8,81.0]
Listens to media				
Bad	29(23.6)	[16.9,31.9]	94(76.4)	[68.1,83.1]
Good	129(33)	[28.5,37.8]	262(67)	[62.2,71.5]
Wealth Index				
Poor	64(27.8)	[22.4,34.0]	166(72.2)	[66.0,77.6]
Rich	30(35.7)	[26.2,46.5]	54(64.3)	[53.5,73.8]
Richest	64(32.0)	[25.9,38.8]	136(68.0)	[61.2,74.1]
Sex of household head				
Male	120(30.7)	[26.3,35.5]	271(69.3)	[64.5,73.7]
Female	38(30.9)	[23.3,39.6]	85(69.1)	[60.4,76.7]
Ever tried to avoid pregnancy				
No	124(39.1)	[33.9,44.6]	193(60.9)	[55.4,66.1]
Yes, used outside calendar	34(17.3)	[12.6,23.2]	163(82.7)	[76.8,87.4]
Accessibility (distance to health facility)				
Big problem	53(27.9)	[22.0,34.7]	137(72.1)	[65.3,78.0]
Not a big problem	105(32.4)	[27.5,37.7]	219(67.6)	[62.3,72.5]
Currently working				
No	63(28.6)	[23.0,35.0]	157(71.4)	[65.0,77.0]
Yes	95(32.3)	[27.2,37.9]	199(67.7)	[62.1,72.8]
Availability: source of family planning for non-users: any source				
No	23(28.4)	[19.6,39.2]	58(71.6)	[60.8,80.4]
Yes	135(45.2)	[39.6,50.9]	164(54.8)	[49.1,60.4]

4.4 Determinants of uptake of unmet need for contraception

4.4.1 Univariate and Multivariate logistic regression analysis

4.4.1.1 Complete model

In the complete model (table 3), in the univariate analysis, availability of source of family planning method (COR = 2.08, 95% CI: [1.217,3.541]), previously tried to avoid a pregnancy before (COR = 0.32, 95% CI: [0.210,0.501]) were statistically significantly associated with unmet need for contraception. Also, the odds of having a good media listening behaviour compared to having a bad one was marginally significant at 10% significance level (COR = 1.60, 95% CI: [1.001,2.545]) in the univariate analysis.

In the multivariate analysis, marital status and availability were significant at 5% and 10% level of significance respectively in the complete model. Adolescents who were in any form of union (either married or cohabiting) were less likely to have unmet need for contraception (AOR = 0.27, 95% CI: [0.118,0.629],) compared to those who were not in any union. Also, adolescents who had an available family planning source were more likely to have unmet need for contraception (AOR = 1.64, 95% CI: [0.914,2.945]) compared to those who had no available source of family planning.

4.4.1.2 Urban model

In the urban model (table 4), though only one variable in the univariate logistic regression analysis was significantly associated statistically with unmet need for contraception. This was having previously tried to avoid a pregnancy before (OR = 0.16, 95% CI: [0.076,0.358],) compared to those who had never tried to avoid a pregnancy before. Education level of adolescents, sex of household head and wealth index were statistically significantly associated with unmet need for contraception at 5% level of significance in the multivariate analysis. Listening to radio was also significant at 10% level of significance in the multivariate analysis. Adolescents with an educational level of secondary or above were over 3 times more likely to have an unmet need for contraception (AOR = 3.44, 95% CI: [1.062,11.116]) compared to those with an educational level below secondary. Also, adolescents with females as their household head were over 7 times more likely to have an unmet need for contraception compared to those with a male household head (AOR = 7.56, 95% CI: [1.288,44.589],). Furthermore, adolescents in the richest category of wealth index were 0.91 times or 91% less likely to have an unmet need compared to adolescents in the poor category of wealth index (OR = 0.09, 95% CI: [0.010,0.823]).

4.4.1.3 Rural model

In the rural model (table 5), two variables in the univariate logistic regression analysis were significantly associated statistically with unmet need for contraception. Having an available source of family planning method (COR = 2.14, 95% CI: [1.162,3.929],) compared to having no available source of family planning, having previously tried to avoid a pregnancy before (COR = 0.39, 95% CI: [0.230,0.672]) compared to those who had never tried to avoid a pregnancy before.

However, only marital status was statistically significantly associated with unmet need for contraception in the multivariate analysis. Adolescents in any form of marital union were about 0.78 times or 78% less likely to have an unmet need for contraception (OR = 0.22, 95% CI: 0.070,0.700]) compared to those in no union.

