

ADOLESCENT GIRLS' NUTRITION AND SEXUAL AND REPRODUCTIVE HEALTH IN UGANDA:
UNDERSTANDING THE FACTORS THAT INFLUENCE HEALTH SEEKING CHOICES

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ABSTRACT

Adolescents comprise a large portion of the world's population, and their nutrition and sexual choices have global impacts. In Uganda, the population is growing rapidly, which is linked to the high fertility rates of the young population, an issue compounded by sexual preferences, early child marriages, high school drop-out rates, especially for girls, and large number of unintended pregnancies due to lack of access to and information on use of modern contraceptive methods. Adolescence represents a change in social roles - a transition from childhood to adulthood that is often swift, with lack of time to prepare and educate adolescents on their health needs, health rights, and nutritional requirements. During adolescence, high nutrient-dense foods are needed to accommodate increased nutrient requirements, especially for girls and pregnant adolescents. However, adolescents from poor urban and rural areas in Uganda have less access to nutritious food and health care than their wealthier urban counterparts, placing them at increased risk for undernourishment and malnutrition. In addition to having limited access to foods and undergoing changes in social roles, adolescent girls in Uganda are at increased risk for negative health outcomes since they marry young or are encouraged to participate in transactional sexual relationships, as their sexual exchange worth increases during puberty.

This thesis has assembled literature on culturally appropriate data paired with a multi-method, peer-to-peer approach to create a foundation for knowledge of adolescent girls and their needs and wants. Providing the space to include adolescent voices, the thesis takes a strengths-based, decolonized, de-siloed research approach that considers both traditional beliefs and adolescents' overall well-being. Adolescent involvement in research processes is critical to understanding the full impacts of nutrition and sexual and reproductive health and rights (SRHR) and to creating an adolescent-led foundation, which is currently missing in the literature. This context-building exercise can provide a base from which to evaluate current and future adolescent interventions. Assessment of available nutrition- and SRHR-based adolescent research and interventions has identified gaps in knowledge that have the potential to be filled through future mixed methods research proposed in this paper.

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TABLE OF CONTENTS

PERMISSION TO USE.....	ii
ABSTRACT.....	iii
ACKNOWLEDGEMENTS.....	iv
CHAPTER ONE: INTRODUCTION.....	1
1.0 Organization of the Thesis.....	1
1.1 Background.....	1
1.2 Purpose of the Study.....	3
1.3 Statement of Hypothesis and Research Questions.....	3
1.4 Significance of Study.....	4
1.5 Definition of Terms.....	5
CHAPTER TWO: LITERATURE REVIEW: UGANDA, AN OVERVIEW.....	8
2.0 Organization of Chapter.....	8
2.1 Purpose of the Literature Review.....	8
2.2 Uganda: An Overview.....	9
2.2.1 Population Characteristics.....	10
2.2.2 Religions of Uganda.....	10
2.2.3 Colonization and Ethnic Dispersion.....	10
2.2.4 Population Dispersion and Agricultural Trends.....	11
2.2.5 Economic Sources in Uganda.....	12
2.2.6 Dietary Patterns: An Overview.....	13
2.3 Health Service Delivery in Uganda: An Overview.....	14
2.4 Healthcare Challenges.....	16

2.4.1 Health Policy.....	16
2.4.2 Healthcare Infrastructure.....	17
2.4.3 Barriers to Access.....	17
2.4.4 Systematic Barriers to Access.....	18
2.4.5 Gendered Access Barriers.....	18
2.5 Uganda: Laws and Policies Impacting Adolescent Health.....	19
2.5.1 Constitution and Governance of Uganda.....	19
2.5.2 Nutrition and SRHR Delivery and Policies in Uganda: An Overview.....	20
2.5.2.1 Adolescent Policies.....	20
2.5.2.2 Adolescent Laws.....	22
2.5.2.3 Barriers to Implementation.....	22
2.5.2.4 Nutrition Service, Delivery, and Education.....	23
2.5.2.5 Nutrition Policies and Laws.....	25
2.5.2.6 SRHR Service, Delivery, and Education.....	25
2.5.2.7 SRHR Policies and Laws.....	27
CHAPTER THREE: LITERATURE REVIEW: FACTORS INFLUENCING ADOLESCENT NUTRITION AND SRHR KNOWLEDGE, ATTITUDES, AND CHOICES – KEY FINDINGS	29
3.0 Chapter Organization.....	29
3.1 Adolescents in Uganda.....	29
3.2 Adolescent Healthcare Delivery.....	30
3.3 Methodological Approach.....	32
3.3.1 Search Strategies.....	34

3.3.2 Search Terms.....	34
3.4 Understanding the Factors that Influence Health Seeking Choices.....	35
3.4.1 Individual Factors.....	37
3.4.1.1 Socioeconomic Status (SES)	37
3.4.1.2 Religiosity.....	40
3.4.1.3 Knowledge, Attitude, and Practices (KAP).....	41
3.4.1.4 Education.....	43
3.4.2 Relationship Factors.....	44
3.4.2.1 Parental Relationships.....	44
3.4.2.2 Household/Marital/Sexual Relationships.....	47
3.4.2.3 Social Support/Peers.....	51
3.4.3 Community Factors.....	52
3.4.3.1 SRHR/Nutrition Environment.....	52
3.4.3.2 Nutrition Environment.....	53
3.4.3.3 SRHR Environment.....	55
3.4.4 Societal Factors.....	59
3.4.4.1 Norms (Social and Cultural)	59
3.4.4.2 Gender Roles/Norms.....	62
3.5 Regulations, Policies and Laws Affecting Youth in Uganda.....	66
3.5.1 Access.....	66
3.5.2 Environment Impact	67
3.6 National and International Interventions Empowering Ugandan Adolescents.....	69
3.6.1 Nutrition and SRHR Interventions.....	69

3.6.2 Nutrition Interventions.....	69
3.6.3 SRHR Interventions.....	71
3.7 Summary.....	73
CHAPTER FOUR: PROTOCOL PAPER.....	76
4.0 Chapter Organization.....	76
4.1 Researcher’s Story.....	76
4.2 Researcher’s Position.....	77
4.3 Background.....	78
4.3.1 Cultural Beliefs and Norms.....	80
4.3.2 Cultural Consensus Modelling.....	81
4.4 Research Aims.....	82
4.5 Research Design.....	82
4.5.1 Cultural Consensus Survey.....	83
4.5.2 Generational Cultural “Truths”	84
4.5.3 In-Depth Interviews.....	85
4.5.4 Study Population and Target Centers.....	85
4.5.5 Participant Recruitment and Sample Size.....	86
4.5.6 Inclusion-Exclusion Criteria.....	87
4.5.7 Data Collection.....	87
4.5.8 COVID and Field Research.....	88
4.6 Ethical Considerations.....	89
4.7 Data Analysis.....	90
4.8 Discussion.....	91

4.9 Conclusions/Implication for Future Research.....	92
4.10 Acknowledgements.....	92
4.11 Funding.....	92
4.12 Conflicts of Interest.....	92
CHAPTER FIVE: FINAL THOUGHTS AND LESSONS LEARNED.....	93
5.0 Chapter Organization.....	93
5.1 Introduction.....	93
5.2 Key Reflections.....	93
5.3 Implications for Practice.....	94
5.4 Implications for Future Research.....	94
5.5 Concluding Thoughts.....	95
REFERENCES.....	96
APPENDICES.....	118
Appendix I: Adolescent Health and Development Policies.....	118
Appendix II: Strategic Plans to Operationalise Adolescent Health and Development Policies.....	120
Appendix III: National and International Laws Impacting Adolescent Health.....	122
Appendix IV: Inclusion/Exclusion Criteria.....	124
Appendix V: Medline Search Strategies.....	125
Appendix VI: CINHAL Search Strategies.....	126
Appendix VII: Embase Search Strategies.....	128
Appendix VIII: CCM Structured Questionnaire.....	130
Appendix IX: Nutrition and SRHR Information Overview Sheets.....	136

Appendix X: Participant Consent Form.....	140
Appendix XI: Nutrition and SRHR NGOs in Uganda.....	146

CHAPTER ONE: INTRODUCTION

1.0 Organization of the Thesis

Chapter 1 outlines the pertinent background information to the topics of this thesis, including the study's purpose, guiding research questions/hypothesis, the study's significance, and definition of key terms. Chapter 2 includes an overview of the Ugandan context, such as population characteristics, healthcare delivery, and nutrition and sexual and reproductive health and rights (SRHR) delivery and policies. This context building chapter provides necessary information for readers unfamiliar with Uganda. Chapter 3 reports on methodological approaches and findings of the in-depth literature review of available resources on adolescent nutrition and SRHR within sub-Saharan Africa (SSA). Chapter 4 is a protocol paper that outlines the preliminary intentions for this thesis, explaining that due to COVID-19, field research was halted. This chapter also provides future research approaches, details, and analysis plans. Chapter 5 addresses the final research question and highlights final thoughts, including lessons learned, potential policy/guideline recommendations, and implications for future research.

1.1 Background

Among adolescent girls in Uganda, a reciprocal relationship exists between undernutrition, education, and SRHR. Often, these girls are marginalised within their own households, have little power over their bodies, and suffer from inadequate nutrition. Adolescent girls in Uganda are at high risk for early marriage, unintended pregnancy, malnutrition, HIV and other sexually transmitted infections (STIs), and face delayed or lack of access to critical health services (Development Initiatives, 2018). Adolescence for girls is a time of high micronutrient demands due to rapid growth, requiring intake of nutrient dense foods, such as animal meats, which are globally more expensive to procure than plant-based foods. Adolescent girls born to families without the resources to provide them with a nutritious diet are at increased risk of developing micronutrient deficiencies (Development Initiatives, 2018). The burden of having to adequately feed an adolescent girl, especially in economically challenged rural and poor urban settings, can incentivize families to seek a bride price for the girl child, resulting in an early age

of first marriage (Harper et al, 2018). Early marriage increases an adolescent girl’s risk of contracting HIV and other STIs and of having multiple pregnancies early in life. Girls’ reproductive and sexual health (SH) is impacted by their lack of negotiating power and body autonomy and by entrenched cultural and social norms.

Food security exists when “*when all people at all times have both physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preference requirements for a productive and healthy life*” (Development Initiatives, 2018; Food and Agriculture Organization (FAO), 2006). Both FAO (2006) and Development Initiatives (2018) indicate that factors that influence dietary choices include availability, affordability, local eating patterns and cultural preferences, and interventions tailored to the situation. Interrelated determinants that influence adolescents’ nutrition security and health behaviours include available household resources, community socioeconomics, access to nutritious foods, levels of knowledge and skills, and policy regulations.

In Uganda, the cycle of early fertility, health-related challenges, and low economic opportunities can curtail nutrition and economic well-being of adolescent girls, rendering them more vulnerable as women later in life. Adolescents make reproductive health and nutrition decisions and choices based on their knowledge, understanding, and availability of such choices, and they require information about SH and sexual and reproductive health services specific to their needs (Chandra-Mouli et al., 2015; Harper et al., 2018; Plummer et al., 2017; UNICEF, 2015). Barriers to use of SH services are common among developed and developing countries, and gaps in service delivery negatively impact adolescent confidentiality, respect for their autonomous abilities, and support of involvement in their care (Regmi et al., 2010). Research has shown that adolescents’ knowledge of and access to nutrition and SRHR services is important for their physical, and psychosocial well-being. A lack of knowledge about the consequences of unprotected sex predisposes girls and women to unwanted pregnancies, unsafe abortion, and related complications, and STIs (Development Initiatives, 2018; Plummer et al., 2017; United Nations, 2012). Nutrition and SRHR decisions and choices can either negatively or positively affect the lives of Ugandan adolescents. This study explores Ugandan adolescents’ nutrition and SRHR knowledge and practices and factors that influence these choices.

1.2 Purpose of the Study

The purpose of this study was to gain understanding of factors that influence Ugandan adolescents' nutrition and SRHR knowledge, attitudes, and choices. Influencing factors include individual factors (SES, religion, etc.), relationship factors (parental involvement, social supports, etc.), community factors (food environment, SRHR environment, etc.), societal factors (gender norms, cultural norms, etc.), and youth-focused policies, laws, and regulations.

1.3 Statement of Hypothesis and Research Questions

Through a cultural consensus model (CCM), it was hypothesized that adolescents would have adequate knowledge of nutrition and SRHR cultural “truths,” but personal attitudes and practices would be conflicting. In other words, although adolescents would know and follow cultural “truths”/norms, when provided with opportunities to voice their personal opinions, it would become apparent that the “truths” they adhere to are different from those constructed by past generations. Adolescents in Uganda are influenced by more factors than ever before through growth of information resources, creating a shift in cultural “truths”/norms.

The guiding research questions were:

1. What are the key factors that influence Ugandan adolescent nutrition and sexual and reproductive health and rights (SRHR) choices?
 - a. What is the current level of knowledge and cultural competence of adolescents regarding nutrition and SRHR?
 - b. Where do adolescents obtain most of their information: parents, peers, health workers, clinics, health post, media?
2. What are the regional and sociocultural differences in understanding nutrition/SRHR knowledge?
3. What policies/guidelines are in place to support adolescent nutrition/SRHR understanding/practices?

4. What recommendations can be made from the research findings to support improved nutrition and SRHR among adolescent girls in Uganda?

1.4 Significance of Study

Adolescents comprise a large portion of the world's population. Their nutrition and sexual choices have global impacts. Eleven percent of births worldwide are due to adolescent pregnancies, with 95% of these births in developing countries, highlighting the importance of understanding adolescent health needs (WHO as cited in Jaacks et al., 2015). Although the already high nutrient demands of adolescent girls increase further during pregnancy and/or breastfeeding, the literature shows that many malnutrition interventions in developing countries focus not on adolescent girls but on children under five (Jaacks et al., 2015). The literature on adolescent SRHR paints a similar picture, as many interventions are limited in scope, targeting education and prevention of STIs/HIV infections rather than being wholistic in their approach to reproductive health education.

The literature tends to put the research on adolescent health into silos, with the relationship of adolescent health to nutrition and the relationship of adolescent health to SRHR treated as siloed, despite similar influencing factors such as sociocultural background, economic status, education level, and local/regional cultural background. The body of research on adolescents of any gender in Uganda is limited, especially those studies that combine nutritional and SRHR research. Understanding gained from this research provides insight into Ugandan adolescent experiences and the current context for their nutrition and SRHR health. Findings from this study may contribute in a meaningful way to the limited body of literature available on adolescents, especially adolescent girls in Uganda. Insights gained from the literature also contribute to our understanding of the adolescent perspective, how better to include their voices in their own health, and how to better inform adolescent-focused interventions, policies, and programs.

1.5 Definition of Terms

Adolescence. This thesis uses the definition of adolescence proposed by Sawyer et al. (2018): the period between 10 and 24 years of age. The authors also note that adolescence is not merely an age marker; it is also a time of physical development, social role changes, and mental/emotional development. The literature highlights that adolescence is an important time to overcome hardships, particularly nutrition deficiencies or malnutrition during childhood. Seen in this light, adolescence can be considered as a period of “catch up” (Campisi et al., 2018). Expanding the definition of adolescence from 10 to 19 years to include those up to 24 years old corresponds more closely to development, and societal understandings of this phase of life (Sawyer et al., 2018).

Influencing factors. For the purposes of this thesis, influencing factors are those that impact either directly or indirectly on adolescence, such as choice, access, understanding, and knowledge. These factors encompass a wide range of items that can negatively or positively impact health outcomes, specifically nutrition and SRHR.

Nutrition. A critical aspect of human development and health, nutrition needs change throughout the life course (WHO, 2021). Nutrition has an impact on child and adolescent health, risks for non-communicable diseases, and safe aging. Adequate nutrition leads to more productive, fulfilled lives, avoiding malnutrition in all forms (WHO, 2021). For this thesis, nutrition also includes the concept of a healthy diet, which is protective against all forms of malnutrition and non-communicable disease and is in line with best practices of intake such as consuming a variety of foods and following food guides (WHO, 2020)

Nutrition environment. Like the SRHR environment, the nutrition environment comprises direct and indirect influencing factors on an individual or community’s nutrition status. For example, nutrition policies supporting breakfast programs or overcoming barriers to access (food deserts) shape the nutrition environment and the positive and negative nutrition outcomes of individuals and communities.

Peri-urban. Alternate terms for peri-urban are “intermediate urban centers” or “emerging urban centers.” A cross between rural and urban centers, a peri-urban centre has access to some

resources and infrastructure systems, and the buildings within it consist of varied house construction materials (Wineman et al., 2020).

Reproductive age. The literature indicates that the age for reproduction ranges from the onset of puberty to menopause (United Nations (UN), 2019). Fertility changes during a woman's life, but often the onset of menopause occurs between 45 and 55 years (CDC, 2020).

Risky Sexual Behaviour (RSB). These behaviours are sexual activities that potentially expose those involved to STIs, HIV, and unplanned pregnancy. RSB includes unprotected sex, early sexual debut, inconsistent or low contraceptive use, multiple sexual partners, substance (alcohol or drug) use before sexual encounters, coerced or forced sexual intercourse, and transactional sexual encounters (Groenewald et al., 2018).

Rural Centers. Specific to the Ugandan context, rural centers, their economy largely derived from agriculture, are less dense, their populations more spread out, and their access to resources more limited compared with their urban counterparts. (Wineman et al., 2020). Rural centers lack sewer systems, water systems, and paved streets (other than the main highway road). Housing in rural centers can be mixed in Uganda, but most houses are made of mud, straw, or wood. Construction of concrete houses mostly occurs in urban centers or in pockets of wealthy farmland in rural areas (personal observation 2016, 2018, 2019).

Sexual and reproductive health and rights (SRHR). Several definitions exist of SRHR, and they typically focus on women and girls (United Nations Population Fund (UNFPA), 2015; World Health Organization (WHO), 2014; Amnesty International, 2021). For this thesis, SRHR extends to people of all identities and genders. General SRHR concepts include the right to access sexual and reproductive services (including abortion care and contraceptives), accurate information on these issues, choice in who and when a person marries, and autonomy over decisions about having children, how many to have, and when to have them (Amnesty International, 2021). Good SRHR *“is a state of complete physical, mental and social well-being in all matters relating to the reproductive system,”* encompassing satisfying and safe sex and access to resources to manage one's reproductive health (UNFPA, 2016). People should be informed about how to access resources, which should be reliable, affordable, and empower people to protect themselves. SRHR includes the ability to have a safe pregnancy and delivery, to be safe from sexual

violence, and to be protected from harmful traditional practices such as female genital mutilation (FGM), and from STIs (UNFPA, 2016; WHO, 2014).

SRHR environment. In this thesis, the SRHR environment refers to all direct and indirect influencing factors on the SRHR of individuals and communities. These factors may include legislation, such as anti-abortion laws, or indirect factors, such as poor sexual education curriculums, which can positively or negatively impact SRHR.

Urban centers. This thesis strays from the traditional North American definitions of urban centers due to differences in infrastructure between developed and developing countries. In dense urban areas of Uganda, the population often has access to much needed resources, whereas in rural areas, people lack these resources. (Wineman et al., 2020). For the purpose of this thesis, then, urban centers are more densely populated than rural areas, their economy is not based on agriculture, and the people have access to resources. The streets in Ugandan urban centers are mainly paved except for side streets. The majority of houses, other than in slums, are of concrete construction.

CHAPTER TWO: LITERATURE REVIEW: UGANDA, AN OVERVIEW

3.0 Organization of Chapter

Chapter 2 provides context to readers who would be unfamiliar with Uganda. Inclusion of topics such as population characteristics, historical context, religions, basic economics, and eating patterns to name a few. The conclusion of the chapter highlights policies and laws that impact adolescent health outcomes.

2.1 Purpose of the Literature Review

The literature review for this thesis is divided into two sections. Chapter 2 is a contextual overview of the literature on Uganda for readers unfamiliar with the country, including population characteristics and an explanation of how health care is delivered. Chapter 3 is a review of literature available on nutrition and sexual and reproductive health and rights (SRHR) of adolescents in Sub-Saharan Africa (SSA) and will be published separately in an appropriate journal.

A quick literature search and conversation with stakeholders in Uganda highlight the need to better understand adolescent health outcomes in Uganda. A significant gap exists in the literature on nutrition and SRHR health choices and outcomes of adolescents in Uganda; this lack of information on adolescents may be because, at any signs of sexual maturity, children's social roles change abruptly from those of children to adults (Harper et al., 2018). In other words, adolescence is short. An in-depth literature review was conducted to synthesize the existing information and to identify gaps to better inform future research and policy decisions, including how healthcare in Uganda can be more adolescent friendly.

At the time this section of the thesis was written, there was no known literature review combining adolescent nutrition and SRHR in SSA. Although nutrition-focused literature reviews are often published for countries within SSA, they primarily focus on children under five or on nutrition intervention barriers (Harper et al., 2018). The most recently published nutrition review was on the use of fish in school feeding programs in SSA (Ahern et al., 2021). Although some literature reviews on adolescent SRHR are available, these studies do not combine nutrition,

knowledge of sexual health (SH), attitudes, and/or practices, including HIV health, access barriers, and gender-based violence. In other words, the studies tend to be done in silos. The most recently published adolescent SRHR review (Usonwu, 2021) focused on parent-adolescent SRHR communication, which does not necessarily target adolescent needs.

Value has been found in mirroring the United Nations' approach to the development and achievement of the Sustainable Development Goals (SDGs), the understanding being that rather than using one approach, a multi-pronged, multi-disciplinary, and concerted effort is needed to enable sustainable changes to take place. (United Nations, 2015). By exploring health seeking choices involving both nutrition and questions of SRHR, studies on the well-being of adolescence in SSA can take a wholistic approach, moving beyond the historical siloed approach. A wholistic approach allows researchers to begin to understand the nuanced linking of these topics and how nutrition can impact adolescents' SRHR choices and the reverse: how SRHR choices impact nutritional choices. In approaching well-being wholistically, we can link similar influencing factors for positive health outcomes, use limited resources more wisely, and begin to understand the complexity of what leads to full well-being.

2.2 Uganda: An Overview

Uganda, located in eastern Africa, is a landlocked country on the shores of Lake Victoria, with Kenya to the east, South Sudan to the north, Democratic Republic of Congo to the west, and Rwanda and Tanzania to the south. The equator splits Uganda, creating two different ecosystems: savannah type grasslands in the north and lush tropical jungles in the south (Knudsen & Hartmann, 2006). In the northern regions, especially around Gulu, there is a history of conflict with the Lords Resistance Army (LRA), the most recent conflict ending in 2006. Based on personal observations and conversations, this area is slowly returning to its agricultural roots, but many were displaced, had property destruction, and/or faced economic losses that impact their ability to return and/or support the local economy.

2.2.1 Population Characteristics

Uganda has a young population of over 40 million, with 9.3 million between the ages of 18 and 30 years, 21.4 million under the age of 18, and 9.8 million women of reproductive age (15-49 years) (Uganda Bureau of Statistics (UBOS), 2019). Focusing on the young in Uganda, 14.2% of the total population is aged 10-14 years, 11.4% aged 15-19 years, 34.8% aged 10-24, with youth aged 15-24 constituting 20.6% (UBOS as cited in Ministry of Health (MoH), 2019).

Uganda has a history of epidemics and, consequently, there are many epidemic experts in the country. However, the population still suffers from high rates of HIV/AIDS, syphilis, and other STIs. At six children per woman, fertility rates in Uganda are some of the highest reported globally; this number is twice as high as the world average (Kokole et al., 2021; Unicef, 2015). Fertility rates in urban centers are typically lower, but nationally the birthrate for mothers 15-19 years is 135 per 1000 live births—the highest in SSA (MoH, 2019). The high fertility rate in Uganda is influenced by many factors such as early marriages, gaps in services, access to resources, and use of modern contraceptives (MoH, 2019). It is common for women in Uganda to have their first child before the age of 18 (one in three women have given birth by this age), influencing the social and cultural acceptance of adolescent pregnancies (Kokole et al., 2021; Unicef, 2015).

2.2.2 Religions of Uganda

The main religions of Uganda are indigenous religions, Islam, and Christianity (which is further primarily divided between Roman Catholics and Protestants). Many of the indigenous religions integrated colonial religions to form a synergistic belief system (Kokole et al., 2021).

2.2.3 Colonization and Ethnic Dispersion

Uganda is populated by dozens of different ethnic groups, with Bantu speakers predominantly in the south and Nilotic groups in the north. Uganda was colonized by the British Empire, which forced the introduction of English and Christianity until its independence on October 9, 1962 (Kokole et al., 2021). During colonial rule, the British encouraged economic

growth and education in the south, encouraging the Bantu to become the predominant group in Uganda, often advancing Bantu to positions of authority, except those within military which were concentrated in the north. English became, and continues to be, an official language, along with Swahili. Although English is the language of education and government, a large part of the population is unable to speak it (Kokole et al., 2021). It is reported that there are about 32 different dialects are spoken in Uganda (Kokole et al., 2021).

2.2.4 Population Dispersion and Agricultural Trends

Many of Uganda's population live rurally, although like other developing countries, urbanization is rising as people seek out more prosperous economic opportunities in cities. The Food and Agriculture Organization (FAO) reports that the population living in urban centers will increase from 22% to 44% by 2050, along with a tripling of the overall population (Auma et al., 2019; FAO, 2019). Many rural families are poorer than their urban counterparts, and most of the rural working population (70-80%) rely on agriculture for their livelihoods (FAO, 2019; Mubiru et al., 2018; National Planning Authority, 2013). The agriculture sector in Uganda accounts for 24.6% of Gross Domestic Product (GDP) and 71% of employment, with two major categories of farmers—the first being smallholder farmers, the majority at approximately 80%, and the second being large-scale farmers who focus on plantation or monocrop agriculture of cash crops and livestock (FAO, 2019). Smallholder farming accounts for the bulk of food production in Uganda and is based on subsistence and family needs planting, with market selling as a secondary thought (FAO, 2019; National Planning Authority, 2013). Small scale farming in Uganda uses minimum system inputs like fertilizers or sprinkler systems to navigate the cyclical pattern of challenges and overcome vulnerabilities to natural variations such as droughts and floods. However, reliance of rural families on small-scale subsistence farming creates a perilous state as pests, disease, and drought can affect crop yield (Apanovich & Mazur, 2018; Mubiru et al., 2018; National Planning Authority, 2013). Reduction in yield can result in malnutrition— when people lack resources to purchase food and are missing essential macro and micronutrients. In 2016, 21% of Ugandans were living below the poverty line. This situation highlights nutritional impacts a poor crop year can have on an already economically strained population (World Bank, 2019). Coping mechanisms to overcome challenges vary depending on families' resources and

farm location, but adaptation to newer technologies may be needed to build greater food security. For example, traditional methods of growing grain are less effective during periods of disease and pest attacks than are newer methods, resulting in total losses of food and seed (Mubiru et al., 2018).

2.2.5 Economic Sources in Uganda

Economically, agriculture is a main source of income for the majority of the population and accounts for a large portion of Uganda's exports and GDP (Kokole et al., 2021). Small-scale mixed farming is still the main approach for many as advanced technology is lacking, and there is minimal access to and therefore use of fertilizers and herbicides. Small-scale mixed farmers use production methods with rudimentary tools and rely heavily on human power (Kokole et al., 2021).

Two important export crops are coffee and cotton, with tea and horticultural products such as fresh-cut flowers also grown for export. Main food crops are corn (maize), millet, beans, sorghum, cassava, sweet potatoes, plantains, peanuts/groundnuts, soybeans, and assorted vegetables like cabbage, bitter greens, onions, and tomatoes (Kokole et al., 2021). The typical livestock in Uganda includes cattle, sheep, goats, pigs, chickens, ducks, and turkey, with some projects trying to introduce rabbits as a food or economic source. In Uganda, livestock accounts for roughly 4.3% of the GDP, and 58% of households depend on livestock for their livelihoods; 92% of these livestock owners are subsistence farmers (FAO, 2019). Livestock provides goods and services, like manure and labour power, and about 1-1.5% of Uganda's export trade value (FAO, 2019). The most important livestock species are cattle and poultry as they comprise much of the production value, and cattle ownership can contribute between 12-75% of a household's total income. The per capita consumption of beef is 14 kg and milk is 36 liters, and only 40% of all households consume milk and beef weekly; comparatively, 2019 per capita consumption of beef in Canada was 27.4 kg (Bedford, 2020; FAO, 2019). In Uganda, nearly twice as many families own chicken as cattle. At least 2.7 million households possess at least one chicken, which not only provide food but also can be sold easily at times of need such as when medicines are required (FAO, 2019). Chickens, being of lower value, contribute about 7-18% of a household's total income, and per capita intake is 22 eggs and 0.8kg of chicken meat annually

(FAO, 2019). In comparison, annual consumption of chicken meat in Canada was 33.4 kg in 2019, and in 2017, the per capita intake of eggs was more than 20 dozen (Bedford, 2021; Pelletier et al., 2018).

