Investigating the social co-construction of masculinity(ies) and sexual development among very young male adolescents in Korogocho slum in Nairobi, Kenya

By

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This PhD thesis is submitted to the School of Public Health, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa, as partial fulfilment of the requirements for the degree of Doctor of Philosophy

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Declaration

I, Beatrice Waitherero Maina, do hereby declare that this thesis is my own unaided work. This thesis is being submitted in fulfilment of requirements of the degree of Doctor of Philosophy at the University of the Witwatersrand, Johannesburg, South Africa, in the School of Public Health. I further declare that this work has not been submitted before for any degree or examination at this or any other University.

Signed:  Date: September 14, 2021

Dedication

To the young boys growing up in urban slums!

To my beloved parents, Mr. Simon Maina Kihia and Mrs. Jacinta Wangechi Maina

Scientific papers, conference attendance, panel discussions and media appearances

Key publications (published, under-review, submitted and under development)

The following peer reviewed publications are included as part of this thesis (order of publications)

1. **Maina, BW,** Izugbara, C, Sikweyiya Y, Kabiru CW. Gender norms and sexual behavior among early adolescents in sub-Saharan Africa: A scoping review: A book chapter for the Routledge Handbook of African Demography edited by Prof. Clifford Odimegwu. **Accepted**

   Beatrice W. Maina (candidate): Conceptualised the study, developed the scoping review plans, led the literature search, screening and data extraction, drafted the manuscript, revised the manuscript addressing the supervisors' comments and submitted the final version of the manuscript for publication.

   Supervisors: Guided the conceptualisation of the study, reviewed the review plan, contributed to data extraction and drafting of the results sections and reviewed the final manuscript.

2. **Maina BW**, Orindi BO, Sikweyiya Y, Kabiru CW. Gender norms about romantic relationships and sexual experiences among very young male adolescents in Korogocho slum in Kenya. *International Journal of Public Health*. 2020; 65:497-506. doi: 10.1007/s00038-020-01364-9. **Published**

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Beatrice W. Maina (candidate): Conceptualised the study, developed the data analysis plan, led the data analysis process, drafted the manuscript, revised the manuscript addressing the reviewers' comments and submitted the final version of the manuscript for publication

Supervisors: Guided the conceptualisation of the study, reviewed the data analysis plan and the draft manuscript, reviewed the final manuscript and guided the response to reviewers.

3. **Maina, BW**, Sikweyiya, Y, Fergusson L, Kabiru CW. Conceptualisations of masculinity and sexual development among very young adolescent boys in an urban slum in Kenya. Culture, Health and Sexuality. *Culture Health & Sexuality*. 2020; doi:10.1080/13691058.2020.1829058. **Published online**

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   Supervisors: Guided the conceptualisation of the study, reviewed the analytical plan and the draft manuscript and reviewed the final manuscript

Other supporting peer-reviewed publications

The following peer-reviewed articles were published in the course of the PhD studies

1. Mulwa S, Osindo J, Wambiya EO, Gourlay A, **Maina BW,** Orindi BO, Floyd S, Ziraba A, Birdthistle I. Reaching early adolescents with a complex intervention for HIV prevention: findings from a cohort study to evaluate DREAMS in two informal settlements in Nairobi, Kenya. BMC Public Health. 2021; 21: 1107

2. **Maina BW**, Juma K, Igonya EK, Osindo J, Wao H, Kabiru CW. Effectiveness of school-based interventions in delaying sexual debut among adolescents in sub-Saharan Africa: a protocol for a systematic review and meta-analysis. BMJ Open. 2021; 11:e044398.
3. **Maina BW**, Ushie BA, Kabiru CW. Parent-child sexual and reproductive health communication among very young adolescents in Korogocho informal settlement in Nairobi, Kenya. Reproductive Health. 2020;17(1):1-4.
4. **Maina BW**, Orindi BO, Osindo J, Ziraba AK. Depressive symptoms as predictors of sexual experiences among very young adolescent girls in slum communities in Nairobi, Kenya. International Journal of Adolescence and Youth. 2020;25(1):836-48.
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10. Bello BM, Fatusi AO, Adepoju OE, **Maina BW**, Kabiru CW, Sommer M, Mmari K. Adolescent and parental reactions to puberty in Nigeria and Kenya: A cross-cultural and intergenerational comparison. Journal of Adolescent Health. 2017;61(4): S35-41.
11. Mmari K, Blum RW, Atnafou R, Chilet E, De Meyer S, El-Gibaly O, Basu S, Bello B, **Maina B**, Zuo X. Exploration of gender norms and socialization among early adolescents: The use of qualitative methods for the Global Early Adolescent Study. Journal of Adolescent Health. 2017;61(4): S12-8.
12. Mutua MM, Achia TN, **Maina BW**, Izugbara CO. A cross-sectional analysis of Kenyan postabortion care services using a nationally representative sample. International Journal of Gynecology & Obstetrics. 2017;138(3):276-82.

Conference presentations

The following presentations were made in conferences attended during the course of the PhD studies

1. **Maina, BW**, Orindi, BO, Sikweyiya, Y, Kabiru CW. Gender norms about romantic relationships and sexual experiences among very young male adolescents in an urban slum in Kenya. Presented at the 24th Congress of the World Association for Sexual Health – 2019

2. **Maina, BW**, Sikweyiya, Y, Kabiru CW. Sexual Health Knowledge and Behaviours of Young Adolescent Boys in a Resource-Poor Urban Setting in Nairobi, Kenya. Presented at the 24th Congress of the World Association for Sexual Health – 2019
3. **Maina, BW**. Ethical issues and moral obligations: Conducting sexual and reproductive health research with very young adolescents. Presented during the 3rd African Studies Association of Africa Biennial Conference at the United States International University-Africa, Nairobi, Kenya. 2019
4. Bello, BM, Fatusi,AO, Adepoju, OE, **Maina, BW**, Kabiru, CW, Sommer, M, Mmari, K. Adolescent and parental reactions to puberty in Nigeria and Kenya: A cross-cultural and intergenerational comparison. Presented at the 2nd Kenya National Adolescent Health symposium. 23-24 November 2017
5. **Maina, BW,** Kabiru, CW, Chilet-Rosell, E, De Meyer, S, Mmari, K. Early adolescents' sexual and reproductive health knowledge, perceptions, and behaviour: A four-country comparison. Presented at the American Public Health Association 2017 Annual Meeting & Expo (Nov. 4-Nov. 8), 2017

Panel discussions

The following panel discussions were held during the course of the PhD studies

1. **Maina, BW**. Gender and adolescent sexual and reproductive health. A panel presentation during the Global Early Adolescent Study & toolkit dissemination webinars organised by the African Population and Health Research Center, UNDP-UNFPA-UNICEF-WHO-World Bank Human Reproduction Programme (HRP) and the Johns Hopkins Bloomberg School of Public Health. 2020

2. Mutahi, P, Fabiano, C, Obonyo, R, Mutahi, FN Kidenda, Y, **Maina, BW.** Promoting inclusive development in Africa through a youth-centred approach. A Panel discussion organised by Canada's International Development Research Centre. 2020
3. Blum, R, Kabiru, CW, **Maina, BW**. A panel discussion on "Achieving gender equality by 2030: Putting Kenyan youth at the center" during the Nairobi Summit on ICPD+25 Side Event moderated by Chandra Mouli. 2019

Media appearances/articles

The following are media appearances and mentions during the course of the PhD studies

1. Let's _not_ talk about sex: insights into how Kenyan parents talk to their teens. An article published in the Conversation focusing on parent-child sexual and reproductive health communication (https://theconversation.com/lets-not-talk-about-sex-insights-into-how-kenyan-parents-talk-to-their-teens-147301
2. Teens with kids: teenage pregnancies on the rise. A television documentary on the teenage pregnancy crisis in Kenya (https://www.youtube.com/watch?v=xcd4m6DiY4s)
3. Dilemma of teenage pregnancies in Kenya. A panel discussion on the teenage pregnancy in Kenya (https://www.youtube.com/watch?v=pxOyKC_8rro)
4. Teens scarred by damaging gender stereotypes. A newspaper article on gender inequalities and adolescent health in Kenya (https://www.standardmedia.co.ke/kenya/article/2001255508/report-teens-scarred-by-damaging-gender-stereotypes)
5. Adolescents crucial in push for gender equality. An online article on the need to involve adolescents in the gender equality debate (https://nation.africa/kenya/gender/adolescents-crucial-in-push-for-gender-equality-232674)

6. Gender norms expose adolescents to health problems. A online article on gender norms and their influence on very young adolescents' health (https://www.scidev.net/sub-saharan-africa/gender/news/gender-norms-adolescents-health-problems.html)

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Abstract

Masculine norms as determinants of male sexuality and sexual health have been widely examined. Masculine norms are widely recognised as socially acceptable ways in which men should behave in a given society. However, few studies have examined gender norms among very young male adolescents (VYMA) (ages 10 – 14), and the influence of gender norms on sexual behaviours of these young boys.

The purpose of this study was to investigate the social co-construction of masculinities and sexual development among VYMA aged 10 – 14 years living in Korogocho slum of Nairobi, Kenya and to examine how slum contexts shape the co-construction of masculinities and sexual development. This study looked at social co-construction of masculinities as a process in which boys' individual characteristics interact with their social environment to inform their masculine beliefs and norms. Such masculine beliefs and norms, which are referred to as "gender norms" in the study were measured using a scale developed and validated in the context of the Global Early Adolescent Study. Sexual experiences were considered a proxy for sexual development. Sexual experience was measured as lifetime experience of penetrative and/or non-penetrative sexual activities. Penetrative sexual activities, for this study, comprised penile-vaginal or penile-anal sexual intercourse while non-penetrative sexual activities included, spending time alone, holding hands, kissing, hugging/cuddling, touching, flirting over the phone, sharing personal sexual pictures and oral sex. The study was guided by the Bioecological theory of development to understand how different contexts within the boys' ecosystem shaped their masculinity and sexual development. The study also used Connell's theory of gender and power to understand how gender was structured in the study setting, separating roles and expectations for men/boys and women/girls, more so in romantic relationships.

I conducted a cross-sectional study that utilised a sequential explanatory strategy to: 1) examine sexual experiences among VYMA aged 10 – 14 years; 2) examine the association between gender norms on sexual experiences and the contexts—individual, household, parental, peer and neighbourhood contexts—that shaped this association; and 3) to understand how boys co-constructed their masculinities, and; to assess whether masculinities were associated with sexual development. Data collection took place in December 2018 in Korogocho slum. The study was nested within the Nairobi Urban Health and Demographic Surveillance System, which provided a sampling frame. I collected quantitative data from a random sample of 426 boys and conducted in-depth interviews with 27 of these boys who were purposively selected based on reported sexual experience—eight boys with reported sexual experiences and 19 boys with no reported sexual experience.

Twenty-two percent of boys who participated in the quantitative survey reported sexual experiences, with about 7% reporting sexual intercourse. There was a high endorsement of heteronormative gender beliefs about romantic relationships and low endorsement of sexual double standards. Sexual experience was inversely associated with low endorsement of heteronormative gender beliefs about romantic relationships. There was a statistically significant association between gender beliefs and sexual experiences even after controlling for individual and household level factors. Additionally, pubertal maturation, school absenteeism, being below recommended grade-for-age were significantly associated with a higher likelihood of reporting sexual experiences, while living in a household headed by someone aged 50 years and older, being born outside Nairobi and sharing a sleeping room with more than two people were significantly associated with a lower likelihood of reporting sexual experiences. The association between gender beliefs and sexual experience was diminished

after controlling for parental and peer characteristics. Nevertheless, perceived parental approval of romantic relationships, often spending time with peers and having peers who were in romantic relationships were significantly associated with a higher likelihood of reporting sexual experiences.

Results from the qualitative findings showed three bases of gender socialisation: 1) verbal messages; 2) observing older men in the society, and; 3) media. Boys conceptualised masculinity in reference to financial stability, family life and responsibility, physical attributes, character and religion. Boys depicted two divergent portrayals of masculinity —idealised masculinity with characteristics including family life and responsibility and financial stability; and dominant masculinities whose characteristics included violence, alcohol and substance use and sexual risk-taking. Boys perceived a close linkage between masculinity and sexual development, underscoring early sexual socialisation associated with prevailing sexual norms. Such sexual norms were associated with sexual risk-taking including early sexual debut and sexual infidelity within the contexts that boys lived.

This study has contributed to the emerging evidence on the association between gender norms and VYMA's sexual development. The findings show that in the study setting, sexual activity begins at an early age, albeit at a small magnitude and highlights the existence of sexual expressions beyond penetrative sexual activity. In this regard, the study highlights the importance of focusing on non-penetrative sexual activities as they are important for understanding sexual development. Although the study shows that inequitable gender norms are learnt early, the results suggest that in early adolescence, these norms are yet to translate into behaviour that promotes early sexual activity.. As such, early adolescence offers a window of opportunity to reach young people before inequitable gender norms influence risky

behaviour. Beyond gender norms, the study highlights different contexts, such as the role of parents, peers, and the neighbourhood characteristics that shape sexual development. This implies that addressing the sexual health needs of adolescent boys should go beyond individual-level factors and focus on contexts within the boys' ecosystems.

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Abbreviations

APHRC	African Population and Health Research Center
GEAS	Global Early Adolescent Study
IPV	Intimate partner violence
NUHDSS	Nairobi Urban Health and Demographic Surveillance System
SRH	Sexual and reproductive health
SSA	Sub-Saharan Africa
VYMA	Very young male adolescents

1. Introduction

Sexual behaviours are a major risk factor for poor health outcomes (1-4). High-risk sexual behaviours can impact adolescents' development and health negatively, impeding their future health trajectories and wellbeing (5). Thus, the challenges associated with achieving sexual health begin early in life (6) as the major developmental changes in early adolescence expose adolescents to high-risk sexual behaviours (7-11).

"It takes a village to raise a child" is an African proverb that resonates well with this study. The proverb implies that children's environment, which includes interactions with other people as well as systems and structures within their environment, shapes their behaviours. This means that while we often measure behaviour as an individual characteristic, it could also be a reflection of the shared attributes at the community level. The influence of social and community norms on behaviour may be particularly pertinent in the early adolescence period, the period of life between 10 and 14 years of age (12-14).

Early adolescence is a developmental stage with major biological, psychological and social changes that shape sexual development (8, 12-15). It is during early adolescence that gender beliefs are shaped with a likelihood of lifelong implications on sexual health and wellbeing (16). However, there is very limited focus on understanding the influence of gender beliefs on adolescent sexuality and sexual development, especially among very young male adolescents (VYMA) in sub-Saharan Africa (SSA). This is despite many studies done in the SSA region indicating that a significant proportion of boys engage in sexual activity before the age of 15 years (17, 18). While this implies an all-important need to invest in early adolescence, it also calls for more understanding of how sexual development occurs among boys and how the community expectations for boys—masculine expectations—shape sexual development.

Masculinity, which is a social construct referring to sociocultural expectations considered appropriate for males in a given society (19, 20), is co-constructed. Masculinities are learnt through the gender socialisation process, which begins early in life, and is intensified during the early adolescence period as young people contend with pressure to conform to gender expectations within their society (13, 15, 16, 21). The gender socialisation process is interactive, that is, boys interact with their environment and position themselves to different masculine discourses depicted in their contexts. By interacting with their environment, boys play a core role in developing their masculine traits, and thus, co-constructing their masculinity. Such masculine traits also refer to boys' sexuality, linking masculinity and sexual development.

In this study, I examined how gender beliefs are associated with sexual development among VYMA—also referred to as early adolescents (these two terms have been used interchangeably going forward). I also explored how masculinities are co-constructed and examined the contexts that shape masculinity and sexual development among early adolescent boys in Korogocho slum in Nairobi, Kenya. I looked at gender co-construction as a process in which individuals develop their own identity by exploring, negotiating and consolidating beliefs, practices and attitudes associated with being male (masculine) (22-24). While noting that masculinities are a display of social and cultural practices, I recognise that masculinity hierarchies are created not only in relation to femininities but also in relation to other men (20, 25). I also recognise that sexual development involves biological and psychological processes that occur within an individual and socio-cultural processes that occur through the interactions an individual has with their environment (10).