Table 2: Factors associated with unmet need for contraception among adolescents (Complete model)

Table 4: Univariate and multivariate analysis for unmet need.						
Variables	Univariate analysis			Multivariate analysis (Adjusted model)		
	Odds ratio	P values	95% CI	Odds ratio	P values	95% CI
Age						
15-17	1(ref)					
18	0.82	0.402	[0.510,1.309]	1.02	0.959	[0.576,1.788]
19	0.67	0.081	[0.423,1.051]	0.67	0.153	[0.387,1.160]
Residence						
Rural	1 (ref)					
Urban	1.20	0.395	[0.791,1.813]	1.24	0.505	[0.656,2.352]
Highest Education						
Below secondary	Ref			1 (ref)		
Secondary and above	1.12	0.624	[0.722,1.722]	1.49	0.203	[0.807,2.743]
Marital Status						
Single	Ref			Ref		
In a union	1.41	0.145	[0.889,2.227]	0.27	0.002	[0.118,0.629]
Husband/Partner's Education Level						
Below secondary	Ref					
Secondary and above	1.30	0.237	[0.843,1.990]			
Listens to Media (Radio, television & Newspapers)						
Bad	Ref					
Good	1.60	0.050	[1.001,2.545]	1.58	0.109	[0.903,2.751]
Sex of House hold Head						
Male	Ref					
Female	1.01	0.966	[0.651,1.566]	0.89	0.697	[0.507,1.575]
Currently working						
No	I (ref)					
Yes	1.19	0.372	[0.813,1.741]	1.20	0.441	[0.757,1.897]
Wealth Index						
Poor	Ref					

Rich	1.44	0.178	[0.847,2.451]	1.43	0.270	[0.759,2.680]
Richest	1.22	0.345	[0.807,1.847]	1.03	0.923	[0.553,1.924]
Availability of a family planning source						
No	1 (ref)			1 (ref)		
Yes	2.08	0.007	[1.217,3.541]	1.64	0.097	0.914,2.945]
Accessibility (distance to health facility)						
Big problem	Ref					
Not a big problem	1.24	0.285	[0.836,1.836]	1.32	0.244	[0.828,2.102]
Ever tried to avoid pregnancy						
No	1 (ref)					
Yes, used outside calendar	0.32	0.000	[0.210,0.501]	1.40	0.273	[0.766,2.570]
Goodness of fit p = 0.2504						

Table 3: Factors associated with unmet need for contraception among adolescents (Urban model)

Table 4: Univariate and multivariate analysis for unmet need.						
Variables	Univariate analysis			Multivariate analysis (Adjusted model)		
	Odds ratio	P values	95% CI	Odds ratio	P values	95% CI
Age						
15-17	1(ref)					
18	0.62	0.305	[0.254,1.534]	0.52	0.374	[0.127,2.175]
19	0.49	0.105	[0.210,1.160]	0.41	0.205	[0.101, 1.635]
Highest Education						
Below secondary	Ref			1 (ref)		
Secondary and above	1.27	0.502	[0.628,2.582]	3.44	0.039	[1.062,11.116]
Marital Status						
Single	Ref			Ref		
In a union	1.33	0.437	[0.646,2.744]	0.53	0.419	[0.116,2.446]
Husband/Partner's Education Level						
Below secondary	Ref					
Secondary and above	1.40	0.491	[0.540,3.613]			
Listens to Media (Radio, television & Newspapers)						
Bad	Ref					
Good	1.59	0.444	[0.484,5.238]	5.51	0.093	[0.753,40.469]
Sex of House hold Head						
Male	Ref					
Female	1.77	0.149	[0.815,3.840]	7.56	0.025	[1.288,44.589]
Currently working						
No	I (ref)					
Yes	0.90	0.769	[0.443,1.826]	0.87	0.821	[0.272,2.807]
Wealth index						
Poor	Ref					
Rich	1.60	0.514	[0.387,6.641]	0.30	0.366	[0.022,4.085]
Richest	0.84	0.754	[0.288,2.467]	0.09	0.033	[0.010,0.823]
Availability of a family planning source						
No	1 (ref)			1 (ref)		
Yes	1.49	0.506	[0.457,4.886]	1.49	0.602	[0.331,6.734]
Accessibility (distance to health facility)						
Big problem	Ref					
Not a big problem	1.37	0.516	[0.528,3.559]	0.86	0.837	[0.203,3.640]
Ever tried to avoid pregnancy						
No	1 (ref)					
Yes, used outside calendar	0.16	0.000	[0.076,0.358]	0.96	0.947	[0.271,3.385]
Goodness of fit p = 0.8287						

Table 4: Factors associated with unmet need for contraception among adolescents (Rural model)