2.2.6 Dietary Patterns: An Overview

Uganda is a developing country undergoing nutritional transition—a period of nutritional changes brought about by urbanization, or the shift away from rural areas to urban centers (Auma et al., 2019). Nutrition transition is characterised by a shift away from traditional, lower processed, plant-based diets to one of more energy-dense, nutrient-poor diets represented by a higher consumption of red and processed meats, sugar, fats and oils, and lower fiber intake (Auma et al., 2019). Traditionally, Ugandans have consumed starchy roots, plantain, and cereals as their main staples, which include cassava, sweet potatoes, maize, millet, and sorghum. Regional variations in consumption patterns exist based on availability, accessibility, climate, socioeconomic status (SES) of the region, and traditions (FAO, 2010). Animal-based proteins, such as fish, red and white meats, and eggs, are consumed in small amounts or infrequently due to their high cost, a finding supported by the 2018 Global Nutrition Report, creating essential micronutrient intake gaps that can lead to negative health outcomes, especially for adolescent girls (Development Initiatives, 2018; FAO, 2010).

Intake disparities exist between the rural/urban poor and the wealthier urban, as resources are not equally distributed throughout Uganda. Resource-scarce areas, such as rural or poor urban areas rely mostly on cereals, starchy vegetables, pulses, and leafy vegetables. Rural meals are typically repetitive and include one staple and one relish/sauce, depending on what is being grown or is accessible in local markets. The intake pattern usually omits breakfast and snacks and includes just a lunch and supper meal; during times of food insecurity, this may only include a single meal a day. (FAO, 2010). In contrast, meals of the wealthier urban typically amount to three a day and snacks. Wealthier urban households that can afford a wide range of foods also have greater access to meats and imported foods, like rice and oats, and have greater buying power (FAO, 2010).

2.3 Health Service Delivery in Uganda: An Overview

Uganda's healthcare delivery is via a partially integrated mixed approach of academically trained professionals (public and private), international agencies/NGOs (particularly religious groups), drug shops, and traditional/complementary healing services (Kamwesiga, 2011; Knudsen & Hartmann, 2006; Madinah, 2016;). The Ministry of Health (MoH), Ministry of Local Government (MoLG), and non-governmental and private organizations are responsible for the health of Ugandan citizens (Madinah, 2016). MoH is responsible for the planning and development of health policies and care provision in government hospitals, while MoLG is responsible for healthcare delivery at district levels and below (Madinah, 2016). NGOs are present in both hospitals and in smaller medical units. In rural communities, first contact with the healthcare system is typically through village health team (VHT) members, who do not provide medicine but are trained in general health to advise patients and refer them to health centers (Kamwesiga, 2011).

Government health expenditure is committed to primary healthcare, but since healthcare is not a priority for government spending, the system is fragmented and lacks sustainability due to heavy reliance on foreign assistance and high out-of-pocket costs for patients (ThinkWell Strategic Purchasing for Primary Health Care (SP4PHC), 2020). Looking to health financing indicators, current health expenditure (CHE) per capita in USD for SSA is \$121.50 (SP4PHC, 2020), Uganda spends \$39.9, and other low-income countries spend marginally less at \$32.90. Domestic general government health expenditure as a percentage of CHE for Uganda is 15.5%, whereas for other low-income countries, the average is 20.1%, and for SSA, the average is 36.1%. Comparing this figure to external expenditures as a percentage of CHE, which reflects the proportion of health expenditures funded externally, Uganda is 43.2%, SSA is 11.2%, and low-income countries are 22.2% (SP4PHC, 2020; WHO, 2021). Domestic health expenditures in Uganda provide 43% to primary healthcare, 26% to "other," 18% to infectious diseases, 8% to non-communicable diseases, and 5% to injuries. Out-of-pocket expenditure as a percentage of CHE in Uganda is 38.6%, in SSA it is 35.3%, and in low-income countries, it is 51.5% (SP4PHC, 2020). These Ugandan statistics show lack of domestic governmental support in providing healthcare and fund allocation outside of primary healthcare and high individual costs for health care. Lack of focused domestic expenditures on healthcare creates barriers of access,

implementation, and sustainability of health interventions. *Figure 2* shows the flow of finances to health facilities in Uganda.

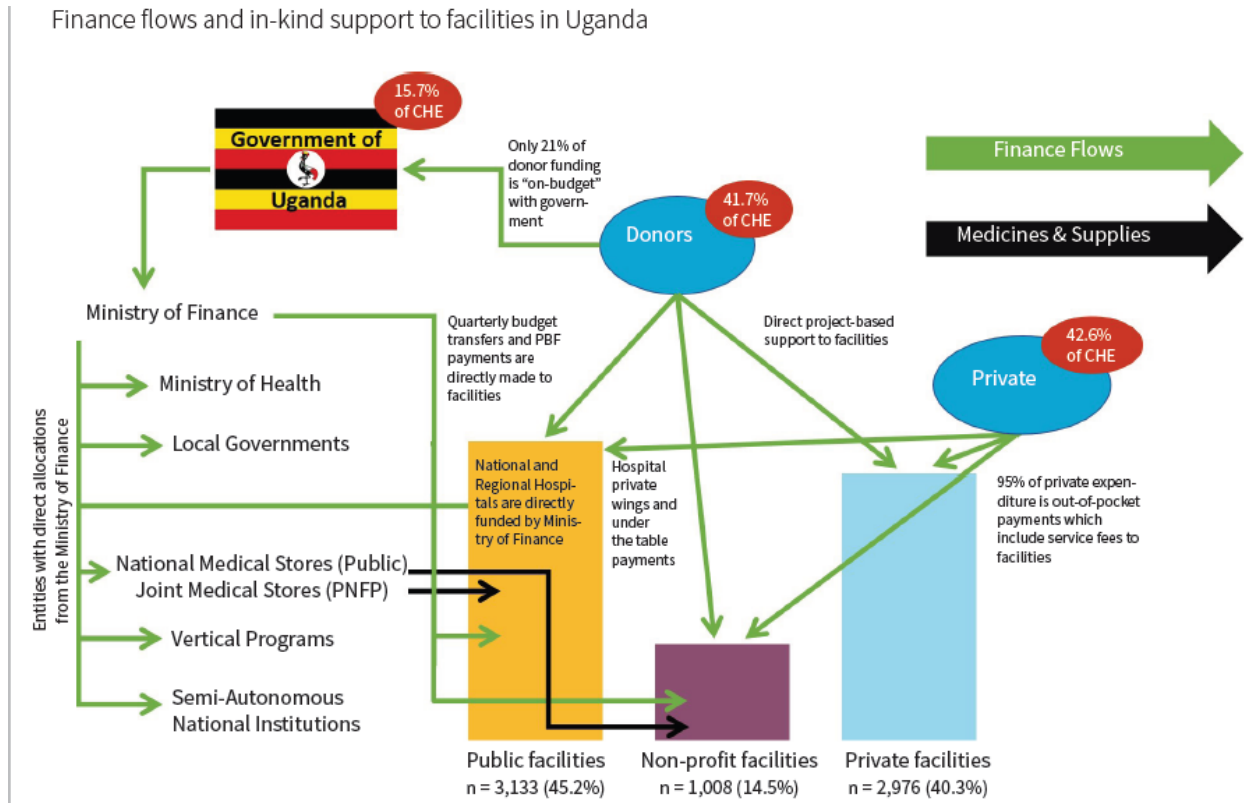


Figure 2 Finance flows and in-kind support to facilities in Uganda. From SP4PHC, 2020, <https://thinkwell.global/projects/sp4phc/uganda/>. Copyright 2020 by ThinkWell

Uganda organizes its healthcare system under four levels: primary, secondary, tertiary, and quaternary. Primary care is conducted at health centers, secondary care at district and rural hospitals, tertiary level care at general referral hospitals, and quaternary care, the highest level, at national hospitals (Madinah, 2016). Beyond these categories, health facilities fall into seven levels based on service provision and the catchment area, with designations as Health Center level one (HC I) up to Health Center level four (HC IV), general hospital, regional referral hospital, and national referral hospital. There are five national referral hospitals, five specialized hospitals, 14 regional referral hospitals, and 139 general hospitals (MoH, 2021).

According to the MoH, Uganda has 6,937 health facilities in total: 45% are government owned, 14% are private or not-for-profit, 40% are private for-profit, and a small fraction (less than 1%) are community-owned facilities (2021). Table 1 lists the ratio of health workers to patients in 2011, highlighting issues with the supply-side of the healthcare system. Uganda, like many other developing countries, is at the mercy of “brain drain”—a phenomenon in which trained professionals are relocating to other countries with higher pay standards more rapidly than they can be replaced (Knudsen & Hartmann, 2006). This phenomenon impacts the sustainability of the healthcare system, and the level of care patients can expect.

Professional	Doctors	Nurses	Midwives	Dentists	Lab Technicians	Occupational Therapists
Ratio to Patients	1:24,000	1:1,700	1:9,000	1:77,000	1:16,000	1:433,000

2.4 Healthcare Challenges

2.4.1 Health Policy

Uganda relies heavily on outside aid and professional skills to provide care, and international donors have created an environment of policy lobbying that strays from community needs toward policies that support their organizations’ goals of saviourism. Policy creation in Uganda, with its heavy international input, has moved away from identifying the needs and interests of local users to and delivering packaged solutions to general global problems. When Uganda decentralized its government in the 1990s, many arms of the government, like MoH, also became disengaged from the local context and needs of the communities (Madinah, 2016). This disembodied, non-community-based approach creates a problem for implementation, as the Ugandan context is not incorporated into decisions, creating challenges to health service delivery (Madinah, 2016).

2.4.2 Healthcare Infrastructure

Uganda's political system has made many attempts at healthcare service reform and health positive policy but has largely been unsuccessful as health services and status remain mostly unchanged. The Uganda Demographic Health Survey (DHS) in the early 2000s suggested a decline in the health status of citizens and service delivery when compared to the previous five years (Madinah, 2016). As mentioned previously the not fully integrated healthcare system creates a system difficult to navigate, especially since the language of service is English, of which many patients may have a limited grasp. Patients with limited English therefore are at the mercy of medical professionals, who may or may not speak a similar dialect, to correctly understand their symptoms/condition (personal observation, 2016, 2018, 2019). To expand access to healthcare services for all, especially those in rural settings, the Ugandan government has attempted to create programs such as the Home-Based Management of Fever (HBMF), which uses Community Medicine Distributors (CMDs), but face limited success (Madinah, 2016).

2.4.3 Barriers to Access

Limited emergency services exist in Uganda due to multiple barriers. For example, the primary mode of transportation to health services is walking, or by bicycle, often over far distances in rural settings. Lack of transportation and communication infrastructure in Uganda creates barriers to implementing successful emergency services. Many roads are unpaved and impassible during rainy seasons, few are labelled with street signs, and unreliable telecommunication systems in all districts make emergency care ineffective (Knudsen & Hartmann, 2006). Cellphone use is growing within the country, but coverage is still limited in rural areas, with no national telephone service in place to cover the gaps (Kokole et al., 2021).

The physical environment also creates healthcare inequities due to barriers on the demand-side of healthcare. Many people, especially in rural areas, must travel long distances to seek health care, a problem compounded by lack of scheduled, reliable transportation. The majority of healthcare resources and facilities are located in urban centers, with the outcome that rural communities have less healthcare access, and as mentioned, longer distances needed to

travel for access (Dowhaniuk, 2021). This demand-side barrier reduces healthcare use, including continued care for disease states, minimal monitoring for disease progression, and early diagnosis of diseases. Continuum of care is also impacted for family planning (FP) services, maternal/child-care, and HIV care (Dowhaniuk, 2021).

2.4.4 Systematic Barriers to Access

To overcome access barriers, the Ugandan government has removed user fees in all government health facilities and began several rural community outreach programs for those living long distances from a facility (Madinah, 2016). Despite these efforts, public facilities are still largely understaffed and desperate for resources such as medication, gloves, medical equipment, and blood supplies. Patients are frequently told by healthcare providers to purchase their own supplies and medicine from private pharmacies nearby before treatment can be administered (Knudsen & Hartmann, 2006). As a Study Abroad Student obtaining various experiences at a local HC IV, I observed maternal staff frequently requiring pregnant women to purchase plastic sheeting, catheters, scalpels, and gloves before maternal care was provided despite already being far along in their labour (personal observation, 2016). An additional barrier to accessing care in public health facilities is shortage of healthcare workers at all levels, with shorter training cycles and less specialized training than are found in other countries (Madinah, 2016). This is especially so in health facilities in rural areas of Uganda, where it is difficult to attract and retain qualified workers. This often results in patients seeking care at healthcare facilities not equipped to deal with their problem or relying on traditional healers, family, and other community sources of health that may not be appropriate (Dowhaniuk, 2021).

2.4.5 Gendered Access Barriers

The literature indicates that across their lifespan women need more health services than men, but they are more disadvantaged when it comes to health coverage. Due to gender inequalities, women are presented with fewer economic opportunities, and they therefore have limited ability to pay for health services (Witter et al., 2017). Uganda is a patriarchal society that has entrenched power differences between men and women, with decision making left to men.

Gendered decision-making affects women's rights and access to preventative care (e.g., FP methods) or immediate healthcare needs and potential finances needed for their care or children's care (Madinah, 2016). For example, disagreements between partners about child spacing or freedom of reproductive rights force women to select FP methods more easily hidden despite not being ideal for their health or to rely on fickle traditional medicines to abort or stop ovulation (Madinah, 2016).

Gender inequalities have a negative effect on maternal health and healthcare access, and gender norms and gendered divisions of labour limit women's ability to access and control household resources, diminish their autonomy, and reduce decision-making opportunities/power, curtailing their ability to access care (Morgan et al., 2017; Singh et al., 2015; Witter et al., 2017). With the brunt of childcare, home upkeep, agricultural work, and cooking left to women, little freedom in their schedules allows them to attend appointments, visit clinics, or gather needed medicines, especially when a long distance needs to be traveled (Madinah, 2016). The supply side of Ugandan healthcare upholds societal patterns of gender discrimination that are reflected in maternal health service delivery. Acts of gender discrimination include the lack of women-focused services, like abortion or family planning, the treatment of maternal health services as "women-only" spaces, and the mistreatment of women by health providers (Tolhurst as cited in Morgan et al., 2017).

2.5 Uganda: Laws and Policies Impacting Adolescent Health

2.5.1 Constitution and Governance of Uganda

The constitution, adopted in 1967, moved Uganda away from its history of quasi-federal policy, effectively abolishing former ruling monarchies and assigning political power to an elected president. The new form of government heavily relied on British government tradition, but branches of government did not work autonomously and had varying levels of power with each president (Kokole et al., 2021). In 1995 a new constitution was introduced with the president as head of state, a government and armed forces, and a prime minister and cabinet to assist them. As of 2005, Uganda has returned to multiparty politics for the first time since 1980 (Kokole et al., 2021).

Local governance comprises districts run by an elected chairperson and district council. Subdistrict administrative units are organized into a tiered structure of elected councils, with each council consisting of members with political and judicial power to manage local issues (Kokole et al., 2021).

2.5.2 Nutrition and SRHR Delivery and Policies in Uganda: An Overview

As mentioned previously, domestic health spending and international support in Uganda has historically disproportionately allocated resources to children under five and to maternal/child health. Because adolescent health data is lacking, the system does not prioritize adolescent health at planning and resource allocation levels, resulting in a gap in adolescent specific services (Hindin & Fatusi, 2009; Jaacks et al., 2015; MoH, 2019; Neema et al., 2004). However, there is a general understanding that with a population in which over 50% is under 15 years of age, Uganda needs to pay attention to this demographic because it has power to impact future economic and political success in the current generation and those to follow. Aware of the gaps in data on adolescents, insufficient adolescent-allocated resources, and a paucity of opportunities for young people, the government encouraged the formation of the National Adolescent Health Strategy, which seeks to understand the current policy environment and legal framework and their influence on adolescent health outcomes at local and international levels (MoH, 2011; Neema et al., 2004). Current policies and laws targeting Ugandan adolescents lack full implementation due to limited resources and pressure put on international funding agencies to assist, which is not sustainable long term (MoH, 2011; Neema et al., 2004). Parents, schools, and public health initiatives are still the most common methods to deliver health education to adolescents. These methods lack follow through and reliable information about topics adolescents need or want to address their health (MoH, 2019).

2.5.2.1 Adolescent Policies

Several adolescent-oriented policies and strategic plans to operationalise policies exist that target nutrition and SRHR, with admirable efforts towards education and resource creation. For example, the Anemia Policy formed in 2002 highlights the importance of giving adolescents

haematinic supplements and de-worming agents, counseling on foods high in iron, and sexual reproductive health life skills training (MoH, 2011). Another example is the Adolescent Health Policy formed in 2004, which aims to mainstream concerns adolescents have about their health in national development processes. This policy allows girls to return to school after giving birth, reviews the restrictive abortion law, increases contraceptive access, and reduces harmful traditional practices (MoH, 2011). As mentioned previously, a challenge for the Ugandan public health sector is limited resources, supply-factor barriers, such as low staffing and low access to medications (even those meant to be free), all of which construct implementation barriers (MoH, 2011; Neema et al., 2004). In rural communities, I personally witnessed iron tablets meant for antenatal clinics frequently running out or low, so full supplies could not be provided for a month, and staffing was too minimal to sit down with patients and provide them with the education many were seeking (personal observation, 2016, 2019). Appendices I and II outline adolescent policies and strategic plans to operationalise policies in Uganda. Many of these policies face implementation issues or need review to match emerging issues of adolescent health, as there is still a lack of adolescent-specific focus in many policies (MoH, 2019). In a 2019 study, adolescents from various Ugandan regions listed health education as their highest need, treatment of STIs/HIV as their second highest need, and menstrual hygiene management facilities (especially in schools) as their third highest need (MoH, 2019).

Another barrier to implementation in Uganda is ethnic diversity. Kinship ties and cultural practices make it difficult for the government to introduce policy intended to eradicate or limit traditional harmful practices, such as child marriage and female genital mutilation (FGM). Without strong policies, a power dynamic is created that enables people to police and report members of their own kin—not a sustainable approach to the protection of adolescents (Harper et al., 2018; Neema et al., 2004). Strong policies and laws are challenging to implement because laws and culture frequently clash. For example, abortion remains illegal in Uganda, and girls who have given birth are allowed to return to school. However, the culture discourages girls from returning to school, and those who do return feel ashamed because they have lost their virginity, and because once they have a child, they are expected to occupy themselves with unpaid (household) labour and child rearing (Barrett et al, 2020). The harmful traditional practice of early marriage, discussed in detail in Chapter 3, is still widely practiced in Uganda, impacting future success and health of adolescent girls. As examples of barriers to

implementation show, although people may be aware of policies, cultural norms still exhibit a powerful influence, clashing with policies and challenging successful implementation.

2.5.2.2 Adolescent Laws

Developed in 1995, the Constitution of the Republic of Uganda states the rights of Ugandans and the roles of the government in providing services to its people (MoH, 2011; Neema et al., 2004). The right to health is included in the Ugandan Constitution and is the foundation of “free” public healthcare for Ugandans, but the lack of infrastructure and resources leaves the public sector destitute, with patients required to buy supplies for their own treatment. Lack of full implementation of health-based laws is multisectoral and a great challenge for Uganda. *The Children’s Act and Sexual Offences Bill* “protects” adolescents, namely adolescent girls from child marriage and effectively raises the minimum age of consent from 14 to 18 years (MoH, 2011; Neema et al., 2004). This laws, though not explicitly stated, have been passed to protect the purity of girls, as purity, or virginity, is a cultural construct held in high regard in Ugandan culture (Barrett et al, 2020). Laws “protecting” adolescents from being married while still children provide fathers with a legal channel to retrieve a bride price if their daughters were to have sex prior to marriage (Harper et al., 2018). Child brides are still common, and many women without education marry by the age of 17, with cultural norms overshadowing legal systems and gendered norms impacting the effectiveness of legislation. The intention behind these laws is sound, but, culturally, they do not support the safety, growth, and rights of adolescents; instead, they create a legal platform with which to secure her value/price. Appendix III outlines National and International laws that impact adolescent health.

2.5.2.3 Barriers to Implementation

As discussed above, the failure to implement policies and laws means adolescents lack health resources, but the physical environment also plays a major role. Rural adolescents have access to fewer health resources than their urban counterparts because, as mentioned, most resources are urban based and may even be non-existent in rural settings. The cultural and social

positions of adolescents create dependence on guardians or informal work for money, enhancing physical barriers (MoH, 2011; Neema et al., 2004).

Also lacking for many adolescents are cultural ties with people that can provide SH information. Traditionally, adolescents relied on the *senga*, or paternal aunts, for providing information on reproductive health, including enabling positive decision-making in sexual behaviour and empowerment of females to choose when they will become sexually active and their own experiences (Neema et al., 2004). Declines in this traditional practice have increased reliance on international funding agencies, which are limited in scope and focus on education about STIs/HIV/AIDS and reductions in unwanted pregnancy (Neema et al., 2004). The literature shows that, despite efforts, these attempts at youth-friendly services do not target them appropriately (Jaacks et al., 2014 Neema et al., 2004). Sexual information coming from a packaged and non-local context provides adolescents with general knowledge rather than specific knowledge based on the local context.

2.5.2.4 Nutrition Service, Delivery, and Education

The link between poverty and inadequate dietary diversity in Uganda is well established, as the population faces the challenge and burden of malnutrition (World Food Programme (WFP), 2019). Malnutrition, according to the WHO, “*refers to deficiencies, excesses or imbalances in a person’s intake of energy and/or nutrients*” (2016). There are two groups of malnutrition conditions: “undernutrition” which includes wasting, stunting, and being underweight and micronutrient deficient, and “overweight” which is linked to diet-related non-communicable diseases (WHO, 2016). According to global data Africa is hardest hit by three overlapping forms of malnutrition—overweight, anemia, and stunting (Development Initiatives, 2018). Little data is available on the diets of adolescent girls in Uganda, but the data available suggest that dietary diversity and food frequency is poor (WFP, 2019). Globally, a nutritious meal for an adolescent girl constitutes up to 42% of the household’s daily budget due to her high nutrient needs, yet diets during this stage rarely change to accommodate increased needs (Development Initiatives, 2018; WFP, 2019). In a review conducted by Shively and Hao, it was found that, in 2011, Uganda was one of the least well-nourished countries in the world, placing 42nd out of 81 ranked countries on the Global Hunger Index (von Grebmer et al., as cited in

Shively & Hao, 2012). Shively and Hao (2012) found that although Uganda has access to food, diets lack diversity, leading to a paucity of micronutrients and seasonal patterns of food insecurity, with one meal a day not uncommon in rural areas or among the urban poor prior to the harvest season. These finding highlights both differences in health outcomes between the rural/urban poor and urban wealthier populations and the lack of nutritional stability in Uganda. It is important to note that the Shively and Hao (2012) review does not report on the nutritional status of adolescents, instead highlighting common interventions and data on children and adult women of Uganda.

Uganda's National Nutrition Planning Policy and National Nutrition Action Plan call upon multi-sectoral government bodies to integrate nutrition and its related services into sectoral planning and policies (Kikomeko, 2021). Nutrition services deemed most critical by communities, as well as in a 2021 study by Kikomeko, were nutrition awareness, education, counselling, management of malnutrition, and interventions aimed at food security and livelihoods (2021). Important for nutrition health interventions are addressing gaps between rural and urban centers; as we have seen, those in rural settings have more nutritional health struggles and less access to services and trained professionals than those in urban settings (Kikomeko, 2021). Nutrition services in Uganda still heavily rely on international organizations and donors for funding and implementation, creating short-term non-sustainable nutrition interventions limited to funding timelines (Namugumya et al., 2021). Select universities and colleges in Uganda provide post-secondary nutrition education allowing students to be a primary source of nutrition delivery if they remain in the country after graduation.

Nutrition education is a part of primary and secondary curriculums in Uganda, with topics covered being nutrition basics, food groups, kitchen equipment, and food technology (National Curriculum Development Centre (NCDC), 2020). Despite free primary education in Uganda, the high rate of school dropouts, especially in rural centers and among girls, impacts access to nutrition information for all. Research conducted by Milkovich (2017) highlighted barriers to information access such as limited basic nutrition knowledge of head teachers who are delivering nutrition education to students, an unsupportive school environment, and lack of access to school materials.

2.5.2.5 Nutrition Policies and Laws

Historically, Uganda has narrowly identified nutrition as a non-health issue; therefore, local, and sector-level governments have not integrated it into development plans, making multidimensional aspects of nutrition poorly addressed (National Planning Authority, 2013). To address this problem, the National Nutrition Planning Guidelines were introduced in 2015 to help all levels of government integrate “nutrition-sensitive thinking” during their planning processes. Since the 1994 International Conference on Population and Development, many nutrition-focused policies have been created in Uganda, but a gap between the creation and implementation of policies exists due to limited resources, with, as mentioned, a heavy burden falling upon unsustainable international donors/organizations (MoH, 2011). Some examples are the Adolescent Health Policy, formulated in 2004, and the Food and Nutrition Policy. The Adolescent Health Policy is discussed above in section 2.5.2. The 2003 Food and Nutrition Policy aims at reducing micronutrient deficiencies, with a focus on iron deficiencies (MoH, 2011). This policy also highlights the importance of increasing the nutrition status of Ugandans through coordinated and multi-sectoral intervention focusing on food security, improved nutrition outcomes, and income resources for better nutrition. As this thesis points out in many sections, the full implementation of these and other nutrition-focused policies rely on unsustainable resources (MoH, 2011; Neema et al., 2004).

2.5.2.6 SRHR Service, Delivery, and Education

Ugandan adolescent females (aged 15-19) make up approximately one-quarter of the female population and give birth to 14% of babies each year; half of adolescent pregnancies are unintended, and 30% of these ends in abortion (Riley et al., 2018). To improve access to contraceptives for adolescents, the Ugandan government in 2017 implemented the National Adolescent Health Policy and the National Sexuality Education Framework, but both have faced barriers as discussed in other sections of this thesis (Atuyambe et al., 2015; MoH, 2019; Riley et al., 2018). As we have seen, lack of substantive and specific health resources, especially for adolescents, in Uganda means that policies and frameworks to improve the service, delivery, and education of adolescent SRHR cannot be fully implemented. For example, in 2018 there were 648,000 sexually active female adolescents aged 15-19 not wanting a child for at least two years;

of these girls and young women, only 39% were using a modern contraceptive (Riley et al., 2018). There is an unmet need for contraception for 395,000 female adolescents who are either using no contraception or are using a traditional method that has low effectiveness—88% of all unintended pregnancies occur within this group (Riley et al., 2018).

Even if they were effective, the policies and frameworks do not go far enough as adolescents need information and services beyond pregnancy/maternal care and HIV to address their full needs (Atuyambe et al., 2015). Adolescents make sexual decisions, and they need to be provided with timely, adequate, and appropriate information. An understanding of their needs, wants, and barriers, such as financial or parental permission, is critical to the success of adapting the healthcare system appropriately. The WHO has highlighted several elements that can increase adolescents use of healthcare including “*confidentiality, provision of required information and services, accepting adolescents as they are, considering and respecting adolescents’ opinions, allowing adolescents to make their own decisions, ensuring that adolescents feel welcome and comfortable, being non-judgmental, and provision of services at a time that adolescents are able to come*” (WHO as cited in Atuyambe et al., 2015).

Adolescents in Uganda make up a large portion of the population, and policies have been created to address their impacts on the country’s economic future, such as increased contraceptive access, but the proportion of health facilities that are adolescent-friendly is approximately 10% (Atuyambe et al., 2015). In a study in the Wakiso district in Uganda, Atuyambe et al. (2015) found that adolescents do not access SH services until the severity of their problem demands it. The study identified a gap between existing services and those that adolescents preferred: adolescents wanted youthful counsellors as they were interpreted to be more understanding of their situation and better able to listen; participants in the study also identified social and financial gaps (Atuyambe et al., 2015). Adolescent girls do not have access to stable finances, and, if married, may have to disclose their money use to husbands, which can create barriers or situations of harm.