The findings of this study are important especially at a time when there is a global push to address the sexual health issues affecting boys (16, 21, 26) and consider inclusivity by ensuring that men and boys are equally targeted in sexual and reproductive health (SRH) programmes (21, 27-29). Understanding that boys, as the other half that is often ignored in research and programming, are also dealing with health issues is critical (30-32). However, there is a huge gap between what we know for older male populations and what my data shows for younger boys, implying that we need to address structures or factors that influence that drastic change from naivety to risk behaviours.

1.1. Background

It is projected that more than two-thirds of the world's population will be living in urban areas by 2050 with a majority of urban dwellers in SSA living in urban slums (33). This means that majority of VYMA in SSA will be living in urban slums (34). Urban slums have been associated with high levels of poverty, violence, crime, sexual risk-taking and poor SRH outcomes (35-37). In settings where traditional masculine ideologies such as those that view men as providers are valorised, high levels of poverty and social marginalisation can affect how boys and men behave if they are unable to meet the masculine expectations, including sexual risk-taking (25, 38-40).

Mmari and Astone (3) underscore the importance of exploring adolescents SRH and the contexts that influence such behaviours, more so among those living in urban communities in low and middle-income countries. They argue that the rising number of adolescents in these communities is likely to change the landscape of adolescent health. Past studies have shown that contextual factors such as poverty and harsh living conditions in urban slums increase the likelihood of risky sexual behaviour and poor SRH outcomes (41, 42). The current study explored the role of the slum contexts in shaping the gender beliefs and expressions of masculinity and sexual development of VYMA. The assumption is that masculine norms are likely to influence sexual behaviours in early adolescence as VYMA interact with individual, proximal and distal factors within the slum contexts. I examined these associations in light of the unique vulnerabilities and opportunities stemming from social, economic, and cultural factors that can influence masculinity development (3, 39, 43).

The growing need to engage men in achieving gender equality calls for increased research on issues of masculinities and sexual health. Gender norms, referring to social expectations of appropriate roles and behaviours for males and females (29, 44, 45), are increasingly being

recognised as drivers of sexual health and well-being. Therefore, males' sexual health cannot be explored sufficiently without looking at the concepts of maleness, attitudes and behaviour that societies define as being male and the contexts that shape specific types of masculinities.

Extensive research on the social co-construction of masculinities and sexual development has greatly contributed to our understanding of gender socialisation processes and the influence of gender norms on sexual behaviours among older adolescents (31). However, there exists limited evidence among early adolescents who, because of their developmental stage, are prone to social influences likely to have an effect on their masculinity and sexual development (26, 46, 47). This study adds to the emerging body of knowledge by focusing on the co-construction of masculinity(ies) and sexual development among VYMA aged 10 – 14 years living in an urban slum in Nairobi, Kenya.

1.2. Significance of the study

Gendered beliefs, attitudes, and behaviours have been documented as determinants of sexual risk-taking behaviour and negative SRH outcomes (48, 49). However, there is limited evidence to show these associations among early adolescent boys aged 10 – 14 years as most of the available literature has focused on older adolescents and men aged 15 years and older. The limited evidence also implies that very young male adolescents' SRH is often overlooked in research and programmes leading to their non-inclusion in health care practice, health promotion and sexual health policies and programmes.

As boys grow, they are socialised to conform to gendered cultural beliefs (13, 50). However, it is in early adolescence where learning and conformity to these gender-related beliefs are intensified as a result of increased socialisation pressures to conform to traditional masculine sex roles (13).

Rigid gendered beliefs, attitudes and behaviours have been associated with negative health behaviours and outcomes for men, including sexual risk-taking and negative SRH outcomes (51) (48, 49). Whereas the gender socialisation process is intensified in early adolescence, there is scarce literature on how VYMA co-construct their masculinities and how the different kinds of masculinities influence their sexual development (16).

In patriarchal communities, men may have higher control power over women in sexual relations, division of labour and higher social status in the society (52-55). As a result, women may have diminished powers to negotiate safe sex practices or have control of their sexuality, with implications on sexual violence, unintended pregnancies, sexually transmitted infections, early sexual debut and early childbearing (56-58). Inequitable gender norms can therefore lead to poor SRH outcomes (49, 59-61). For instance, a study conducted in South Africa associated masculine norms with intimate partner violence (IPV) and found that men who had perpetrated IPV were more likely to be infected with HIV compared to men who had not perpetrated IPV (62). These findings are echoed across populations living in resource-poor urban settings in SSA (63-65). However, these and most of the other studies have not established the ways in which inequitable gender norms interact with different contexts to influence sexual development among VYMA. Thus, focusing on VYMA living in an urban slum and interrogating their social construction of masculinity and sexuality and the influence of context on gendered beliefs and practices is vital.

Taken together, the findings from this research are expected to inform interventions that address gender inequality as well as SRH in early adolescence before VYMA start to engage in risky sexual activity. Understanding how masculinity is co-constructed and identifying masculine norms and behaviours that are harmful to boys, men, and their relationships, including sexual relationships, at an early age may help shape gender transformative interventions. For such interventions to be

effective, they need to be tailored to specific contexts such as the urban slum context. Additionally, the study findings may inform policies on gender and SRH issues that are important to male sexual health.

1.3. Research aim

The main aims of this study were to investigate the social co-construction of masculinities and sexual development among VYMA aged 10 – 14 years living in Korogocho slum of Nairobi, Kenya and to examine how slum contexts shaped the co-construction of masculinities.

1.4. Research questions

i. How do VYMA construct their masculinities?

ii. What are the sociodemographic, socio-cultural and socioeconomic factors associated with VYMA's sexual behaviours?

iii. How are masculinities associated with sexual experiences among VYMA?

iv. What are the factors that influence how masculinities are constructed, and what is the interrelationship between these factors and sexual experiences of VYMA?

1.5. Research objectives

i. To explore gendered beliefs and perceptions associated with masculinity(ies) and sexuality among VYMA living in Korogocho slum in Nairobi, Kenya

ii. To describe the socio-demographic, socio-cultural and socio-economic characteristics associated with specific sexual behaviours (none, penetrative or non-penetrative) of VYMA living in Korogocho slum

iii. To assess the association between endorsement of conventional gender beliefs about masculinity and sexual behaviour of VYMA living in Korogocho slum in Nairobi, Kenya

iv. To explore how slum contexts, shape the beliefs and expressions of masculinity(ies) and sexuality among VYMA living in Korogocho slum in Nairobi, Kenya

1.6. Outline of the thesis

Chapter 2 describes the existing literature on masculinity and sexual development and places this study within the existing theoretical understandings. Chapter 3 describes the general methodology of the study. The results are presented in Chapter 4. Chapter 5 discusses the results from the four articles, drawing linkages to the existing evidence. The chapter is structured in line with the study objectives and is presented in six sub-sections, including a revised conceptual framework. Chapter 6 provides a concluding summary with implications for research, policy and programming work

2. Literature review

This chapter provides a review of the literature on co-construction of masculinity and male sexual development, with a key focus on the early adolescence period. I first describe the early adolescence period as a time of transition with key developmental changes taking place. Next, I focus on gender socialisation and the concept of masculinity, broadly and also pay specific attention to poor urban settings. Lastly, I highlight the linkages between masculinity and sexual development with the recognition that while sexual intercourse has largely been used as a marker for sexual development, emerging evidence suggests a prevalence of other non-vaginal sexual experiences that are important for understanding sexual development. I also present the theoretical background in which this work is embedded.

2.2. Early adolescence as a time of transition

Although early adolescents face great challenges and barriers to health and development (66), they are often invisible in discourse and data with attention mainly given to adolescents aged 15 years and older (67, 68). The changes occurring in early adolescence (physiological, biological, social, and cognitive) are likely to affect young adolescents' sexual development as they transit from childhood to adulthood (8). For boys, puberty marks the onset of rapid body growth, which includes the development of genitals, sexual characteristics and increased sexual drive arising from increases in testosterone levels (69).

Early adolescence is also a time of rapid cognitive development—increasing ability to think abstractly, differentiate hypothetical and real situations, and ability to process sophisticated and elaborate information (7, 70). Choudhury, Blakemore and Charman (71) and Blakemore (72) indicate that adolescents are more efficient in and better able to systematically process emotional perspectives of other people compared with children as a result of neuroanatomical maturation

within the regions of the brain involved in social cognition. According to Steinberg (73), the remodelling of the brain's dopaminergic system during puberty affects the social-emotional systems of adolescents leading to increased risk-taking behaviours.

Social development in early adolescence is characterised by interpersonal relationships that are influenced by physiological, biological and emotional changes taking place (8, 10). Uncertainty about the body changes is common in early adolescence, leading to anxiety and shame (74), which enhances the need for privacy as adolescents realise and become more sensitive to their changing bodies (75). For boys in many contexts in SSA, there is also increased social freedom to move outside the home, work and engage in leisure activities, whereas girls' social mobility decreases and they are expected to take on more household chores (29, 66, 76).

Early adolescence is also a time when young people are expected to assume socially defined adult gender roles that result in pathways that lead to particular SRH outcomes. This implies that gender-differentiated roles, responsibilities and expectations, including in sexual relationships, begin to take shape in early adolescence as young adolescents become increasingly aware of the socially endorsed norms dependent on their gender.

2.3. Gender socialisation and the concept of masculinity

Gender socialisation refers to the process of learning the socially and culturally ascribed traits, statuses and values considered appropriate for people based on their actual or perceived sex or sexuality (77). Arnett (78) defines three goals of socialisation as: i) impulse control and the capacity to self-regulate developed in early childhood through socialisation from parents, siblings and peers; ii) preparation for and performance of roles including roles relating to gender; iii) developing sources of meanings such as religion, family relationships and ethnic affiliation. Thus, gender socialisation takes place through inter-personal relationships and through interactions with

one's social-cultural environment (79), including the contexts one lives in and the institution built therein such as family, schools, media and churches (80, 81). For instance, Crouter, Whiteman, McHale et al. (82) refer to the trajectory of youth's unfolding ideas about gender from middle childhood through adolescence as depending on the confluence of youth's personal characteristics and their family circumstances. To illustrate how parents influence gendered behaviours, a study by Serbin, Powlishta and Gulko (83) found that children who practised less gendered behaviours had parents who endorsed egalitarian gender norms. Arnett (78) further indicates that parents draw their parenting skills from the cultures surrounding them. In line with scholars like Ehrensaft (84) and Fausto-Sterling (85), I recognize the role of individual characteristics in the process of gender co-construction. As Ehrensaft notes, 'true gender self is a kernel of gender identity that is there from birth, residing within us, in complex chromosomes, gonads, hormone receptors, genitalia but ‚most importantly our brain and mind'.

The cultural or social expressions of masculinities in many settings are often unhealthy (19). Extant literature shows that men who endorse traditional forms of masculinity engage in poorer health behaviours and have greater health risks than their peers with less traditional beliefs (60, 86). Such health risks include physical dominance, violence and crime, risky sexual behaviours, as well as drug and alcohol abuse. For instance, in societies where hegemonic masculinity—viewed as "*patterns of practice that allow men's dominance over women*" (20)—is prevalent, the use of power and force, more so, in interpersonal relationships, leads to unhealthy relationships (19, 52, 87). Although men could reject these unhealthy beliefs and practices, it means crossing over socially constructed gender boundaries. Noting that male SRH issues have often been overlooked in research and programmes globally, and that the few studies exploring the nexus between

masculinity and sexual behaviours in SSA have primarily been conducted among older males (88), there is a need for research focusing on these interrelationships among young male adolescents.

2.4. Co-construction of masculinities in resource-poor urban settings

The urban-poor young male adolescents are a vulnerable and fast-growing population (89, 90). Very young male adolescents living in urban slums are exposed to extreme challenges including limited access to quality basic services such as healthcare, education, housing and livelihood opportunities (91), challenges that can lead some to adopt risky behaviours to cope with demands of daily living (92). High levels of crime and violence, sexual abuse and substance use characterise the urban slums and pose a health risk to young boys growing up in such environments (37, 93, 94).

Growing up in slums is a threat to healthy adolescent development (1, 89). Urban poverty has been linked to higher sexual risk. Evidence shows that the median age at first sex is approximately three to five years lower in slum areas than in non-slum areas (37, 95) and young adolescents are at particularly at high risk of early transitions into sexual relations (95). As observed by Baker (96), in contexts where young men have to show their virility or machismoness to be acceptable, low socioeconomic status predisposes them to be aggressive due to a perceived lack of control over their life—a sense of being fragile.

The extent to which boys ascertain their masculine identities and their influence on sexual behaviours may therefore depend on their environment. In their study among male Malawian youth, for example, Izugbara and Undie (49) found that male youths' sexual behaviours were influenced by their need to maintain a masculine identity and recommended in-depth explorations of social contexts in which specific gender scripts manifest themselves. Although some studies suggest that high poverty levels in resource-limited urban settings may drive young men to take

up risky behaviours to ascertain their masculinity (96), many studies often fail to account for contextual factors that influence such masculinity traits.

2.5. Masculinity and sexual development in early adolescence

The WHO (97) defines sexual health as *"a state of physical, mental and social well-being in relation to sexuality. It requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence*". As a result of changes taking place during puberty, sexual desires begin to develop in early adolescence (26, 98, 99). In their review, Marston and King (59) found that gender stereotypes were crucial in determining social expectations and behaviour regarding sexual activities and that men were expected to be highly heterosexually active and vaginal penetration was important in determining masculinity. To achieve the socially defined masculinity, and since premarital sex among women is proscribed, Marston and King (59) argue that men may resort to scheming and plotting to obtain sex, for example, by deceiving women. In another study, Fleming, Andes and DiClemente (100) found that young men expressed themselves and their masculine identities through sexual relationships including pursuing multiple sexual partners. Although such behaviours may increase boys' social standing among their peers, they pose a health risk (49); unsafe sexual behaviours are a major contributor to years of life lost due to premature death and disability among young people (101). Issues around how masculinities are defined and enacted are likely to pose a challenge in achieving sexual health as defined by WHO (97).

Data on SRH outcomes among VYMA in SSA are scarce. Existing literature, which is largely based on retrospective studies with older adolescents aged 15—19 years and young adults, suggests that about 14% of boys in East and Southern Africa initiate sexual activity when they are

younger than 15 (102, 103). In Kenya, early sexual debut is less common if adolescents grow up with two parents (104), experience high parental monitoring (36, 95) and is more common if there is no guardian in the household (36). Connectedness to parents or caregivers also matters (56, 105). For example, family dysfunction characterised by violence and lack of support is associated with a higher likelihood of early sexual debut among young adolescents in Nairobi slums (36). In addition, perceptions of permissive parental sexual norms and conventional gender beliefs in the family are linked to early sexual initiation among adolescents (104).

Peer social norms also matter; if adolescents perceive that most of their peers are having sex or that their peers encourage sexual relations, they are more likely to engage in sexual behaviours for social acceptance and to avoid being stigmatised (56, 106, 107). In Nairobi slums, positive peer modelling, such as having friends who do well in school, participate in pro-social activities and refrain from delinquent behaviours, is associated with delayed sexual initiation (95). Studies from other SSA settings have further linked social isolation (e.g. no close friends or social and economic opportunities) to a higher risk of coerced sexual initiation and sexual violence (58)

In early adolescence, boys and girls begin to have interest and curiosity for romantic relationships (26). However, the social acceptance of early romantic relations, as well as pre-marital sexual behaviours, varies (69, 106, 108). Boys in many contexts in SSA are socialised to have control over women and women to be submissive (49, 109). A study conducted on coerced sexual activity among adolescents aged 11 – 16 years attending primary grade 7 in Nyanza and Rift-valley regions in Kenya showed widely-accepted beliefs that sexual relationships were necessary for girls and boys who had entered puberty (110). As a result, young girls and boys experienced pressure from peers and community to initiate vaginal sex. Further, boys were generally perceived as not in control their sexual urge, thereby justifying their sexual aggression while girls described sex as an

obligation to boys and men, especially in return for gifts and money (110). Another study conducted in South Africa showed that young women were pressurised to conform to gender norms of male dominance hence restricting their power in sexual relations (53). These findings portray a gendered advantage towards boys in that, although early sexual activity is condemned, young men are socialised to dominate women in many aspects (110-114). Hence, it is highly likely that even boys who endorse conventional gender beliefs will initiate sexual behaviours early to prove masculinity and win social approval.