Table 4: Univariate and multivariate analysis for unmet need.						
Variables	Univariate analysis			Multivariate analysis (Adjusted model)		
	Odds ratio	P values	95% CI	Odds ratio	P values	95% CI
Age						
15-17	1(ref)					
18	0.90	0.715	[0.518,1.571]	1.13	0.719	[0.590,2.151]
19	0.74	0.282	[0.433,1.276]	0.74	0.354	[0.394,1.394]
Highest Education						
Below secondary	Ref			1 (ref)		
Secondary and above	0.94	0.833	[0.516,1.705]	1.10	0.816	[0.494,2.447]
Marital Status						
Single	Ref			Ref		
In a union	1.67	0.117	[0.880,3.156]	0.22	0.010	[0.070,0.700]
Husband/Partner's Education Level						
Below secondary	Ref					
Secondary and above	1.20	0.481	[0.719,2.014]			
Listens to Media (Radio, television & Newspapers)						
Bad	Ref					
Good	1.56	0.092	[0.930,2.611]	1.50	0.196	[0.811,2.775]
Sex of House hold Head						
Male	Ref					
Female	0.77	0.344	[0.446,1.326]	0.65	0.195	[0.333,1.252]
Currently working						
No	I (ref)					
Yes	1.41	0.153	[0.881,2.245]	1.40	0.218	[0.820,2.386]
Wealth index						
Poor	Ref					
Rich	1.34	0.331	[0.745,2.397]	1.28	0.475	[0.648,2.542]
Richest	1.29	0.342	[0.761,2.197]	1.54	0.221	[0.771,3.083]
Availability of a family planning source						
No	1 (ref)			1 (ref)		
Yes	2.14	0.015	[1.162,3.929]	1.67	0.134	[0.853,3.281]
Accessibility (distance to health facility)						
Big problem	Ref					
Not a big problem	1.17	0.498	[0.745,1.829]	1.39	0.205	[0.835,2.309]
Ever tried to avoid pregnancy						
No	1 (ref)					
Yes, used outside calendar	0.39	0.001	[0.230,0.672]	1.74	0.145	[0.827,3.652]
Goodness of fit p = 0.6589						

5.0 Discussion

5.1 Unmet need for contraception in the general population

The purpose of this study was to investigate the prevalence of unmet need for contraception among female adolescents in Uganda and to explore some of its determinants. Unmet need was generally high,

about 31% of female adolescents had unmet need for contraception. This was similar to the prevalence of unmet need for contraception (34.3%) in the general population of Uganda as reported by the 2011 UDHS. Thus, about 31% of young of girls who are were actively engaging in sexual intercourse are not using any family planning method to avoid pregnancy even though they did not want to get pregnant at the time. This has serious implications for unwanted teenage pregnancies considering the very youthful nature of the Ugandan population (with 67% below age 24) coupled with a very high fertility rate of 6.7 children per woman in Uganda as reported by the 2011 UDHS. Unwanted pregnancies have implications for unsafe abortions and unwanted child birth which also have implications for poverty and overall socio-economic burden.

In this study, marital status was found to be associated with unmet need for contraception for the general adolescent population and those living in the rural areas. Adolescent girls who reported being in any form of union (either married or cohabiting) with a partner were about 73% less likely to have an unmet need compared to those who were single or not in any union at the time. Married women or those in a union usually have the support of their partners and are more likely to want a child compared to women in no union. Though, it can also be assumed that people also marry usually to have children and are usually ready to expect a child. Thus, women in a union are more likely to want to be pregnant and by extension less likely to have an unmet need for contraception. This finding is consistent with other studies in the literature. One of such studies in Nigeria found marital status to have a significant protective effect on unmet need. (Oginni, 2015). Another study based on the demographic and health survey in Ethiopia also found marital status to have a protective effect against unmet need for family planning (Ayele, 2013).

Other marital conditions have also been shown to affect the probability of having unmet need among married women. A study conducted in Cameroon found husband's approval and also couple's discussion of family planning to have a protective effect against unmet need for contraception among women. (Ajong, 2016). Another study in Burkina Faso also found husband's approval to have a protective effect against unmet need. (Adebowale et al, 2014).