SH education in Uganda has historically encouraged abstinence only and discouraged use of contraceptives. In 2016, the Ugandan government imposed a parliamentary ban that effectively banned sexual education beyond abstinence only (Boozalis et al., 2020). Promoting the narrative of abstinence only impacts the confidence of youth during a time of great change. When worth is

tied to one's sexual experience or the construct of virginity, having a sexual experience, wanted or unwanted, negatively impacts perceived self-value (Boozalis et al., 2020). In this era of minimal SH, the Presidential Initiative on AIDS Strategy for Communication to the Youth (PIASCY), which is largely funded and supported by the Ugandan government, was able to falsely claim that condoms do not block HIV 100%, which impacted youths' opinions of the efficacy and therefore needed use of condoms to protect against HIV and prevent pregnancies (Boozalis et al., 2020). In 2018, the Ministry of Education launched the National Sexuality Education Framework that reverses the 2016 ban and allows youth to make decisions for themselves but still highlights its main principle as "God fearing" and avoids discussing contraceptive use (Boozalis et al., 2020).

The School Health Policy has been awaiting approval for several years but was originally formed to promote and guide school health programs and service delivery (MoH, 2019). The School Health Policy filled gaps left by NGOs, which due to limited funds did not target all schools in Uganda and eventually phased out its help, making SH education unequal across the country. Formation of national concerted efforts for SH education in schools would still miss out-of-school adolescents but could still have positive health impacts for those in school (MoH, 2019).

2.5.2.7 SRHR Policies and Laws

Similar to nutrition policies and laws, full implementation of SRHR policies and laws is difficult as low and unsustainable resources create barriers. Some policies are the 2006 National Policy Guidelines and Service Standards for Sexual and Reproductive Health (SRH) and Rights and Adolescent Sexual and Reproductive Health (ASRH) in National HIV Policies, also from 2006. The first-mentioned policy targets increased access and availability of SRH services for all Ugandans, including young people, and the last-mentioned policy is targeted at STI and HIV screening, at increased awareness of them but with an abstinence focus for those unmarried, and at encouraging condom use (MoH, 2011).

As always, context needs to be addressed when considering policies and laws, and, as we have seen, a large gap between policy/law format and cultural context exists in Uganda. The

“protection” of women through SRHR policies and laws is admirable, but translation into the Ugandan context alters their outcomes. This thesis discusses the cultural context in Uganda and its impacts on adolescent SRHR health. Women, especially adolescent women have a role to play in this societal context in which they have little autonomy over their own bodies (Barrett et al., 2020; Harper et al., 2018; Neema et al., 2004).

CHAPTER THREE: LITERATURE REVIEW: FACTORS INFLUENCING ADOLESCENT NUTRITION AND SRHR KNOWLEDGE, ATTITUDES, AND CHOICES—KEY FINDINGS

3.0 Chapter Organization

Chapter 3 presents findings from the literature on nutrition and sexual and reproductive health and rights (SRHR) knowledge, attitude, and practices. Each subheading corresponds with categories of socio-ecological model (SEM) and sub-category themes determined by the researcher. Sections 3.5 and 3.6 provide an overview of laws and policies impacting adolescents in Uganda and adolescent-empowered nutrition and/or SRHR interventions, respectively. Lastly, section 3.7 discusses the literature review findings, identified gaps in the literature, and recommendations of the researcher.

3.1 Adolescents in Uganda

Globally, adolescents constitute about 1.8 billion of the world's population, and 90% of them live in developing countries (United Nations Population Fund Africa (UNFPA), 2015). In sub-Saharan Africa (SSA), 23% of the region's population is aged 10-19 years (UNICEF, 2019). Other developing regions of the world are seeing decreases in the adolescent population, a trend not reflected in the African population as people in the 12-24 age bracket continues to increase (United Nations, 2012). The growing number of adolescents in SSA has promoted recognition of their unique health needs, which are not being addressed in program development (Plummer et al., 2017). As individuals transition from childhood through adolescence to adulthood, they must be prepared with the knowledge and skills needed to seek out opportunities and address challenges they will encounter in adulthood (Plummer et al., 2017).

In Uganda, over half the population is under the age of 16 years, and close to 35% (34.8%) of Uganda's population of 34.6 million are adolescents (UNFPA, 2017). The UNFPA (2015) has defined adolescence as an age range from 10-19 and youth from 15-24. For Ugandan females, adolescence is even more of a theoretical construct as once they begin to show sexual

maturity, they are viewed as an adult woman. This change can even be as simple as breast formation or the beginning of their menses (Harper et al., 2018). Upon sexual maturation, adolescent women are expected to learn domestic responsibilities, remain pure, and uphold the family name until marriage can be arranged—all leading to potential lifelong consequences without much input from the adolescent herself (Harper et al., 2018; personal observation, 2016-2019).

A 2016 report by the Uganda Demographic and Health Survey (UDHS) suggests that although the legal age of marriage is 18 years, 43% of women aged 25-49 were married before 18 years, with 10% of men in this category marrying this early. (Uganda Bureau of Statistics (UBOS), 2018). This report also suggests the median age for women aged 20-49 years of first sexual intercourse was 17.1 years, while the median age for men was 18.4 years (UBOS, 2018). These data suggest that women in Uganda are exposed to risks inherent with sexual activity for longer than their male counterparts. Women who have access to the greater resources found in urban centers are marrying on average 2.1 years later than their rural peers, highlighting that having this access to resources allows young women to delay marriage; men overall still have a greater delay in first sex though (UBOS, 2018). SSA has one of the highest occurrences of adolescent pregnancies globally, and Uganda has one of the highest rates within SSA (Gunawardena et al., 2019; Kassa et al., 2018; Ministry of Health (MoH), 2019). It is reported that 18% of women aged 20-49 years had first sexual intercourse by age 15, 62% by age 18, and 83% by age 20 (UBOS, 2018). These statistics show the increased and prolonged sexual vulnerability that girls in Uganda face due to their early sexual debuts. As Mensch asserts, “*Girls disappear as policy subjects after receiving their last childhood immunization and do not reappear until they are pregnant and, in most cases married*” but we can encourage a change by understanding influencing factors of adolescent girls’ nutritional and SRHR practices (Mensch as cited in Harper et al., 2018).

3.2 Adolescent Healthcare Delivery

Adolescence in Uganda is marked by additional barriers such as limited economic opportunities, overdependence on guardians, and lack of employment—all impacting the care adolescents can access. Many adolescents in Uganda partake in subsistence farming for food

needs or take part in trade in the informal sector (MoH, 2011). To exacerbate the situation, there is a lack of social services targeted to their specific needs, low use of reproductive health services, low access to information, high school drop-out rates (especially in rural areas), and inadequate teaching and learning environments within school and healthcare settings (MoH, 2011; Neema et al., 2004). Efforts have been made to reduce disparities between girl and boy adolescents, such as policies to keep girls in school or to return to school after giving birth (MoH, 2019). Despite multi-sectoral efforts, opportunities are still far from equal for adolescent boys and girls, as socially girls are expected to help or take over home duties as they mature—an expectation that is not extended to boys whose education is expected to continue, so they can earn future wages for their families (Morgan et al., 2017; Witter et al., 2017). Adolescent boys are provided more opportunities to pursue education and greater access to healthcare services (MoH, 2011).

Additional barriers, and mentioned elsewhere in this thesis, are cultural practices that directly impact the health of adolescent girls, such as the practice of men marrying child-brides. Despite laws protecting children, like the age of consent, the continued practice of early marriage for girls highlights lack of enforcement and the power of culture, particularly in low resource settings (MoH, 2011; Neema et al., 2004). Child marriages and spousal sharing/inheritance between male family members reinforce the lack of autonomy that females, especially adolescents, have over their bodies and SRHR choices (MoH, 2011). Child bride and spousal inheritance can impact nutritional health when adolescents are exposed to household shifts in wealth, food availability, and access to healthcare and resources. Interventions targeting young, pregnant adolescents have been viewed as successful in many SSA contexts but still embed the idea that women are vectors for child health rather than independent, autonomous beings with differing needs (Witter et al., 2017).

Despite the development of specific adolescent policies, such as the National Youth Policy, as discussed previously, a lack of resources impacts full implementation as the responsibility of adolescent health often falls upon international agencies, which lack sustainability and continuity (MoH, 2011; MoH, 2019; Neema et al., 2004). Many policies created in Uganda and internationally do not specifically focus on adolescents but assume that this population is included under the broad scheme of targeted populations. For example, the

National Policy Guidelines and Service Standards for SRHR do not identify the unique SRHR needs of adolescents but better target sexual health (SH) services for all (MoH, 2019).

Throughout the life cycle, SRHR needs change. For example, during adolescence, understanding management of menstruation may be more critical than it is for an adult woman, whereas those preparing to have children require different resources/care.

Another example is the Universal Primary Education (UPE) and Universal Secondary Education (USE) policies both of which aim to keep children, primarily girls, enrolled in school for better well-being outcomes. Success has been seen with the UPE policy as primary school enrollment rose from 56% to 73% from 1999 to 2007, but the same increase is not being seen with the USE policy (Pallegedara & Yamano, 2011). Since USE was implemented in 2007, a large gap has been identified between boys' and girls' enrollment in secondary school, as many girls do not attend despite school fees being covered. Potential reasons for this may be requirements for passing primary school leaving exams, which may be difficult for girls due to household labour expectations or management of menstruation, inability to purchase school uniforms, or boarding not being covered under the policy, or embedded social beliefs that education investment is not worth it for girls as they will be married and live with their husbands soon (Pallegedara & Yamano, 2011). As mentioned previously, the lack of adolescent resource allocation, due to lack of data, results in adolescents being packaged into groups with other populations that have different needs from them and a gap in services that needs to be filled (MoH, 2019).

3.3 Methodological Approach

The SEM of health promotion that was advocated in the Ottawa Charter for Health Promotion guided this thesis's literature review and analysis (WHO, 1986). The approach embodies key concepts and holds that behaviour is affected by several spheres of influence and that behaviour change shapes and is shaped by the individual's environment. The SEM considers that there are dynamic and complex relationships within the individual, between individuals, and between the individual and their environment, including community and society. It is therefore appropriate to address population health challenges such as combined nutrition and SRHR

outcomes that are too complex to understand from a single point of analysis (Centers for Disease Control and Prevention (CDC), 2018; Golden & Earp, 2012).

Figure 1 depicts the CDC’s SEM model that builds from the individual level to the relationship level, to the community, and upwards to the societal level, highlighting the interdependence among the levels of relationships (2018). The SEM model suggests that interactions between individuals and their environment is reciprocal because individuals are not only influenced by their environment, but their environment is influenced by them (CDC, 2018; Golden & Earp, 2012).



Figure 1 Social-ecological model. From CDC, 2018, <https://www.cdc.gov/violenceprevention/publichealthissue/social-ecologicalmodel.html>. Copyright 2020 by U.S. Department of Health & Human Services

Three databases—Medline, Embase and CINAHL—were searched using the limitation of articles published since 2010 to best capture current practices for adolescent nutrition and SRHR health. Publication dates were not limited for governmental or law documents as change to these is less frequent. Studies prior to 2010 may not represent adolescent perspectives well, as impacts of globalization were more limited in the early 2000s (Nyamache, et al., 2014). Alerts were set up to capture any new publications related to the study content; no additional studies were found to date.

Keywords and search strategies are described in more detail below, but all databases were surveyed for articles appearing to be relevant to an area of the SEM model or outlined as adolescent nutrition and/or SRHR intervention using scoping review guidelines. Vetted articles were investigated for relevancy and appropriateness, but article rigour was not assessed as content was critical for this study regardless of rigour. Studies written in English and peer-reviewed, along with some grey literature, were included in the literature review.

3.3.1 Search Strategies

Due to limited amounts of literature found during preliminary searches, database results were expanded beyond Uganda to include literature within Africa, with a strong focus on SSA. Originally searches were limited using adolescent age limitations (10-24 years), but limited search outcomes resulted, so this practice was discontinued. The lack of age limitations resulted in papers including adolescents with children below 10 years of age, and with those over 24 years. These papers were still included with separation of reported results if possible, or a researcher's note that results were not limited to our specific population. The context of the literature search was influencing factors; therefore, studies that had associated or predicting factors of nutrition or SRHR outcomes were eliminated (Peters et al., 2015). The purpose of this study was to reach beyond the Euro-centric norm of research that historically reports on factors without understanding root causes, instead I am using participants' perspective to inform the research. For example, reports on the prevalence and associated factors of dietary diversity were not included, but a study on dietary diversity and agricultural diversity relationships was included as this belongs to the "community" section of the social-ecological model.

Removal of articles was based on pre-determined inclusion/exclusion criteria outlined in Appendix IV, that were added to as searches were conducted. Exclusion criteria added during the search process were terms not predicted by the researcher to be common in the literature; for example, HIV testing efficacy was added as an exclusion criterion after searching Medline database. After the preliminary pass of articles, a second review was conducted that relied more heavily on the presence of adolescents within the study and their relation to inclusion criteria. Several studies grouped adolescents within adult studies, making some reported findings difficult to tie directly to adolescent health outcomes. If researchers' reporting on adolescent outcomes was minimal, I carefully analyzed whether the study should be included and separated adolescent-specific data if possible.

3.3.2 Search Terms

A two-pronged approach was used to identify appropriate search terms: in the first approach, terms were narrowed down to target areas of interest, for example, Uganda. In the

second approach, broad terms, for example Africa, were used. The second approach was used more often, as limited literature on adolescents was found for the Ugandan context in preliminary reviews of available literature. By expanding the search to Africa as it relates to our study population, I was able to gather critical information. The main search terms used were “sub-Saharan Africa,” “Uganda,” “SRHR” and iterations of “SRHR” and “nutrition,” with additional terms added to capture other possible studies. These terms capture the main topics of this study, and additional terms were used to narrow results to different areas of SEM. The search strategies (found in Appendix V, VI, VII) of each database highlight terms used to arrive at the final number of studies reviewed.

3.4 Understanding the Factors that Influence Health Seeking Choices

In total, 73 articles were found: 29 from Medline, two from CINHALL, and 42 from Embase. *Figure 3* below breaks down the process of reaching 73 articles included within the literature review. Studies were not excluded based on research design or method and not analyzed for study strength as these considerations were outside the study’s purpose. Of articles selected, only nine (eliminating intervention articles) looked at nutrition and SRHR together, and the majority of these discussed relationship between food insecurity and transactional sex, with study participants not limited to just adolescents. This outcome highlights gaps this study intends to fill; there is little to no adolescent-specific literature viewing nutrition and SRHR under the same lens.

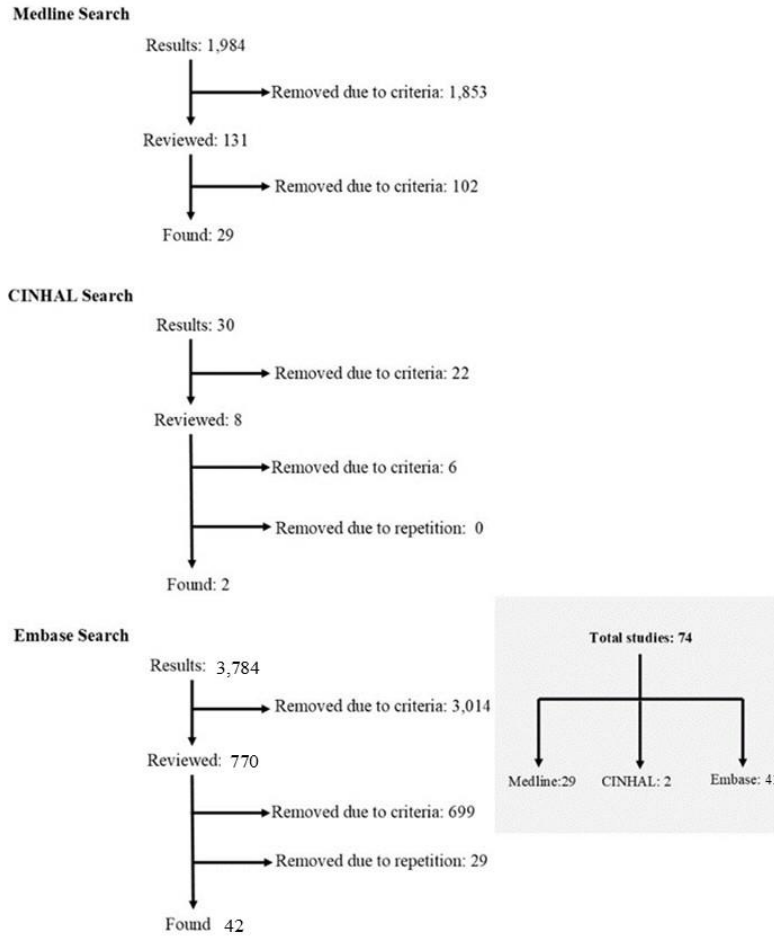


Figure 3 Database Results of Literature Search

The resulting studies were compiled using SEM categories of individual, peers, community, and society; the categories were further broken down into sub-categories within each grouping based on emerging themes. Some studies belonged to multiple categories and reported on additional times. Adolescent-based interventions were reported on separately and not categorized based on SEM. *Figure 4* depicts the breakdown of categories, sub-categories, “*other*,” and number of studies belonging to each, respectively. Appendices V, VI, and VII are search strategies used for each database.

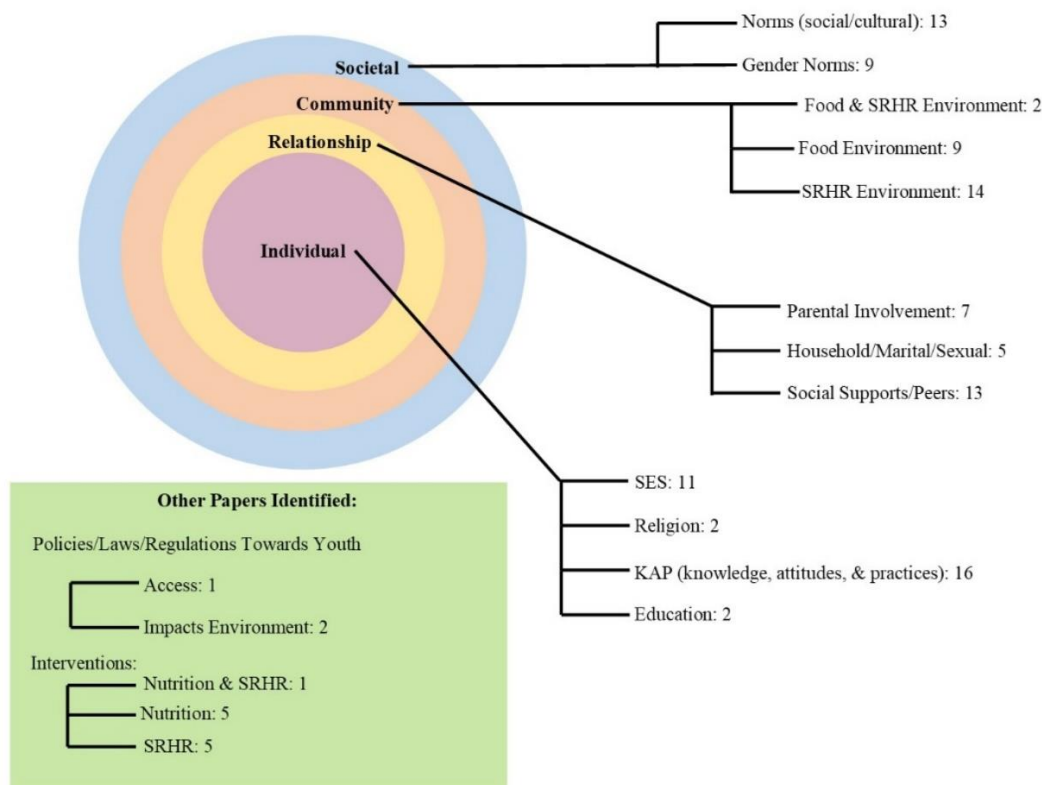


Figure 4 Organization of Papers into Categories, Sub-categories, and Other

3.4.1 Individual Factors

3.4.1.1 Socioeconomic Status (SES)

According to the literature, SES—predominantly informed by income and education— influences nutrition and SRHR decisions. Poverty strongly impacts nutritional status. In SSA, the majority live below the poverty line, with women being most susceptible (Adebowale et al., 2015; Yiga et al., 2021). Women in SSA have low purchasing power and few economic opportunities, making them less able than men to overcome resource scarcity and the cycle of poverty. Financial resources impact types and amounts of food available for purchase, with unhealthier food options cheaper than fruits and vegetables (Sedibe et al., 2014). Resource scarcity at the household level impacts the food security of household members, as most resources are required to be spent on food. When a household is required to spend meagre

income on health problems, food insecurity is exacerbated (Adebowale et al., 2015). As well, women with over five children or no children were found to be more undernourished than those with one to four children (Adebowale et al., 2015).

Additional mouths to feed impact intrahousehold resource allocation, and, culturally, females in a household are disproportionately impacted. This situation also creates intrahousehold competition: older siblings who are better able to compete for food leave younger siblings more likely to receive inadequate nutrition (Yetubie et al., 2010). Culturally, the identities of both women and men are closely tied to fertility. For example, men with multiple children are admired for their masculinity (Burtscher et al., 2020), whereas women with no or few children may be demeaned within their household and community, with resource withholding as a likely result. The number of livestock owned also impacts a household's overall nutritional status, as livestock represents economic stability and a source of meat and/or milk. The more livestock a family owns, the higher nutritional status of household members. The source of food is also important, as it dictates the use of household resources. A 2010 study (Yetubie et al., 2010) found that the adolescent children of families who relied on purchased food were more likely to be underweight than children of families that grew their own food.

The literature supports further education of women, as lower educational status is associated with poor nutritional status, which is partly attributed to low parental educational levels (Adebowale et al., 2015; Yiga et al., 2020). Higher parental education is linked to higher SES and more economic opportunities and is associated with greater nutritional knowledge, which impacts food choices (Yetubie et al., 2010). Education levels were also found to impact SRHR choices; researchers found lower education attainment was associated with inconsistent condom use (Davidoff-Gore et al., 2011). This association may be due to lack of SH knowledge, lack of money to purchase condoms, or due to marginalized positions requiring risky sexual behaviours (RSB) to meet financial needs through transactional sexual encounters.

Young people in SSA are disproportionately impacted by food insecurity due to factors such as irregular or insufficient income, unemployment (due to lack of skills or experience), minimal assets, and limited access to food safety nets (Masa et al., 2019) This relationship is important to understand as it plays a key role in the spread of HIV/STIs within marginalized groups. Women's lack of economic opportunities and reliance on men's resources play a crucial

role in their ability to negotiate condom use (Atwood et al., 2011; Chakalisa et al., 2019; Davidoff-Gore et al., 2011; Kamndaya et al., 2015; Masa et al., 2019). To find financial or material support, women often must seek transactional sexual relationships, knowing they lack power to make decisions about sexual safety (Atwood et al., 2011; Davidoff-Gore et al., 2011; Chakalisa et al., 2019; Kamndaya et al., 2015; Masa et al., 2019). Similar findings were not found in men, highlighting the gendered impact of food insecurity. Women in SSA are responsible for food provision and feel greater pressures of food insecurity, encouraging them to seek alternative economic resources to fulfill their role (Davidoff-Gore et al., 2011). Girl's lack of inclusion in decision-making and their lack of understanding of their changing social roles during adolescence negatively impacts their ability to identify and judge risks. Adolescents' lack of inclusion in decision-making opportunities has the potential to weaken their agency and confidence in communicating or negotiating while seeking alternative economic resources (Masa et al., 2019).

The above findings are in line with research conducted by Gotmark and Andersson (2020), who found that fertility—or total fertility rate (TFR)—is negatively correlated with education and the economy (2020). In the authors' study, women with less education and who were less financially secure were more likely to have higher TFR, although this relationship is not well understood. It can be assumed that education provides more opportunities for critical thinking, and decision-making, as well as exposure to sexual education, even informal, through peers, all of which can impact SRHR decisions such as contraceptive use acceptance. This study showed that, as per capita income increases, there is a trade-off between quantity and quality when it comes to having children. Those countries with higher wealth indexes encourage education, and the more highly educated the society, the fewer children families have. As the cost of children increases, due to added expense of education, the number of children people have declines (Gotmark & Andersson, 2020). This finding illustrates the role of education in wealth as families transition from needing more hands to help at home to focusing on their children's future opportunities.

Research has shown that post-colonial rule men face economic challenges, meaning they have little money for bride wealth—payments made to a bride's family to make a marriage official (Tomori et al., 2013). As a result, there has been a movement away from traditional

polygamous marriage towards Christian-approved monogamous marriages (Tomori et al., 2013). Tomori et al. (2013) addressed changing cultural and economic dynamics of polygamous relationships in Tanzania. They noted that although polygamous marriage has declined in Tanzania, masculinity is still associated with having many sexual partners, and, as men seek infrequent or informal partners outside of marriage, new forms of unreliable sexual relationships have arisen. Men sometimes seek these additional relationships to secure their feelings of masculinity due to their inability to provide for their families. According to Tomori et al. (2013), these unstable extramarital relationships create an expectation of sexual exchange for goods or resources. In other words, men feel obliged to give their sexual partners money and gifts, impacting the scarce household resources of their primary partner (wife). This undermining of support for their wives encourages the wives to seek additional relationships to secure much-needed resources, further expanding the sexual network and associated risks (Tomori et al., 2013).

3.4.1.2 Religiosity

Religiosity, as mentioned above, plays an important role in Ugandan culture, with a variety of religions prominent in the country. Gotmark and Andersson (2020) conducted a study relating human fertility to multiple factors, including economy, religion, and family planning (FP) programs in six global regions (2020). The growth of a population is strongly linked to TFR, but the importance of factors that influence fertility have not been well studied. TFR is the average number of children women would have if they lived to the end of their reproductive years with the same probability of bearing a child in each age interval, as currently seen on average across the population (Gotmark & Andersson, 2020). In their study of six countries, the authors found that a strong religious presence was positively correlated with TFR. In other words, the more deeply religion is embedded in a country, the higher number of births; this correlation was particularly strong in SSA countries (Gotmark & Andersson, 2020). It is worth noting Gotmark and Andersson (2020) found that religiosity was negatively correlated with education and that those who were more educated favoured use of contraceptives, resulting in a lower number of births.

Similar but more historically grounded findings by Tomori et al. (2013) support the idea that religiosity influences individuals' SRHR choices and outcomes (2013). As mentioned, this study focused on polygamous relationships in Tanzania. The authors found that due to colonialist rule by the British, male-female relationships have changed and women's autonomy has declined. The goal of the paper was to highlight the HIV risk informal relationships in Africa pose to the population, particularly to women, who now must accept more casual transactional relationships. According to the authors, the role of religion, specifically Christian missionary discourse, restricted women's sexuality by creating expectations for monogamy and for bride wealth payments. Tomori et al. (2013) notes that the traditional practice of having multiple wives, and its ties to masculinity, have not been eradicated, but expectations on women's SRHR choices have changed. The expectation of women to be "pure" are still in place, as are expectations of a single partnership due to Christian based dialogue. However, although men often are legally married to a single woman, they engage in masculinity boosting additional sexual partnerships (Tomori et al., 2013). As mentioned previously, women in this position have little ability to assert control as their financial needs cannot be met in other ways, and they can face high levels of violence. It is of note that some women in the study entered unstable arrangements strategically to increase their access to men's wealth to purchase goods that enhance their social status and improve abilities to further attract additional sexual partners (Tomori et al., 2013). In summary, Christianity influenced polygamous marriage structures common across SSA to monogamous structures, altering partnership and resource dynamics for many women who lost their ability to be on equal footing with another wife, necessitating many to enter unstable resource-driven partnerships to support themselves (Tomori et al., 2013).

3.4.1.3 Knowledge, Attitude, and Practices (KAP)

Urban SSA is seeing a nutritional transition away from traditional foods towards those that are nutrient poor. Studying women of reproductive age, Yiga et al. (2020) found that food skills and knowledge gaps impacted nutritional choices they made and that these knowledge gaps included a lack of understanding of the benefits of fruits and vegetables and a misunderstanding on what dietary diversity represents. Many participants felt dietary diversity was offering a range of foods, and not a diversity in food groups offered (Yiga et al., 2020). Similarly, adolescents'

lack of information on healthy eating and gaps in food skills were their main barriers to healthy eating (Musaiger et al., 2013; Yiga et al., 2021). In these studies, parental knowledge and support of healthy eating were found to have a somewhat positive impact, highlighting the need for inter-generational support of education attainment and nutrition knowledge.