Studies on sexual behaviours in SSA have typically overlooked non-penetrative forms of romantic and sexual behaviours that are important in sexual development such as kissing (36). The few studies that have considered non-penetrative behaviours show that a considerable proportion of adolescents engage in these activities as their first sexual experience (95). A multi-country study among 12 – 14-year-olds found that other than vaginal sex, very young adolescents engaged in non-coital sexual behaviours that they considered as part of romantic activities (115). Incorporating the whole range of romantic and sexual behaviours in defining sexual experiences gives a full range of sexual expectations and behaviours as part of healthy sexual development, something that is missing in a large number of studies, especially among very young adolescents.

Important to this study, the limited focus on boys results in a poor understanding of how they construct and express their masculinities and how these expressions predispose them to poor SRH outcomes.

2.6. Theoretical and conceptual background

This research builds on Bronfenbrenner's bioecological theory of development (79, 116), a revision of Bronfenbrenner's Ecological Systems Theory (117). The initial theory laid emphasis on context, discounting the role a person plays in their own development. Bronfenbrenner's

bioecological theory posits that an individual's behaviour is shaped by interactions among person, process, context and time, emphasizing on the person-context interaction.

The bioecological theory is best suited to situate the findings of this research as it aligns well with the concept of co-construction of masculinity and sexual development. At the centre of the model is the adolescent (person) and the individual level factors including biological and personal characteristics such as age, sex, and pubertal maturation that increase the likelihood of adopting certain gendered beliefs and sexual behaviours. The theory refers to context in four different aspects of the ecosystem—micro-, meso-, exo-, and macro-systems. Microsystems are the immediate proximal factors and include family, peers and sexual partners that an adolescent interacts with to influence behaviour. The interactions between the micro-systems to influence adolescent beliefs and behaviours create the mesosystem. Exosystems refer to structures that impact an adolescent's development indirectly through interacting with microsystems. In this study, this includes schooling characteristics (age-for-grade and absenteeism), neighbourhood contexts (neighbourhood cohesion, safety and control, neighbourhood poverty, community sexual norms, and media). The macrosystems refer to broad structures, such as culture, religious affiliations, ethnicity, laws and policies, and education systems that police behaviours. The interaction between these systems to influence behaviour is what Bronfenbrenner (79) refers to as the "process". The interaction between a person and his environment (context) over time is likely to produce specific behaviours that are, often, unique to the context where the person is situated. Additionally, chronosystem captures the time dimension in relation to an adolescent's environment. It encompasses changes within an individual over time and changes within and across generations.

While Bronfenbrenner's bioecological theory is useful in understanding the concept of co-construction of masculinity and sexual development as it places emphasis on person-context interaction, the theory has been criticised for considering individual and cultural processes as separate entities (118). According to Vygotsky (119), individual and cultural processes are an intricate part of proximal developmental but in the bioecological theory, the cultural processes are placed in the macrosystem (118). Vygotsky (119) places culture at the center of the microsystems. Mistry, Li, Yoshikawa et al. (120) conceptualises culture as "generalizable ideologies and practices shared by groups, as well as, the meaning-making processes through which individuals interpret their environmental contexts by drawing on the shared ideologies available to them as members of groups" (p. 4). Thus, culture can be viewed as both a process and the content of daily activity in all contexts in developmental processes (119). However, how culture is operationalised and measured remain invisible in the bioecological theory (119, 120). The importance of considering culture as a central component of human development is also raised by Weisner (121), arguing that culture cannot be separated from the person. Weisner (121) recognises the importance of the ecological and cultural environment in which human development takes place and considers these environments within the microsystems contributing to developmental processes.

This study also builds on Connell's theory of gender and power (52). The theory posits that the social production of gender inequities is driven by the sexual division of labour, the sexual division of power, and cathexis (affective attachments). Connell's theory of gender and power , which implies that gender is 'achieved' in action/practice, is important in understanding the concept of hegemony According to Connell (122), health is one of the practices involved in 'doing' gender in everyday life and thus, attributing gender to some of poor health outcomes. While noting that Connell`s theory of gender and power has many elements, the theory is useful in understanding

how gender is structured within the study setting. Connell's theory of gender and power explains how gender is structured in a society and identifies three major structures that characterise the gendered relationships between men and women—the sexual division of labour, the sexual division of power, and the structure of cathexis. These structures, according to Connell (20), exist at societal and at institutional level. At societal level, these structures exist through forces that separate powers and ascribe social norms on the basis of gender-determined roles. At the institutional level, these structures exists within institutions such as schools, families, relationships, religious institutions, and work places. The presence of these and other social mechanisms produces gender-based inequities that ascribe men a higher social status in the society.

However, Connell's theory has been criticised for how it conceptualises gender (20). For instance, Demetriou (123) argues that "men do not constitute a homogenous or internally coherent bloc. Demetriou (123) further argues that while hegemonic masculinity is only enacted by a minority of men, Connell (20) expresses hegemonic masculinity as the idealised type of masculinity. Demetriou (123) argues that this hegemonic masculinity is based on ideals, fantasies and desires that men strive to achieve, but can never be completely achieved. According to Wetherell and Edley (124), Connell's theory of gender and power theory fails to specify what in practice, conformity to hegemonic masculinity looks like.

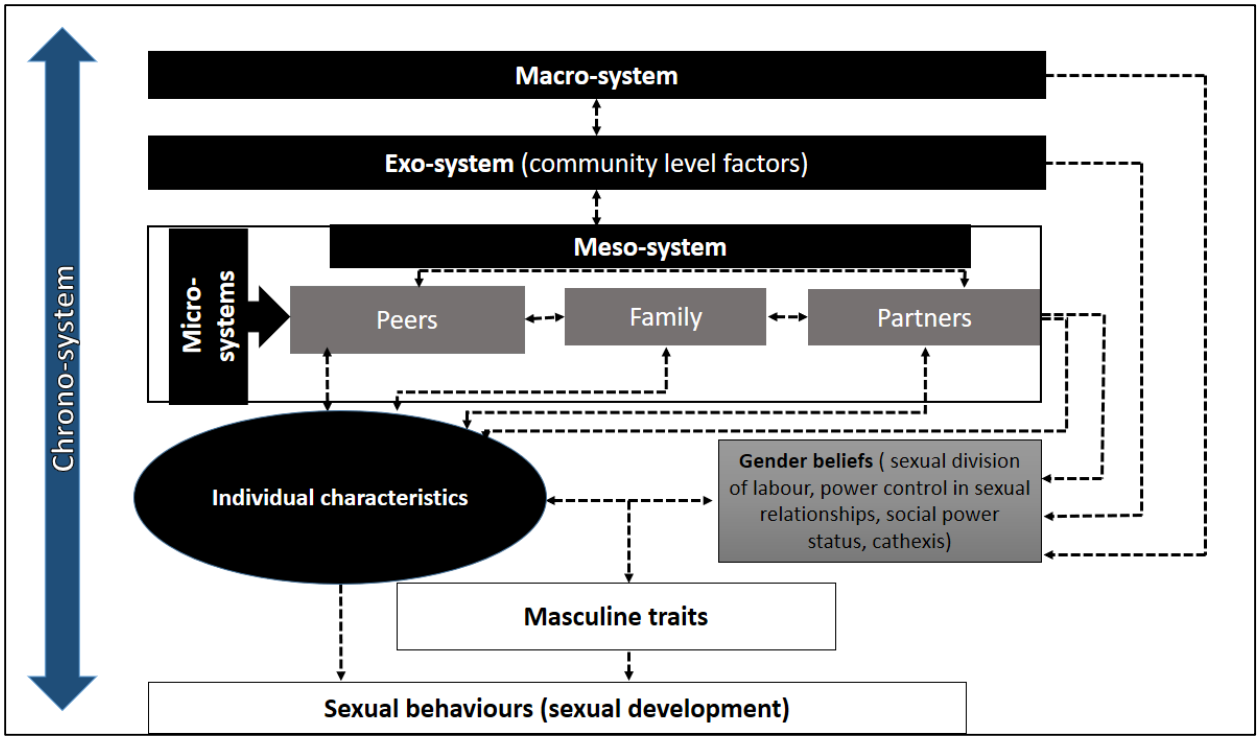
Despite the criticism, Connell's theory of gender and power is useful in understanding the concept of how gender is structured, more so in understanding hegemonic masculinity and how boys/men ascribe to or deviate from the culturally defined gender norms.

Connell's theory of gender and power is linked to the Bronfenbrenner's bioecological theory at the level of individual characteristics with the assumption that although societies have defined different forms of masculinities (macro level of the bioecological framework), it is at the individual

level that these masculinities are adopted or challenged through interactions with one's environment, defining one's masculine traits in regard to their sexuality and thus influencing their sexual behaviour.

The concepts and perceptions of ideal masculinities vary across time and cultures. Men who assume conventional masculine identities (e.g., the ideal man) have the highest social status; men who assume other, more marginalised masculine identities such as having traits associated with women have a lower social status (52). Thus, conventional gender beliefs are defined as beliefs that afford men more power, abilities, status and competence than women i.e. that support norms about gender inequitable relationships.

Connell's theory of gender and power informs the organisation of gender beliefs in this study as the key factors influencing sexual behaviours. The temporal relationship between gender beliefs and sexual behaviours may be bi-directional in that sexual behaviours may shape beliefs as well as other psychosocial covariates. Figure 1 shows the conceptual framework used in this research combining Bronfenbrenner's bioecological theory and Connell's Theory of Gender and Power. A revised conceptual framework illustrating how the key variables emerging from study findings are linked is presented later.



Adapted from the Bronfenbrenner's bio-ecological theory of human development and the Connell's theory of gender and power

Figure 1: The conceptual framework for the research

Sexual development is conceptualised as a process that is influenced by individual, proximal and distal factors, and that is ultimately explained by an individual's sexual behaviours, a marker of sexual development. Sexual intercourse has often been used as the hallmark of sexual development. Increasingly, however, a growing body of literature suggests that young people engage in other sexual activities that are central to their sexual development (18, 95). In this study, sexual behaviours include penetrative (vaginal and anal sex) and non-penetrative behaviours (spending time alone with a person one is in love with, hugging, holding hands, kissing, touching/fondling, cuddling, flirting on the phone, social media, and oral sex).

3. Methodology

3.1. Study setting

This study was conducted in Korogocho slum in Nairobi, Kenya (Figure 2) and was nested within the Nairobi Urban Health and Demographic Surveillance System (NUHDSS), which the APHRC has been running since 2002 (35, 125).

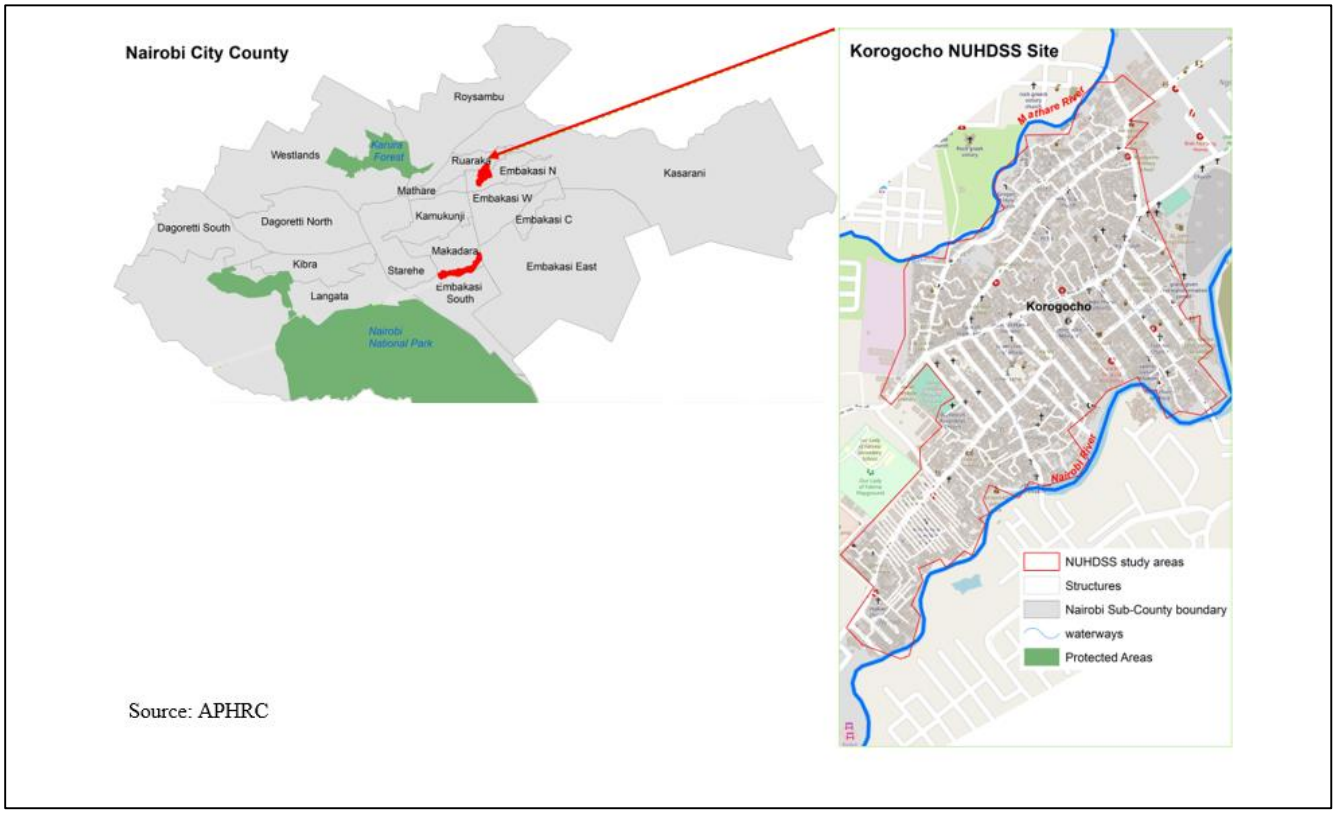


Figure 2: Location of Korogocho slum in Nairobi County

The NUHDSS is a longitudinal platform that collects vital health and socio-demographic data on about 89,000 individuals in two sites—Korogocho and Viwandani—in Nairobi (125). The platform provided an accessible sampling framework for this study. Korogocho slum, where the current study was based, was chosen for this study because the slum is characterised by high levels of crime, social and physical insecurity, unemployment, overcrowding and limited access to

healthcare (35). Populations living in Korogocho also report poor SRH outcomes (37, 42, 88, 95). More information about Korogocho and the NUHDSS can be found elsewhere (35, 125)

3.2. Study design

This was a cross-sectional sequential explanatory mixed-methods study. In a sequential explanatory mixed-methods study design, quantitative data are first collected and analysed, providing a general understanding of the research problem while qualitative data elaborate on the quantitative findings through an in-depth exploration of the research problem (126). The sequential explanatory design was suitable for this study because the paucity of data on VYMA living in urban slums would have made it challenging to frame the quantitative findings within larger foci on gender and male sexual health.

3.3. Data sources

The study utilised quantitative and qualitative data collected among VYMA. Qualitative data were also collected from parents of adolescent boys participating in qualitative interviews to understand their role in shaping masculinity and sexual development among VYMA. Similarly, focus group discussions were conducted with very young adolescent girls to understand their role in the co-construction of masculinities and sexual development. However, the findings reported in this thesis are limited to data from VYMA.. The study adapted a quantitative *toolkit* developed, piloted and validated within the context of the GEAS. The GEAS is the first international study to focus on gender norms and sexuality among very young adolescents. The *Toolkit*—which is publicly available on www.geastudy.org—comprises of a parent/guardian (household) questionnaire, a health and behaviour instrument, a gender norms instrument and a vignette-based measure of gender equality. The study also adapted a qualitative tool used in phase 1 of the GEAS study. The methodology used in the GEAS study is described elsewhere (127).