5.2 Unmet need for contraception by area of residence

In the urban population, educational status was associated with unmet need for contraception. Surprisingly, adolescents with an educational level of secondary school level or above were over 3 times

more likely to have an unmet need for contraception compared to their counterparts who had a below secondary level educational status. This is consistent with studies in Uganda that reports a discrepancy between knowledge of contraception and contraception usage. One of such studies reported a high knowledge level of contraception among adolescents aged 15-19 years of 92% and 96% for girls and boys respectively but contraceptive prevalence was only 9% (Clements & Madise 2004). The problem therefore doesn't seem to be due to a lack of awareness of contraception. It seems people well know about contraception but contraceptive usage rate is low and this partly accounts for unmet contraceptive need. This reveals that, knowledge about contraception doesn't seem to be the problem of the high unmet need prevalence in Uganda. This is because those who are more likely to know much about the importance of contraception are rather not using them. Also, adolescents with a female household head were over 7 times more likely to have an unmet need for contraception compared to those with a male household head in the urban model. Furthermore, adolescents in the richest category of wealth index were 0.91 times less likely to have an unmet need compared to adolescents in the poor category of wealth index also in the urban areas. These findings are consistent with a study in Nigeria which found female household heads and household wealth status as significant determinants of unmet need for family planning services among married women (Oginni et al, 2015).

According to the more recent UDHS 2016 report, 28% of Ugandan women have an unmet need for family planning, a decline from 34% in 2011 (UDHS, 2016). However, the new UDHS reveals an increase in the contraceptive prevalence rate (CPR) from 30% in 2011 to 39% in 2016 (UDHS, 2016). The new UDHS also showed that 51% of sexually active unmarried women are also currently using a family planning method, and 47% of the same category are using a modern method (UDHS, 2016). At the same time, demand for family planning has increased to 67% in 2016 (from 64% in 2011) (UDHS, 2016). Thus, despite the recent improvements in contraceptive usage, unmet need has declined. This means that those who actually need family planning and contraceptive usage are not being properly targeted by family planning interventions.

6.0 Conclusion and recommendations

Using the UDHS 2011 data this study has shown that empowering adolescent girls to access and use contraceptives should be a health priority at both policy and implementations level of the Uganda

government due to the high unmet need prevalence. High unmet need for contraception translates into high numbers of unintended pregnancies, and into high maternal mortality given Uganda's poor public health care system.

Well-designed and informed family planning policies and programs can address the problem of unmet needs by addressing issues of access and uptake barriers. It is clear that there is no one size fit in terms of mitigating the problems but it's important to consider the educational status, residence and marital status of these young women in finding a workable solution. The health system particularly ante-natal clinics can be used as a vehicle to educate pregnant women on family planning services available and how to access them. SRH Information, education and communication efforts have proven effective in most developed countries and could be employed in Uganda. The goal of the Ugandan government and the department of health should be to prepare and support women to use contraception in order to protect themselves from unintended pregnancies in the future. Family planning services and interventions should also target more vulnerable groups like the unmarried mostly in the rural areas who usually do not want to get pregnant and are sexually active since they are more likely to have unmet need.

Disclosure

We the authors report no financial or personal relationship(s) which may have inappropriately influenced us in writing this paper. We declare no conflicts of interest in this work.

Authors' contributions

Alex Magezi designed the study, performed the analysis and also drafted and prepared the manuscript. Olufunke Alaba who was the academic supervisor, contributed to the interpretation of findings, edited and reviewed the manuscript. All authors read and approved the final manuscript.

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Part D: Policy Brief

Unmet need for contraception and its determinants among adolescent girls in Uganda: Findings from Demographic and Health Survey (2011).

A Policy Brief – By Alex Magezi- 15th February 2018

1.0 Executive Summary

Unmet need for family planning refers to the gap amid a woman's reproductive desire to not get pregnant and her contraceptive behavior. This study focused on unmet need for limiting which measures the percentage of women who are sexually active, who do not want to become pregnant (give births) but are not using any contraception.

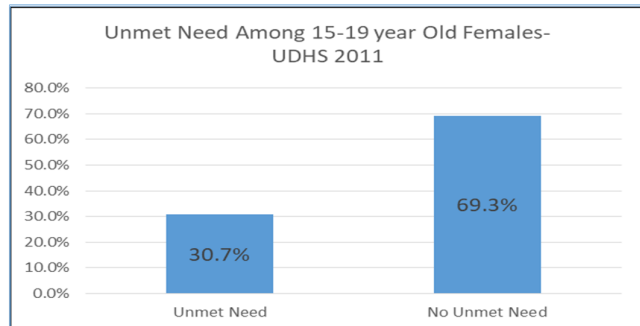
2.0 Introduction

According to the State of World Population Report 2013, Uganda has the youngest population in Africa. The phenomena of unmet need for family planning among adolescents have enormous impact on their health, schooling, employment prospects and overall transition to adulthood.

During adolescence years, most young girls begin sexual exploring (including unsafe sex) and engage in their first sexual encounters (Ramiro et al, 2014). Adolescent girls are four (4) times more likely to have an unintended pregnancy compared to other reproductive women age groups.