Additionally, research has shown that cultural attitudes towards food, such as fruits being only a snack for children and not for adult consumption, impact types of food chosen. Yiga et al. (2020) found that positive food attitudes towards energy-dense diets also influenced types of food sought and that these unhealthier foods were perceived to have better taste and required less time to prepare. The false perception that healthy foods are tasteless, require more skills and time to prepare, and cost more than unhealthy food encouraged their minimal intake (Yiga et al., 2020).

Dietary practices of adolescents are not in line with their knowledge. Sedibe et al. (2014) found that adolescents were able to articulate what made up healthy dietary practices and why less healthy foods posed a health risk, but only a few routinely made healthy food choices (2014). Typically, adolescents in this study were found to eat convenience, energy-dense foods with a low intake of fruits and vegetables, and to frequently skip meals. Similarly, SRHR choices were not always in line with knowledge about RSB. In a study by Tesfaye and Agenagnew (2020), adolescents presented poor RSB knowledge and nearly half had unfavourable attitudes towards RSB, with two-thirds currently practicing RSB such as non-condom use (2020). Adolescents know that alcohol use with sex lowers their inhibitions and impacts sexual choices they make, such as who they go home with and their use of condoms, but it is still a frequent practice as it is associated with heightened sexual performance (Akinsoji et al., 2015; Arasi & Ajuwon, 2020; Groenewald et al, 2018; Manyapelo et al., 2017; Mokwena & Morabe et al., 2016; Schwitters et al., 2015; Shiferaw et al., 2014). Researchers have found that despite high knowledge of HIV and how to prevent infection, many participants' practices do not correspond with their knowledge (Barchi et al., 2021; Oyekale, 2014; Shiferaw et al., 2014; Schwitters et al., 2015). In these studies, reported barriers to safe sexual practices were trust for their sexual partner, partner was already pregnant, inability to use condoms when drunk, forgetting to use condoms when drunk, ignorance of where to get condoms, and that sex is better without a

condom. That participants did not translate their knowledge into practice is a key learning for developing interventions (Manyapa et al., 2017; Oyekale, 2014; Schwitter et al., 2015).

Iyoke et al. (2014) looked at sexual habits, knowledge of contraceptive methods, and pattern of contraceptive choices in student learners. They found that students had good knowledge of contraceptives available to them, but knowledge of how to use them appropriately was quite low, with only 34% able to correctly describe two modern methods. This gap in knowledge between names and proper use potentially contributes to low use of contraceptives (Iyoke et al., 2014). This knowledge gap is critical to SRHR success of female adolescents, as the reliance on peers for knowledge can encourage improper adherence, off-label drug use, or trust in ineffective traditional methods. Iyoke et al. (2014) found that many participants using contraceptives planned to discontinue use soon due to perceived complications. These findings were not fully supported by Mbachu et al. (2021), who found that poor knowledge and inconsistent/incorrect use of contraceptives was present in their participant group. Like Iyoke et al. (2014), these researchers also found that peers as a knowledge source did not equate with safe sexual or correct contraceptive use or knowledge (Mbachu et al., 2021). Overall, the results of both author teams showed that poor SRHR choices of adolescents were based on a lack of or false information. Other research (Atwood et al., 2011) has found that lack of SRHR knowledge also creates misinformation like the following: that women are unable to become pregnant the first time they have sexual intercourse, that AIDS is a false disease or that contracting it is God's will, and that if a man insists on using a condom, he views the woman as little more than sex worker.

3.4.1.4 Education

Neve et al. (2019) explored the association between in-school and out-of-school adolescents and health outcomes (2019). The study population was over 7,000 participants aged 10-19 years in nine settings in SSA. To understand the role of education and contraceptive use, the researchers asked participants to identify and describe two contraceptive methods and their proper use; only 34% could describe two methods accurately, showing gaps between awareness versus use of modern contraceptive methods (Neve et al., 2014). The contraceptive education platforms most used by participants were peers, and many stated their wish to stop using

contraceptives due to unfounded fears of negative health outcomes or complications (Neve et al., 2014). School enrollment was strongly associated with SRHR and healthcare use, which are critical as more decision-making autonomy during adolescence can have lifelong impacts such as adolescent pregnancy, HIV/STI infection, and planning for the future. Adolescents who have dropped out of school have a higher risk of adolescent pregnancy, early marriage, and negative health outcomes—all impacting their lifelong outcomes (Neve et al., 2019). Similar positive correlation between education and sexual knowledge and habits were found by Iyoke et al. (2014) when studying choices of unmarried students. For these students use of contraceptives was dependent on their knowledge of available methods and willingness to use them; knowledge included accurate understanding of usage and simply not just awareness of different methods.

Both studies (Iyoke et al., 2014; Neve et al., 2014) highlight the importance of continued access to formal education for more positive health outcomes for adolescents, for reducing early marriage and pregnancies, and for more positive adherence to modern contraceptive, all of which are critical for the future success of adolescents. Early marriage impacts adolescents' negotiating power, economic opportunities, and ability to develop through traditional education platforms, which, in turn, impacts their and their children's futures. The positive impacts of education resulted in in-school adolescents being 20.5% more likely to use a condom during sex and 4.1% more likely to communicate with their parents/caregivers about SRHR issues (Neve et al., 2019). Education is positively linked with increased awareness both of safer sexual practices and of the importance of discussing SRHR issues, highlighting education's continued importance for adolescents.

3.4.2 Relationship Factors

3.4.2.1 Parental Relationships

Parental involvement is a determining factor for more positive health outcomes if the parents support dietary diversity, regular food intake, and their household's food needs (Auma et al., 2020; Glozah & Pevalin, 2015). Studies included in this section reviewed positive eating behaviours and physical activity, but, for the purpose of this thesis, only changes in eating patterns will be discussed. Having social support from educated parents has been found to

positively impact adolescent eating behaviours (Glozah & Pevalin, 2015). Parent education is linked to greater understanding of the importance of good nutrition, adherence to recommended eating patterns, and greater access to nutrition resources (Glozah & Pevalin, 2015; Musaiger et al., 2013). For adolescents living at home, the availability of nutritious food and healthy food choices provided by their mothers impact their dietary practices, whereas fathers' "unspoken law" of having appropriate foods in the house has a less direct impact (Auma et al., 2020).

Parents influence dietary practices by entrenching certain practices overtime from childhood to adulthood (Auma et al., 2020). Healthy eating patterns in adolescents may be the result of family members providing useful information on the effects of food, continued emotional support, and the involvement of parents in preparing the intake of healthy foods. The sharing of nutrition information with adolescents provides them with crucial information to make positive nutrition decisions if motivation is present. Eating meals regularly with adolescents increases their fruit and vegetable intake, increase consumption of dairy containing foods, and make it less likely they will skip breakfast, possibly through modeling positive eating habits of their parents (Glozah & Pevalin, 2015). Another influencing factor is the view adolescents have of their parents and other important community members and their fear of displeasing their them, especially by becoming overweight (Glozah & Pevalin, 2015). The result of their home environment, access to healthier foods, and food in general, is not the responsibility of adolescents themselves. Lack of resources, time, or supports impacts a household's potentially meagre resources, which negatively impacts resource allocation at the intra-household level (Sedibe et al., 2014). It is important to view adolescents' individual food choices within the context of what is made available to them.

Parental influence on sexual practices of adolescents has been reported in the literature, one negative impact being lack of open discussions of sex due to cultural views of it being inappropriate. In a 2010 study, Lawoyin and Kanthula found that despite 92% of respondents agreeing that parents should be able to talk to their children about sex, parents or adults reported finding it difficult to broach the subject. According to Lawoyin and Kanthula (2010), socially and culturally in SSA, it is inappropriate to discuss sexual matters around women and children, based on western practices that encourage a reserved approach. Lawoyin and Kanthula (2010) found that it was more acceptable for parents to ignore the issue or give biased information that

potentially negatively impacted SRHR outcomes for their children. The authors also reviewed gender roles at play, finding that men and women do not have an equal say in a relationship, with women unable to assert and negotiate their SRHR. In their study, 54% of participants felt couples should stop using condoms, as the agreement of marriage created assurance and trust of their partners; 35% of participants reported having additional sexual partners outside of their marriage and additional non-regular partners. Lack of open dialogue about sexual matters, combined with cultural practices that do not support continued contraceptive use, places primarily women at additional sexual risk (Lawoyin & Kanthula, 2010).

The literature supports that parental knowledge or involvement in adolescents' sexual decision-making has positive impacts (Kugbey et al., 2018; Tsion & Netsanet, 2013). In a study conducted in southwest Ethiopia, despite 93% of adolescents reporting they had never discussed sexuality, family connectedness and support had protective factors against RSB (Tsion & Netsanet, 2013). Adolescence is a time of psychological change, and the majority of student participants said they participated in RSB for sensation-seeking—the pursuit of exciting and novel experiences (Tsion & Netsanet, 2013). Understanding this sensation-seeking behaviour in adolescents is important because it needs to be paired with supportive environments that encourage safe exploration. Similar findings were reported in a study by Kugbey et al. (2018). In addition to parental influence, the authors found that being female and peer support were key factors in healthy sexual behaviour. The gendered positive influence is most likely due to gender norms being at play where female abstinence is valued more than males.

Parental influence can also create negative dialogue around sexual relationships, specifically those of a transactional nature. A study reviewing adolescents' participation in transactional sex in Liberia found that most girls and young women participated in these relationships with older, more financially stable males to secure resources such as cash, food, clothing, western commodities, and school fees (Atwood et al., 2011). Parents of participants were frequently in favour of these relationships, as they reduced household financial burdens, as adolescents could access material and consumer needs without depending on their parents. In settings such as Liberia, adolescents may seek numerous transactional partnerships for increased “social insurance,” in case crises such as war or famine return to their region and to help overcome uncertainty in their daily lives (Atwood et al., 2011).

Atwood et al.'s 2011 study also found that although an adolescent's sexual debut is typically of a non-transactional nature, when adolescents began to gain financially and in social status in the eyes of their peers, sexual relationships became transactional. Although parents generally supported these relationships, they stipulated that they must be discrete for fear of the family's reputation being damaged (Atwood et al., 2011). Encouragement by the family and the much-needed financial gains from these relationships heightened power differentials between adolescents and their often-older sexual partner; the adolescents often therefore accepted sexual advances from unwanted parties, such as their teachers, in exchange for better grades, and had difficulties negotiating condom use (Atwood et al., 2011). Although parents encouraged use of condoms to avoid pregnancy, early marriage at a reduced bride price, and to maintain their daughters' worth in the sexual exchange market, a lack of communication about SRHR caused conflict. Despite being encouraged to use condoms, some girls believed they caused physical issues such as "*pain in the belly*" or "*damage to the womb*" (Atwood et al., 2011). Male participants reported that if they had paid for sex, they had the right to expect condom-free sex, and female participants also reported that if they did negotiate use of a condom, it encouraged boys to become quite rough; this was as major barrier to condom use as participants believed damage to reproductive organs through rough sex decreased fertility, negatively impacting female power and identity. As the traditional relationships of SSA are shifting towards those reflective of colonialist societies, parents' permissive attitude towards transactional sexual partners may represent a cultural shift in thinking about bride price. Instead of the bride price being negotiated between families, payment is now negotiated between sexual partners as sex is still highly valued and not provided free of charge.

3.4.2.2 Household/Marital/Sexual Relationships

Research has established that women are at most SH risk within their relationships due to RSB of their spouses, relationship inequality, and lack of negotiating power. Empowerment and increase in the agency of women are critical in mitigating physical and SH risks and increasing their overall well-being and economic independence (Amugsi et al., 2016; Davis & Kostick, 2018; Siedner et al., 2012; Tomori et al., 2013). Women in a study by Davis and Kostick (2018) highlighted the importance of a balancing act—balancing their agency with their relationship and

the influence it has on their decisions about SRHR. In SSA, women exist in a vacuum where there are few economic and educational opportunities in their communities, and as transactional sex becomes a requirement in their marriage, they are at substantial risk for food insecurity and HIV (Siedner et al., 2012). Women showing agency can have positive outcomes, such as reduced HIV risk and socio-economic benefits for their family, but agency can also put them at increased risk for physical, psycho-social, and SH problems if their spouses do not support their growing autonomy (Davis & Kostick, 2018; Siedner et al., 2012). Women are aware of inherent health/physical risks they are taking in being more independent, but they seek to support their household's well-being and partner intimacy. Women's autonomy is at odds with the notion that social and cultural expectations paired with reduced economic opportunities require women to continue to stay in unsatisfactory relationships. Because there are few structural factors in place, there is little societal support for women trying to develop their own agency and decision-making power within and out of relationships.

As women navigate the SRHR influences of relationships, education and financial resources may not be available to them, as, according to cultural tradition, men or other family members govern these resources (Davis & Kostick, 2018). In a study by Amugsi et al. (2016), the authors found that women had more opportunity in the household than they did elsewhere to exercise their decision-making skills and that decisions about household purchases increased household dietary diversity (DD). This study found that household structure had a large influence on women's autonomy. Those in monogamous structures were three times more likely than those in polygamous structures to make autonomous household decisions. Women in monogamous relationships have more autonomy because they do not have to share household resources with co-wives. This result shows the impact that primary and additional relationships can have on individual decision-making power (Amugsi et al., 2016).

Changes in the dynamics of polyamorous relationships influence SRHR choices; in the past, these relationships were considered to provide a stable resource base for women and to protect against the spread of HIV, so these relationships were considered to minimize a woman's health risks (Tomori et al., 2013). As economic power decreased, these formal partnerships became less formal, creating the need for women to find additional partners to gain resources, putting them at risk. In these informal partnerships, women play the role of a semi-wife, creating

a casual and long-term transactional relationship (Tomori et al., 2013). Since these informal relationships do not provide women with sufficient resources, they seek additional partnerships for material support. In this way, the sexual network expands and is in direct conflict with past relationship structures during colonial rule, where bride wealth was used as a tool to restrict women's sexuality in the name of Christian missionary preaching (Tomori et al., 2013).

As discussed above in section 3.4.1, in colonial SSA, men's economic circumstances have declined, making it difficult to maintain traditional, reliable sexual networks. Many feel they needed to assert their masculinity with extramarital relationships that encouraged use of their resources for gifts to additional sexual partners. This undermines their ability to support their primary families and encouraged women to seek additional sexual partners to fulfill their economic needs, with a lack of control of their situation increasing their risk of violence (Tomori et al., 2013). In a study by Tomori et al. (2013), some women reported that poverty motivated them to enter these additional relationships, but others reported that their motivation was to purchase goods that would enhance their social status and ability to seek more lucrative sexual partners and continued access to men's wealth. Tomori et al. (2013) found that the reinforcement of patriarchal practices and masculine power over women in these relationships is detrimental to women's health and well-being. These findings are supported by Siedner et al. (2012), who found that in HIV positive rural Ugandan women, those with higher power in their relationship were less likely to have low BMI, low body fat percentage, and low mid upper arm circumference (MUAC).

Reliance on males for resources such as food and housing places women and their families at risk of food insecurity. Women who experience more food insecurity are less likely than food secure women to be educated, receive sufficient support from their spouses in unpaid labour, and have access to income-generating activities; they are also more likely to experience different types of abuse in their relationships (Davis & Kostick, 2018). Structural compounding factors for food insecurity include lack of money, inability to work due to sickness, lack of educational experience, and lack of a supportive partner (Davis & Kostick, 2018). If a man is not providing within the relationship, women are more likely to engage in risky behaviours to compensate such as drinking or having additional sexual partners (including extramarital sex), but the cultural expectation is for women to sustain the primary relationship (Davis & Kostick,

2018). In Davis and Kostick's 2018 study of marginalized women in Zambia, those who did not support these behaviours had barriers to leaving such as stigmatization in their families and community and lack of a socially justifiable reason, making these relationships complicated at best. In this study, 70.4% reported they did not want to have sex but felt they could not refuse, and 66.5% felt they could not ask their primary partner to use a condom, even though this partner was participating in RSB (Davis & Kostick, 2018).

In a study conducted with a Samburu community in Kenya, Kock and Prost (2017) sought to understand factors that could influence male acceptance of FP. Samburu people are rural and often impoverished. Most aspire for large families to help with herds of livestock but are severely impacted by changes in their environment due to climate change (Kock & Prost, 2017). When considering FP for their household in the context of growing resource scarcity, many men in this study accepted reducing their family size, so all their children could be educated equally rather than selecting only a few to be educated while the rest participated in unpaid labour. When participants disagreed with FP, it was due to tribal reasoning (other tribes filling their land with people), and a desire to keep the same herd size (Kock & Prost, 2017). The authors found that a husband's support (or lack of support) for FP methods greatly impacts their wife's access, as their ability to negotiate, as mentioned, is low, and they usually rely on men's financial resources to pay for FP services. In this study, women's reasons for wanting to use FP was not to limit the size of their families but rather to space births, improve maternal/child outcomes, and provide more support for children in their early years without the distraction of another pregnancy or baby. Samburu women reported having increased access to education than they had had in the past, providing them with opportunities to partake in small business ventures, which was viewed positively as it diversified household revenue; however, to avoid marital issues, they left fertility decisions to their husbands. (Kock & Prost, 2017). This study shows that even as empowerment is increasing for Samburu women, they lack decision making power about fertility, and although, men's acceptance of women partaking in diversifying household revenue represents progress, relational power dynamics are still a large influencing factor in the SRHR choices women make.

3.4.2.3 Social Support/Peers

Social and peer supports can impact both nutritional and SRHR decisions, especially during adolescence, when the desire to conform to norms is understandably strong and avoidance of “outing” or bullying is critical to social success. Glozah and Pevalin (2015) found that when adolescents perceive they have high social support, they are more likely to partake in physical activity and have more positive eating patterns, but peer influence can also encourage unhealthy eating behaviours. In a review study by Yiga et al. (2021), young adults reported eating energy-dense street/fast foods due to peer pressure. These findings were supported by Musaiger et al. (2013), who found that parental and friend support of healthy and physical activity encouraged the adolescents in the study to eat healthily (2013), suggesting that family, friends, and other peers influence eating and nutrition.

Like nutritional outcomes, peer and social support can impact adolescents’ decisions to partake in sexual acts or practice abstinence (Mokwena & Morabe, 2016). Research on adolescent behaviour in Malawi and Liberia, found that transactional sexual relationships are socially supported by parents and others as a new modern form of bride wealth, and participation in these relationships raises one’s social standing among peers (Atwood et al., 2011; Kamndaya et al., 2015). Glick et al. (2018) found that adolescents’ reasons for participating in RSB include perceived engagement of peers (normalcy of risky acts) and the desire to conform to risky behavioural norms. The influence of others and perception of actions by members of their community impact sexual decisions adolescents make. When studying young men, Manyapeló et al. (2017) found participants felt a strong motivation to comply with opinions of significant people in their lives, including non-condom use as this was not the accepted norm.

Peer knowledge of safe sexual practices and SH also impacts choices adolescents make, and many adolescents rely on peers for information; for example, approximately 45.8% of participants in a Nigerian study relied on peers for their SH information (Akinsoji et al., 2015; Mbachu et al., 2021). Reliance on peers for sex education limits decision-making power as myths, such as condoms damage a female’s womb, sexual debut encounters cannot result in pregnancy, and improper use of contraceptives, are often shared (Atwood et al., 2011; Iyoke et al., 2014; Mbachu et al., 2021). This lack of accurate information encourages RSB of adolescents as they make decisions based on inaccurate knowledge and poor uptake, often resulting in use of

non-effective traditional or off-label methods of contraception (Iyoke et al., 2014).

Misinformation, such as boys' greater needs for sex, also upholds the peer-driven perception that women in relationships do not have enough to negotiate for their safety (Barchi et al., 2021).

3.4.3 Community Factors

3.4.3.1 SRHR/Nutrition Environment

Few studies have looked at the environment and its impact on SRHR and nutrition. Kalichma et al. (2012) looked at food insufficiency and sexual risks in informal drinking establishments in South Africa. The authors found that both men and women participants lacked adequate food in the previous four months, with more women (53%) experiencing hunger than men (29%). Women worried significantly more than men about having enough food, limiting their variety of foods, and going an entire day without eating due to lack of food, and women were 20% more likely than men to have had insufficient food for their families or themselves in the past four months (Kalichma et al., 2012). Women's fear of hunger, together with their disempowered positions in society, led them to have unprotected sex and to exchange sex for goods and alcohol. Men in the study who experienced hunger were more likely than women to be diagnosed with an STI, to exchange money or materials for sex, and to eat foods they did not want due to lack of resources. Women's hunger was associated with an exchange of sex to meet survival needs; hunger would drive them to engage in RSB as transactional sex was used to meet basic needs (Kalichma et al., 2012). Thus, lack of resources and unmet basic needs can change attitudes toward risky behaviour.

Kalichma et al.'s (2012) findings were supported in a more recent systematic review by Wiafe et al. (2021), which focused on differences in rural and urban environments. This study did not focus on drinking establishments but sought to understand the RSB adolescents partake in due to lack of awareness, structural barriers, and access to resources. Fifty-eight percent of the included studies found that rural adolescents had a higher likelihood of engaging in RSB than their urban counterparts; as well, the neighbourhood influenced adolescents' engagement in RSB, with RSB more likely if there were local structural barriers to accessing services and knowledge relating to SRHR (Wiafe et al., 2021). Those living in urban environments have

greater access to SRHR information and resources, such as contraceptives and FP and may have different social norms relating to sexual engagements and their outcomes (pregnancy) of adolescents. Although those from rural areas might have the knowledge, they face additional barriers of access, such as the distance to a healthcare facility, and economic capacity (Wiafe et al., 2021). When observing healthcare facilities in Uganda, the author of this thesis frequently witnessed the absence or shortage of drugs in rural health care facilities and more staffing shortages than in urban centres (personal observation 2016, 2019).

In the above-mentioned review study (Wiafe et al., 2021), the nutrition and eating habits of urban adolescents were associated with potential negative outcomes, as their environment provided opportunities for sedentary transport and fast-food consumption. Although studies looking at the nutrition and the SRHR environment were limited, both Wiafe et al. (2021) and Kalichma et al. (2012) highlight linkages between nutrition and SRHR and how they can impact current and long-term health outcomes of adolescents.

3.4.3.2 Nutrition Environment

The nutrition environment of adolescents is complex and dynamic, with many factors influencing access, availability, and DD—a sign of a balanced diet. Since adolescent females do not have economic opportunities, ability to own land, or autonomy in choices, they are often at the mercy of others, including family members and males. Wealth is directly tied to the ability to procure resources such as food, and in large families, there is often not enough food to adequately feed all household members (Kahsay et al., 2020; Powell et al., 2017; Sedibe et al., 2014; Yiga et al., 2020). When investigating mobility and its impacts on South African adolescents, Ginsburg et al. (2013) noted an increase in household SES was positively associated with girls' BMI, but no impact was seen for boys, highlighting the gendered resource allocation within a household. Relocation often negatively impacts the diets of girls (due to changes in resources and availability including purchasing opportunities), and changes in supportive relationships (Ginsburg et al., 2013; Powell et al., 2017).

Cultural norms influencing the nutrition environment include links between weight and social status, the perceived better taste of energy-dense foods high in salt or fat, and weight gain

(Yiga et al., 2020). The cultural belief that large women are more attractive than thinner women impacts the nutrition decisions females make, especially if they wish to avoid being victims of bullying by their peers (Yiga et al., 2020). Despite education on the importance of healthy eating, it is difficult to break dietary habits and beliefs because they are engrained from childhood, and children typically follow similar patterns of eating to their parents (Auma et al., 2020). The culture and discussion of food at household and community levels impact the “right” and “wrong” foods to be included in one’s diet (Auma et al., 2020; Yiga et al., 2020; Yiga et al., 2021). The influence of others’ opinions and nutrition advice on female bodies, especially advice provided by religious institutions, impact the environment through access, availability, and perception of correct choice (Yiga et al., 2020).

Agricultural practices and the need to maintain diversity of land types and crops have obvious impacts on DD, including increasing the purchasing power of a household (Bellows et al., 2019). In one study, failure to understand the link between agricultural practices and diet outcomes and DD was associated with being highly disadvantaged (Powell et al., 2017). Agricultural practices or even subsistence farming is not always an option for all; start-up costs of seeds, soil, and fertilizer, or purchasing land, can be major barriers (Kahsay et al., 2020). Often those practicing agriculture live in rural areas, which impacts the nutrition environment. Rural regions tend to have limited access to a variety of foods, impacting DD and the availability of much needed nutrients for adolescents (Kahsay et al., 2020). Living in a food desert negatively influences the nutrition environment, as greater resources are needed to procure food, and only limited types of foods are available, with energy-dense street food often being the only option (Yiga et al., 2020; Yiga et al., 2021). As well, climate change has impacted agriculture greatly, with food shortages common and variation in rainfall impacting harvest outcomes (Kahsay et al., 2020).

Nutrition education and people’s perception of food and also influence the nutrition environment. The perception of convenience, high cost of healthier foods, and better taste of energy-dense or high salt and fat foods all impact food choices (Sedibe et al., 2014; Yiga et al., 2020). In their systematic review of women’s dietary and physical activity behaviours in urban SSA, Yiga et al. (2020) found that the negative perception of healthier foods was slightly dulled by awareness of the unhealthiness of energy-dense foods. They also found that greater

knowledge of nutrition and health concerns translated into a more positive attitude towards healthier foods, but young adults still felt that health problems only manifest in older age and are not a current concern for them (Yiga et al., 2020). Another study (Kahsay et al. 2020) found that although food taboos are decreasing, they are still prevalent in certain regions. Food taboos limit women's intake of nutrient-dense foods, such as animal protein, which is critical in resource-limited regions. Avoiding certain taboo foods in resource-limited regions can significantly increase under nutrition in adolescent females (Kahsay et al., 2020).

Nutrition education could be a solution to food taboos, but there is a disparity between what adolescents know and what they practice. In one study, for example, despite understanding healthy dietary practices and knowing why unhealthy choices increase health risks, few adolescents routinely made healthy food choices (Sedibe et al., 2014). Additionally, the institutions who are encouraging healthier dietary practices should provide options, but this is not the case. Schools do not provide healthy and affordable food options to the students, and despite awareness, many adolescents purchased it anyway (Okeyo et al., 2020; Sedibe et al., 2014) A study in South Africa also found that teachers providing nutrition education lacked formal nutrition training, and their responses to questions was poor (Okeyo et al., 2020). This finding is worrisome as students rely on teachers as a source for nutrition information, but their lack of familiarity with nutritional guidelines and information creates a nutrition environment based on possibly unfounded or unsupported information.

3.4.3.3 SRHR Environment

The SRHR environment influence types and kinds of decisions adolescents can make about their own bodies, sexual choices, and their participation in sexual acts. The literature available on SRHR environment predominately addresses alcohol, or substance intake, and its influence on choices made. There is a lack of understanding of how adolescents specifically assess and negotiate RSB in low-resource and high-HIV communities as, much of the research does not differentiate between adults and adolescents (Groenewald et al., 2018). In SSA, males are more likely to drink heavily and to consume alcohol during sexual situations (Woolf-King & Maisto, 2011). For example, in South Africa alcohol intake of those between 11 and 20 years is of growing concern as frequency and quantities consumed are associated with an increase in the

number of sexual partners, unprotected sex, and sexual encounters that are later regretted (Groenewald et al., 2018; Letsela et al., 2019). An outcome of this behaviour is an increase in HIV risk among heavy drinkers, as they are more likely to engage in risky behaviour when their inhibitions are lowered (i.e., unprotected, or regretted sex), early sexual debut, and engagement with multiple partners. In several studies, women report that consuming alcohol has impacted their decision making and led to poor decisions about who they go home with and who they have sex with, as well as later confusion on the consensual nature of sexual encounters (Groenewald et al., 2018; Letsela et al., 2019). Often sex under the influence of alcohol is unprotected as condom use is overlooked/forgotten, the ability to negotiate a condom's use is impaired, and the ability to correctly use a condom is compromised. The odds of women considered to be high alcohol users having used a condom during their last sexual encounter was 83% lower than those of other women (Lama et al., 2016; Letsela et al., 2019). For men, significantly lower condom use was associated with those who had only primary level education and those who believed alcohol did not increase their RSB (Lama et al., 2016). Nwagu (2016) had similar findings in Nigeria. In this study, student participants reported that alcohol and substance use was related to higher numbers of sexual partners, and those that did not partake were better able to control their sexual encounters in a positive way. These outcomes highlight that, to be successful, SRHR interventions need to target alcohol and potential substance use in adolescents. As the research shows, use of alcohol in adolescents is high, and the association between use and RSB in SSA is positive (Woolf-King & Maisto, 2011).