3.4. Study sample and sampling

Quantitative survey

The study population for the quantitative survey comprised of a randomly selected sample of 426 VYMA aged 10 – 14 years living within Korogocho NUHDSS site. I used the June 2018 enumeration list as a sampling frame. The list comprised 1878 VYMA living with Korogocho NUHDSS site. I estimated the minimum sample size based on the third objective of the study–to assess the association between gender norms and sexual experiences among VYMA. Unpublished data collected during the GEAS pilot study (128) showed that about 19% of VYMA had ever engaged in either penetrative or non-penetrative sexual activities. Given the scarcity of data on the association between gender norms and sexual experiences of VYMA, I assumed an odds ratio (OR) of 2% and sexual experience prevalence of 15%.

Results of sample estimation showed that with an 80% power, it was possible to assess the association between gender beliefs and sexual experience with a sample of 422. Given that data collection was going to take place during the December holidays when there is a lot of movement of people, I anticipated a 30% non-response, slightly higher than the 20% non-response rate often considered in other studies in the same setting (128), arriving at a final sample of 549, which was rounded to 550. The sample was stratified by age (ages 10, 11, 12 13 14) and participants randomly selected from each stratum. In total, 428 VYMA were successfully interviewed representing 78% of the inflated sample. Records from two boys whose parents gave consent conditional on their children not being asked questions about sexual behaviours were dropped because sexual behaviour was the main outcome variable of the study. Thus, the dataset for analysis comprised of 426 VYMA, representing 101% of the minimum sample (422) required to assess the association between gender beliefs and sexual experiences among VYMA. Of the 122 boys who were not

reached, 65 had moved out of the surveillance area between June and December 2018. Another 51 VYMA could not be reached because they were away for an extended period mainly because of the Christmas holidays, their homes had been demolished, or could be not traced at all. Two boys had died since June 2018 enumeration listing; one boy did not provide informed assent for his participation in the study, and two parents did not provide informed consent for their son's participation in the study.

Qualitative sample

A purposive sample of 30 VYMA was selected from the quantitative sample based on reported sexual experiences in the quantitative data. Ten VYMA were selected because they reported either penetrative or non-penetrative sexual experience while 20 VYMA were selected because they reported no sexual experience. The stratification by sexual experience was informed by the small proportion of VYMA reporting sexual experience in studies conducted in similar settings (18, 95). The sampling strategy and sample sizes for qualitative data are within standard practices for collecting qualitative data (129). Clarke and Braun (130) recommends a minimum sample size of at least 12 to reach data saturation. Thus, a sample of 30 was deemed sufficient for the qualitative analysis in this study, ensuring that the sample consisted of a sufficient numebre of boys who had had a sexual experience. In total, 27 VYMA were successfully interviewed. Among the 30 selected VYMA, three could not be reached at the time of the interview, having travelled out of the study site for Christmas holidays.

3.5. Study instruments

3.5.1. Quantitative questionnaire

The questionnaires used in the study comprised of:

i) a parent/guardian instrument to collect sociodemographic data (Appendix 1)

ii) a health and behaviour instrument for use with very young adolescents (Appendix 2)

iii) a multidimensional scale to measure overall gender norms about relationships (Appendix 3).

The tools were translated into Swahili, a language widely spoken in Korogocho.

3.5.2. Qualitative instruments

A semi-structured IDI guide (also translated into Swahili) was used to explore the concepts of masculinity and gender socialisation among VYMA (Appendix 4).

3.6. Outcome Measure

Sexual experiences among VYMA were the main outcome measure for the quantitative components of the study as shown in Table 1. However, in one set of analyses, I examined gender belief scores as an outcome variable to understand the factors associated with individual level gender beliefs.

Table 1: Description and measurement of outcome variables

Outcome variable	Nature of outcome	Variable Description	Variable measurement
Sexual experience	Binary	Individual level measure of sexual experience generated from 10 indicators of sexual experiences—spent time alone with a person you were in love with, held hands, hugged/cuddled, kissed, flirted, shared a sexual picture, touched/fondled private parts, sexual intercourse, oral sex, anal sex.	0=no sexual experience 1= had a sexual experience
Gender belief scores	Continuous	The outcome was an individual level measure of gender beliefs. Two gender domains were identified—sexual double standards which was derived from 13 gender belief items—and heteronormative beliefs about romantic relationships—derived from six gender belief items.	Higher scores represented endorsement of inequitable gender beliefs related to the specific gender domain

3.7. Data processing and quality control measures

Quantitative data were collected electronically using android tablets loaded with the SurveyCTO v12.2 platform. The process of data collection was structured. First, households of sampled adolescents were identified using the NUHDSS household listing information. A parent/guardian in the household was approached, provided with information about the study and requested for permission to allow the sampled adolescent to participate in the study and also for the parent/guardian to be interviewed on household characteristics. If they gave permission, they were requested to provide written informed consent for their own participation and for their son/male ward to be interviewed.

A household characteristics questionnaire was then administered to the parent/guardian. After the interview, the interviewer gave the parent/guardian a card with a unique identification number and NUHDSS identification details and instructed him/her to give the card to the adolescent to bring with him to the interview venue. This card was proof that the parent/guardian had given informed consent for the adolescent to participate in the study and they had been interviewed about their household characteristics. Only adolescents who brought the card with them and assented to participate in the study were interviewed. All the cards were collected after the adolescent interview. To provide a safe environment for conducting interviews and to ensure privacy and confidentiality during the interview process, all adolescent interviews were conducted at a local school within the NUHDSS site.

Several measures were instituted to ensure data quality. First, the data collection tool consisted of inbuilt programmes to check for inconsistent responses. The tool also contained filters for questions that did not apply to a respondent based on the nature of response to preceding questions. For instance, if a boy responded that they had never had a sexual experience, then the subsequent

questions such as the boy's age when they first had the sexual experience, reasons for engaging in the sexual activity or age of the partner did not apply.

Second, the field team supervisors reviewed all completed questionnaires before data were synced to the server to check for completeness and inconsistencies not captured by the inbuilt systems. Lastly, I checked all data submitted for any inconsistencies and missing information. In all steps, cases of inconsistencies and missing data were corrected/completed in the field. These quality assurance steps ensured minimal cases of missing data.

For qualitative data, all interviews were audio-recorded to ensure that all discussions were captured. Daily briefings were held with the interviewers to ensure that data quality issues were identified, discussed and resolved. All audio-recordings were transcribed, three of which were double transcribed and transcripts compared. Additionally, the PI listened to ten audio-recordings and compared the recordings with their respective transcripts to ensure no information was missing.

3.8. Data analysis

3.8.1. Qualitative components

To address Objective 1, I used qualitative data to explore the gendered beliefs and perceptions associated with masculinity(ies) and sexuality among VYMA living in Korogocho slum in Nairobi, Kenya. The results are published in Paper 1 (Section 4.1). Transcripts were transcribed verbatim (for interviews conducted in English) or transcribed directly into English (for interviews conducted in Swahili) by two bilingual transcriptionists. I then coded all the data, discussing the code list with the academic supervisors.

Data were analysed using thematic analysis (131). First, broad themes were identified deductively using the semi-structured interview guides. An initial set of codes emerging for each theme were

identified inductively through reading all the transcripts. Codes were reviewed to ensure consistency, merging similar codes or splitting broad codes, and grouping codes into sub-themes under each theme, while at the same time checking for emerging patterns, commonalities and differences using thematic analysis (131). Key themes related to how VYMA conceptualised masculinity, how masculinities were performed in the slum contexts and how masculinities were associated with sexual development among VYMA were identified. During transcription, data from IDIs were triangulated with research assistants' field notes. Data coding and organisation were done using ATLAS.ti 7 software.

3.8.2. Quantitative analysis

Different types of analyses were conducted in response to each of quantitative objectives. These analyses are described in detail in each of the papers presented in the results sections but are described briefly below.

The focus of Objective 2 was to describe the socio-demographic, socio-cultural and socio-economic characteristics associated with sexual behaviours of VYMA in Korogocho slum. Data from VYMA were analysed quantitatively. The outcome variable was sexual experience defined as having ever had a sexual experience, or not. Another aim was to describe the prevalence of and identified the forms of sexual experiences among VYMA. I conducted bivariate analyses to examine the association between sexual experience and select background characteristics (age, ethnicity, religion, place of birth, pubertal maturation, household size, household rooms, sleeping arrangements, parental survivorship, age of the household head, grade for age and school absenteeism). In Paper 2 (Section 4.2), I examine whether parent and peer characteristics are associated with sexual experiences among VYMA. Additional analyses and results related to this objective are also presented in Paper 4 (Section 4.3.2).

In order to answer Objective 3 of the research, I conducted a scoping review of existing literature exploring the implications of gender norms on very young adolescents' SRH behaviours and outcomes in SSA (Paper 3) (Section 4.3.1). I also assessed the association between gender norms about sexual relationships and sexual experience, controlling for significant sociodemographic, sociocultural, and socio-demographic characteristics associated with sexual experience. The results are published in Paper 4 (Section 4.3.2). The first step was to perform an exploratory factor analysis of 46 items in a gender belief scale developed as part of the GEAS to determine the factor structure. Four factors were extracted. Confirmatory factor analysis was used to verify the factor structure. Two factors namely 'relational autonomy' and 'stereotypical views about toughness' had an internal consistency lower than 0.6 (cut-off point for the study) (0.543 for the 'relational autonomy' factor and 0.485 for the 'stereotypical views about toughness') and were dropped from subsequent analyses. The factors considered in the study were 'sexual double standard', which measured the extent to which boys and girls were judged differently relative to the same sexual behaviours, and 'heteronormative beliefs about romantic relationships', measuring the beliefs that boys should play an active role and dominate romantic relationships while girls should be passive. In the second step, I assessed the association between gender norms and sexual experiences, controlling for exogenous factors—including demographic, household, socio-cultural, and schooling characteristics—which were statistically significant at 90% confidence level based on analysis conducted to examine sociodemographic, sociocultural, and socio-demographic characteristics associated with sexual experience.

Objective 4 entailed exploring how slum contexts, shape the beliefs and expressions of masculinity(ies) and sexuality among VYMA living in Korogocho slum in Nairobi, Kenya. In order to respond to this objective, I used quantitative data to examine different contexts within the

slum settings. I analysed quantitative data to assess the association between parent and peer characteristics and gender beliefs about romantic relations, using the two gender domains that were relevant for this study population as highlighted in the previous paragraph. Results from analysis assessing the association between parent and peer characteristics and sexual experiences among VYMA is presented in paper 5 (Section 4.4).

Another paper analysing community contexts—neighbourhood safety, control and cohesion—that are likely to influence gender beliefs and sexual behaviours among VYMA is ongoing at the time of publishing the thesis and so not presented here. However, I describe other contextual factors emerging from Papers 1, 2, 4 and 5 in the discussion section.

3.9. Ethical considerations

This study was approved by AMREF Health Africa Ethics and Scientific Review Committee (Ref. AMREF-ESRC P399/2017) and the University of the Witwatersrand's Human Research Ethics Committee (Medical) (Ref. M1711112). Additionally, institutional approval was obtained from the African Population and Health Research Center Ethics Review Committee. A research permit to conduct the study in Kenya was obtained from the National Commission for Science, Technology and Innovation in Kenya (Ref. NACOSTI/P/58043/27160). Written informed parental/guardian consent and adolescent assent were obtained prior to conducting the interviews.

Research assistants who collected the data were trained on ethical practices while conducting research with human participants, including while working with vulnerable populations such as children and those in marginalised contexts like the slum settings. Research assistants were required to strictly adhere to the principles of research ethics and signed a confidentiality agreement.

3.10. Positionality

This study was born not only from my previous work with adolescents, especially in the Global Early Adolescent Study (GEAS)—the first international study to examine gender socialisation in early adolescence and how it shapes health and wellness for individuals and their communities (www.geastudy.org)—but also from experiences growing up in a remote village in Central Kenya. Being a patriarchal community, men often prevailed in all situations and relationships exuding power, especially over women. Men's main roles were that of family provision and protection while women were expected to be submissive, with their main role being to raise and take care of the family. While that was the patriarchal nature of the society, both young boys and girls were treated equally and had the same responsibilities—tilling land, feeding livestock, fetching firewood and water, cooking, cleaning, doing laundry, baby-sitting among other duties—until boys underwent circumcision as a rite of passage, often around early adolescence. After circumcision, boys abandoned and refused to take up roles that were traditionally meant for girls, yet, girls continued to take up all the tasks with no resistance. So where did boys learn the gender-differentiated roles?

Circumcision as a rite of passage, which often happened in early adolescence and immediately after boys completed their primary education, marked a transition from childhood to adulthood. During the seclusion period after circumcision, boys were taught the expectations and roles of men in the community, including how to relate with girls (132). Thus, through circumcision, boys were initiated into a gendered community and began showing interest in girls. Partly for this reason, the schools within my community did not recommend circumcision as a rite of passage if a boy was still in primary school as the "young men" were said to become unruly, disrespectful and unmanageable.

These scenarios were to replay later in my life as an academic researcher when I joined the African Population and Health Research Center (APHRC) in 2011 and took a keen interest in adolescent SRH. Until recently, adolescent SRH programming and research focused on girls and those aged 15 years and older. Many researchers, including myself have often asked, "what about the boys?" Wanting to know how boys develop their sexuality then became important for me. Part of my work at APHRC was conducted within the Nairobi Urban Health and Demographic Surveillance System (NUHDSS), a research platform run by APHRC in Korogocho and Viwandani slums since 2002. The objective of the NUHDSS is to monitor population dynamics—births, deaths and migration—, their trends and drivers; characterise the effects of slum contexts on health and socio-economic outcomes; provide a platform for specialised studies; and to monitor interventions and programmes by the Government of Kenya and other stakeholders within the NUHDSS (125). It was during my work in Korogocho slum that I came face to face with the challenges that young boys living in urban slums face. This brought back some of my childhood memories. I saw the diversity of slum communities—different ethnicities, religions and family set-ups, extreme poverty, poor housing among others—and wondered what guided young boys into their masculine roles and responsibilities. I wondered about how and when boys learnt their roles and expectations and which norms prevailed. Just to mention, growing up in my village, everyone went to the same church, was from the same ethnic group and single parenting was uncommon. The diversity and heterogeneity in the slums presented a different world to me and I developed a keen interest to understand this community more and particularly issues around masculinity and very young boys' sexual development, aligning with my research interests on adolescent SRH. Additionally, this was also a less researched population, yet, with enormous health needs (16).

As a woman, researching on male gender and sexuality issues came with its own challenges. The sensitivity of some of the issues I was researching on, especially sexual activity and gender beliefs about romantic relationships were a concern to me, more so, because of the age of the target participants. To circumnavigate this challenge, I hired a team of young men in their 20's, on average, as research assistants. I then trained them intensively on the study objectives, research methods used in the study, research ethics including obtaining parental and adolescent informed consent and assent respectively, and reviewed the data collection tool question by question to ensure a clear understanding. I conducted regular quality assurance checks and conducted daily field visits throughout the period of data collection. Despite the challenge, the study was well received. Parents, in particular, appreciated the involvement of young boys in the study, indicating that boys were rarely involved in research. The research assistants were recruited from the study community and so were conversant with cultural and social factors within their settings and thus able to drive conversation about the same. With Korogocho slum extending across seven villages, research assistants were assigned work in villages away from their residence. This was to avoid interviews with study participants who were likely to be known to them. I let my analysis and interpretation of research findings be guided the theoretical frameworks used for the study. As such, I detached from my conceptualisation of masculinity as a young person growing up in rural Central Kenya, and as an adult woman in Nairobi and connected with the views and perceptions of the study participants.