The use of contraceptives contributes to reduction in population growth which

Fig 1: Prevalence of Unmet need for contraception



- ✓ *Unmet need for contraception remains a problem in Uganda among adolescents aged 15-19 with up to 30% reporting unmet need for contraception.*
- ✓ *Education, place of residence and marital status are significantly associated with unmet need among girls in Uganda.*
- ✓ *Married adolescent girls were less likely of having unmet need than those who were not married.*
- ✓ *Odds for unmet need are higher in girls who have attended school than those who have not.*

subsequently leads to poverty reduction and preservation of the environment as well as demand for public goods and services.

Uganda also has the highest pregnancy rate, where 33 percent of Ugandan women having given birth before the age of 18 years (Westoff, 2012). This high birth rate among adolescents is further exasperated by unmet need for modern contraceptive that exists (Westoff, 2012).

A number of Ugandan studies have looked at women in general and studied factors that affect uptake of family planning services. However very few studies have looked at the unmet needs and its determinants among adolescents in a special population group such as adolescents.

The purpose of this study was to explore the extent of unmet need and its determinants among female adolescents in Uganda.

3.0 Approach & Results

A quantitative secondary data analysis study was conducted to determine the prevalence of unmet need for contraception and associated determinants among adolescent girls aged 15-19 years in Uganda, using the 2011 Ugandan Demographic and Health Survey (UDHS) data.

The results showed that, about a third (31%) of the adolescents reported having unmet need for contraception. From the multivariate logistic regression, adolescents who reported being in a union were about 73% less likely to have an unmet need compared to those who were not in any union.

In the urban areas, adolescents with an educational level of secondary school level or above were over 3 times more likely to have an unmet need for contraception compared to their counterparts who had a below secondary level educational status. Also, adolescents with a female household head were over 7 times more likely to have an unmet need for contraception compared to those with a male household head .Furthermore, adolescents in the richest category of wealth index were 0.91 times less likely to have an unmet need compared to adolescents in the poor category of wealth index .

Recommendations



To effectively address the problem of unmet need for contraception among adolescents, it is paramount that its determinants among different populations groups are well understood.

It is clear that there is no one size fit for all in mitigating the problems. Education status, residence and marital status of these young women must be of serious consideration in programming. Sexual Reproductive Health Information, education and communication efforts have proven effective in most developed countries and could be employed in Uganda.

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Appendix 1: Human Research Ethics Committee approval

	<p style="text-align: center;">UNIVERSITY OF CAPE TOWN Faculty of Health Sciences Human Research Ethics Committee</p>	
		<p style="text-align: right;">Room E32-24 Old Males Building Groote Schuur Hospital Observatory 7925 Telephone (021) 406 7687 • Facsimile (021) 406 6411 Email: post.letters@uct.ac.za Website: www.health.uct.ac.za/fhs/research/humanethics/forms</p>
<hr/>		
<p>27 June 2017</p>		
<p>HREC REF: 449/2017</p>		
<p>Dr O Alaba Health Economics Unit Public Health & Family Medicine Falmouth Building</p>		
<p>Dear Dr Alaba</p>		
<p>PROJECT TITLE: UNMET NEED FOR CONTRACEPTION AND ITS DETERMINANTS AMONG ADOLESCENT GIRLS IN UGANDA: FINDINGS FROM DEMOGRAPHIC AND HEALTH SURVEY (2011) - MPH candidate- Alex Magezi</p>		
<p>Thank you for submitting your study to the faculty of Health Sciences Human Research Ethics Committee for review.</p>		
<p>It is a pleasure to inform you that the HREC has formally approved the above-mentioned study.</p>		
<p>Approval is granted for one year until the 30th June 2018.</p>		
<p>Please submit a progress form, using the standardised Annual Report Form if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period. (Forms can be found on our website: www.health.uct.ac.za/fhs/research/humanethics/forms)</p>		
<p><i>We acknowledge that the student Alex Magezi will be involved in this study.</i></p>		
<p>Please note that for all studies approved by the HREC, the principal investigator must obtain appropriate institutional approval before the research may occur.</p>		
<p>Please quote the HREC REF in all your correspondence.</p>		
<p>Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.</p>		
<p>Yours sincerely</p>		
<p>PROFESSOR M. BLOCKMAN CHAIRPERSON, FHS HUMAN RESEARCH ETHICS COMMITTEE Federal Wide Assurance Number: FWA00001637, Institutional Review Board (IRB) number: IRB00001938</p>		
<p style="text-align: right;">HREC 449/2017</p>		