Related to alcohol consumption is the transactional nature of alcohol purchases in taverns. In one study, for example, women reported that alcohol purchased for them led to an implicit message that sex would be exchanged later (Letsela et al., 2019). In the environment where alcohol is served, sexual exchange is seen as an acceptable option, so women have few opportunities to negotiated. If someone buys her alcohol, women typically lack the resources to reimburse the person. In this environment, if a woman leaves the tavern without the buyer, it is generally believed that she would “rightfully” be sexually assaulted by the buyer at a later time (Letsela et al., 2019). This pressure of exchange encourages women to accept their fate of being compelled to sleep with men, eliminating the consensual nature of the encounter. The SRHR environment in taverns specifically increases the risk of sexual assault because women lack negotiating power, especially when they are drunk (Letsela et al., 2019).

Heavy male consumption of alcohol in SSA also has negative impacts on their primary partners' SH. Women are at increased HIV risk if their male partners consume alcohol and buy alcohol for women in taverns in exchange for sex; they also are at risk of sexual coercion at home when alcohol is involved (Woolf-King & Maisto, 2011). In Africa, no alternatives to homelessness exist (there are no shelters, for example); therefore, women have few alternatives when they find themselves in powerless positions, leading them to make decisions that impact their well-being such as partaking in informal or formal sex work or expanding their sexual network to garner more resources (Greif, 2012). Not being able to control their lives can increase feelings of fatalism or depression, diminishing inhibitions and increasing the likelihood that they will take risks. A study conducted in Nairobi found that women who had multiple sexual partners were more likely to face difficulty in meeting house, medical, and food needs than those who did not (Greif, 2012). Kamndaya et al. (2015) found that many women engage in transactional partnerships, so they can pay for private health care and avoid public healthcare, which lacks trained staff and medical supplies; despite the expense, they perceive private care as being more reliable for them and their children. Evidence shows that compared with women in monogamous relationships, those with multiple partners are less educated, more impoverished, and more food deprived, which make it more likely that they will participate in RSB (Greif, 2012). In low resource settings, multiple women may participate in transactional sexual partnerships to fulfill economic and resource needs, while this relationship between low resources and transactional sex is not observed in men, highlighting the gendered SRHR environment (Kamndaya et al., 2015). When women are aware that other members of their community partake in transactional sex to their subsistence need, they may see this behaviour as socially acceptable and validate their risky actions when other avenues of earning resources are not present (Greif, 2012).

An additional scenario beyond meeting necessities is participating in transactional sexual partnerships for consumer goods (Kamndaya et al., 2015). This driver for seeking transactional partnerships is often not discussed in the literature, but it is an important factor for young people in urban poor settings. Kamndaya et al. (2015) found consumerism goals were connected more strongly to transactional relationships than was material deprivation. As the authors found, many young people in SSA aspire to a glamorous lifestyle, which encourages them to seek financially secure older men who can provide them with money to buy fashionable clothing and hair styles, cell phones, and better-quality food. Some women may wish to acquire these resources to

increase their desirability to other men, so their economic and social goals are secured. According to Kamndaya et al. (2015), men have reported taking advantage of women's consumer goals by using the unbalanced power relations to control the terms of sexual encounters, often to the detriment of women.

Another influencing factor shaping the SRHR environment is lack of equal power dynamics coupled with the influence of community members. Men have a strong motivation to please others, comply with community/social norms, and conform to their peers' beliefs about sexual encounters, including non-use of condoms despite knowing the risks (Manyaapelo et al., 2017). Men's power to dictate terms of sexual encounters and condom use—while also maintaining their social standing, conforming to norms, and enhancing their masculinity—disproportionately impacts women's SH (Manyaapelo et al., 2017). Although the nature of relationships is changing due to colonial influences, men's self-worth—their masculinity—is still measured by the number of sexual partners they have, rather than the number of wives, and many partners expands the sexual networks (Tomori et al., 2013). A key part of colonial influence is religion, and the high regard religious leaders' hold for SRHR home practices. When Egeh et al. (2019) explored religious leaders' influence on SRHR in Islamic societies, they found that acceptance of contraceptive use was permitted by religious leaders for proper birth spacing but was unacceptable to limit family size, or if it tempted sex outside of marriage. Religious leaders' influence on the SRHR environment directly impacts women and their right to choose under international human rights and humanitarian laws, but religious leaders do not necessarily hold these laws in high regard. Culturally, female identity in African countries is closely tied to fertility and becoming pregnant, so to use contraceptives or have abortions rejects this identity (Burtscher et al., 2020). The complex nature of the SRHR environment in SSA limits options to deal with negative sexual outcomes; for example, seeking an abortion leads to what is considered to be “rightful” ostracization and shame of the community (Burtscher et al., 2020; Marlow et al., 2014). Even though women lack power in sexual relationships, outcomes such as unwanted pregnancy are largely blamed on women. Upholding the unequal power relations between men and women influences the SRHR environment and negatively impacts the health and future of women.

One approach to creating a more supportive SRHR environment is SH education, but there is a lack of literature in this area. In Uganda, positive changes in sexual behaviour and the incidence of HIV did not come about through condom education but through promotion of sexual abstinence (Mokwena & Morabe, 2016). In a study with South African adolescents aged 15 to 18 years, researchers found major themes: adolescents understand sexual abstinence, abstinence is protective against STIs and unwanted pregnancies, and practicing abstinence ensures a better future. The adolescents in this study's focus groups discussed peer pressure, myths, and perceptions about sex, use of alcohol and drugs, and the influence of the media as barriers to successfully practicing abstinence. School based sexual education was viewed as working against the promotion of abstinence and was viewed as a barrier to its practice (Mokwena & Morabe, 2016). Abstinence programs, however, can negatively impact the rights and autonomy of females who are subjected to items like virginity tests, and they may not be as successful as practices that involve the influence of peers and the community (Mokwena & Morabe, 2016).

3.4.4 Societal Factors

3.4.4.1 Norms (Social and Cultural)

Social norms are unwritten rules that impact behaviours, actions, and beliefs of those belonging to a group. In patriarchal societies, like Uganda, social norms prioritize boys access to food—both quantity and quality—and education (Berhane et al., 2019). These same norms negatively impact female adolescent health, as their health rights, including contraceptive use and the right to refuse sex, are not socially supported. Berhane et al. (2019) studied Ethiopian adolescents, finding that social norms for girls resulted in early marriage to preserve their virginity and prevent births out of wedlock. These accepted norms impacted adolescent girls' ability to make the right choice for their body and their future, impeding their nutritional and SRHR outcomes. Social norms can also keep power imbalances that victimize girls in place. For example, in Berhane et al.'s (2019) study, more than 18% of girls had never attended school, 89% did not have a personal income, and 80% lived in food-insecure households. Food insecurity highlights the inequalities in a household's resource allocation. Women and female children are typically the first to bear the burden of low food and financial resources within a

house, as, again, the social norm of patriarchal societies is to provide more to men and boys than to women and girls (Durairaj et al., 2019).

Norms impact not only resource allocation but also what is made available to women and female children, availability that is also influenced by cultural food taboos. These taboos or beliefs are engrained in a society that does not question the attachment to traditional foods and practices, regardless of the harm they do or inequality they engender (Auma et al., 2020). As mentioned previously, in Uganda, animal protein is scarce in rural areas to begin with, but females in general do not eat it, even when available, as a traditional taboo exists that discourages them from consuming chicken and eggs (Durairaj et al., 2019). Similar taboos have been observed for fruit consumption, which may explain lack of intake by adults; the taboo may arise from a cultural belief that fruits are snacks for children and that only those of low social status eat fruit (Durairaj et al., 2019; Yiga et al., 2020; Yiga et al., 2021).

Cultural beliefs also exist for energy-dense confectionery, salty and fat-rich foods, and a higher body weight, all of which are associated with high social status (Yiga et al., 2020). Several studies have found that in regions of SSA the overweight body image for women influences food intake as it is associated with beauty, dignity, health, wealth, and good treatment by the husband; in contrast, weight loss is viewed as negative because of cultural stigma and because it is associated with signs of HIV/AIDS (Ozodiegwu et al., 2019; Yiga et al., 2020; Yiga et al., 2021). Although the overweight body image may not be as idealized as it once was due to awareness of health risks, common practices such as force-feeding adolescent girls to hasten development and therefore marriage are still present (Ozodiegwu et al., 2019). The positive symbolism of larger bodies and stigma against thinness impacts food choices adolescents make to fit into cultural body norms. Girls with non-conforming body types, such as thin or muscular, may be social targets for bullying and endless questions about their health and HIV status (Ozodiegwu et al., 2019). Most adolescents wish to conform to the social and cultural norms prized by their peers and community; therefore, want to conform can ignite a wish to gain more weight through food choices.

Norms similarly influence adolescents' SRHR choices. One such influence in African countries is early marriage, especially for rural adolescents whose families may be resource poor and wish to benefit from the sexual exchange market (Adebowale et al., 2012). Child marriage is

a socially and culturally endorsed practice, although some changes have occurred with globalization, urbanization, and increasing female education attainment. Early marriage cuts childhood growth periods short and violates the rights of the child in exchange for the potential economic survival of her family (Adebowale et al., 2012). Consequences to the child bride are numerous, including physical (non-consensual and cross-generational sex, pregnancy complications, maternal death, higher rates of undernourishment), emotional (being treated poorly at the in-laws' home, separation from family), and intellectual (school drop-outs, changes in self-development opportunities). These marital decisions often reduce women's empowerment due to cultural norms that dictate the need to submit to the husband and high fertility rates as young sexual debut, often without contraceptives, often leads to large families (Adebowale et al., 2012).

Gendered social and cultural norms are discussed further in the next section, but a brief expansion of SRHR outcomes for adolescents is warranted here. Culturally, men in a patriarchal society have the upper hand in power relations with women and determine sexual safety (contraception use). As we have seen, although the traditional practices of polyamorous relationships are changing, men's ego and masculinity are still tied to the number of sexual partners they have, and, culturally, women are supposed to obey and be submissive, even if sexual acts are unsafe (Lawoyin & Kanthula, 2010; Tomori et al., 2013). In a mixed gendered study with adolescents, participants were asked to agree or disagree with the following statement: "Men need sex more frequently than women"; those who agreed were 4.5 times more likely to be confident enough to insist on sex compared to those who disagreed (Barchi et al., 2021). This statement reflects the perception that males need sex, putting them in control and allowing their actions to be socially accepted when in control of sexual negotiations. Norms that establish that the SRHR of men is of greater importance than that of women are already well understood in adolescence and continue into adulthood. The burden females bear starts young, impacts their future, and negatively impacts their SRHR.

Norms not only impact how men and women interact but also how peers and families interact with women. In one study on abortions, women-led focus groups agreed that if they knew that another woman was seeking an abortion and that if this knowledge became known, they would be ostracized, labelled, and stigmatized, and accused of being unfaithful to

husbands/boyfriends (Marlow et al., 2014). Furthermore, the same focus groups revealed that if a young woman was known to have sought an abortion, she would be perceived as a poor candidate for marriage. All these factors encourage secrecy; therefore, women gravitate towards unsafe abortion practices. Reported barriers to care in this study were the insults and shame from health care workers who would berate women seeking abortions (whether pregnant out of wedlock or married) for not upholding their role as a wife and woman (Marlow et al., 2014).

Also influencing interactions between families and wives is perception of HIV/AIDS risk. When HIV/AIDS is present in the household, women are often blamed, regardless of the size of their sexual network (Dworkin et al., 2013). The norm of unequal resource distribution leaves women in these situations without much choice over their health and safety (Dworkin et al., 2013). Typically, if a husband dies due to HIV or suspected HIV/AIDS, a wife may become the property of her husband's brother or forcibly removed from her house by her in-laws. Women are stripped of their property rights in exchange for bringing HIV into the family and bringing shame, further putting them at risk and influencing SRHR choices made in pursuit of survival and care of children (Dworkin et al., 2013). These negative social and cultural norms, paired with women's lack of negotiating power and few assets, leaves little room to insist on safe sexual practices when entering transactional partnerships. Growth of a wife's independence from their husbands and in-laws could have beneficial outcomes for women's SRHR.

3.4.4.2 Gender Roles/Norms

If there is any hope of reaching the UN Sustainable Development Goals (SDGs), adolescents need to be engaged and invested in, but they are often excluded from development and inclusion in health policies and programming (Jones et al., 2020). As they transition out of childhood, many changes an adolescent faces are social, and the physical and emotional changes they undergo impact how families, societies, and communities regard them. Historically, more efforts have focused on adolescent boys as they represent livelihood security; girls are not valued because they are confined to the house for unpaid labour (Jones et al., 2020). Adolescent access to general health and nutrition services is impacted by lack of adolescent friendly services, rural/urban inequalities, knowledge stigma (especially on SRHR topics such as contraception, puberty, and menstruation), and social norms around age and gender. These inequalities are

exacerbated by structural barriers such as poverty, environmental degradation, and lack of services available (Jones et al., 2020). Jones et al. (2020) found that rural adolescents in Ethiopia received inadequate and inaccurate information about SRHR: only approximately 50% of young rural adolescents had access to information on puberty compared to 64% of young urban adolescents. In the same study, adolescent boys reported having greater access to information than girls, likely because there is less gendered stigma around male puberty-based changes, whereas they indicated that discussion of menstruation and puberty in general is biased towards girls, making discussion for them next to impossible or including harmful information such as menstruation is an illness or a sign of being sexually active (Jones et al., 2020). Researchers also found that when information is provided, it is typically to older adolescent girls and is more general than practical; they also reported that only about 47% of schools had classes on puberty, with topics quite limited (Jones et al., 2020). Targeting of older adolescents is limiting as many girls have left school by this point, and the provision of non-specific and non-practical information encourages adolescents to seek information from non-reliable resources, potentially perpetuating harmful beliefs about their bodies and gender.

Girls and women in SSA are at greater risk for developing nutritional deficiencies and disproportionately impacted by household food scarcity (Belachew et al., 2011; Durairaj et al., 2019; Jones et al., 2020; Kahsay et al., 2020). In 2011, a cross-sectional study with Ethiopian adolescents was conducted by Belachew et al. (2011). At the time, little was understood about the relationship of gender roles, adolescent females, and food scarcity in the household. Belachew et al. (2011) used reported illnesses as a measurement of well-being. When girls were food insecure, reports of illness were twice as likely, and the risk of illness tripled when they were food insecure and a part of a food insecure household. Girls were 7.4 and seven times more likely to have difficulty participating in activities due to poor health or feelings of tiredness/low energy compared to males, respectively. The researchers found that the so-called “female advantage”—biological and behavioural advantages such as not partaking in dangerous, injury-prone activities—were lost due to gender norms and values established in developing countries (Belachew et al., 2011). When a household was food secure and decisions on resource allocation were not required, a gender bias was not present. When discussing their role in the household, female participants reported being in subordinate positions to males and were socially, culturally, and economically dependent on others, precluding decision-making about resources (Belachew

et al., 2011). Negative feelings towards their household impacts not only female adolescents' health but also their capacity to learn, negotiate, and empower themselves. Men and boys of the household are more physically productive for social reasons and are therefore in a better position to defend the family in unfavourable circumstances than are girls and women. This dichotomy of power and feelings of “usefulness” keep inherent power dynamics in play and the nutritional risk of female adolescents high.

As discussed, rural adolescents have greater challenges to overcome as larger family sizes, food insecurity in households, and lack of clean drinking water result in greater nutritional problems (Kahsay et al., 2020). In a study by Kahsay et al. (2020), rural adolescents were found to be at greater risk for food insecurity due to factors such as lack of or limited access to and availability of foods (in part due to shortages and seasonal variations) and not owning farmland. To compound the issue, long distances must be traveled to fetch water, which is usually unsafe for consumption and hardly meets domestic needs, let alone the demands of a subsistence farm with access to fresh and safe foods (Kahsay et al., 2020). Adolescent girls are those most often tasked with fetching water for the household, which impacts their ability to focus on school due to lack of time and the hunger they experience after a long trek for water (Kahsay et al., 2020). This increase in workload translates into critical caloric expenditure that many of these rural adolescents cannot afford. Rural adolescents are a demographic in dire need of interventions aimed at improving their nutritional outcomes. Most participants in Kahsay et al.'s 2020 study, claimed that interventions in their area were largely aimed at improving nutritional outcomes through counseling, supplements, food aids, and additional supports for pregnant/lactating women and children—in other words, they were not directed to the adolescent demographic. This gap highlights the continued unfulfilled needs of adolescents, specifically females.

Similar findings were found by Durairaj et al. (2019), who reported that women and girls in Uganda are disproportionately impacted by food scarcity due to gender inequalities at play within households. According to the authors, girls and women are first to face the burden of resource scarcity, adverse agriculture, and economic shocks. These findings can also be viewed through traditional food patterns; Ugandans traditionally eat a core-fringe-legume meal pattern that emphasizes grains or tubers, paired with a small side dish or sauce or stew and occasionally legumes. Animal protein is rarely eaten and, when, it is available, as discussed earlier, females

do not partake due in part to gendered traditional food taboos (Durairaj et al., 2019). Although traditional food taboos are less influential today in women's food choices, cultural and social barriers still play a role in their food choices and their access scarce resources.

As we have seen, the masculine ego in SSA is bolstered by having a large number of sexual partners, and, culturally, men decide whether to use a condom. Manyaapelo et al. (2017) conducted a study with men about factors that influence condom use. Participants said that they intended to use condoms with every sexual encounter, but their actual use depended on gendered norms of their community. In other words, their intention to use condoms was strongly influenced by what significant members of their community thought about this behaviour: compliance with gendered norms was important to them. The researchers also found a large variance between intention to use and actual use of condoms at every sexual encounter, which is supported by men's reported perceived behavioural control over condom use (Manyaapelo et al., 2017). This behaviour corresponds with gendered power relations and men's knowledge of the power they hold over condom use with sexual partners. The women reported that men used multiple tactics to avoid condom use (Manyaapelo et al., 2017). Women in an additional study by Mbachu et al. (2021) reported that when condoms were not used, the reason was typically that men chose not to use them, were not prepared to use them, or supposedly did not know how to use them. Mbachu et al. (2021), found that adolescents have the lowest rate of contraceptive use: ninety-three percent of adolescents in developed countries reported using modern methods during their last sexual encounter, but only 48.7% of adolescents in developing countries reported using them. Adolescent females in Mbachu et al.'s (2021) study reported condom use resulted in more sexual satisfaction for them, as they felt protected from negative consequences, whereas males reported a decrease in sexual satisfaction, which resulted in low condom use.

An additional gendered influence is that adolescent girls are not provided with SRHR information due to cultural and social restrictions. Manyaapelo et al. (2017) found that some adolescents had correct information about modern contraceptive methods, but many could not rely on family members for information, and rather believed what they heard from media and friends. Some harmful beliefs of contraceptive use before adulthood are contraceptives block a female's womb, impacting her fertility (and therefore value), increased chances and delays of pregnancy during marriage, condom slippage during intercourse being tied to infertility and

mortality, and condoms being washable and re-usable (Manyaapelo et al., 2017). Lack of reliable and sound information about contraceptives and SRHR in general negatively impacts female adolescents' critical thinking abilities and negotiating power over contraceptive use. If the information they have is unreliable or not robust enough for them to know safe practices, it is easy for the gendered power relations to overtake the decision-making process.

Because they are unable to determine their own safe sexual practices, girls and women are vulnerable to having unintended pregnancies. Between 2010 and 2014, it was estimated that 55.7 million abortions took place every year, with 25.1 million considered to be unsafe and 97% of these unsafe abortions occurring in low- and middle-income countries (Burtscher et al., 2020). Uganda has restrictive abortion laws that do not support a reduction in abortions but rather criminalize them and encourage unsafe practices. Issues involving the reform of Uganda's anti-abortion law goes beyond politics and is impacted by gendered social and cultural beliefs and stigmas; Ugandan women's identity and value is closely tied to their fertility (Burtscher et al., 2020). A woman opting to have an abortion is rejecting this cultural identity, and, as discussed, if she is discovered, she could be ostracized and branded as a killer or sex worker in her community. This stigmatization only increases if the man involved is not on board with the abortion, and if the woman is unmarried having or even wanting an abortion will impact her marriage prospects (Burtscher et al., 2020). In a study by Burtscher et al. (2020), many women reported reasons for unwanted pregnancy as lack of knowledge of their menstrual cycle and an inability to obtain contraceptives, but gendered stigma and shame around abortions influence their ability and choice to have one (Burtscher et al., 2020). Thus, inadequate knowledge, an inability to negotiate, and lack of autonomy over their bodies due to their gender greatly impacts women's health, their SRHR options, and their future.

3.5 Regulations, Policies and Laws Affecting Youth in Uganda

3.5.1 Access

Only one study by Onwujekwe et al. (2021) was found to review access to health and food/nutrition resources in urban development policies in Nigeria. Researchers found access to

health and food/nutrition resources were explicit in 20 policies/plans. These policies were viewed under a lens of equity and social inclusion. Emerging themes for health resources included the provision of functional and improved health infrastructure, strengthening of primary healthcare for improved quality health service delivery, provision of safety nets and social health insurance, community participation and integration, and public education and enlightenment (Onwujekwe et al., 2021). These emerging themes target foundational inputs that could tackle systematic barriers to access for the majority of Nigerians. Upstream identification of gaps in needs for health resources can support more positive health outcomes.

For nutrition resources, Onwujekwe et al. (2021) found that emerging themes were provision of accessible and affordable land to farmers, upscaling local food production, diversification and processing, provision of safety nets, private-sector participation, and special considerations for vulnerable groups (Onwujekwe et al., 2021). These themes, like health resources, highlight gaps in achieving upstream approaches to nutrition in Nigeria through policy/plan development. In addressing systematic barriers, such as land inaccessibility, additional nutritional needs of vulnerable groups, and safety nets for nutritional resources, the health outcomes for most of the population would be more positive. Development of policies with equity and social inclusion in mind creates an environment of sustainable community health that addresses root issues versus a “band-aid” solution.

3.5.2 Environment Impact

Policies and laws influence the environment adolescents are exposed to and choices they make. Consumers interact with the food environment, which enables or disables the accessibility, affordability, and availability of food (Booth et al., 2021). In a 2019 regional report on SSA, the food environment was found to be quite poor, with a lack of policies encouraging intake of healthful and nutrient-dense foods and a growth of diets high in sugars, salts, fats and processed foods (Onyango et al., 2019). Increase in processed food intake is being shaped by sociocultural drivers and puts smallholder farmers at risk, as there is a higher reliance on purchased goods versus grown goods, which also negatively impacts dietary diversity (Booth et al., 2021). To address these changes in diet, national multisectoral policies guided by the Lancet framework of nutrition-specific and nutrition-sensitive interventions have been put in place in African

countries, but the target population is children—again demonstrating that policies are not aimed at the growth period of adolescence (Onyango et al., 2019). Some obesity/overweight policies have been implemented that encouraged dietary change in the adult population, but there have been major delays in acceptance of such policies, highlighting the difficulty of engaging consumers in the development of regulations that will impact their purchasing decisions. One such example is the taxation on sugar-sweetened beverages in South Africa to prevent and control obesity (Onyango et al., 2019).

In a synthesis of five policy areas to support consumption of healthier food in urban Africa, researchers support policies that regulate trade/foreign investment, mandate health/nutrition claims/labels on processed foods, restrict unhealthy food marketing, and integrate school food policy (Booth et al., 2021). In creation of policies, it is imperative to understand the complex pathways that will be impacted; food environments do not happen within a vacuum but are impacted by global, national, and local contexts including relationships with consumers and retailers, economic interests, stakeholders, and global trade (Booth et al., 2021). Awareness of healthy diets is a piece of the puzzle, but creating supportive environments has the potential to make sustainable changes in consumption patterns.

The prevalence of obesity among children and adolescents doubled between 2006 and 2016 (Onyango et al., 2019). As the double burden of obesity and malnutrition continues to increase in several African countries, the driving factors need to be investigated in an upstream way. Common drivers are poverty-related factors (food insecurity and infectious diseases), persistent droughts, floods, continuing human crises, and cultural expectations (Onyango et al., 2019). With the onset of puberty occurring at earlier ages, adolescent girls are at higher risk of adiposity, which is encouraged because of cultural perceptions of the female body. Being overweight for a woman in regions of Africa is considered a sign of wealth, achievement, and marital harmony, impacting the choices women make in their food purchasing and consumption (Onyango et al., 2019).

The environment shaped by the complex relationships that form purchasing environments, cultural beliefs, and policy development are key to addressing nutrition decisions. However, few papers addressed the outcomes and benefits of adolescent-specific laws, regulations, and policies around SRHR, so these are not well understood.

3.6 National and International Interventions Empowering Ugandan Adolescents

3.6.1 Nutrition and SRHR Interventions

Only one intervention was found to target nutrition and SRHR in adolescents. Adolescent Girls Empowerment Programme (AGEP) is a multi-sectoral intervention targeting over 10,000 adolescent girls aged 10-19 in rural and urban areas (Hewett et al., 2017). The AGEP program was a mentor-led girl's group, with weekly meetings of 20-30 adolescents occurring over two years. Meetings were guided by three curriculum areas—sexual and reproductive health and life skills, financial literacy, and nutrition (Hewett et al., 2017). Some additional components of the program included health vouchers and banks accounts offered to some of the participants, so their access to health and financial services improved. The intervention was found to impact early marriage and first birth, contraceptive use, educational achievement, and contracting/acquiring HIV and HSV-2 (Hewett et al., 2017).

3.6.2 Nutrition Interventions

Of nutrition adolescent-specific interventions, one targeted both physical activity and fruit and vegetable consumption; two targeted child and adolescent overweight and obesity; one aimed at intervening in school nutrition; and the last was a systematic review of food literacy interventions in secondary schools. Although this last study was not an intervention, the inclusion of several studies within the review provided insights imperative to understanding adolescent nutrition-based interventions.

The intervention to increase fruit and vegetable consumption and physical activity targeted South African adolescents with a mean age of 12.4 years using a cluster-randomized control trial approach (Jemmott et al., 2011). The intervention was designed to encourage positive health-related behaviours and used a HIV/STI risk-reduction intervention as the control. Overall, the intervention participants met recommendations for five-a-day fruit and vegetable intake and physical activity guidelines. Researchers found an increase in health-promotion knowledge, attitudes, and intentions but did not impact substance use factors such as use or attitude or intention (Jemmott et al., 2011). Although this intervention had some positive results, not all intended outcomes were met.

The two overweight/obesity studies are different: the first is a review of mobile health interventions addressing childhood and adolescent obesity in SSA and Europe, and the second study specifically targeted those aged 11–16 years in Tunisia, Northern Africa. The mobile health (mHealth) review found no studies in SSA currently targeting prevention or treatment of childhood or adolescent obesity, but several existed for adults—promoting weight control, physical activity, and healthy eating to populations with chronic conditions (Reddy et al., 2021). One other study was discovered in the review, but it focused on improvements in child and infant feeding practices. The mHealth review highlights gaps in adolescent-specific interventions in SSA that target obesity, demonstrating the overall lack of nutritional interventions for this population.

The second study, a three-year project, on overweight rates found a protective factor in school-based interventions against gaining excessive weight for participating Tunisian students (Maatoug et al., 2015). The intervention group saw significant increases in fruit and vegetable intake and increases in students in the normal weight category, with a decrease of those in the overweight category. The intervention was made up of two major components: educational lessons and environmental change, with the education curriculum based heavily on the creation of student leader groups meant to motivate their peers to adopt healthy behaviours, such as increasing fruit and vegetable consumption and physical activity (Maatoug et al., 2015). Environmental change included approaching store clerks to stock healthier snack options for students, and students that chose better snack options were rewarded with stickers that were collected for a prize at the end of the month (Maatoug et al., 2015).