4. Results

The Chapter is organised into five sub-sections. Each sub-section is a full manuscript that either has been published, is forthcoming, under review or is in draft form. For the published peer-reviewed papers, I provide the final accepted versions or the submitted versions for those articles by the respective journals and provide details about the final published manuscripts. For all manuscripts, the formatting is based on the respective journal's guidelines.

Section 4.1 presents the results from the qualitative interviews that explore the conceptualisation of masculinity and sexual development among VYMA (Objective 1). Section 4.2 presents the results of the analysis of the association between family and peers and sexual experiences among VYMA (Objective 2). Section 4.3 presents results of the association between gender beliefs about romantic relationships and sexual experiences of VYMA (Objective 3). This section includes two papers: a scoping review on the implications of gender norms on very young adolescents' SRH (Section 4.3.1) and a paper on the association between gender beliefs about romantic relationships and sexual experiences of VYMA, controlling for key covariates (Section 4.3.2). Section 4.4 presents the results of the analyses focused on Objective 4 which examined how slum contexts, shape the beliefs and expressions of masculinity(ies) and sexuality among VYMA. Specifically, I present a paper on the role of family and peer contexts in influencing gender beliefs about romantic relationships.

4.1. Conceptualisations of masculinity and sexual development

This section presents the results of a qualitative paper titled "Conceptualisations of masculinity and sexual development among boys and young men in Korogocho slum in Kenya" that is published in the Culture, Health and Sexuality journal.

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Conceptualisations of masculinity and sexual development among boys and young men in Korogocho slum in Kenya

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Abstract

Adolescence and youth are times when young men negotiate their masculine identities in relation to social and cultural expectations of being a man, with enduring implications for sexual health and wellbeing. This study explored how boys aged 10-14 years living in Korogocho slum in Nairobi, Kenya conceptualised masculinity, their perceptions of how masculinities are performed and the linkage between conceptualisations of masculinity and sexual development. Three bases of gender socialisation were identified: 1) verbal messaging (mainly from parents and teachers); 2) observing the behaviours of older men in the community; and 3) through information received from mainstream and social media. Masculinity conceptualisations focused on financial stability, family life and responsibility, physical attributes, character and religion. Two contrasting portrayals of masculinity emerged in the form of idealised and dominant masculinities. A close linkage was found between masculinity conceptualisations and sexual development. Findings are important programmes that aim to transform harmful gender norms and signal the need for longitudinal research exploring how gender beliefs may change over time.

Key words: masculinity, early adolescents, sexual development, urban slums, Kenya

Introduction

Early adolescence (ages 10-14 years) represents an important developmental period in the lives of boys and young men (Blum, Mmari, and Moreau 2017). In addition to navigating biological, psychological, social and cognitive changes (Kar, Choudhury, and Singh 2015), it is a time when boys learn to negotiate and construct their masculinity—characteristics that are generally attributed to men (Galambos, Berenbaum, and McHale 2009, Kågesten et al. 2016). According to Addis and Mahalik (2003), the process of constructing masculinities is influenced by dominant or powerful groups in a society and learned through observing what most people do (descriptive norms), perceptions of what people ought to do (injunctive norms), and observing what popular people do (cohesive norms). Masculinities are dynamic in that masculine positions, practices and values differ from one context to another and over time (Connell and Messerschmidt 2005). Men who fail to meet masculine expectations are often regarded as unmasculine or effeminate (De Visser and McDonnell 2013, Izugbara 2015).

Connell and Messerschmidt (2005) conceptualises masculinity as relational to femininity implying a creation of gender hierarchies and the centrality of women (and femininity) to notions of masculinity, particularly in heterosexual relationships. In patriarchal contexts, the gender hierarchy is often constituted in relation to hegemonic masculinity—or the cultural expression of the dominant form of masculinity that governs and subordinate's femininity and other patterns of masculinity (Connell and Messerschmidt 2005, Stern, Cooper, and Greenbaum 2015), resulting in gender inequities.

Gender inequities in turn have implications for men's sexual and reproductive health. Often, dominant masculine norms are associated with sexual exploration, prowess and conquest in heterosexual relationships, behaviours that are linked to sexual risk-taking including early sexual

debut, multiple and concurrent sexual partnerships, unprotected sex, transactional sex and sexual violence (Coles 2007, Izugbara and Undie 2008, Stern, Cooper, and Greenbaum 2015).

Masculinity and sexual development in early adolescence

Early adolescence has been referred to as a period of sexual socialisation, exploration and experimentation that, shapes adolescent boys' sexual development trajectories (Sommer 2011, Sommer, Likindikoki, and Kaaya 2014, Kagesten, Kabiru, and Maina 2018). Signifying a transition from childhood to adulthood, the physical and sexual characteristics associated with pubertal maturation are important to boys' conceptualisation of masculinity (Barker and Ricardo 2005, Izugbara and Undie 2008, Sommer, Likindikoki, and Kaaya 2014). Available literature suggests that sexual development is also influenced by sociocultural structures that define the conduct expected for men in romantic and sexual relationships (Kabiru et al. 2010, Stern, Cooper, and Greenbaum 2015), intertwining masculinity with male sexuality.

This study adds to the growing body of literature on construction of masculinities and sexual development among boys and young men. Conducted in an urban slum—a context rife with high levels of poverty, violence, crime and other social injustice, the study provides insight into how slum contexts shape construction and performance of masculinities, corroborating existing theoretical understandings and providing a basis for comparison with studies conducted in other contexts.

We premise our study on two theoretical understandings both of which view masculinity as a social construct dependent on the context in which individuals live. Firstly, Bronfenbrenner's bioecological theory focuses on interactions between a person and his environment and involves four components—process, person, context and time (Bronfenbrenner 2005). When applied to the context in this study, the theory locates boys (person) as co-creators of their own masculinity

through interactions (process) with their environment (context) over a period of time. The time component also captures changes in expectations within and across generations. Secondly, Connell's theory of gender and power advances the concept of hegemonic masculinities providing a holistic understanding of gender hierarchy, the power of dominant groups, the influence of subordinated groups and the role of other social dynamics (Connell and Messerschmidt 2005). An important facet of hegemonic masculinity is heterosexual discourse, defined as stereotypical gendered norms and expectations considered appropriate for men and women within and across institutions, including sexual relationships (Connell and Messerschmidt 2005).

Methods

Study design and setting

Qualitative data were collected in December 2018 from 27 boys aged 10-14 years. Data were collected as part of a cross-sectional study investigating the co-construction of masculinities and sexual development in Korogocho slum in Nairobi, Kenya. Korogocho is one of the most congested slums in Nairobi with a population of about 200,000 in an area of 0.5 km^2. The slum is characterised by high levels of crime, social and physical insecurity, poverty and unemployment (Beguy et al. 2015), factors that are likely to influence how masculinities are constructed (Izugbara 2015). Additionally, a high prevalence of risky sexual behaviours (e.g., early sexual debut) and poor sexual and reproductive health outcomes (e.g., high rates of early and unintended pregnancies and a high HIV prevalence) have been reported (Kabiru et al. 2010, Madise et al. 2012).

Participants

Thirty boys were purposively selected to participate in in-depth interviews (IDIs) from a random sample of 426 boys who had participated in a cross-sectional survey. Among the 30 eligible boys,

three were unreachable at the time of interview. The three boys had similar background characteristics as the 27 boys interviewed.

Sampling

Purposive sampling was used to capture a diversity of sexual experiences, taking into consideration the age of eligible boys. Selection was based on reported sexual experience during the survey and included 10 boys who reported (penetrative or non-penetrative) sexual experiences and 20 boys who reported no sexual experience. For the purposes of the study, penetrative activities comprised penile-vaginal or penile-anal sexual intercourse while non-penetrative activities include spending time alone with someone one was romantically attracted to, holding hands, kissing, hugging/cuddling, touching, flirting over the phone, sharing sexual pictures of themselves and oral sex (Kagesten, Kabiru, and Maina 2018, Maina et al. 2020).

Data collection procedures

Boys were contacted if during the cross-sectional survey, they and their parents had expressed interest in participating in a follow-up qualitative interview. The first author identified eligible boys from data obtained in the survey and invited them to participate in the qualitative interviews. A semi-structured IDI guide was used to explore boys' conceptualisations of masculinity, gender roles for men and women, gender socialisation processes, sexual development, sexual socialisation and sexual behaviours. To explore contextual dilemmas and performances of masculinity, (Talbot and Quayle 2010), we posed three different contexts—at home, social outing with wife/partner, and when attacked violently by a man or a woman—and asked boys how they thought men behaved in such contexts. Specific to this study, we used data collected using the guiding questions in Appendix 1.

Interviews were conducted in Swahili or English, based on the participant's preference. Research assistants took field notes during and immediately after each interview. Interviews were audio-recorded, transcribed verbatim (those conducted in English) or directly transcribed into English (those conducted in Swahili) by two bilingual transcriptionists. To ensure original messages were not lost through translation, the transcriptionists were briefed about the study to enable them to frame translations within the study context and objectives. Three audio-recordings were double transcribed and transcripts compared. Additionally, the first author listened to ten audio-recordings and compared the recordings with their respective transcripts. Any discrepancies were discussed between the first author and the transcriptionists.

Data analysis

Data were coded using ATLAS.ti 7 software. Broader themes representing key study concepts were developed deductively. The first author then read through all the transcripts and identified an initial set of codes emerging for each theme. At a second level, codes were reviewed by all authors, ensuring consistency by merging codes that were similar or splitting codes that were broad. Codes were then grouped together into sub-themes under each theme, while checking for emerging patterns, commonalities and differences using thematic analysis (Braun and Clarke 2006). During transcription, data from IDIs were triangulated against research assistants' field notes.

Ethical considerations

The study was approved by AMREF Health Africa Ethics and Scientific Review Committee (Ref. AMREF-ESRC P399/2017) and University of the Witwatersrand Human Research Ethics Committee (Medical) (Ref. M1711112). The National Council for Science, Technology and Innovation in Kenya gave permission (Ref: NACOSTI/P/58043/27160) to conduct the study in Kenya.

Written informed parental/guardian consent and adolescent assent were obtained prior to conducting the interviews. Interviews were conducted by trained male research assistants aged 20-29 years and took place in a school within the community rather than in participants' homes to ensure privacy. Only study participants and the research team were allowed in the interview venue. Although sampling for the qualitative study was based on reported sexual experiences in the quantitative survey, this information was unavailable to the research assistants. Instead, to ensure the confidentiality of the quantitative data, participants were asked about their sexual experiences during the interviews.

Findings

Table 1 presents the background characteristics of the 27 boys who participated in the study. They had a mean age of 12 years and only one boy was out of school.

Table 1: Background characteristics of participants

Characteristic	Number of participants (n=27)
Age	
10	6
11	5
12	5
13	4
14	7
Current schooling status	
Not in school	1

Below primary grade 4	2
Primary grade 4 – 6	20
Primary grade 7 – 8	4
Parental survivorship	
Both parents alive	20
Father dead/whereabouts unknown	5
Mother dead/whereabouts unknown	1
Both parents dead	1
Living arrangements	
Lives with both parents	13
Lives with mother	9
Lives with father	2
Lives with grandmother	3
Sexual experience	
None	19
Non-penetrative	4
Penetrative	4

Conceptualisations of masculinity

Boys received messages on masculine expectations from parents/guardians and teachers (as core gender socialisation agents) and others, including family members, peers, and religious and community leaders within their community.

> Both my parents have told me that as a man I am to be self-sufficient so that I do not become a thief in the community. I can only do this by studying hard to make my future better. (Dominic, 13 years)

Boys also observed the behaviours and roles that older men performed or did not perform, as Gregory, a 12-year-old described:

> We [boys] learn from what other older men do around the neighbourhood. Like if you see a man has a car-wash business, you know it's nice, he has a good life… and you want to have such [a business] when you grow older. Not like men who never work but are always drinking and fighting.

Boys were also exposed to mainstream media, social media and Internet messages concerning how men behaved or were expected to behave:

> On (a local radio station), they talk about how men should support their wives and care for their families. (Chris, 14 years)

Four key concepts characterised conceptualisations of masculinity in this study—financial stability, family life, physical features and character. Additionally, three boys, all from the Muslim community, mentioned religion as an attribute defining a man.

Financial stability

Financial wellbeing not only enabled men to provide for their family but was associated with power, according one higher social status than others in the community. Hiram alluded to the relationships between power, money and subordination not only with respect to women but also other men.

> A man should have money and also a wife at home to be recognised. The wife helps him [by] washing clothes and cooking for him. A man with money can say or do anything he wants, and no-one will question him, even other men cannot ask. They come to consult him about different things. (Hiram, 12 years)

Boys were socialised towards achieving financial stability, mainly through investing in education. Academic success was perceived as a gateway to getting a 'good' job, leading to financial stability and self-sustenance, and setting the basis for good family life. However, even as boys were socialised to believe that education was key to future financial stability, higher education aspirations were often hampered by the poverty levels in the slum which made both education and financial stability unattainable. In his work on poverty and masculinities among older populations, Izugbara (2015) argues that how men deal with adversity such as poverty is in itself, a reflection of how masculinities are constructed or performed.

To meet their family obligations, boys observed that most men took up any work available, which included pulling carts, vending water, working at construction sites, washing cars, operating motorcycle taxis and running small businesses. Cliff, a 14-year-old indicated how men who did not provide for their families were viewed as unmasculine.

> There are some men in our area who do not work, they rely on their wives to work and provide for them, which is not good for a man. He will not be respected. (Cliff, 14 years)

Aligning with masculine expectations, boys had begun adopting more 'masculine' roles and responsibilities. At a younger age, boys performed roles similar to girls including household chores, which they characterised as 'helping their mother or sister'. As they got older, some boys had started taking up work similar to older men to earn a living and to supplement their family income. Chris, a 14-year-old said

> I work at the dumpsite, get money and buy my own household items besides taking care of myself and, sometimes, I also transport people around using motorbikes.

Family life and responsibility

There was consensus that masculinity was measured by a man's ability to have and raise a family. At the core of being masculine was the man's ability to provide food, shelter, clothing and school fees for his children and to protect his family from harm.

Wayne, a 13-year-old described a man as a 'a person who has a home, wife and children. A person who takes care of his family, goes to work and provides for them'. In preparation for family life, fourteen-year-old Jay's parents often told him to, 'plan your life well before getting married to lay a strong foundation for marriage'. For Jay and other boys, this meant investing in education as a guarantee to financial stability.

Boys observed that pressure to conform to masculine ideology, coupled with systemic poverty and limited work prospects bred opportunities for crime as men looked for alternative ways to meet their family obligations. Consequently, some boys started to engage in crime at an early age in search of financial freedom, sentiments echoed by 12-year-old Gregory:

> Men often get into violence, crime and alcohol consumption to hide their problems. Like they can't get a job, so they steal to feed their kids because your kids must eat. And boys think this is a nice thing, so they start copying that, even if they don't have kids

Physical appearance and strength

The transition to adulthood was also marked by pubertal changes, including growth in body size, muscularity and strength, having a beard, and penis size. Wayne said his mother often sent him on

errands even in the dark, believing he was strong enough to protect himself compared to when he was younger. Though Wayne was sometimes afraid, he did not want to appear unmasculine to his mother and so, he often asked a friend to accompany him indicating ‘when we are two, no one can attack.

A key attribute associated with physical strength was a man’s ability to protect himself and his family. Men who appeared physically weak were termed as *wasio na sifa za kiume* (unmasculine) or *walio na tabia za kike* (effeminate). While men’s physical appearance and strength are often viewed as important features in sexual relationships (Ninsiima et al. 2018), for people living in slums, physical strength is a basic necessity for hard labour, keeping criminal gangs at bay and protecting one’s family (Izugbara 2015). Dolan, an 11-year-old, said ‘a man is strong, to be able to protect his family’

Masculinity in this context was also associated with being circumcised. Circumcision as a rite of passage from childhood to adulthood was emphasised and uncircumcised men were perceived as unmasculine:

> A man is big in size and age. I can’t fight a man. And circumcised. A man can beat up other people to command respect. (Abraham, 14 years)

With a large proportion of Korogocho population coming from communities that traditionally practised male circumcision (Beguy et al. 2015), boys from communities that traditionally did not practise circumcision were sometimes circumcised to gain peer acceptance and to avoid being stigmatised.

Character

Sexual fidelity and avoiding violence, criminal activities, drugs and alcohol abuse were viewed as important characteristics of masculinity (Fast, Bukusi, and Moyer 2020) Thirteen-year-old Dominic emphasised the importance of fidelity:

> When you are a man you should concentrate on your children and wife and not have sex with other people apart from your wife.

Being masculine entailed not only commanding respect but also ensuring mutual respect within the household:

> As a man, I should have respect and also be respected in the society. I should respect my wife and children. When I respect my wife, my marriage will be successful. (Ellon, 14 years)

Other attributes included emotional and behavioural maturity including the ability to handle difficult situations with calmness and being humane, especially by supporting the less privileged in society.

Religion

Being religious did not appear strongly as a masculine trait, except for three Muslim boys who perceived masculinity as underpinned by their religious teaching.

> A man was created by Allah to lead and has a duty to cater for his wives, children and extended family. (Hassan, 12 years)

Performing masculinity

Informed by literature on the expression and dynamics of masculinities (Talbot and Quayle 2010), we posed three contextual dilemmas to explore masculine performances at home and in public

spaces—when a man was at home, during a social outing with his wife or partner, and when confronted with a violent situation.

Two main sub-themes were identified: 1) idealised masculinity in the form of admired masculine conduct, expressed through family headship, protection and provision; and 2) dominant masculinity, as expressed through subordination and aggression, directed not only towards women, but also other men.

Idealised masculinity

An ideal man was seen as caring and a provider. For 12-year-old Yohan, family interests took precedence:

> Most men just relax and think [about] how they will fend for their families because they are the providers. Most men aspire to help out their families in all ways.

Even in adversity, an ideal man looked for any work that enabled him to provide for his family.

> Men struggle to get work here [in the slum]. Jobs are few and those available are not the best. But they [men] have to work so that their children can have something to eat. (Yohan, 12 years)

The majority of boys said that family decisions were made by men. However, three boys challenged this notion as they knew of men who involved their wives in decision-making. Jephat (aged 12 years) indicated women were involved in discussion around prioritising essential family needs given the scarce resources because ‘she [woman] runs the house’.

Nevertheless, a majority of boys noted, with some disapproval, that women were 'challenging idealised masculinity' by increasingly finding work and taking up the role of family provision wholly or partially. However, this was acceptable to a few boys who commented on the high poverty levels in the slum and the need to supplement the family income. A few boys also noted with disapproval, that men were increasingly taking on roles traditionally meant for women. Cliff, a 14-year-old, said:

> Nowadays, you can get a man who is married to a rich woman and he serves as her servant by cleaning utensils, spreads the bed and house. It is not good because when you are seen by other men doing this, they misjudge you. Some even refer to you as the 'woman' and your wife as the 'man'.

Dominant masculinity

Although widespread among men in Korogocho (Beguy et al. 2015, Izugbara 2015), dominance, aggression and violence were largely perceived as unmasculine. According to 13-year-old Basil, men's financial stability instead enabled them to exert dominance and control over women and to some extent over other men, often receiving recognition in the community:

> A man should have a lot of wealth especially money to be recognised. Even other men will acknowledge your presence. You are invited to *harambees* [fundraising events]. When you speak, others listen.

In consequence, men viewed women who took paid work as a challenge to their masculine dominance as men and women competed for scarce job opportunities. Such women were met with hostility resulting in economic and physical violence (Fawole 2008):

> Men feel bad and disadvantaged, they start abusing the women who take up their[men's] roles or still, beat them up. They feel it is not the role of women to work. (Yohan, 12 years)

Observing such behaviours might have directly influenced the boys' voiced disapproval of women taking the jobs noted above.

How a man reacted during violent attacks was in itself, a demonstration of masculinity. If attacked by another man, ordinarily a man fought back both in self-defence and to avoid being termed as weak, unmasculine or effeminate. Even so, in line with the legal context, many men reported violence to the authorities.

> Most men take the matter into their own hands and may injure the other person [perpetrator], while some report to the police. (Hasani, 11 years)

That said, 14-year-old Jay indicated that a man might choose to walk away if he perceived his attacker was stronger than himself, or a known criminal:

> A man will fight back, always. If not, they become the laughing stock. If you cannot defend yourself, how will you defend your family? But if the person attacking is a big and strong man, most men keep quiet, walk away to avoid more trouble or avoid being physically injured and plan on how to retaliate.

Boys associated men's violence with the use of alcohol and illicit drugs, which prevented them from resolving conflicts amicably. Twelve-year-old Jephat said 'some men behave very badly when they go out. They fight and some even kill others because of drunkenness'. Men were said to be more restrained when the perpetrator was a woman. As 14-year-old Ellon said, 'a man is not

supposed to fight a woman'. However, in some circumstances, a man might fight back in self-defence or to avoid being seen as a 'weakling who can be fought by a woman'.

Masculine dominance was present in romantic relationships. Yohan, a 12-year-old expressed how a man 'will fight [a woman] because he thinks another man is interested in [her]'. Similarly, a man would fight another man whom he thinks is interested in his woman. Yohan gave an example of his neighbour '… a man in our plot [housing block] was beaten because he danced with another man's wife in the presence of her husband'.

Masculinity and sexual development

As they transition to adulthood, boys are often perceived to have sexual freedom, unlike girls (Ninsiima et al. 2018). However, the majority of boys in our study viewed 'sex [as] bad if you are not married', terming sexual activity beforehand as a 'bad behaviour'. Concurrent and extra-marital sexual relationships commonly known as *mpango wa kando* (taking a mistress) were prevalent among men in Korogocho. Cosmo, a 10-year-old, alluded to them and to boys' early exposure to sexual activity:

> Most men behave very badly by even doing sex on the road in the sight of children because of being drunk. They cannot get a lodging because they have used all their money on alcohol, and their wife is at home. But some take their girlfriends home when their wife is not there.

Such concurrent and extra-marital sexual relationships had an influence on boys' sexual attitudes and behaviour. Basil, a 13-year-old asked:

> It (sex) is a nice thing. It makes you a man. How can you be a man if you cannot have sex with your girlfriend?

The eight boys who reported having had sex were unanimous in saying that sexual experience made them feel masculine. All were between 13 and 14 years of age. Jimmi, a 14-year-old, explained 'it [sex] made me feel so nice and lively as a man'. Boys spent time with peers talking about girls:

> We talk about how to caress girls, how they can get pregnant especially if it's at night and how we should use condom whenever we have sex to avoid making girls pregnant. We also teach each other how to court and sweet talk girls. (Ellon, 14 years)

Most sexual relationships began with boys giving presents to girls and girls reciprocating by showing affection or having sex.

> The first time, I gave her (girlfriend) ten shillings to buy chips, she kissed me. And then on a Saturday when her mother went to the market, I bought her chips again and then we did it [had sex] (Basil 13 years)

Asked where he got the money to buy chips from, Basil said, 'I clean motorbikes for pay after school and weekends'. Taken together, boys viewed becoming sexually active as a key element in the development of masculinity.

Discussion

The construction of masculinities begins at an early age. Our findings provide insights into how boys in Korogocho slum conceptualise masculinity, their views on how masculinities are performed, and the linkage between masculine ideologies and sexual development in early adolescence.

In this study, masculinity was conceptualised in terms of independence, financial stability and the ability to provide for and protect one's family; physical characteristics and emotional strength,

aligning with notions of hegemony (Coles 2007, Morrell et al. 2013, Gibbs, Sikweyiya, and Jewkes 2014). Men who attain these masculine ideals manifest more power than women and other men.

In contrast to findings from other studies among young people in which sexual prowess and aggression were viewed as masculine traits (Andersson 2008, Gibbs, Sikweyiya, and Jewkes 2014), boys in this study conceptualised masculinity in terms of fidelity in sexual relationships and the avoidance of violence and crime, indicating an attempt to resist dominant masculine ideologies and implying evolving meanings of masculinity Despite this, boys noted that violence, crime and sexual-risk taking were prevalent among men in Korogocho, findings also reported by Beguy et al. (2015) and De Meyer et al. (2017).

The conflict between boys' conceptualisations of masculinity and observed sexual behaviours among adult men is a clear indicator of the struggles boys have to deal with as they develop their own masculinity. With past research suggesting that social norms influence health behaviours (Rimal and Real 2005, Mahalik et al. 2013), boys are likely to adopt behaviours they observe from adult men in their communities. This calls for sexual and reproductive health programmes targeting boys and young men not only to address individual level factors but also socio-cultural norms likely to impede positive gender norm change.

Similar to Izugbara's study on the construction and performance of manliness among adult men in Nairobi's slums (Izugbara 2015), expectations of men as providers persisted even in times of adversity. The few jobs available were perceived to be of lower status than would be ideal for a man, yet were different from what a "woman's job" entailed (Mudege and Ezeh 2009, Clark et al. 2017). Failure to find work may result in ostracism and stigmatisation due to men's inability to meet masculine obligations (Kågesten et al. 2016, Closson et al. 2019, Fast, Bukusi, and Moyer 2020) and may trigger a sense of fragility (DiMuccio and Knowles 2020) motivating a variety of

compensatory behaviours such as violence and crime. Elsewhere, Gibbs, Sikweyiya, and Jewkes (2014), Closson et al. (2019) and Fast, Bukusi, and Moyer (2020) have argued that contextual influences hindering men's ability to provide for their families may lead to a gender role conflict with heightened risk of gender-based violence, risky sexual behaviours and alcohol and substance use. In line with such an argument, we found that women who took up paid work were perceived to be challenging the dominant notion of men as providers and decision-makers, perhaps placing them at risk of gender-based violence. Despite the risk of gender-based violence, women challenging dominant masculinities signified flaws in how masculinities are conceptualised, and such flaw presents a window of entry for interventions to challenge gender-inequitable norms.

For boys in this study, educational achievement was linked to career success, financial stability and self-reliance, yet for the majority of men living in Korogocho, educational attainment was often unachievable. Unpublished data collected in 2018 as part of the impact evaluation of the Determined, Resilient, Empowered, AIDS-free, Mentored and Safe lives (DREAMS) partnership in Korogocho slum (Birdthistle et al. 2018) revealed that among 1,070 men aged 15-49 years, only 8% had completed tertiary education. Whether higher education provides a pathway to achieving the masculine ideology of financial stability in Korogocho could be answered using longitudinal research.

Heterosexuality and procreation, mainly referenced as family life, were key masculine attributes among study participants. Sexual relationships were seen as central to masculinity with a man's financial worth perceived to enabling him to attract and retain sexual partners. Similar to research showing that men are more likely to be trusted by their intimate partners if they provide for and protect them, (Ott 2010, Bell, Rosenberger, and Ott 2015), by finding work and improving their financial wellbeing, boys were likely to improve their chances of attracting girls.

Similarly, sexual experiences—for those participants who reported previous sexual activities—made boys 'feel like a man' endorsing masculinity ideologies related to men's sexual behaviour. Since boys were socialised to delay sexual activity until marriage, their reported sexual experiences and their linkage to masculinity were likely to be influenced by observed behaviours among older men in the community. Considering that some masculine norms in relation to sexual relationships have been associated with poor sexual health among men (Izugbara and Undie 2008, Ott 2010), our findings reflect a need to engage boys with sexual health information before they start sexual activity.

Limitations

There are limitations to this study. First, while the study focused broadly on sexual development, participants made no reference to same-sex practices and relationships, thus, our findings relate only to heterosexual relationships. Second, given the purposively selected sample, our findings are not generalisable, yet, we hope the insights we have gathered are of interest to other contexts. Third, while we conducted quality checks of the transcripts' translations, it is possible that some local meanings may have been lost during the process of translation.

Conclusions

This study adds to the growing body of literature on the construction of masculinities and sexual development among boys and young men. Our findings show that boys' conceptualisation of masculinity are shaped not only by information they receive, but also by observing behaviour of other men locally. Programmes on masculinity and gender-related issues need to address these practices and the community and social norms they convey.

Our findings also suggest that ideologies of masculinity are likely to influence sexual development and behaviour from an early age. Early adolescence presents a window of opportunity to influence these ideologies (Kågesten et al. 2016). Future interventions however should recognise sexual development as a normative rather than a risky developmental process so as to promote healthy behaviours and outcomes.

As economic hardships coupled with masculine dominance increase the risk of gender-based violence, programmes working to transform dominant norms of masculinity need to empower boys to deal with and challenge the contextual expectations that are often unattainable.

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Declaration of interest statement

The authors declare no conflict of interest

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Appendix 1: Interview guide

1. When I say the word “man”, what comes to your mind? And a “boy” of your age?
2. How should a man generally behave? (Probe for sexual activity, financial provider, need to prove masculinity) How should a boy of your age behave?
3. How do young boys learn of what is expected of them as men in Korogocho? What rules do they need to follow? And rules from who? Probe for peers and family (siblings, parents)
4. What messages have you received from your family about behaving like a man, specifically the roles of men?
5. How do you think most men behave in the following situations and why?
    a. When at home with their family?
    b. When they go out with their wives/girlfriends?
    c. When they are attacked by a man/woman in a violent way?

4.2. Sociodemographic, socio-cultural and socioeconomic factors associated with sexual experiences.

For objective 2, I examined the sociodemographic, socio-cultural and socioeconomic factors associated with sexual experiences. In the paper (under development) presented in this section—Parental and peer influence on sexual experiences among very young male adolescents in Korogocho informal settlement, Nairobi, Kenya—I assessed whether parent and peer characteristics are associated with sexual experiences among VYMA.

Manuscript

Sexual experiences among young adolescent boys in Korogocho slum, Nairobi, Kenya: The influence of parents and peers

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Abstract

Introduction: Sexual development is a critical developmental process in early adolescence—the period between 10 and 14 years of age with sexual maturation, exploration and experimentation beginning to emerge. For boys, the risks associated with early initiation of sexual activity include sexually transmitted infections, a higher number of lifetime sexual partners and multiple sexual partners, early fatherhood, with a likelihood of lifelong implications. Sexual development is influenced by various factors and in this study, we explored the influence of parents and peers, in shaping sexual development among boys aged 10 – 14 years living in Korogocho slum in Nairobi, Kenya.

Methods: The study uses cross-sectional data collected in 2018 among 426 boys aged 10 – 14 years living in Korogocho informal settlement. We defined sexual experience as lifetime experience of penetrative—penile-vaginal or penile-anal sexual intercourse—and/or non-penetrative sexual activities—spending time alone, holding hands, kissing, hugging/cuddling, touching, flirting over the phone, sharing sexual pictures of themselves and oral sex. For the descriptive analyses, we summarized sexual experiences by background, parental and peer characteristics. We conducted bivariate logistic regressions to examine the independent associations between sexual experience and parent and peer characteristics. We conducted multivariable logistic regression to examine the association between parental and peer characteristics and sexual experience, controlling for individual characteristics found to be significant in the bivariate model.

Results: Perceived caregiver approval of romantic relationships in early adolescence, often spending time with close friends, having close friends who perceive romantic relationships and

who were in romantic relationships were significantly associated with a higher likelihood of having had a sexual experience.

Conclusion: This study shows that peer characteristics and interactions were associated with young boys' sexual development by increasing their likelihood of engaging in early sexual activity while parental characteristics had no influence on boys' engagement in early sexual activity. Given these findings, there is a need for further research on how peer interactions can be improved to positively influence adolescent sexual development, without increasing the risk of negative sexual and reproductive health behaviors and outcomes.