A similar approach was used by Delisle et al. (2013) in their pilot project Nutrition-Friendly School Initiative (NFSI), where health and nutrition committees were formed in selected schools and street vendors were involved. Teachers at selected schools were trained in nutrition education and anthropometric measurements of children but were not required to follow a pre-defined schedule of interventions. Street vendors were also provided with training to improve the nutritional value of food they sell to schoolchildren, as well as increase hygiene practices, as they can impact children's overall health (Delisle et al., 2013). Other intervention activities included nutrition events and sanitation measures, but barriers to gaining the full benefit of NFSI were found in low-income populations due to poverty and scarce school

resources. Some improvements in community and school mobilization were seen because of NFSI, but the sustainability of the program was not well understood (Delisle et al., 2013).

Lastly, a synthesis on the literature of food literacy interventions among adolescents in secondary schools was included in this snapshot of nutrition interventions. Data from this study was collected from a variety of global regions, with South Africa the only African country represented. Researchers found that adolescents with a greater knowledge of nutrition and food skills showed healthier dietary practices, but an association between food literacy and long-term healthy dietary practices was less strong (Bailey et al., 2019). Overall, better nutrition was associated with improved knowledge of food, nutrition, and food safety, and good cooking skills, and food literacy interventions resulted in short-term healthy dietary behaviours (Bailey et al., 2019). The lack of specific data on resource-limited settings limits the generalizability of these findings, but this review does support the pairing of knowledge and skill building interventions in adolescent populations.

3.6.3 SRHR Interventions

All five-adolescent specific SRHR interventions targeted reduction of HIV within this demographic. The SHAZ! project targeted structural barriers to positive HIV outcomes for adolescent girls using a randomized controlled trial and a combined intervention package that included life-skills and health education, vocational training, micro-grants, and social supports compared to life-skills and health education alone. In Zimbabwe, the study location, 15 to 19-year-old women were twice as likely as men to be HIV infected, with cited reasons being poverty and income inequality, lack of education opportunities, gender inequalities, and gender-based intimate partner violence (Dunbar et al., 2014). As other studies have found, transactional sex was commonly used to overcome these barriers and gain access to food, mobile airtime, or other items. Outcomes of this intervention saw decreases in food insecurity, a higher likelihood of earning independent income, and a reduction in violent experiences. Researchers also found over time a reduction in participating in transactional sex and a higher likelihood of using a condom with a sexual partner (Dunbar et al., 2014).

INSTRUCT was another randomized controlled trial aimed at structural barriers for HIV prevention in young women aged 15 to 29, using workshops and linking participants with existing government structural support programs in Botswana (Cockcroft et al., 2021). It was found that these programs are not designed to benefit young women, or prevent HIV, because they do not target them appropriately. Structural barriers disable choice for many women, limiting their options to keep themselves safe from HIV infection while knowing the risks and how to avoid them. The women cited these factors as disabling their choices: low education, serious poverty, income disparity with a partner, and experience of partner violence (Cockcroft et al., 2021).

Two studies by Cluver et al. (2014, 2016) explored social protection interventions (cash transfers, free school, parental support) with South African adolescents aged 10 to 18 years. The first study found cash transfers for girls reduced HIV risk for girls but not for boys; however, an integrated approach of cash plus psychosocial support halved HIV-risk behaviours for both (Cluver et al., 2014). This finding was supported by the authors' 2016 study, which found that child-focused grants, free schooling, school meals, teacher support, and parental involvement were associated with reduced HIV-risk behaviours (Cluver et al., 2016). The authors found that adolescent girls predicted past-year incidence of transactional sex dropped from 11% to 2% among those with additional social protection, like parental involvement and free school. Participation in unprotected/casual sex or multiple partners for adolescent girls dropped from 15% with no intervention to 10% with parental involvement or school feeding, and to 7% with both interventions (Cluver et al., 2016). These outcomes highlight the multi-pronged approach that is needed to target reduction in HIV risk for adolescent girls, as many social, cultural, and peer driven influencing factors impact them.

The last SRHR adolescent intervention took place in 22 randomized villages throughout South Africa and used a gender transformative community mobilization (CM) intervention to understand and modify harmful gender norms (Pettifor et al., 2018). The results were a reduction of HIV risk for women. The intervention did not impact gender norms among women participants, but significant changes in normative beliefs among men were observed; no difference in gender-based violence or HIV risk behaviour among men was found (Pettifor et al., 2018). Although the intended intervention outcomes were not reached, it is important to note that

gender norms are upheld culturally and socially; therefore, making impactful changes that shift gender norms takes time and additional approaches. The fostering of supportive environments that support changes in harmful gender norms is a good first step towards better SRHR outcomes.

3.7 Summary

Overall, the amount of adolescent-specific information to report on was limited, with the literature often grouping adolescents with young adults or those of reproductive age. The findings from this literature review emphasize the complex and dynamic world adolescents live in. Their nutritional and SRHR well-being is influenced by lack of economic opportunities, decision-making skills, and confidence in decisions (Masa et al., 2019).

Nutritionally, adolescent girls are at higher risk than their male counterparts, especially in resource-scarce settings. Patriarchal ideals uphold unequal resource allocation in favour of boys, as they represent more economic opportunities than girls, who with their increased nutritional needs and lack of economic opportunities represent a burden, their sexual value helping them and their families overcome financial difficulties (Adebowale et al., 2012; Berhane et al., 2019; Development Initiatives, 2018; Ginsburg et al., 2013; Harper et al., 2018; Powell et al., 2017; WFP, 2019; Yetubie et al., 2010). Knowledge about adolescent nutritional choices is limited, as again they are not often targeted in nutritional interventions in SSA (Harper et al., 2018). A lack of knowledge and access, combined with external community/peer influencing factors, seem to impact their choice; despite knowledge of what compromises a healthy diet, adolescents tend to pick energy-dense foods due to lack of access to other options, poor school and home nutritional environments, and peer pressure (Auma et al., 2020; Ginsburg et al., 2013; Glozah & Pevalin, 2015; Okeyo et al., 2020; Powell et al., 2017; Sedibe et al., 2014; Yiga et al., 2020; Yiga et al., 2021).

A potential solution to overcome food scarcity is agricultural practices such as subsistence farming, but start-up costs, knowledge of crops and growing methods, and access to land are major barriers for many. Even when agriculture is an option a variety in land types, and crops are needed for it to positively impact the dietary diversity of a household (Bellows et al.,

2019; Kahsay et al., 2020). The changing climate and variations in rainfall also have large impacts on agricultural output, which may not seem worth the effort for many. This option is also less available to those in urban areas.

Food taboos are less influential than they used to be but still affect nutritional outcomes of women, as they are discouraged from consuming nutrient-dense foods such as chicken and eggs (Durairaj et al., 2019; Kahsay et al., 2020). When in a resource limited setting, women are at increased risk for nutritional deficiency, as denial of these vital nutrients is culturally expected. Another cultural expectation that needs to be more deeply understood is whether there are any shifts in the body ideals of the African woman, as currently large women are seen as culturally and socially more acceptable than thinner women, as their size is equated to happy marriages, wealth, and being healthier (Glozah & Pevalin, 2015; Ozodiegwu et al., 2019). Despite being aware of the risks associated with being overweight, adolescents fear being thin or muscular, as this indicates a lower social status and/or HIV infection.

The SRHR of adolescents is in a perilous position as, again, their value on the sexual exchange market is quite high, and they may be encouraged by peers and parents to enter transactional relationships to gain access to men's resources (Adebowale et al., 2012; Greif, 2012; Kalichma et al., 2012; Kamndaya et al., 2015). These types of relationships place women in risky situations as their ability to negotiate safe sexual practices is diminished; women culturally do not have an equal say in relationships, which impacts their safety and autonomy (Lawoyin & Kanthula, 2010; Manyapeló et al., 2017).

Peer and cultural influences not only impact the types of relationships adolescents enter but also their use of contraceptives. Peers greatly influence type, knowledge of, and acceptance of contraceptive methods; when information is inaccurate, or upholds myths, adolescents' decisions are based on inaccurate information (Manyapeló et al., 2017). This influence can also be seen in abortion acceptance and use of substances and alcohol during sexual encounters. Despite being disproportionately impacted by RSB, women who have an abortion because of poor decision making are negatively seen by their peers, and community (Marlow et al., 2014). Even seeking options for abortion, and not obtaining one can result in shame and stigma, and ostracization from their community as they are seen as killers and improper women who have denied the African female identity that is closely tied to their fertility (Burtscher et al., 2020;

Marlow et al., 2014). Even with knowledge of RSB, adolescents still frequently participate in RSB, such as mixing alcohol and sex, which leads to non-condom use for a variety of reasons, including not being able to properly use one while drunk and decreased inhibitions (Groenewald et al., 2018; Lama et al., 2016; Letsela et al., 2019; Woolf-King & Maisto, 2011). These actions place women at increased risk for HIV infection, sexual violence, and lack of negotiating power as they often feel the pressure to exchange purchased drinks for sex.

Few policies exist on adolescent health outcomes, and adolescents are often left out of health policies that instead target maternal/child health outcomes (Booth et al., 2021; Jones et al., 2020; Onwujekwe et al., 2021; Onyango et al., 2019). Policies that do exist target structural barriers to accessing food and do not specifically target SRHR needs of adolescents. Although valid efforts have addressed nutritional disparities in an upstream approach, many face difficulties being integrated into action due to policy makers' lack of cultural awareness or a failure to include consumers in policies that impact their buying power (Booth et al., 2021; Onwujekwe et al., 2021; Onyango et al., 2019). Interventions for adolescents specifically are few, and many target education, which does not translate into practice. The lack of adolescent-specific data and adolescent-led interventions and policies highlight the need for this research. We need to continue to understand health from the perspective of adolescents.

CHAPTER FOUR: PROTOCOL PAPER

4.0 Chapter Organization

Chapter 4 is an outline of prospective research that is intended to be published separately. Sections 4.1 and 4.2 outline the context of the researcher. Section 4.3 contains background information that may repeat material found elsewhere in the thesis; the intention to publish separately warrants its inclusion in this chapter. Section 4.4 and 4.5 outline aims of the future research project, and research design details. 4.6 highlights ethical considerations, 4.7 is data analysis plans. Sections 4.8, 4.9 and following sections include the discussion of findings thus far, implications for future research, acknowledgements, funding, and conflicts of interest.

4.1 Researcher's Story

Since 2016, I have had the honor of experiencing Uganda in several ways. Initially, I was awarded the Queen Elizabeth II Diamond Jubilee (QES) scholarship that required a minimum 90-day stay, and in the years following I was its program coordinator. Through these experiences, I garnered informal and formal research experience and knowledge that has helped shape this research project, especially considering COVID-19 and limitations in field research. My past research experiences have shaped my understanding, albeit to a small degree, of what life is like for Ugandan adolescent girls. I frequently witnessed the gendered inequalities and discrimination, which motivated me to research root ways to resolve some of their impacts. Understanding the root drivers and potential solutions through the community's voice became a main driver of my continued work in Uganda.

This research is important to me personally, as, in Uganda, I frequently saw mothers, or soon-to-be mothers, who were young, underprepared nutritionally, and did not have resources or knowledge to stop the cycle of malnutrition. These experiences and informal research outcomes, such as a lack of nutrition and sexual and reproductive health and rights (SRHR) communication channels, made discussing cultural norms to arm women and girls with the knowledge they need for more positive health outcomes an important part of my work. Education does not mean changes in behaviour, but it can open doors to more dialogue on needs and wants. Researching

nutrition and SRHR under the same lens, I hope to find mutually supportive information that will support local changes that implement joint efforts to better serve the whole population.

4.2 Researcher's Position

Understanding your biases, privileges and worldview are critical as a researcher. I am a Canadian born, white presenting researcher, whose ancestors hailed from England—the colonizer and oppressor of Uganda for almost seven decades. My position of power, and privilege are a part of my research, with efforts made to diminish negative impacts I have when working with partners in Uganda. The concepts of cultural safety and competency are top of mind to not repeat past mistakes of researchers.

Historically, research has engaged in culturalism or racialization when researching a group other than the researcher's own. Culturalism refers to viewing people through the lens of culture, using this as the primary explanation for gaps in health and social or economic outcomes, such as poverty (Browne et al., 2009). Racialization, not the same as racism, is a social process that labels people according to physical characteristics or problematic ethnic/racial categories and treats people in accordance with the social beliefs that are attached to these labels (Agnew as cited in Browne et al., 2009). The impact of these lenses is the “othering” of research participants and a failure to commit to community-based participatory research (CBPR) or community involvement. The concept of cultural safety aims to counter these tendencies that make groups believe they are diminished or disempowered by the actions and systems of people conducting the research (Wood & Schwass as cited in Browne et al., 2009). Simply put, any action that disrespects or demeans the background of individuals, groups, or communities is culturally unsafe (Racine, 2014). This research aims to dispel cultural stereotypes using CBPR and to disempower the systematic privilege of the researcher. Adolescent voices are leading this research, creating a new foundational knowledge base of some cultural “truths” they may answer to. Entering this research with limited to no knowledge on nutrition and SRHR of adolescents in Uganda, I question the dehumanizing and outdated categorization or value system. As an outsider I aim to understand what is true, and I am not creating pre-conceived categorization of participants.

Cultural competency in healthcare addresses health disparities through ethno-relativism, the ability to work within the cultural context of patients (Drevdahl et al., 2008). Practicing cultural competence in healthcare shares many features with conducting research with a community, as similar principles apply. The literature shows that practicing culturally competent care has been an insurmountable task but is essential in overcoming the power dynamics that keep structural disparities in place (Drevdahl et al., 2008). Culture is complex and dynamic in nature; it is a part of everyday and should not be simplified. Common practice in healthcare—and extended to research—is to equate culture with “simpler” categorization with race and ethnicity (Drevdahl et al., 2008). The narrowing of culture allows “othering” to occur, works against understanding the complexities at play, and limits self-reflection on problematic practices. The approach of this research is to bring to light the complexity of culture through adolescents. They are informing the data and defining their cultures within a nutrition and SRHR.

4.3 Background

Globally, adolescents make up about 1.8 billion of the world’s population, and 90% live in developing countries (United Nations Population Fund Africa (UNFPA), 2015). In Sub-Saharan Africa (SSA), 23% of the region’s population is aged 10-19 years (UNICEF, 2019). Other developing countries are seeing a decrease in adolescent populations, a trend not being reflected in the African population as its 12-24 age bracket continues to increase (United Nations, 2012). Over half of Uganda’s population is under 16 years of age, and 34.8% of its population is between 10 and 19 years old (UNFPA, 2015; UNFPA, 2017). As individual’s transition from childhood through adolescence to adulthood, they must be prepared with knowledge and skills needed to seek out opportunities and address challenges they will encounter in adulthood (Plummer et al., 2017).

A recent Lancet Commission revealed significant gaps in country level data indicators for child development and well-being, particularly during the period of adolescence, which has been identified as a neglected area (Azzoparadi et al., 2019). While some attention has been given to studying protective and vulnerability factors in achieving healthy development, discourse on barriers to nutrition and SRHR are limited, as are studies on exposure to violence and

participation in high-risk behaviours. (Azzoparadi et al., 2019). There is a failure to bridge the narrative between nutrition and SRHR that includes the adolescent voice (Development Initiatives, 2018; Harper et al., 2018). Also missing are the dimensions of adolescent empowerment, social capital, engagement, and connectedness through adolescent-led initiatives.

There is a reciprocal relationship between undernutrition, education, and SRHR among adolescent girls in Uganda. Adolescent girls are often the most marginalized within households and have the least access to adequate nutrition and body autonomy. They are at high risk for early marriage, unintended pregnancy, malnutrition, HIV, and other sexually transmitted infections (STIs)—often with delayed access to or limited choice of critical health services (Harper et al, 2018). In Uganda, the cycle of early fertility and health-related challenges can curtail nutrition and economic well-being of adolescent girls, rendering them more vulnerable as women later in life. Research has reported that young people require information about SRHR health services targeted to their needs (Chandra-Mouli, Lane, & Wong, 2015; Harper et al., 2018; Plummer et al., 2017; UNICEF, 2015). Key barriers to sexual health (SH) services are common among developed and developing countries—adolescents need confidentiality, respect for their autonomous abilities, and a sense that their voices are a part of their care (Regmi et al., 2010).

The link between poverty and inadequate dietary diversity is well established in Uganda; the country faces the challenge and burden of malnutrition throughout the strata of their population (World Food Program (WFP), 2019). Malnutrition, according to the WHO, “*refers to deficiencies, excesses or imbalances in a person’s intake of energy and/or nutrients*” (2016). Little data is available on the diets of adolescent girls in Uganda, but what is available suggests that dietary diversity and food frequency is poor (WFP, 2019). Globally, a nutritious meal for adolescent girls would constitute up to 42% of the household budget due to their higher nutrient needs, yet diets during adolescence rarely change to accommodate these increased needs (Development Initiatives, 2018; WFP, 2019). As a result, adolescent girls born into a family already struggling to afford a nutritious diet have a high risk of developing micronutrient deficiencies (Development Initiatives, 2018). Adequately feeding an adolescent girl adds a burden to a household, especially in economically challenged rural or urban settings, and this

burden can motivate the family to seek a bride price, resulting in early marriage (Harper et al., 2018).

Several physical and societal barriers exist, as well as governance barriers, to achieving SRHR in Uganda, especially for women. The WHO stresses importance of the right to health in its constitution, noting that health is essential to happiness, harmonious relations, and security of all peoples, and placing an obligation on states to ensure the health of their people (1946). The Constitution of Uganda (“the Constitution”) lacks an explicit provision on the right to health, but, even so, various government policy documents explicitly recognize the right to health (Uganda, 1995). For example, both Objective XIV (ii) and Objective XX of the National Objectives and Directive Principles of State Policy support the State of Uganda’s obligations to ensure access to health services for all its citizens (Uganda, 1995). Moreover, certain articles in the Constitution protect fundamental elements of that right. Articles 33(3) and 33(5) of the Constitution require the state to “*protect women and their rights which includes, their natural maternal functions.*” They also state that “*laws, cultures, customs or traditions which are against the dignity, welfare or interest of women or which undermine their status, are prohibited by this Constitution*” (Uganda, 1995). Taken together, Articles 33(3) and 33(5) can be interpreted as the need to ensure the protection of young women’s right to health in Uganda, a right that inevitably encompasses issues of nutrition, SRHR, and other related needs.

The Committee on Economic, Social and Cultural Rights (OHCHR) defines the right to health as the “*right to the highest attainable standard of physical and mental health.*” This includes “*access to all medical services, sanitation, adequate food, decent housing, healthy working conditions, and a clean environment*” (United Nations, 2008). The right to health includes a range of factors that are intended to contribute to the well-being, dignity, and prosperity of all people regardless of socio-economic status or geographical location. It ensures that everyone has the right to the healthcare they need, safe nutritious food, and conditions that enable them to make healthy choices.

4.3.1 Cultural Beliefs and Norms

Barriers to nutrition and SRHR facing adolescents in Uganda are not only systemic but also rooted in gender norms and cultural beliefs. Cultural beliefs or “truths” are boundaries

defined by individuals from a shared culture for a set of knowledge or behaviours shared within the group (Brown et al, 2018). Shared knowledge—for example, the shared beliefs that a woman’s goal in life is to procreate—is reflected in the term cultural “truths.” These truths maybe specific to one culture-sharing group or may be shared by several groups—but it is individuals within shared spaces who set the boundaries for what is true and what is false, or acceptable and unacceptable.

Determining cultural truths traditionally falls within the discipline of anthropology, and their application can be used to better understand influencing factors of adolescent nutrition and SRHR. The approach to understanding group thought is appropriate for adolescent studies, as researchers are not asking adolescents about their personal habits but rather about the cultural or collective norms that influence them. Adolescence is a period of great change when young people explore their autonomy and take risks (Singh et al, 2006).

4.3.2 Cultural Consensus Modeling

Culture as a topic of study and as a basis for consensus theory has roots in anthropology and expands beyond the basic ethnography of seeking to “*know what they know*” about a culture-specific group (Romney et al., 1986). Cultural consensus modeling (CCM) is an approach to developing discovered cultural truths and acquire a more culturally sensitive understanding of a topic. Culture in this context, and as mentioned above, comprises learned and shared beliefs, behaviours, or norms held by the group (Brown et al, 2018). Using CCM to determine the influencing factors of nutrition and SRHR for adolescents is a novel approach that integrates adolescent voices into defining the boundaries for set knowledge or behaviours—a key objective of this study. The CCM approach allows respondents to specify factors based on self-reported lived experiences, reducing researcher bias, embedding the data within the local, and being more culturally appropriate than traditional research methodologies (Brown et al., 2018).

Brown et al. (2018), in their study on reproductive health needs of South African adolescent girls, use CCM and combine both qualitative and quantitative methodological approaches. CCM integrates participants lived experiences into the research, making it locally and culturally appropriate, reducing researcher bias, and acquiring data grounded in factors relevant to participants (Brown et al., 2018).

Although research based on ethnographic approaches has inherent biases, it has helped researchers understand the impacts of social norms, especially within adolescent populations. These impacts include expanding cultural understanding of adolescents and others, filling gaps on identified nutrition and SRHR needs and understanding adolescent girls' attitudes, awareness, and uptake of protection strategies (Brown et al., 2018).

4.4 Research Aims

This study uses a mixed-methods approach, with the qualitative data reported elsewhere. Quantitative approaches are outlined in this protocol paper.

The aim of this study is to:

1. Determine whether cultural “truth(s)"/consensus concerning nutrition and SRHR exists (individual/collective)
2. Determine if there are sub-groups within the study sites, who present variances in cultural “truth(s)”
3. Explore generational changes in cultural “truths” to understand if a shift in culture is occurring
4. Consider whether what the researcher has learned from the participants (adolescents/families/community) is similar/different to the findings from the literature

It is hypothesized that adolescents will have adequate knowledge of cultural “truths” on the topics of nutrition and SRHR but will have conflicting personal attitudes and practices. Adolescents will follow and know of cultural “truths”/norms but when provided opportunities to voice personal perceptions the “truths” they answer to will not be the ones constructed by past generations. Adolescents in Uganda are being influenced by more factors than ever before, which is creating a shift in cultural “truths”/norms.

4.5 Research Design

A mixed methods approach is fitting for this explorative study as the researcher seeks to understand factors that influence Ugandan adolescent nutrition and SRHR choices while adding depth to both methodological approaches (Johnson et al, 2007; Rossman & Wilson as cited in

Johnson et al, 2007). A structured questionnaire based on CCM will allow an iterative approach to data collection and analysis resulting in deep, culturally appropriate data that builds and characterizes the nutrition and SRHR cultural “truths” of Ugandan adolescents (Appendix VIII; Fetters et al., 2013; Hennink et al., 2011). The strengths of ethnographic research data collection will be explored in naturalistic settings, with the aim of understanding a portion of the day-to-day lives of adolescents in Uganda who will have active dialogue about interpretations of the researcher’s findings (Sangasubana, 2011). Ethnographic approaches are limited in their ability to ascertain whether identified beliefs or behaviours are shared across individuals or clustered across groups and whether identified cultural beliefs or behaviours predict outcomes of interest (Sangasubana, 2011). We will assess the characteristics of each respondent with respect to their cultural “truth” (e.g., age, gender, etc.) in order to identify variances in cultural “truths” presented.

4.5.1 Cultural Consensus Survey

Through the cultural consensus survey (CCS), data on participant characteristics will be collected, including socio-demographic information such as age, sex, and current household structure (married, number of people in household, mother/father present in the house), and family relationship/relationships between adolescents and their parents/significant others. Once the demographic data has been gathered, questions will be asked of participants to understand potential cultural “truths” through a simple agree-disagree model on major nutrition and SRHR themes. An agree-disagree model provides a quick snapshot of cultural “truths,” allowing for simple aggregation that provides a reasonable estimate and strength of the cultural “truths” benchmark to compare with individual respondents. For example, 90% agreement indicates a strong cultural “truth,” but a 51%/49% split reveals a weaker cultural “truth” (Weller, 2007). Analysis will also determine sub-groups of cultural “truths” within and between study population.

The survey draws on existing literature on survey creation for CCM, and validated survey tools (Uganda Bureau of Statistics (UBOS), 2014; Weller, 2015). To develop reasonable estimates of cultural “truths,” 20 questions in the nutrition or SRHR section will build in complexity as the participant completes the survey and 20 section questions (40 questions total)

(Weller, 2007). The questions will assess for basic understanding of nutrition/SRHR concepts and knowledge, for example, the role of macronutrients in a balanced diet. Adolescence is a time of learning autonomy and independence; therefore, the questions avoid asking participants about their own practices. Observational questions allow data capturing not related to personal decision-making skills and can assess participant cultural competence (Merves et al., 2015; Strong & White, 2020; Van Doren, 2021).

The socio-ecological model (SEM) will be used to assess the content validity of the questionnaire, with questions intended to target each level of the model and related areas of influence (Dahlberg & Krug as cited in Centers for Disease Control and Prevention (CDC), 2021). For example, “*Using condoms during all sex is important*” targets the relationship level, and “*Sexual health is a priority in my community*” targets community-level influencing factors impacting cultural “truths.” Pre-testing occurred in summer 2019, using undergraduate students participating in the Queen Elizabeth II Diamond Jubilee Scholarship (QES) placement. Rural, peri-urban, and urban settings in Central, Western, and Northern Uganda were targeted to garner a range of input across Ugandan cultural groups. The public was not approached, and we relied on our placement stakeholders, fellow participating students, and research partners for feedback. Representation of the research population was not reached in the pre-test, but useful feedback was gathered to appropriately modify the survey tool to its current version.

4.5.2 Generational Cultural “Truths”

To address generational changes in cultural “truth(s)”, a group of participants above 30 years of age will be selected to complete the CCS. Our primary study population has a maximum age of 24 years, so this represents a large enough age gap (six years) between the studies adolescent and generational participants. Based on young primigravida, most individuals aged 45 are already grandparents—adding to their lived experiences and changes in roles and responsibilities within the family unit. Researchers will be flexible on exact age, as individuals in this age range are less aware of their exact age especially in rural settings (personal observation 2016, 2019). Analysis of the generational CCS will be compared to the adolescent data to assess if a cultural shift is happening.

4.5.3 In-depth Interviews

To address issues of rigor, the CCM quantitative questionnaire will be paired with in-depth interviews (IDIs) to identify, from the ground up, a set of culturally and adolescence-relevant factors (Strong & White, 2020). The paired use of the CCM survey and IDIs with a subset of the study population adds depth to data collected, integrates adolescents' voices for a deeper understanding of their felt needs/wants/barriers, and integrates this information into their healthcare. The simple CCS agree-disagree model does not allow for data on narratives behind responses, and avoidance of the "*I do not know*" response option can lead to participants guessing (Weller, 2015). IDIs will add this missing narrative and allow for gaps in understanding due to respondent guessing.

The IDI question framework will follow themes of the CCS, with further probing questions, to acquire understanding of a group rather than individual thoughts/practices of cultural "truths." The interviews will be recorded and transcribed verbatim, and the analysis will search for emerging themes and the strength of themes discovered in CCS responses. Each study site has 5-10 individuals, for a total of 10-20 IDIs; the generational population will include 5-10 IDIs.

4.5.4 Study Population and Target Centers

Participants will be of any gender, between 14 and 24 years of age and located in either Mpigi or Gomba districts in Uganda. Worth noting due to the transient nature of peoples in Uganda, those residing in the study area during data collection and without a permanent address in Mpigi or Gomba will be included.

Mpigi is 35 kilometers south-west of Kampala (the capital city), along the Masaka Road highway, and had a population of 250,548, the majority under 39 years, in the 2014 census. (UBOS, 2017; Republic of Uganda, 2020). Mpigi is located on the edge of Lake Victoria, lies along the Equator, and lies within the central plateau; the area has deep valleys that support seasonal and permanent wetlands (Republic of Uganda, 2020).

Gomba had a population of 159,922 in the 2014 census, with the majority under 39 years and is located 85 kilometers south-west of Kampala and north of Mpigi (Republic of Uganda, 2020). Because Gomba is a relatively new district in Uganda, information is limited, but we do

know that in 2014, over 56% of the population was under 17 and that those between 15 and 24 years made up 18% of the people. The majority of the households do not have access to safe water, and more boys (8.1%) than girls (5.7%) between the ages of 6 and 15 do not attend school (UBOS, 2017).