Background:

Sexual development is a critical developmental process in early adolescence—the period between 10 and 14 years of age (1-3) whereby sexual maturation, exploration and experimentation begin to take shape (1, 4, 5).For boys, the risks associated with early initiation of sexual activity include sexually transmitted infections, high number of lifetime sexual partners and multiple sexual partners, evidence largely generated with older adolescents and young adults (6-11). There exist evidence gaps among early adolescent boys—also known as very young male adolescents (VYMA) (3).

Sexual intercourse has often been used as an indicator of sexual development (12-15); however, for early adolescents, emerging literature suggests the importance of including both penetrative and non-penetrative sexual activities when exploring adolescent sexual development (16-18). Non-penetrative sexual activities demonstrate readiness, curiosity and anticipation of sex and are key in understanding adolescent sexual development (1, 2, 5). The few studies that have explored non-penetrative sexual activities in sub-Saharan Africa show that a considerable proportion of adolescents report non-penetrative sexual activities as their first sexual experience (16, 17). Early onset of sexual experiences may increase the risk of negative sexual and reproductive outcomes including early entry into fatherhood (6, 7), increased risk for sexual coercion (8, 9) and sexually transmitted infections (STIs) (10, 11)

Sexual development is influenced by various factors (14, 19, 20). Using the Bioecological Theory of Human Development (21), we term sexual development as an intricate process which involves interactions between individuals and their environments, presenting both risk and protective factors for sexual development. The bioecological theory categorizes environment in five different systems—at micro-, meso-, exo--, macro and chrono-systems (21). In this study, we explored the

influence of factors within the micro-system, particularly parents and peers, in shaping sexual development among very young male adolescents aged 10 – 14 years living in Korogocho slum in Nairobi, Kenya.

Parental influence, including open and positive parent-child communication and connectedness, can be protective against risky sexual behaviours in adolescence, including early initiation of sexual activity. (20, 22, 23). Parents can reinforce protective behaviours, and offer a safe environment for sexual development (24). In a longitudinal study among unmarried adolescents aged 12 – 19 years in two urban informal settlements in Nairobi, Okigbo, Kabiru, Mumah et al. (23) found that among male adolescents who had never had sex, those who reported positive communication with their mothers at baseline were less likely to report sexual debut during the follow-up survey conducted nearly a year later. In a study conducted among in-school adolescents aged 15 years in eight African countries, Peltzer (20) found that boys who reported poor parental connectedness were more likely to have initiated sexual activity by the age of 15 years.

In a study conducted among older adolescents aged 16 – 19 years in Morogoro, Tanzania, Mmbaga, Leonard and Leyna (25) found that boys who did not have a father and those who were living with relatives had a higher rate of early sexual debut compared to boys who had a father. In the same study, lack of parental communication on issues such as pubertal changes, relationships, sex, and HIV was associated with a significantly higher likelihood of early age at sexual debut.

Peers relationships and influences are central in shaping sexual relationships (26-29). A study investigating young males' sexual identity and behaviours in rural South Africa found that boys felt compelled to subscribe to social norms, including multiple and concurrent sexual relationships, to achieve status among their peers (30). In another study conducted in Ethiopia, perceiving that best friends had engaged in oral or anal sex was significantly associated with a higher likelihood

of engaging in similar sexual activities, respectively (31). Nonetheless, in a systematic review of studies conducted among young people, the majority of whom were aged 13 – 20 years, Fearon, Wiggins, Pettifor et al. (32) found no conclusive evidence on the role of peers in shaping sexual behaviours among young people in sub-Saharan Africa (SSA).

The lack of conclusive findings on the role of parents and peersin influencing sexual development among very young male adolescents in the sub-Saharan African region, more so among those living in urban informal settlements warrants further research. Young people living in urban informal settlements initiate sex early and are at disproportionate risk of poor sexual and reproductive health outcomes (16, 33). In this study, we examine the association between parental and peer characteristics and sexual experience among young male adolescents aged 10 – 14 years living in Korogocho slum, Nairobi, Kenya.

Methods

Study design, setting and sample

The study uses cross-sectional data collected in 2018 among 426 boys aged 10 – 14 years living in Korogocho informal settlement. The study methodology is described by Maina, Orindi, Sikweyiya et al. (18). The study used a data collection tool developed, validated and piloted during Phase I of the Global Early Adolescent Study (34).

Measures

Outcome

Sexual experience: A lifetime experience of penetrative and/or non-penetrative sexual activities. Penetrative activities, for the purpose of this study, comprise penile-vaginal or penile-anal sexual intercourse while non-penetrative activities include, spending time alone, holding hands, kissing,

hugging/cuddling, touching, flirting over the phone, sharing sexual pictures of themselves and oral sex. This variable was dichotomized such that a boy either reported engaging in one or more sexual activities (coded 1) or not having engaged in any of these sexual activities (coded 0).

Explanatory Variables

Parental context: The following variables were used to define parental characteristics: i) the primary caregiver, that is, the main person who looked after the adolescent boy; ii) parental survivorship; iii) parental connectedness as a composite measure assessing boys' comfort discussing worries, body changes, and romantic partners with their primary caregiver iii) parent-child closeness—whether boys felt close to their mothers/main female caregiver and to their fathers/male caregiveriv) parental monitoring as a composite measure of whether their primary caregiver knew their friends by name, knew how they were doing in school, and usually knew where they are . Adolescents were also asked if their primary caregiver approved of them being in a romantic relationship.

Peer context: Number of close friends (male and female) and frequency of time spent with friends were used to measure peer relationships. To measure peer norms, boys' perceptions about the number of their friends who perceived romantic relationships and having sex as important, number of friends who had engaged in sexual activity, including, kissing, touching sexually or sexual intercourse were used. Boys were asked about their friends who smoked cigarettes or used alcohol or illicit drugs. use of alcohol and other substances/drugs

Background characteristics: Additional explanatory variables included socio-demographic characteristics—age, ethnicity and religion. Self-reported pubertal maturation was determined if a boy reported having observed any of the following changes in his body: enlargement of penis/testicles, pubic hair, voice change into a deeper voice, moustache/beard, having a wet dream.

Analysis

We summarized sexual behavior by background, parental and peer characteristics and reported the proportions engaging in one or more sexual activities. To examine the association between sexual experience and parental and peer characteristics, logistic regression models were fitted in four stages. Parental connectedness and parental monitoring were computed as composite measures. Responses for each of the parental connectedness item ranged from 1=not at all comfortable, 2=not very comfortable, 3=somewhat comfortable, 4=very comfortable. Responses "not at all comfortable" and "not very comfortable" were combined into one category coded "0" While responses "somewhat comfortable" and "very comfortable" were combined into one category coded "1". Row totals were then obtained, ranging from 0 to 3. Row totals were coded as follows: 0 and 1 were coded as 0=none/low connection; row totals of 2 were coded as 1=average connection; and row totals of 3 were coded as 2=high connection. For parental monitoring items, responses ranged from 1=Not true at all, 2=Not very true, 3=Somewhat true, 4=Very true. Responses "not true at all" and "not very true" were combined into one category coded "0" While responses "somewhat true" and "very true" were combined into one category coded "1". Row totals were then obtained, ranging from 0 to 4. Row totals of 0, 1 and 2 were coded as 0=no/low monitoring; row totals of 3 were coded as 1=high connection. We estimated bivariate logistic regression models to assess the independent associations between the independent variables (individual, parent and peer characteristics) and the outcome variable (sexual experience) (Model 1). Independent variables found to be significant at 10% in Model 1 were included in subsequent multivariable models. In Models 2 and 3, we examined the association between parent and peer characteristics and sexual experience, respectively. Model 4 is the full model whereby we examined the association between parental and peer characteristics and sexual experience,

controlling for individual characteristics that were significant at 10% (*= p<0.1) in the unadjusted model (Model 1). All independent variables included in the multivariable models were tested for multicollinearity using the variance inflation factor (details are provided as supplementary information). All analyses were performed using STATA version 15 (StataCorp, College Station, TX, USA).

Results

Descriptive results

Table 1 presents socio-demographic characteristics of adolescents by sexual experiences.

Table 1: Sexual experience among young adolescent boys in Korogocho informal settlement by socio-demographic characteristics, 2018

Characteristic		Sexual experience	
	N	n	%
Age			
10 – 12 years	260	47	18.1
13 – 14 years	166	46	27.7
Pubertal maturation			
Started puberty	197	35	29.4
Pre-pubertal	229	58	15.3
Ethnicity			
Kikuyu	135	35	25.9
Luo	107	30	28.0
Luhya	64	14	21.9

Somali/Garre/Borana/Gabra/Banna	90	10	11.1
Others	30	4	13.3
Religion			
Christian	307	76	24.8
Muslim	96	10	10.4
None	23	7	30.4
Total	**426**	**93**	**21.8**

The proportion of boys who reported sexual experiences was significantly higher among those aged 13-14 years than among those aged 10-12 years, those who reported pubertal changes than among those who did not, among Luos compared to other ethnic groups, and among those with no religion compared to those who belonged to some denomination.

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Table 2 presents the proportion of boys reporting a sexual experience by parental characteristics. The proportion of boys who had a sexual experience was significantly higher among those whose one or both parents died than among those whose both parents alive and those whose biological parent was not their primary caregiver compared to those whose primary caregiver was a biological parent. Similarly, the proportion of boys with a sexual experience was significantly higher among those who reported not being close to either parent than among those who were close, as well as among those whose caregivers approved romantic relationships than among those whose caregivers did not Boys who had little or no comfort discussing issues/problems they were experiencing (things that worry them, changes with their body, problems with boyfriend or

girlfriend) with their caregiver had a significantly higher likelihood of reporting sexual experiences compared to those who were more comfortable discussing such issues.

Table 2: Sexual experiences among young adolescent boys in Korogocho informal settlement by parental characteristics Kenya 2018

Characteristic		Sexual experience	
	N	n	%
Parental survivorship			
Both parents alive	367	79	21.5
One/both parents dead	59	14	23.7
Primary caregiver			
Mother/father	370	80	21.6
Others	56	13	23.2
Comfort talking with caregiver			
None/low	172	45	26.2
Average	201	33	16.4
High	53	15	28.3
Feels that close to mother			
No	48	17	35.4
Yes	378	76	20.1
Feels that close to father			
No	159	43	27.0
Yes	267	50	18.7
Primary caregiver approves romantic relationships			

Not true	388	70	18.0
True	38	23	60.5
Parental monitoring			
Low/none	92	23	25.0
High	334	70	21.0
Total	**426**	**93**	**21.8**

Table 3 presents sexual experience among young adolescent boys by peer characteristics. The proportion of boys with sexual experience was significantly higher among those who had four or more female friends than among those who had fewer, those with no male friends than among those with male friends and those who often spent time with friends than among those who did not.

Table 3: Sexual experience among young adolescent boys in Korogocho informal settlement by peer characteristics, Kenya 2018.

Characteristic	Sexual experience		
	N	n	%
Number of female friends			
None	245	34	13.9
One, two or three	143	44	30.8
Four and above	37	15	40.5
Number of male friends			
None	6	2	33.3
One, two or three	220	46	20.9

Four and above	200	45	22.5
Time spent with friends			
None/rarely	102	16	15.7
Often	324	77	23.8
Friends who perceive romantic relationships as important			
None	259	26	10.0
Some, all	167	67	40.1
Friends who perceive having sex as important			
None	355	65	18.3
Some, all	71	28	39.4
Friends in romantic relationships			
None	285	27	9.5
Some/most	141	66	46.8
Friends who have either kissed, touched or had sex			
None	330	51	15.5
Some/most	96	42	43.8
Friends who used recreational drugs/alcohol			
None	394	81	20.6
Some/all	32	12	37.5
Total	426	93	21.8

With respect to peer norms, the proportion of boys with sexual experience was significantly higher whose close friends perceived romantic relationships and sexual intercourse as important than those whose friends felt otherwise. Boys who had close friends in romantic relationships or close

friends who had had a sexual experience were more likely to report a sexual experience than among those whose friends were not in romantic relationships or whose friends did not have sexual experience. A higher proportion of boys whose close friends used recreational drugs (smoked cigarettes or other illegal substances) or used alcohol reported sexual experiences compared to those whose friends did not use such substances.

Association between parental and peer characteristics and sexual experiences

Table 4 presents unadjusted and adjusted estimates examining the association between parental and peer characteristics and sexual experiences among adolescent boys. In Model 1, we present findings on independent associations between parental and peer characteristics and sexual experience. In model 1, we also examine the association between individual characteristics and sexual experience. In Model 2 and Model 3 we present findings from the adjusted model for parental and peer characteristics, respectively. Model 4 is a combined model that includes both parental and peer characteristics. The model presents the adjusted results of the association between parental and peer characteristics and boys' sexual experiences, controlling for individual characteristics that were significant at 10% in Model 1.

Parental characteristics and sexual experiences

In the unadjusted model, there was a significant association between parental characteristics and sexual experiences. Adolescent boys who were moderately comfortable discussing with their primary caregiver about issues that worried them, body changes and romantic relationships and those who felt close to their mother and fathers were significantly less likely to have had a sexual experience compared with those who were not or less comfortable and those who did not feel close to their mother and father respectively. These associations were not statistically significant in the adjusted models.

Table 4. Variations in sexual experience among young adolescent boys in Korogocho informal settlement by parental and peer characteristics, Kenya 2018

Characteristic	Model 1 OR(CI)	Model 2 (Individual characteristics) aOR(CI)	Model 3 (Parental characteristics) aOR(CI)	Model 4 (Peer characteristics) aOR(CI)	Model 5 (Full model) aOR(CI)
Age (ref: 10 - 12 years)					
13 - 14 years	1.74 (1.09-2.76)**	1.34 (0.77-2.27)			1.05 (0.55-2.02)
Pubertal maturation (ref: pre-pubertal)					
Pubertal	2.31 (1.44-3.71)***	1.97 (1.16-3.36)**			1.77 (0.98-3.42)*
Ethnicity (ref: Kikuyu/Embu/Meru/Kamba)					
Luo	1.24 (0.711-2.16)	1.31 (0.74-2.31)			1.74 (0.88-3.46)
Luhya	0.89 (0.45-1.78)	0.98(0.48-2.00)			0.88 (0.37-2.08)

Others*	0.39 (0.18-0.82)***	1.07 (0.12-9.77)		1.44 (0.15-13.541)
Religion (ref: Christian)				
Muslim	0.35 (0.17-0.71)***	0.37 (0.04-3.29)		0.43 (0.05-3.88)
None	1.33 (0.53-3.35)	1.27 (0.49-3.29)		1.96 (0.65-5.912)
Parental survivorship (ref: Both parents alive)				
One/both parents dead	1.13 (0.59-2.17)			
Primary caregiver (ref: Mother/father)				
Other relatives/non-relatives	1.10 (0.56-2.14)			
Comfort talking with caregiver (ref: None/low)				
Average	0.55 (0.33-0.92)**		0.68 (0.40-1.17)	0.63 (0.33-1.201)
High	1.11 (0.56-2.22)		1.05 (0.49-2.24)	1.07 (0.42-2.73)

Feels that close to mother (ref: No)				
Yes	0.46 (0.24-0.87)**	0.55 (0.26-1.13)		0.63 (0.26-1.50)
Feels that close to father (ref: No)				
Yes	0.62 (0.39-0.99)**	0.69 (0.41-1.15)		1.05 (0.57-1.93)
Perceived caregiver approval of romantic relationships (ref: Not true)				
True	6.97 (3.46-14.03)***	6.45 (3.13-13.27)***		3.90 (1.57-9.66)***
Parental monitoring (ref: Low/none)				
High	0.80 (0.46-1.37)			
Number of female friends (ref: None)				
One, two or three	2.76 (1.66-4.58)***		1.58 (0.89-2.84)	1.52 (0.82-2.82)

	4.23 (2.00-		
Four and above	8.95)***	1.89 (0.79-4.53)	1.51 (0.60-3.77)
Number of male friends (ref: None)			
One, two or three	0.53 (0.09-2.98)		
Four and above	0.58 (0.10-3.27)		
Time spent with friends (ref: None/rarely)			
		2.08 (1.05-	
Often	1.68 (0.93-3.03)*	4.13)**	2.55 (1.22-5.31**
Friends who perceive romantic relationships as important (ref: None)			
	6.00 (3.61-	2.15 (1.12-	
Some, all	10.00)***	4.13)**	1.83 (0.90-3.725)*
Friends who perceive having sex as important (ref: None)			

Some, all	2.91 (1.68-5.02)***	1.71 (0.87-3.37)	1.52 (0.71-3.230)
Friends in romantic relationships (ref: None)			
Some/most	8.41 (5.02-14.09)***	4.78 (2.60-8.79)***	4.565 (2.38-8.735)***
Friends who've either kissed, touched or had sex (ref: None)			
Some/most	4.25 (2.58-7.03)***	1.48 (0.80-2.72)	1.49 (0.78-2.85)
Friends use of recreational drugs and alcohol) (ref: None)			
Some/all	2.32 (1.09-4.94)**	0.89 (0.37-2.14)	1.01 (0.40-2.54)

*= p<0.1 (significant at 10%).
**= p <0 .05 (significant at 5%).
*** = p<0.01 (significant at 1%).