4.5.5 Participant Recruitment and Sample Size

Recruitment will be done in collaboration with Makerere University (MU) School of Nursing through convenient and snowball sampling. Convenient sampling is a non-random inexpensive method of participant recruitment and an appropriate approach when participants are readily and easily available (Taherdoost, 2016). If convenience sampling does not garner the numbers needed, snowball sampling will be used to achieve the required number of participants. Suggested names of potential participants will be contacted by a member of the research team, provided with study information, and invited to participate.

Potential participants will be approached at Health Centers located in each study site by members of the research team (myself and MU nursing students), and MU students will assist in identifying key community members (nurses, community health workers, teachers, etc.) who can identify additional adolescent participants. Word of mouth is the most reliable form of communication in Uganda, with cellphone use high; however, service may be limited in urban poor or rural sites due to lack of data/minutes and cell coverage.

An information package on nutrition and SRHR and study objectives in plain language will be provided to all prospective participants before their consent is secured. (Appendix IX). Research team members will be present/contactable to answer any questions or to provide clarity where needed. The consent process will begin with the participants indicating they are willing to participate, after being provided with an overview of the study and informed about possible risks. They will be required to sign a consent form (Appendix X).

Based on previous studies on determining data saturation for CCM, 50 adolescents per study site, 100 total participants, will be sought (Fielding et al., as cited in Brown et al., 2018; Weller, 2007). Weller concludes when a 50% level of shared beliefs among participants is reached, sufficient evidence of a moderate cultural “truth” exists. Assuming a low level of

agreement (50% sharing of beliefs) and seeking a high accuracy of answers, past studies concluded that 30 participants per study group is needed (2007). When more participants than are required are recruited, data accuracy increases. The increase in participant numbers, when compared to smaller sample sizes, can report average competency or belief sharing beyond 50% as collective beliefs or “truths” are more representative of whole population beliefs (Weller, 2007).

Participants for the generational difference in cultural “truths” will also be sought at study site Health Centers through convenience sampling. Generational participation will be voluntary, and consent will be sought after the study is explained in detail. As generational data represent a secondary source of data for comparison, a smaller sample size will be sought. Thirty participants (15 from each study site) will be sought based on work by Weller demonstrating that this sample size is needed to reach an understanding of cultural “truths” (2007).

4.5.6 Inclusion – Exclusion Criteria

Included in the study will be those aged 14 to 24 years of age of either gender. Marital status and gravidity/parity may be noted through research tools but will not be considered as a part of exclusion criteria. For the generational data set, included will be males and females 30 years and older who can effectively communicate with the research team.

Individuals outside of the adolescent age range and not within the generational criteria will be excluded from participating. Those unable to communicate in English or the most common dialect (typically Lugandan) or the dialect of the research assistants will also be excluded. Adolescents unable to communicate effectively due to a variety of conditions, such as mental or physical disabilities, will be excluded. Any individual who did not consent to participating will be excluded as well.

4.5.7 Data Collection

Peer-to-peer (PTP) approaches are becoming increasingly popular in nutrition and SRHR capacity-building research; therefore, this approach will be used (Burke et al., 2017; Ndwiga et al., 2014). Senior nursing students in their community health rotations will assist in gathering

data, with the researcher, a nutrition graduate student from the University of Saskatchewan (UofS) leading data collection. The PTP approach is appropriate for the comfort of the adolescents in the study, as nursing peers will have close cultural ties in settings of limited funding or staff (Burke et al., 2017; Chandra, Lane, & Wong, 2015; Ndwiga et al., 2014).

MU nursing students completing their community placement in either study site and able to speak nationally and locally recognized languages will be approached to participate in data collection. Due to COVID-19, students and UofS researchers may be limited in their ability to participate in data collection. At this point, research assistants outside MU but known to the research team may be hired to conduct data collection.

4.5.8 COVID and Field Research

The COVID-19 pandemic has altered the ability to safely conduct field research, as community health is more of a priority than data collection. Researchers are required to critically analyze the importance of their study and develop contingency plans to maintain their personal safety and the safety of other researchers and participants (Krause et al., 2021). The pandemic has presented an opportunity to reflect on the roles researchers play and the risks they take and impose on others. As the global in-person platform may not be available, we are relying on our partners in research sites more than ever before. This reliance is creating an expectation of research partners to increase their scientific language proficiency/techniques and to follow North American ethical expectations (Barroga & Matanguihan, 2020). The need to uphold research standards and ethics is not questioned, but the pandemic is an opportunity to pause and reflect on power dynamics, research environments, and determine who is in the best position to do research at international and community levels.

This pause can allow time to revisit structural power dynamics at play in research relationships and that is placed on research assistants and participants, who are often most marginalized and provided with no health coverage to overcome potential negative outcomes of being in the field (Krause et al., 2021; Racine, 2014). A unique opportunity to dismantle the largely unquestioned systematic power dynamics in place is being presented to us. Field projects should now be more adaptable to the current climate by being more collaborative with research assistants and communities, enabling their needs to be more deeply discussed (Krause et al., 2021). Mutual partnerships, with adaptable, contingency planned projects, may be the wave of

the future for field research. Traditionally, I, as the researcher would control primary data collection in collaboration with our partners, but is this the best approach moving forward? Barroga and Matangulhan (2020) argue that research methodological approaches need to possibly rely on more local networks for the collection of primary data, which I to agree with. Local networks belong to a similar group of participants, understand the nuances of culture at play, and are in a better position to determine what is safe.

The changing research environment is allowing space to reflect on the cultural integrity of methodological approaches we tend to default to in cross-cultural studies. Although the research has been conducted in Uganda, the nuances of the cultural and political environment are not fully understood, which poses a risk of imposing my beliefs, values, and behaviours on participants (Pelzang & Hutchinson, 2018). When researchers uphold cultural integrity, they establish a level of trust with cross-cultural participants by behaving in a way consistent with participants' cultural values (Lapan, Quartaroli & Riemer as cited in Pelzang & Hutchinson, 2018). As argued by Pelzang and Hutchinson (2018), I am already at a disadvantage when it comes to embodying cultural integrity. I cannot speak local the languages fluently enough to allow a culturally appropriate assessment of data. To at least partly overcome this barrier, I need to gain cultural knowledge and understanding of cultural practices, contexts, and worldviews. At some level, the literature review and my multiple stays in Uganda has enabled me to accomplish this. However, a gap of understanding remains in this cross-cultural project, and I will never be fully immersed in Uganda's various cultures. This reflection recalls the question: who is best suited to collect the data—a cross-cultural researcher or someone in our local research network? As the pandemic shows little sign of abating, reflection will be ongoing, reliance on our local networks will strengthen, and assessment of research approaches will continue to be monitored to ensure the best, most valid outcomes for all results.

4.6 Ethical Considerations

Ethical approval has been received from the UofS Office of the Vice President Research and is being sought by MU Faculty of Medicine Research and Ethics Committee (FOMREC).

Parental consent will not be sought for participants. Adolescents are experts in their own lived experiences and have different priorities, even though they have historically been categorized as children—a vulnerable group needing protection from harm, resulting in their

exclusion (Santelli, Haerizadeh, & McGovern, 2017). To improve adolescent overall well-being and to garner benefits from the research, their inclusion is required, and they have the capacity to consent to research that has the potential to affect their lives (Santelli, Haerizadeh, & McGovern, 2017). The sensitive nature of this study also warrants adolescents' freedoms from parental involvement, questioning, and breach of their rights to confidentiality.

4.7 Data Analysis

Data analysis will include providing participants with a unique code void of direct identifiers comprising the first initial of their given name, the first letter of study site, and the participant's number. For example, Lydia from Gulu Referral Hospital and seventh to be interviewed will be LG007. Participants will have the choice of being quoted directly in the research using their identifying codes or pseudonyms or of being anonymous. A master list will be kept, allowing for re-identification, down to participant code (not name) and made available only to the researcher and research supervisor.

To analyze similarities between participants, match coefficient tests will be used rather than Pearson's r , as the latter has accuracy limitations and one-factor properties. If one or multiple "truths" exist, they will be examined using a correlation participant by participant matrix (methodsMcr, 2013; UCI media, 2013). While the majority rule approach is valid, the research will use the general Condorcet model (GCM) to establish "correct" answers since binary variable questions were used in the CCS; the assumption of this model is all participants share the same answer key (Oravecz et al., 2014). The GCM will allow estimation of consensus answer key, generate a hit and false alarm rates and account for, participant guessing, and differences in question difficulty; it is more in-depth than other models and has strong assumptions while limiting the number of respondents needed to determine the presence of cultural "truth" (Batchelder & Anders, 2011; Oravecz et al., 2014; UCI media, 2013). The GCM also allows cultural "truth" to be continuous or not one-factors but will identify other factors clearly (ICU media, 2013).

Generational CCS data will be analyzed using the same process. The resulting data will be compared against the adolescent data to test the hypothesis that a shift in cultural "truths" is occurring and that there has been a shift in cultural "truths" Ugandan adolescents identify with.

4.8 Discussion

Current non-profit organizations in Uganda do not address adolescent needs directly, and those that do focus on vocational training or include adolescents with adult or child populations, thereby failing to address their unique needs. Appendix X identifies the NGOs currently in Uganda, none of which tackle nutrition and SRHR together. Although several mention healthcare access and food security directives, there is no specificity, so these characteristics might mean addressing HIV/AIDS awareness or cervical cancer screening, especially as adult women are frequently intervention targets with adolescents tacked on.

Ensuring adolescent SRHR understanding, and safety is critical for global public health due to the high numbers of adolescents and their ability to become young mothers. Improving health outcomes for this population and their children, including delaying pregnancy and reducing maternal mortality—would have major implications for cycles of poverty, economic development, and sustainable development goals (SDGs; Ministry of Health (MoH), 2011; Tanabe et al., 2012). Work done by researchers in India and East Africa brings to light issues of discourse on SRHR with adolescents. Because discussions about SH, particularly in SSA, reinforce a girl's singular role in reproduction, the importance of her fertility is emphasized, and her decision-making capacities, confidence and/or negotiation skills are minimized (Kamangu et al., 2017; Nandi et al., 2015). Cultural, political, and structural barriers faced by vulnerable girls and young women are exacerbated by an unsupportive environment and low levels of education.

One recommended strategy to address nutritional issues is to implement school-based nutrition education and integrate nutrition care into primary health care (Reddy & Anitha, 2015). Although valid, this approach would exclude marginalized youth who have discontinued school or unable to access healthcare, including a large portion of rural and urban poor adolescents in Uganda. Adolescent nutrition health in Uganda focuses on the outcome of poor food access such as stunting, anemia, and micronutrient deficiencies and their resulting health complications that are further exacerbated if the adolescent is pregnant (MoH, 2011).

Although they are reasonable approaches to nutrition and SRHR, the above measures do not address upstream root causes of cultural, political, and structural barriers for adolescent girls. Nor in programs and policies do they address ways to integrate adolescents' power to make decisions about their own health. Sadly, boys and girls in Uganda live in separate realities as boys have continued access to education and healthcare for longer than girls. Future research

needs to address this gender bias in program planning for sustained equal access for girl adolescents (MoH, 2011).

4.9 Conclusions/Implications for Future Research

This proposed study will fill gaps in knowledge of adolescent nutrition and the SRHR literature. There is a lack of both adolescent-focused NGOs that address nutrition and SRHR in Uganda and literature that builds understanding of the specific and unique needs of adolescents. Understanding the culture of adolescents, including their voiced needs, can lead to development of locally appropriate interventions that are grounded in the needs and voices of adolescents. Involvement of adolescent voices brings to light power dynamics and provides adolescents, especially girls, an opportunity to identify what works best for them.

4.10 Acknowledgements

I would like to thank QES for the opportunity to experience Uganda in 2016 and for hiring me on as a coordinator in the years that followed. My learnings from my experience were so critical to my continued interest and success in Uganda. I would also like to thank Makerere, especially their nursing students for their aid in carrying out this proposed research project. Your efforts are greatly appreciated. And an immense thank you to community stakeholders, leaders, parents/guardians, and, most importantly, adolescents who will participate in this research.

4.11 Funding

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4.12 Conflicts of Interest

The researcher reports no conflicts of interest.

CHAPTER FIVE: DISCUSSION, FINAL THOUGHTS AND LESSONS LEARNED

5.0 Chapter Organization

Chapter five summarizes the findings of this thesis. Section 5.2 outlines key reflections of the researcher. Sections 5.3 and 5.4 discuss implications for practice, and future research, respectively. Section 5.5 presents concluding thoughts on the thesis project.

5.1 Introduction

The purpose of this study was to gain a better understanding of factors that influence Ugandan adolescents' nutrition and sexual and reproductive health and rights (SRHR) knowledge, attitudes, and choices through a multi-method research approach. Influencing factors investigated included individual factors such as socio-economic status (SES) and education level, relationship factors such as parental involvement and marital/sexual relationships, community factors such as nutrition and/or SRHR environments, societal factors like cultural/social and/or gender norms, and policies, laws, and regulations that impact youth and national and international youth targeting interventions. The outcome of the literature review presented many gaps in our understanding of adolescent-led nutritional and SRHR needs and wants. Some of these gaps would have been filled with the proposed mixed methods research approach, but field research is still on hold due to the COVID-19 pandemic.

5.2 Key Reflections

The information I was able to collect on adolescents shows a bleak picture for them in sub-Saharan Africa (SSA) settings. There is a lack of supportive adolescent-specific structures, few opportunities to build confidence in their abilities, and limited opportunities to make decisions. Adolescent girls are hit especially hard by these factors, as their value is built upon their body type, virginity, and exchange on the sexual market. The majority of what was available in the literature came from white/privileged researcher voices who are not embedded in the context where adolescents live. It is important to continue to involve adolescents in the research process, so they can reap the benefits of this work.

5.3 Implications for Practice

My experience of the dietetic field in Uganda shows promise for the future health of Ugandans. If paired with a growth in adolescent-specific data, I believe the nutritional outcomes of adolescents will be more positive. An understanding of nutritional needs throughout the life cycle is critical to a person's success later in life. In addition to understanding, there need to be systematic opportunities built in that increase adolescent access to comfortable, appropriate, safe, and relevant care/resources. The role of nutritionists/dietitians in Uganda is to advocate for these systemic changes, the formation of adolescent-specific policies, and laws that do not just uphold cultural practices and beliefs around a woman's worth, and the creation of adolescent-focused safe spaces. On a global scale, due to the formation of the sustainable development goals (SDGs), we are beginning to understand the need to include and advocate for the inclusion of adolescents in their care, in research, and in interventions.

5.4 Implications for Future Research

The involvement of adolescents in the research process is often a difficult task, as culturally they are viewed as children needing protection, and, if they are female, they are kept close to home with limited opportunities to participate. Challenging the status quo is critical to overcome the barriers that keep girls back and to their future health. Social positions and changes—emotional and physical—make it difficult for adult researchers to appropriately include adolescent voices or to interpret their meaning accurately. When adolescents are involved in research that affects them, they feel important, and they are represented as they desire to be.

Adolescent-led and informed policies need to be created throughout SSA. The lack of policies that fully protect the rights of girls and women are needed, so they can build confidence in the structures around them. The historically rooted distrust in and the power culture has over current policies/laws makes their implementation less than ideal. Fostering a supportive environment and culture towards adolescent health outcomes is needed for their future and to reach the SDGs.

5.5 Concluding Thoughts

This research was rewarding, challenging, and difficult as it comes from a place of privilege. The lack of adolescent-specific data limits the conclusions I can draw, but I can say that adolescents need to be more involved in the decisions that impact their health. The lack of information on Ugandan adolescents impacts not only the outcomes of this study but also the day-to-day life of adolescents in SSA. When adolescent needs and wants are not understood, inappropriate interventions and services will continue to miss the critical needs of this population. Essential to the future of girls and women in SSA is a clear understanding both of structural barriers to nutritional and SRHR health and of factors that influence adolescents—their community, peers, school environments, and culturally and socially upheld norms

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APPENDICES

Appendix I: Adolescent Health and Development Policies

<i>Policy Document</i>	<i>Formation Date</i>	<i>Key Points</i>
The National Adolescent Health Policy for Uganda	2004	Framework to provide direction and focus in providing adolescent health services
The National Policy Guidelines and Service Standards for SRHR	2012 (3 rd ed.)	Overview of SRHR services, policies around SH service provision, and eligibility of services
Standards and Guidelines for Reducing Maternal Morbidity from Unsafe Abortion in Uganda	April 2015	Goal is to provide FP methods and information to anyone seeking it regardless of age and marital status.
The National Policy on Young People and HIV/AIDS		
National Guidelines on Prevention and Management of HIV/AIDS and unintended pregnancy in school settings	2015	
Gender in Education Sector Policy (GEP)	2009	
National Sexuality Education Framework	2017	National guideline on provision of sexual education in formal education settings.
National Physical Education and Sports Policy		
School Health Policy	Under review	Every child and adolescent have a right to quality health

		and education services. Promotion of physical, emotional and social development.
National Parenting Guidelines		
Universal Primary Education and Universal Secondary Education Policy	1997, 2007	
National Youth Policy	2016	
Uganda Gender Policy	2007	
National Population Policy	2008; currently under review	Reduce fertility and mortality, and more investing in young people

Source: MoH, 2019

Appendix II: Strategic Plans to Operationalise Adolescent Health and Development Policies

<i>Strategy Document</i>	<i>Date</i>	<i>Key Points</i>
Uganda Vision 2040		Blueprint for Uganda’s development; goals to create a more sustainable age structure
The Second National Development Plan (NDP II)	2015/15-2019/20	Recognizes the impact of adolescent health and well-being
Health Sector Development Plan	2015-2020	Support of Universal Health Coverage, including FP services
Health Financing Strategy	2015/16-2024/25	
The Strategy for Improving Health Service Delivery	2016-2021	
Road Map for Improving Adolescent Health in Uganda	2016	
Adolescent Health Girl Framework		
Reproductive, Maternal, Newborn, Child and Adolescent Health Sharpened Plan for Uganda	2016/17-2019/20	Groups adolescent needs in with SDGs. Address gaps in adolescent health and development challenges
Uganda Family Planning Costed Implementation Plan	2015-2020	Aims to reduce unmet FP needs and increase modern contraception prevalence; specific targets on 10-24 years and family planning education, access, and use

National HIV and AIDS Strategic Plan, and National HIV and AIDS Priority Action Plan	2015/16-2019/20; 2015/16-2017/18	Scale up of SH and HIV programs targeting adolescent in and out of school
Presidential Fast-track Initiative on Ending HIV & AIDS in Uganda	June 2017	
National Strategy to End Child Marriage and Teenage Pregnancy	June 2015	Targets cultural practice of child brides and resulting teenage pregnancies
National Integrated Early Childhood Development Policy Action Plan of Uganda	2016-2021	Targets children from conception to 8 years of age to grow and develop to their full potential
School Health Education – Oral Health. A Guide for Teachers in Pre-primary and Primary Schools	2008 (2 nd ed.)	
National Strategy for Girls Education (NSGE)	2015	Framework with identified strategies to achieve a narrowing of the gender gap in education. Equal access and opportunity of the girl child for education
National Strategy on elimination Violence against Children in School	2015-20	
Presidential Initiative on AIDS Strategy for Communication to Youth (PIASCY)		Source: MoH, 2019

Appendix III: National and International Laws Impacting Adolescent Health

<i>Policy Document</i>	<i>Last Amendment</i>	<i>Key Points</i>
The 1995 Constitution of the Republic of Uganda		Basic medical provision for all Ugandans
The Penal Code Act, 1950	2007	Outlines sexual offenses and crimes including penalties
The Children Act, 2003	2016	Protection of children, and their care
The Domestic Violence Act, 2010		
The Prohibition of Female Genital Mutilation Act, 2010		Protection against violence, harassment, harming, injuring and endangering of life
The HIV and AIDS Prevention and Control Act, 2014		Includes protection, counseling, testing and care of those living with HIV/AIDS
The Local Government Act, 1997		Delivery of social services within district level populations
The Tobacco Control Act, 2015		Prohibits tobacco use and provision to youth
Liquor Act, 1960		
The Education (Pre-Primary, Primary and Post-Primary) Act, 2008		Free school provision
Equal Opportunity Act, 2010		
Prevention of Trafficking in Persons Act, 2010		

The Employment Act, 2006/ Employment Framework, 2011		Protects against sexual harassment in the workplace and provides procedures for reporting. Stops children under 12 years of age to be employed and those aged 14 years only being employed to do light work with adult supervision
Persons with Disabilities Act, 2006		
Public Finance Management Act (PFMA) of 2015		
The UN Convention on the Rights of the Child, 1989		Set of non-negotiable standards and obligations for those under 18 years of age
The ILO Convention 182 on the Worst Forms of Child Labour, 1999		Requires the state to take immediate and effective actions to stop and eliminate worst forms of child labour
The African Charter of The Rights and Welfare of the Child, 1999		Protects children against forms of social, economic, cultural, and political abuse and exploitation
Convention on Elimination of Violence Against Women (CEDAW)		

Source: MoH, 2019

Appendix IV: Inclusion/Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Adolescents (aged 10-24)	Sex workers
Male & Female	Physical abuse/Domestic abuse
Uganda	Medical procedure
Sub Saharan Africa (limit it too many)	Specific nutrient deficiencies
Sexual Health laws in overview	FGM in specifics
English language	Sex worker laws
2010 and later ideal *some exceptions such as law documents	Alcoholism
Overview of nutritional education	Antenatal care
Overview of SRHR/SH education	Maternal Child health (adult)
	specific STIs
	specific STDs
	transgender rights
	Transgender issues
	Child <5 years (health)
	Overview of nutrition deficiencies

Appendix V: Medline Search Strategies

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1. exp "Africa South of the Sahara"/
2. Uganda/
3. exp Africa, Eastern/
4. (Uganda or Ethiopia or Tanzania or Rwanda or Kenya or Burundi or Djibouti or Eritrea or Somalia or Sudan).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
5. 1 or 2 or 3 or 4
6. exp "diet, food, and nutrition"/
7. exp nutrition assessment/
8. exp Nutrition Therapy/
9. exp Diet/
10. exp Diet Therapy/
11. ((kw* or foot*) and program*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
12. exp Food Supply/
13. (nutrition* or diet*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
14. (food* and (supply or access* or inaccess* or security* or insecurity)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
15. exp Reproductive Health/
16. exp Sexual Health/
17. exp Reproductive Health Services/
18. exp Reproductive Rights/
19. (reproduct* and health).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
20. ((sex* and right*) or (sex* and health)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
21. ((sex* and health) or (sex* and right)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
22. ((sex* and reproduct*) or (sex* and right)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
23. (reproduct* and rights).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
24. or/15-23
25. exp knowledge/
26. exp Attitude/
27. exp Education/
28. exp guideline/
29. exp Comprehension/
30. exp Health Knowledge, Attitudes, Practice/
31. knowledge.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
32. (status or "health status").mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
33. literacy.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
34. attitude.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
35. (perception or comprehension).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
36. health.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
37. information delivery.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
38. information.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
39. (educat* or lecture* or train* or workshop* or teach* or lesson* or conference* or seminar* or curriculum*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
40. delivery.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
41. polic*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
42. polic*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
43. guideline*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
44. law*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
45. program*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
46. understanding.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
47. practice*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
48. rights.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
49. intervention*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
50. or/25-49
51. or/5-14
52. 5 and 24 and 51
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Appendix VI: CINHAL Search Strategies

Search ID#	Search Terms	Search Options	Actions
<input type="checkbox"/> S45	<input type="checkbox"/> S5 AND S43 AND S44	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (30) View Details Edit
<input type="checkbox"/> S44	<input type="checkbox"/> S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (91,126) View Details Edit
<input type="checkbox"/> S43	<input type="checkbox"/> S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (149,316) View Details Edit
<input type="checkbox"/> S42	<input type="checkbox"/> S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (1,538,265) View Details Edit
<input type="checkbox"/> S41	<input type="checkbox"/> (MM "Intervention Trials") OR (MM "Experimental Studies")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (757) View Details Edit
<input type="checkbox"/> S40	<input type="checkbox"/> (MM "Patient Rights") OR (MM "Civil Rights") OR (MM "Right to Health") OR (MM "Human Rights") OR (MM "Women's Rights")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (12,221) View Details Edit
<input type="checkbox"/> S39	<input type="checkbox"/> (MM "Cultural Competence")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (5,524) View Details Edit
<input type="checkbox"/> S38	<input type="checkbox"/> (MM "Program Implementation") OR (MM "Program Evaluation") OR (MM "Program Development")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (34,045) View Details Edit
<input type="checkbox"/> S37	<input type="checkbox"/> (MH "Legislation*")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (56,389) View Details Edit
<input type="checkbox"/> S36	<input type="checkbox"/> (MM "Guideline Adherence") OR (MM "Rules and Regulations") OR (MM "International Health Regulations")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (9,373) View Details Edit
<input type="checkbox"/> S35	<input type="checkbox"/> (MM "Health Policy")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (27,642) View Details Edit
<input type="checkbox"/> S34	<input type="checkbox"/> (MM "Health Care Delivery")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (35,356) View Details Edit
<input type="checkbox"/> S33	<input type="checkbox"/> (MM "Seminars and Workshops") OR (MM "Curriculum Development") OR (MM "Congresses and Conferences") OR (MM "Teaching Materials") OR (MM "Teaching Methods") OR (MM "Patient-Family Conferences")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (56,226) View Details Edit
<input type="checkbox"/> S32	<input type="checkbox"/> (MM "Information Literacy")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (3,187) View Details Edit
<input type="checkbox"/> S31	<input type="checkbox"/> (MM "Health Information Networks")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (400) View Details Edit
<input type="checkbox"/> S30	<input type="checkbox"/> (MM "Health")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (16,294) View Details Edit
<input type="checkbox"/> S29	<input type="checkbox"/> (MM "Perception")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (15,111) View Details Edit
<input type="checkbox"/> S28	<input type="checkbox"/> (MM "Attitude")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (9,880) View Details Edit
<input type="checkbox"/> S27	<input type="checkbox"/> (MM "Literacy")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (3,209) View Details Edit
<input type="checkbox"/> S26	<input type="checkbox"/> (MH "Health Status*")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (113,458) View Details Edit
<input type="checkbox"/> S25	<input type="checkbox"/> (MH "Attitude to Health*")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (166,657) View Details Edit
<input type="checkbox"/> S24	<input type="checkbox"/> (MH "Government Regulations*")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (19,008) View Details Edit
<input type="checkbox"/> S23	<input type="checkbox"/> (MH "Education*")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (964,746) View Details Edit
<input type="checkbox"/> S22	<input type="checkbox"/> (MH "Attitude*")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (478,330) View Details Edit
<input type="checkbox"/> S21	<input type="checkbox"/> (MH "Knowledge*")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (73,472) View Details Edit
<input type="checkbox"/> S20	<input type="checkbox"/> S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (238,264) View Details Edit
<input type="checkbox"/> S19	<input type="checkbox"/> (MH "Attitude to Sexuality*")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (6,277) View Details Edit
<input type="checkbox"/> S18	<input type="checkbox"/> (MH "Patient Rights*")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (21,284) View Details Edit
<input type="checkbox"/> S17	<input type="checkbox"/> (MH "Sexual Reproduction Periods*")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (28,692) View Details Edit
<input type="checkbox"/> S16	<input type="checkbox"/> (MM "Reproductive Rights")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (26) View Details Edit
<input type="checkbox"/> S15	<input type="checkbox"/> (MH "Health Services Needs and Demand*")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (27,553) View Details Edit
<input type="checkbox"/> S14	<input type="checkbox"/> (MM "Sexual Health")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (4,712) View Details Edit
<input type="checkbox"/> S13	<input type="checkbox"/> (MM "Reproductive Health")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (5,022) View Details Edit
<input type="checkbox"/> S12	<input type="checkbox"/> (MM "Food Security")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (2,203) View Details Edit

<input type="checkbox"/>	S11	(MH "Nutritive Value*")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (6,274) View Details Edit
<input type="checkbox"/>	S10	(MH "Food Supply*")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (4,299) View Details Edit
<input type="checkbox"/>	S9	(MM "Food Assistance") OR (MM "Food Habits")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (8,708) View Details Edit
<input type="checkbox"/>	S8	(MH "Diet Therapy*")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (34,306) View Details Edit
<input type="checkbox"/>	S7	(MM "Nutritional Assessment")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (5,712) View Details Edit
<input type="checkbox"/>	S6	(MH "Diet*")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (128,638) View Details Edit
<input type="checkbox"/>	S5	S1 OR S2 OR S3 OR S4	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (74,066) View Details Edit
<input type="checkbox"/>	S4	(MM "Burundi") OR (MM "Ethiopia") OR (MM "Uganda") OR (MM "Tanzania") OR (MM "Sudan") OR (MM "Somalia") OR (MM "Rwanda") OR (MM "Kenya") OR (MM "Eritrea") OR (MM "Djibouti")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (86) View Details Edit
<input type="checkbox"/>	S3	(MH "Africa, Eastern*")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (22,774) View Details Edit
<input type="checkbox"/>	S2	(MM "Uganda")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	View Results (13) View Details Edit
<input type="checkbox"/>	S1	(MH "Africa South of the Sahara*")	Expanders - Apply equivalent subjects	View Results (74,066) View Details Edit

Appendix VII: Embase Search Strategies

<input type="checkbox"/>	1	exp "Africa South of the Sahara?"	285558	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	2	Uganda?	20358	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	3	exp Africa, Eastern?	382578	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	4	(Uganda or Ethiopia or Tanzania or Rwanda or Kenya or Burundi or Djibouti or Eritrea or Somalia or Sudan) mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	106107	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	5	1 or 2 or 3 or 4	396754	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	6	exp "diet, food, and nutrition?"	2534284	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	7	exp nutrition assessment?	34176	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	8	exp Nutrition Therapy?	389950	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	9	exp Diet?	397306	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	10	exp Diet Therapy?	389950	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	11	((eat* or food*) and program*) mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	65972	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	12	exp Food Supply?	25702	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	13	((nutrition* or diet*) mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	1495545	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	14	((food* and (supply or access* or success* or security or insecurity)) mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	54296	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	15	exp Reproductive Health?	19225	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	16	exp Sexual Health?	17685	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	17	exp Reproductive Health Services?	6025357	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	18	exp Reproductive Rights?	1320	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	19	((reproduct* and health*) mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	79754	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	20	((sex* and right*) mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	101054	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	21	((sex* and health*) mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	390779	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	22	((sex* and reproduct*) mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	79810	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	23	((reproduct* and rights*) mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	29883	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	24	or15-23	6425404	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	25	exp knowledge?	181746	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	26	exp Attitude?	837440	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	27	exp Education?	1550146	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	28	exp guideline?	0	Advanced	Save	More	<input type="checkbox"/>
<input type="checkbox"/>	29	exp Comprehension?	32544	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	30	exp Health Knowledge, Attitudes, Practice?	120975	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	31	knowledge mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	1016795	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	32	((status or health status*) mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	1618630	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	33	literacy mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	32703	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	34	attitude mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	502587	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	35	((perception or comprehension) mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	439873	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	36	health mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	4495516	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	37	information delivery mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	844	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	38	information mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	2117752	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	39	((educat* or lecture* or train* or workshop* or teach* or lesson* or conference* or seminar* or curriculum*) mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	4310197	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	40	delivery mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	923248	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	41	polici* mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	559633	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	42	polici* mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	559833	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	43	guideline* mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	834377	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	44	law* mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	270297	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	45	program* mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	1594351	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	46	understanding mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	1143195	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	47	practice* mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	1949811	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	48	rights mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	1351832	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	49	intervention* mp [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]	1829811	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	50	or25-49	14712805	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	51	or16-14	3053166	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	52	5 and 24 and 51	13134	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	53	limit 52 to yr="2010-Current"	9404	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	54	exp diabetes mellitus?	1085379	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	55	exp iron deficiency?	47065	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	56	exp prenatal care?	164808	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	57	53 not 54 not 55 not 56	7949	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	58	exp infant?	1211979	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	59	57 not 58	6444	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	60	exp antiretroviral therapy?	55814	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	61	59 not 60	6092	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	62	exp malaria?	105038	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	63	61 not 62	5794	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	64	exp metabolic syndrome X?	89197	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	65	63 not 64	5751	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	66	exp maternal welfare?	15775	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	67	65 not 66	5664	Advanced	Display Results	More	<input type="checkbox"/>
<input type="checkbox"/>	68	exp sex worker?	2588	Advanced	Display Results	More	<input type="checkbox"/>

<input type="checkbox"/>	69	67 not 68	5618	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	70	exp vitamin D/	159747	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	71	69 not 70	5547	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	72	exp folic acid/	69966	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	73	71 not 72	5454	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	74	exp HIV test/	13241	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	75	73 not 74	5352	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	76	exp "eclampsia and preeclampsia"/	70042	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	77	75 not 76	5339	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	78	exp malaria control/	10839	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	79	77 not 78	5320	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	80	exp cholera/	13157	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	81	79 not 80	5293	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	82	tuberculosis rapid test/ or exp drug resistant tuberculosis/	11364	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	83	81 not 82	5271	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	84	exp hypertension/	63267	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	85	83 not 84	4990	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	86	exp cardiovascular disease/	4709656	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	87	85 not 86	4761	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	88	exp malignant neoplasm/	3942666	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	89	87 not 88	4552	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	90	exp drug resistance/	345944	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	91	89 not 90	4493	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	92	exp tuberculosis/	278415	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	93	91 not 92	4325	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	94	exp smoking cessation/	62366	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	95	93 not 94	4316	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	96	exp bacterial infection/	1101313	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	97	95 not 96	4185	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	98	exp aged/	3371215	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	99	97 not 98	3864	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	100	exp epilepsy/	271062	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	101	99 not 100	3823	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	102	exp virus load/	89393	Advanced	Display Results	More ▾	<input type="checkbox"/>
<input type="checkbox"/>	103	101 not 102	3781	Advanced	Display Results	More ▾	<input type="checkbox"/>

Appendix VIII: CCM Structured Questionnaire

Introduction: This survey will help us understand your thoughts and concerns about reproductive health and nutrition so that programs can be developed to better serve adolescent girls. The questions in this survey represent a wide range of experiences and concerns faced by adolescent girls. Some of these may or may not be applicable to you. Your name will not be in the survey so no one will know your answers. Please feel free to answer exactly as you feel. Your participation is voluntary and you do not have to answer any questions if you prefer not to. Thank you, your help is very important to us.

Participant and Family Characteristics

Q01	Date of interview ____/____/____ DD/MM/YYYY	Q02	Enumerator ID/name: _____
Q03	Participant sex:	Q04	Participant age: _____ DD/MM/YYYY
Q05	Participant code: _____	Q06	Study center: _____
Q07	Are you currently married? 1. Yes and living together 2. Yes but separated 3. No, divorced 4. No, but cohabitate 5. Never	Q08	Do you have children born to you? 1. Yes – how many? a. Alive: b. Deceased: 2. No If yes, do they live with you? 1. Yes, all do 2. Yes, but only some 3. No

Q09	<p>What is your religion?</p> <ol style="list-style-type: none"> 1. None 2. Catholic 3. Protestant 4. Muslim 5. Other (Specify): _____ 	Q10	<p>How many people live in your household right now?</p> <p>_____ people</p>
Q11	<p>Does your father live in the same household as you right now?</p> <ol style="list-style-type: none"> 1. Yes 2. No 	Q12	<p>Do you find it easy to talk with your father about things that are important to you?</p> <ol style="list-style-type: none"> 1. Very easy 2. Easy 3. Somewhat 4. Difficult 5. Very difficult 6. Do not see him
Q13	<p>Have you ever discussed sex-related matters with your father?</p> <ol style="list-style-type: none"> 1. No 2. Occasionally/when something important occurs 3. Often 	Q14	<p>Does your mother live in the same household as you right now?</p> <ol style="list-style-type: none"> 1. Yes 2. No
Q15	<p>Do you find it easy to talk with your mother about things that are important to you?</p> <ol style="list-style-type: none"> 1. Very easy 2. Easy 3. Somewhat 4. Difficult 5. Very difficult 	Q16	<p>Have you every discussed sex-related matters with your mother?</p> <ol style="list-style-type: none"> 1. No 2. Occasionally/when something important occurs 3. Often

	6. Do not see her		
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Section 1: Culture-Consensus Analysis

Participants will be asked to either “Agree” or “Disagree” to the following statements regarding nutrition and sexual and reproductive health and rights (SRHR). If no answer is provided please leave blank.

Nutrition is related to all food and non-food items and the environment in which they are gathered, made, and consumed in. This includes items ingested daily, access/affordability to foods they need and want, and ability to safely prepare their foods including cooking supplies and clean water access. Please explain that items related to SRHR (sexual and reproductive health and rights) relate to being in a state of complete physical, mental and social well-being in matters related to the reproductive system. This means they are able to have a safe and satisfying sex life, able to reproduce when they decide if, when and how often to do so (UNFPA, 2019). Study overview on nutrition and SRHR booklets are available if more information is needed for participants.

Section 1.1: Nutrition

Q101	It is important to eat a variety of foods from each food group daily. 1. Agree 2. Disagree	Q102	Proteins contains nutrients for body building. 1. Agree 2. Disagree
Q103	Carbohydrates provide energy. 1. Agree 2. Disagree	Q104	Fruits and vegetables provide vitamins and minerals. 1. Agree 2. Disagree
Q105	It is important to eat a variety of <u>colored</u> foods every day. 1. Agree 2. Disagree	Q106	Some fat is a part of a healthy balanced diet. 1. Agree 2. Disagree

Q107	It is important to eat breakfast every day. 1. Agree 2. Disagree	Q108	The amount of food one eats is related to their body size. 1. Agree 2. Disagree
Q109	Nutrition is important for overall health. 1. Agree 2. Disagree	Q110	The only time you need greater nutrition is when sick or ill. 1. Agree 2. Disagree
Q111	Adolescents require more iron in their diet. 1. Agree 2. Disagree	Q112	Adolescence (14-24 years) is a time of greater nutrition needs. 1. Agree 2. Disagree
Q113	Iron deficiency is common among adolescents. 1. Agree 2. Disagree	Q114	When pregnant you need more nutrition. 1. Agree 2. Disagree
Q115	There is enough information at school provided about nutrition. 1. Agree 2. Disagree	Q116	Caregivers have a role in teaching children about nutrition 1. Agree 2. Disagree
Q117	Most people in Uganda have access to food all year round 1. Agree 2. Disagree	Q118	Access to clean water is not an issue in Uganda. 1. Agree 2. Disagree
Q119	Skipping meals due to food shortage is common for many in Uganda. 1. Agree 2. Disagree	Q120	Many still cook using charcoal or firewood in Uganda. 1. Agree 2. Disagree
Q121	Nutritional health is a priority in my community.		

	1. Agree 2. Disagree		
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Section 1.2: SRHR

Q122	It is important to discuss SRHR with one's mother. 1. Agree 2. Disagree	Q123	It is important to discuss SRHR with one's father. 1. Agree 2. Disagree
Q124	It is important to discuss SRHR with my peers. 1. Agree 2. Disagree	Q125	It is important to have sexual education at school. 1. Agree 2. Disagree
Q126	There is enough sexual education provided in school. 1. Agree 2. Disagree	Q127	There is a lot of fear about HIV/AIDS. 1. Agree 2. Disagree
Q128	There is a lot of fear about sex. 1. Agree 2. Disagree	Q129	There is choice of <u>who</u> women marry. 1. Agree 2. Disagree
Q130	There is a choice <u>when</u> women marry. 1. Agree 2. Disagree	Q131	Sex before marriage is common. 1. Agree 2. Disagree
Q132	Sex before marriage is okay. 1. Agree 2. Disagree	Q133	It is okay to be unmarried and pregnant. 1. Agree 2. Disagree

Q134	Pregnant adolescents, under 18 years, is okay. 1. Agree 2. Disagree	Q135	Using birth control/contraceptives is good practice. 1. Agree 2. Disagree
Q136	Using condoms during <u>all</u> sex is important. 1. Agree 2. Disagree	Q137	Condoms are only used when you do not know your sexual partner well. (You would not use them with your husband). 1. Agree 2. Disagree
Q138	It is okay for men to have multiple sexual partners. 1. Agree 2. Disagree	Q139	It is okay for a women to have multiple sexual partners. 1. Agree 2. Disagree
Q140	There is a choice when women have first sex. 1. Agree 2. Disagree	Q141	Women are allowed to say no to sex with their husbands/boyfriends. 1. Agree 2. Disagree
Q142	Sexual health is a priority in my community. 1. Agree 2. Disagree		

NUTRITION



Study Information

Adolescent Girls' Nutrition and Sexual and Reproductive Health in Uganda:
Understanding the Factors that Influence Health Seeking Choices



What is NUTRITION?

Nutrition includes foods and beverages that you eat/drink in a day and the environment you eat them in. This also includes malnutrition and over-nutrition (obesity).

Food environment includes where you get your food (market, store, government aid, from friends/family, church), how you prepare and cook your food. We also want to know where you take your foods. Are you eating with others or alone? At a table or standing?
Is eating relaxed or stressful?

Researchers also want to know how food is stored, what access you have to safe food and water, and illnesses from foods/water you have had.



NUTRITION

SOME CONCEPTS



Water security. Always having access to clean water to drink in the amounts you need.



What foods and drinks you have daily and your favorites.



Food security. Access to safe foods you want and in the amounts you want.



Types and how often sicknesses from foods/water occurs.



How food is prepared. Including washing and cooking and fuel used.



How do you get foods and water, and is it affordable?

NUTRITION IS A PART OF HEALTH

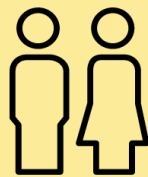
This study wants to understand how you view your own nutrition and food environment. Did you know about the concepts listed above? What other ones did you know about?

Your nutrition is a very important part of your overall health as an adolescent. This is a time of major body and brain growth that is supported by foods you take in. Researchers want to know more about how this is a part of your community, family, friends, and others.

Resources:

- www.piktochart.com
- USAID. (2018). Uganda: Nutrition Profile. Available from <https://www.usaid.gov/global-health/health-areas/nutrition/countries/uganda-nutrition-profile>
- World Food Programme. (2019). Fill the Nutrient Gap: Uganda National Summary Report. Rome: Nutrition Division (OSN). https://docs.wfp.org/api/documents/WFP-0000108062/download?_ga=2.229298588.1879842694.1576273300-1144055978.1576273300
- Shively, G., & Hao, J. (2012). A Review of Agriculture, Food Security and Human Nutrition Issues in Uganda. Purdue University: Department of Agricultural Economics.

Sexual and Reproductive Health and Rights | "SRHR"



Study Information

Adolescent Girls' Nutrition and Sexual and Reproductive Health in Uganda:
Understanding the Factors that Influence Health Seeking Choices



What is SRHR?

SRHR applies to many things of your sexual and reproductive health

The definition is:

“a complete physical, mental and social well-being in all matter relating to the reproductive system. It implies that people are able to have a satisfying and safe sex life, the capability to reproduce, and the freedom to decide if, when, and how often to do so. To maintain one’s sexual and reproductive health, people need access to accurate information and the safe, effective, affordable and acceptable contraception method of their choice. They must be informed and empowered to protect themselves from sexually transmitted infections”

(UNFPA, 2019).



SOME CONCEPTS



Pregnancy. You have the right to decide if and when and how often to have children.



Consent. You have the right to decide who and how often and when to do sexual things. This includes which sexual acts too!



Sexual safety. You should feel safe and supported during sexual things



Right to access reproductive health care that is correct and for your age. This includes pregnancy and your period.



HIV/AIDS and other sexually transmitted infection information and care that is free from judgment.



Right to access information about SRHR that is correct and age appropriate

SRHR IS A PART OF HEALTH

This study wants to understand how you view your own sexual and reproductive health and rights. Did you know about the concepts listed above? What other ones did you know about?

Your sexual and reproductive health and rights are an important part of your overall health. Researchers want to know more about how this is a part of your community, family, friends, and others.

Resources:

- www.piktochart.com
- UNFPA (2019). Sexual and Reproductive Health and Rights: an Essential Element of Universal Health Coverage. https://www.unfpa.org/sites/default/files/pub-pdf/SRHR_an_essential_element_of_UHC_SupplementAndUniversalAccess_27-online.pdf
- Uganda Bureau of Statistics (UBOS) and ICF. (2018). Uganda Demographic and Health Survey 2016. Kampala, Uganda and Rockville, Maryland, USA: UBOS and ICF
- Government of Uganda & United Nations (2018). The Multi-Sectoral Communication for Development Strategy for Adolescent Girls, 2017. Available from <https://www.unicef.org/uganda/reports/multi-sectoral-communication-development-strategy-adolescent-girl>

Appendix X: Participant Consent Form



Participant Consent Form

You are invited to participate in a research study entitled:

Adolescent Girls' Nutrition and Sexual and Reproductive Health in Uganda: Understanding the Factors that Influence Health Seeking Choices

Student Researcher(s):

Sarah Crawford, graduate student, College of Pharmacy and Nutrition, University of Saskatchewan, s.crawford@usask.ca

Researcher(s):

Dr. Carol Henry, faculty, College of Pharmacy and Nutrition, University of Saskatchewan, 306-966-5833, cj.henry@usask.ca; Dr. Susan Fowler-Kerry, faculty, College of Nursing, University of Saskatchewan,

Principal Investigator/Supervisor:

Dr. Carol Henry, faculty, College of Pharmacy and Nutrition, University of Saskatchewan, 306-966-5833, cj.henry@usask.ca

Purpose and Objective of the Research:

The purpose of this study is to gain an understanding of the factors that influence Ugandan adolescent's nutrition and sexual and reproductive health and rights (SRHR)

knowledge, attitudes and choices. These influencing factors include socio-cultural/-economics, local/regional culture, nutritional and educational background.

Procedures:

- Participants will be asked the questions on the Interview Administered Questionnaire by a member of the research team, or translator if needed. Participants will not be responsible for writing down their answers, researchers will record the answers for them. Verbal answers are needed.
- It is estimated this questionnaire will take 30 minutes in total.
- Please feel free to ask any questions regarding the procedures and goals of the study or your role.

Funded by:

- This study is being funded in part by Grand Challenges Canada and Queen Elizabeth II Diamond Jubilee scholarship

Potential Risks:

- There are no known or anticipated risks to you by participating in this research.
 - Participants who may experience distress discussing their health will be provided contact information for organizations that can help them.
- o Youth Social Work Association (YSA) Uganda; +256 41 4286984; info@ysafrica.org
 - o Ministry of Health Uganda; Toll free: 0800-100-066; <https://www.health.go.ug/>
 - o One Step at a Time; 07541 479 819; info@one-step-at-a-time.org.uk

Potential Benefits:

- Participants may benefit from policy changes, community awareness, and future research interventions as a follow up to this study on nutrition and sexual and reproductive health and rights

Compensation:

- No compensation will be provided.

Confidentiality:

- Collected data is a part of a Master’s thesis and will be published. Publications may include presentations at conferences, to our stakeholders in Uganda, etc.
- All translators a part of this project have completed Confidentiality Agreements and have no access to data after they have helped collect it.
- By default data will be reported within publications using direct quotations and in a summarized form with no participant identifiers. Quotations will include names or pseudonyms of participants based on their consent forms, with no other identifying information present within the publications content.
- All consent forms will be stored separately from the data. This will safeguard participants wished level of confidentiality.
- The data from this research project will be published and presented at conferences but identities of participants will be kept confidential. Direct quotations may be used, you will not be identified with the quotation, provided a pseudonym, or your name will be used based on what was indicated on the consent form.

Please put a check mark on the corresponding line(s) to grant or deny your permission:

I grant permission for my verbal answers to be written by the researchers on my behalf	
--	--

Please only select one option below:

I wish for my identity to be confidential	
---	--

I wish for my identity to be confidential but you may refer to me by a pseudonym. The pseudonym I choose for myself is: _____	
You may quote me and use my name	
I would like to be acknowledged for contributing to the research	

Storage of Data:

- Data will not be transported across international borders. It will be uploaded to Usask OneDrive, and all physical copies will be destroyed. Data will be deleted from computer hard drives.
- In Canada all electronic data will be stored on the password protected computer of Carol Henry. Once analysis is done electronic data will be stored on a USask OneDrive account for the minimum 5 year requirement post publication.
- Once 5 years has been reached, post-publication, and the data is no longer required it will be destroyed beyond recovery using protocols set out by the University of Saskatchewan.
- All identifying information will be stored separately from the data collected to secure participants confidentiality. Pseudonyms or names of participants will only be used if consent has been provided, otherwise data will be presented in a summarized format with no identifiers. Any identifying information, will be stored separately for 5 years and only available to the research team.

Right to Withdraw:

- Your participation is voluntary and you can answer only those questions that you are comfortable with. You may withdraw from the research project for any reason, at any time without explanation or penalty of any sort.

- Should you wish to withdraw, you may indicate so (written or verbal) to the research team or any research assistants as a part of this study. Data that has not been integrated into the results will be deleted from the research project and destroyed.
- Your right to withdraw data from the study will apply until 1 month beyond your completion of the interview administered questionnaire. After this, it is possible that some form of research dissemination will have already occurred and it may not be possible to withdraw your data.

Follow up:

- To obtain results from the study, please contact Sarah Crawford, Carol Henry or Lydia Kabiri by the emails listed above. A summary of the results will be provided electronically.

Questions or Concerns:

- Contact the researcher(s) using the information at the top of page 1.
- This research project has been approved on ethical grounds by the University of Saskatchewan Behavioural Research Ethics Board. Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office: ethics.office@usask.ca. Participants may call collect to +1-306-966-2975; out of town participants may call toll free 1-888-966-2975.
- Local ethics approval through Makerere University School of Health Sciences Institutional Review Board (MakSHS IRB). They can be contacted via email at healthsciences.irb@gmail.com or by phone at +256-71698560

Consent:

Signed Consent:

Your signature below indicates that you have read and understand the description provided.

I have had an opportunity to ask questions and my questions have been answered. I consent to participate in the research project. A copy of this consent form has been given to me for my records.

<i>Name of Participant</i>	<i>Signature</i>	<i>Date</i>
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<i>Researcher's Signature</i>	<i>Date</i>
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A copy of this consent will be left with you, and a copy will be taken by the researcher.

Oral Consent:

- If consent is provided orally researchers will sign the consent form and date it. This indicates participant has understood the study but is unable to provide written consent.

I read and explained this consent form to the participant before receiving the participant's consent, and the participant had knowledge of its contents and appeared to understand it.

<i>Name of Participant</i>	<i>Researcher's Signature</i>	<i>Date</i>
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Appendix XI: Nutrition and SRHR NGOs in Uganda

Name of Organization	General Information	Focus of Efforts
<i>Adolescent Focused</i>		
SRHR Alliance Uganda	8 organizations –Eastern and Northern Uganda Founded 2011	Ensuring all young people have access to high quality ad youth friendly SRHR information and services in a supportive environment Vulnerable groups of adolescents and young persons are supported to exercise their SRHR without barriers and free from violence Resource: https://srhrallianceug.org/
Uganda Youth Development Link (UYDEL)	Districts of Kampala, Wakiso, Mukono, Mubende, Mityana, Gomba, Sembabule, Bukomansimbi, and Rakai Founded 1993	Targets youth ages 10-24 years Works with victims of commercial sexual exploitation through advocacy, psychosocial and skills development, and enhance human capital development Resource: https://www.uydel.org/
Uganda Youth Skills Training Organisation (UYSTO)	Founded 2011	Developing youth through skills training Resource: https://skillsforyouths.org/about.html
Uganda Youth Network (UYONET)	Founded 2002	Engage youth in development and governance processes in Uganda and East Africa Resource: https://uyonet.wordpress.com/about/

RAHU (Reach a Hand Uganda)	Districts of Kampala, Wakiso, Mpigi, Mbarara, Jinja, Mayuge, Lira, Kabale, Abim, Amudat, Moroto, Kaabong, Kotido, Nakapiripirit, Napak, Iganga and Mukono, Luwero, Nakaseke, Butaleja Founded 2011	Youth empowerment programs (skills development, behaviour change, SRHR, and HIV/AIDS awareness) Resource: https://reachahand.org/about/
Save the Children	1959	SRHR for adolescents; and vocational training Resource: https://uganda.savethechildren.net/
Straight Talk Foundation	Founded 1997	Target is 10-24 year old; originally focused just on adolescent SRHR and HIV prevention; now includes adults and focus on livelihoods and environment Resource: https://straighttalkfoundation.org/about.php
<i>Children, Youth &/or Adults Focused</i>		

Hope for Youth Uganda (H4YU)	Nama & Kyampisi; Mukono district Founded 2008	Children and young adults; provision of free basic primary and vocational educational skills and access to health services Resource: https://www.hopeforyouthuganda.org/about
Somero Uganda	Slums of Bwaise, Kawempe division Kampala district Founded 2009	Education programs, skills development, health promotion among slum young women and girls; human rights Resource: http://somero-uganda.org/
Plan International Uganda	Northern Uganda Founded 1992	Education/skills training; children and primary education and safety; improving maternal, neonatal and child health, and SRHR; disaster and refugee response Resource: https://plan-international.org/uganda
CFU Foundation	Countrywide with focus on Kamuli, Kayunga, Jinja, Iganga, Mayuge, Namutumba, Luuka, Kaliro, and Kampala	Improve access, and use of healthcare, nutrition and food security; educational and livelihood provision to youth, women, children and persons with a disability in poor populations Resource: https://www.cfufoundation.org/

URICT (Uganda Rural Information and Communication Technology/Education Center)	Busago Eastern Uganda Founded 2005	Joy orphanage, HIV/AIDS impacted children, microfinancing for rural widows and teenage mothers, food security, water safety, vocational training, maternal and child health programs. Resource: https://www.urictuganda.org/
Share Child Opportunity Eastern and Northern Uganda (SCOEN)	Eastern and Northern Uganda Founded 2010	Children's protection; advance rights of women and children Resource: https://www.girlsnotbrides.org/our-partnership/member-directory/share-child-opportunity-eastern-and-northern-uganda-scoen/
BRAC	113 districts 2006	Poverty reduction; women and youth support; programs in microfinance, agriculture, food security, livelihood, health, education, early childhood development, youth empowerment, emergency preparedness, ultra-poor graduation Response, and Ultra-Poor Graduation Resource: https://www.bracinternational.nl/en/where-we-work/uganda/
<i>Social Justice Focused</i>		
ActionAid International Uganda (AAIU)	15 districts Founded 1982	Social justice, gender equality, and poverty reduction Resource: https://uganda.actionaid.org/
Oxfam	Working in Uganda since 1960's	Addresses inequality and injustice; women's rights and decision-making power; humanitarian response to crisis Resource: https://www.oxfam.org/en/what-we-do/countries/uganda
FIDA Uganda	Across the country Founded 1974	Human rights (women and children focused); law and policy advancement Resource: https://fidauganda.org/

CARE International Uganda	62 districts Founded 1969	Addresses poverty and social injustice (gender inequality, corruption, and poor governance), and climate change Resource: https://www.careuganda.org/
Human Rights Network Uganda (HURINET-U)	Founded 1993	Human rights (child, women, and peace and conflict) https://www.devex.com/organizations/human-rights-network-uganda-hurinet-u-117297
MIFUMI Uganda	Founded 1994	Rights agency against violence (children and women focused); specific to cultural practices Resource: https://mifumi.org/
Raising Voices	Kampala Founded 1999	Violence against women and children; address power dynamics between the genders Resource: https://raisingvoices.org/
General SRHR		
UNICEF		HIV and AIDS and adolescent health, reproductive health, basic education and adolescent development Resource: https://www.unicef.org/uganda/what-we-do
UNFPA		Unmet need for family planning; gender-based violence Resource: https://uganda.unfpa.org/en
Global Aim	North-Western; districts of Adjumani and Moyo Founded 2001	Livelihoods, HIV/AIDS, malaria management, SRHR, human rights, good governance, water and sanitation; emergency response Resource: http://globalaimsug.org/about/
Marie-Stopes Uganda	27 years	Largest and specialized sexual and reproductive health services Resource: https://www.mariestopes.or.ug/about/about-marie-stopes-ug/

Reproductive Health – Uganda (RHU)	29 districts Founded 1957	Family planning, HIV/AIDS, STIs and post abortion care Resource: https://www.facebook.com/rhuganda/
<i>General Nutrition</i>		
Food for the Hungry		Generalized nutrition interventions Resource: https://www.fh.org/our-work/countries/uganda/
Action Against Hunger		Generalized nutrition interventions Resource: https://www.actionagainsthunger.org/countries/africa/uganda
<i>Changing Focus/Funding</i>		
World Vision	Founded 1986	Programs dependent on funding; current focus on adolescent health

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