Boys who indicated that their caregivers approved of romantic relationships in early adolescence were more likely to have had a sexual experience compared to those whose caregivers did not approve of such relationships, associations that were statistically significant in both adjusted and unadjusted models.

Peer characteristics and sexual experiences

Results from the unadjusted model showed that the likelihood of having a sexual experience was significantly higher among boys with close female friends, close friends who perceived romantic relationships and sexual intercourse as important, close friends in romantic relationships, close friends who had kissed, touched/fondled or had sex, close friends who used drugs or alcohol compared to those who had no such friends.. In the adjusted model, boys who often spent time with friends, those whose close friends perceived romantic relationships as important, those with close friends in romantic relationships were more likely to have had a sexual experience.

Discussion

The study findings demonstrate the influence of parents and peers in sexual development among young adolescent boys in Korogocho slum in Nairobi. Existing evidence suggests that while parents aim to defer sexual development by delaying early initiation of sexual activity (35-38), peers operate on the contrary by encouraging early initiation of sexual activity (32, 39). Our findings show diminished parental influence on boys' sexual experiences when peer characteristics were taken into consideration, except for perceived parental approval of romantic relationships increased the risk of engaging in sexual activity. Perceived approval of romantic relationships could be interpreted to mean that parents did not object to their adolescent boys being in such relationships. Manning, Longmore and Giordano (40) indicate that early engagement in romantic relationships predicts early sexual activity. The diminished influence between parental

characteristics and boys' sexual experience has been documented in the past. A study conducted in Ghana found no significant relationship between living with both parents and having had sexual intercourse among males while for females, those who lived with both parents were significantly less likely to have had sex compared to those who did not(41). Similarly, in a study among 15 – 24-year-olds in Cote d'Ivoire, Babalola, Tambashe and Vondrasek (42) found no association between boys who lived with their fathers in childhood and delaying sexual debut, while a positive significant association was found among girls. While these findings may not be surprising given that parent-adolescent communication about sex barely occurs among boys (43), they suggest the need for additional research to understand why parental characteristics have no influence on boys' sexual experiences. In addition, as they get into adolescence, boys experience more freedom of movement (38), and this may imply that they are often outside familial contexts and out of parental monitoring and control. Parental monitoring and control are often considered as appropriate strategies to prevent adolescents from early sexual debut (23, 36, 44).

Our findings support the existing evidence on the significance of peers as boys develop sexually. As they begin to develop, peers become important reference frames for adolescents for the development of healthy/unhealthy behaviors (45, 46). In the current study, often spending time with friends, having peers who thought having a romantic relationship in early adolescence was important and having peers who were in romantic relationships was significantly associated with a higher likelihood of having a sexual experience. This relationship between peer norms and adolescent sexual behavior suggests that adolescent sexual activity is strongly associated with what adolescents think their peers do (25, 26, 32, 45). Bandura and Walters (47) posit that engagement in behavior is stimulated by observing or perceiving behaviors of close contacts such as friends. Boys who observe their closer friends engage in a specific behavior are likely to perceive such

behavior as correct and are more likely to engage in the same behavior. Similarly, boys are likely to experience extensive pressure from peers to engage in sexual activity in order to conform to peer norms and expectations and thus gain peer rewards of acceptance and recognition (45).

The findings of this study should be interpreted in light of the following limitations. First, our study focuses on very young adolescent boys in an urban slum and thus findings cannot be generalized to other populations. However, we believe these findings are useful in understanding sexual development among early adolescent boys in different contexts. Second, measures of sexual experience used in this study were self-reported, and this could increase the possibility of boys giving socially desirable responses. To minimize inconsistencies, the electronic study tool employed inbuilt consistent checks that flagged and prompted the research assistant of any inconsistencies in responses. This enabled the research assistants to address the inconsistencies promptly.

Conclusion

This study shows that peer characteristics and interactions are associated with young boys' sexual development by increasing their likelihood of engaging in early sexual activity. Early sexual activity has been associated with increased risk of negative sexual and reproductive outcomes (7, 8, 10, 11). Given these findings, there is a need for further research on how peer interactions can be improved to positively influence adolescent sexual development, without increasing the risk of negative sexual and reproductive health behaviors and outcomes. Additionally, the findings show that parental characteristics had no influence on boys' engagement in early sexual activity and calls for additional research to understand the dynamics around parent-young boys' interactions.

There is also a need for longitudinal studies to understand how parental and peer contexts change over time and how they influence adolescent sexual development at different stages of life.

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Declaration of interest statement

The authors declare no conflict of interest

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Supporting information

Table S1. Variance inflation factor

Variable	VIF	1/VIF
Peers who perceive romantic relationships as important	1.77	0.564439
Peers in romantic relationships	1.56	0.641680
Ethnicity	1.37	0.732104
Religion	1.36	0.735360
Peers who've either kissed, touched or had sex	1.36	0.735646
Pubertal maturation	1.36	0.735659
Age	1.31	0.765031
Peers who perceive having sex as important	1.27	0.788387
Number of female friends	1.17	0.856416
Feels close to mother	1.17	0.856648
Feels close to father	1.14	0.876183
Comfort talking with caregiver	1.14	0.877634
Caregiver approves romantic relationships	1.11	0.897394
Peers use of recreational drugs and alcohol	1.11	0.900716
Time spent with friends	1.04	0.962676
Mean VIF	1.28	

4.3. Gender beliefs about romantic relationships and sexual behaviours

In this section, I present two papers addressing objective 3. The first paper is a scoping review of existing literature exploring the implications of gender norms on very young adolescents' SRH behaviours and outcomes in SSA (accepted for publication). The second paper is a published peer-reviewed paper on "Gender norms about romantic relationships and sexual experiences among very young adolescents in Korogocho slum in Kenya". In this paper, I assessed the association between gender norms about sexual relationships and sexual experience, controlling for significant sociodemographic, sociocultural, and socio-demographic characteristics associated with sexual experience. The paper is published in the International Journal of Public Health (https://doi.org/10.1007/s00038-020-01364-9). As an addendum to the published paper, I have also published an erratum to correct an error on Table 4 of the peer reviewed article. During the analysis, the labels for the pubertal maturation variable in Table 4 alone were erroneously swapped. This has been corrected with the journal (https://doi.org/10.1007/s00038-020-01512-1).

4.3.1. Gender norms and sexual behavior among early adolescents in sub-Saharan Africa: A scoping review

This section presents a review of existing literature on implications of gender norms for very young adolescents SRH behaviours and outcomes in SSA, highlighting key implications for research, policy and programmes. The review has been accepted as a book chapter for the Routledge Handbook of African Demography.

Gender norms and sexual behavior among very young adolescents in sub-Saharan Africa: A scoping review

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Introduction

Gender norms—socially constructed roles, behaviors, and attributes considered appropriate for men and women (Connell 1987, Barrett and Raskin White 2002, Blackstone 2003, Brickell 2006, Crouter et al. 2007)—are increasingly recognized as major drivers of health and wellbeing (Courtenay 2000, Courtenay 2003, Auerbach, Parkhurst, and Cáceres 2011). Gender norms often contribute to inequalities that disadvantage women and girls, leading to unbalanced distribution of power and access to resources. Power differentials inherent in inequitable gender norms often position women as subordinate to men (Morrell, Jewkes, and Lindegger 2012, Smith et al. 2015) and are key in informing relational health behaviors and outcomes with a strong influence on sexual and reproductive behaviors (Campbell 1995, Ampofo 2001, Firestone, Harris, and Vega 2003, Fonck et al. 2005, Campbell et al. 2008, Fiaveh et al. 2015). For instance, existing evidence associates certain forms of masculinities with women's restricted autonomy (Gallagher and Parrott 2011, Smith et al. 2015). Such masculine norms are shown to encourage male sexual risk-taking (Harrison et al. 2006, Izugbara and Undie 2008) and promote women's passivity in sexual matters (Sanchez, Kiefer, and Ybarra 2006, MacPherson et al. 2014), predisposing women to a wide range of sexual and reproductive health (SRH) risks, including unprotected intercourse, sexually transmitted infections (STIs) and unintended pregnancy (Varga 2003, Maharaj and Munthree 2007, Campbell et al. 2008, Jewkes 2010, Jewkes and Morrell 2010, Fiaveh et al. 2015) and intimate partner violence (Moore and Stuart 2005, Jewkes et al. 2011a, 2011b). Risky sexual behaviors also put men at risk for STIs, including HIV (Messerschmidt 2000, Izugbara and Undie 2008, Marcos et al. 2013, Morrell et al. 2013).

Adolescence lays a foundation for lifelong health trajectories (Patton et al. 2016). Understanding the ways in which gender norms regulate SRH behaviors in this developmental stage is critical.

Galambos, Berenbaum, and McHale (2009) argue that gender inequalities between boys and girls in sexual relationships begin to manifest at an early stage of development, as young people adopt their society's belief system particularly with respect to gender and sexuality. Norms and practices acquired during adolescence shape adolescents' vulnerability to poor SRH outcomes (Varga 2003, Braam and Hessini 2004, Fatusi and Hindin 2010, Izugbara, Ochako, and Izugbara 2011, Fiaveh et al. 2015) with implications that extend beyond adolescence. HIV and maternal conditions rank among the leading causes of death and disability-adjusted life years (DALYs) lost among adolescent boys and girls aged 10 – 19 years and among girls aged 15 – 19 years respectively in sub-Saharan Africa (SSA) (Institute for Health Metrics and Evaluation 2017). These mortality and morbidity patterns disproportionately affect girls, reflecting the impact of the social and gendered contexts (Micanovic 1997, Talbot and Quayle 2010, Crockett and Crouter 2014) of adolescents' lives as well as the physiological processes that they undergo during adolescence.

While several factors contribute to SRH behaviors and outcomes among adolescents in SSA (Kaaya et al. 2002, Luke 2003, Bankole et al. 2007, Peltzer 2010, Doyle et al. 2012, Hervish and Clifton 2012), gender and more specifically, gendered beliefs and norms have far-reaching implications. Although gender socialization begins early in life, pubertal maturation in early adolescence heightens expectations related to gender (Hill and Lynch 1983, Galambos 2004, Davis 2007, Lindberg 2008, Galambos, Berenbaum, and McHale 2009, Perry and Pauletti 2011). Evidence suggests an intensification of gendered learning in early adolescence (Hill and Lynch 1983, Galambos, Almeida, and Petersen 1990, Crouter, Manke, and McHale 1995, Pettitt 2004, Lindberg 2008, Priess, Lindberg, and Hyde 2009, Marcell et al. 2011, Sommer, Likindikoki, and Kaaya 2015). Increased social interactions during this period are important in adopting a belief system critical for informing behavior (Brickell 2006, Blakemore 2008, Moreau et al. 2019).

Globally, there is growing awareness that promoting equitable gender norms in early adolescence is key to securing young people's safe transition to adulthood (Kågesten et al. 2016, Chandra-Mouli et al. 2017, Lane, Brundage, and Kreinin 2017). This growing awareness is exemplified in the Sustainable Development Goal (SDG) 5, which recognizes gender equality as a fundamental human right and a necessary foundation for a peaceful, prosperous and sustainable world (United Nations 2015). With romantic and sexual relationships taking shape and gender roles playing out in early adolescence, promoting gender equality during this critical period of human development requires robust understanding of the intersections of gender norms and adolescent SRH behaviors and well-being.

In SSA, adolescents make up the greatest proportion of the population, with about 12 percent of the region's population aged 10 – 14 years (United Nations Population Division 2019). While studies show that most very young adolescents in the region have not initiated sex, they engage in intimate relationships and non-coital sexual activities, including kissing, hugging and fondling and other behaviors that are only the beginning of patterns of gendered practices with potentially far-reaching implications for individuals, communities, and society at large (Peltzer 2006, Kabiru et al. 2010, Gevers et al. 2013, Kagesten, Kabiru, and Maina 2018).

This review aims to provide insights on the state of knowledge on the implications of gender norms for very young adolescents' SRH behaviors in SSA; highlight lessons emerging from the literature for policy and programmatic actions and identify gaps for further research. The review was guided by the following research questions:

i. What are the key gender norms that circumscribe the socialization of very young adolescents (ages 10 – 14 years) in SSA region?

ii. How do gender norms influence sexual and reproductive behaviors and outcomes of very young adolescents in SSA?

iii. What are the barriers to addressing gender norms that influence SRH outcomes among very young adolescents in SSA?

iv. What interventions have been implemented to improve gender equitable norms and SRH outcomes among very young adolescents in SSA?

Methods

We conducted a scoping review of available literature to map and synthesize existing evidence on gender norms and SRH among very young adolescents aged 10 – 14 years in SSA.

Search strategy

We searched the following databases: PubMed, JSTOR, EbscoHost (PsychINFO, CINAHL, Psychology and Behavioral Sciences Collection, Global Health), Scopus, ScienceDirect, HINARI and the Web of Science. Geographically, search results were limited to countries in SSA and to peer-reviewed papers published between January 2000 and May 2020. Papers were included if they addressed 1) gender norms that circumscribe the socialization of very young adolescents and their influence on sexual and reproductive behaviors and outcomes of very young adolescents in SSA; 2) barriers to addressing gender norms that influence SRH outcomes among very young adolescents; and 3) interventions to improve gender equitable norms among very young adolescents in SSA.

Searches were conducted between April 30, 2020 and May 18, 2020 and while the exact search terms varied by database (available upon request), the four primary search components included were (1) very young/early adolescents/adolescents (2) gender norms (3) SRH/SRH behaviors (4) sub-Saharan Africa. Studies were excluded if they focused exclusively on children younger than

10 years or adolescents older than 14 years. Also excluded were studies that included early adolescents but where data were not disaggregated by age.

Article selection

After removing duplicate search results, two authors, BM and IN, independently screened all titles and abstracts of potential articles identified in the search to determine which studies met the inclusion criteria. In the second stage, full-texts of all studies that met the inclusion criteria in the title and abstract screening stage were reviewed independently by two primary reviewers to ascertain eligibility. In both screening stages, any discrepancies were jointly reviewed by all authors.

Data extraction and quality assessment

Data from included articles were extracted using a standardized form. Two reviewers independently assessed the internal validity of each included study using the appropriate CASP (Critical Appraisal Rating Programme) appraisal checklist and assigned each paper an overall quality ranking of "low," "medium," or "high." Any discrepancies in these rankings were resolved through discussion. While the majority of the studies ranked medium or high in quality, no studies were excluded because of this quality assessment. Results of the quality assessment are available on request.

Results

Figure 1 shows the flowchart of the study selection process. Table 1 describes the twenty-three articles that met the inclusion criteria. Results by the year of publication were indicative of increasing attention being paid to gender and SRH issues among very young adolescents in SSA. Studies varied by geographical regions: fourteen studies were conducted in four countries in

Eastern Africa, six studies in two countries in Southern Africa (mainly South Africa), seven studies in five Western Africa countries and three studies in the Democratic Republic of the Congo (Central Africa). Four studies were multi-country, three of which included countries outside SSA.

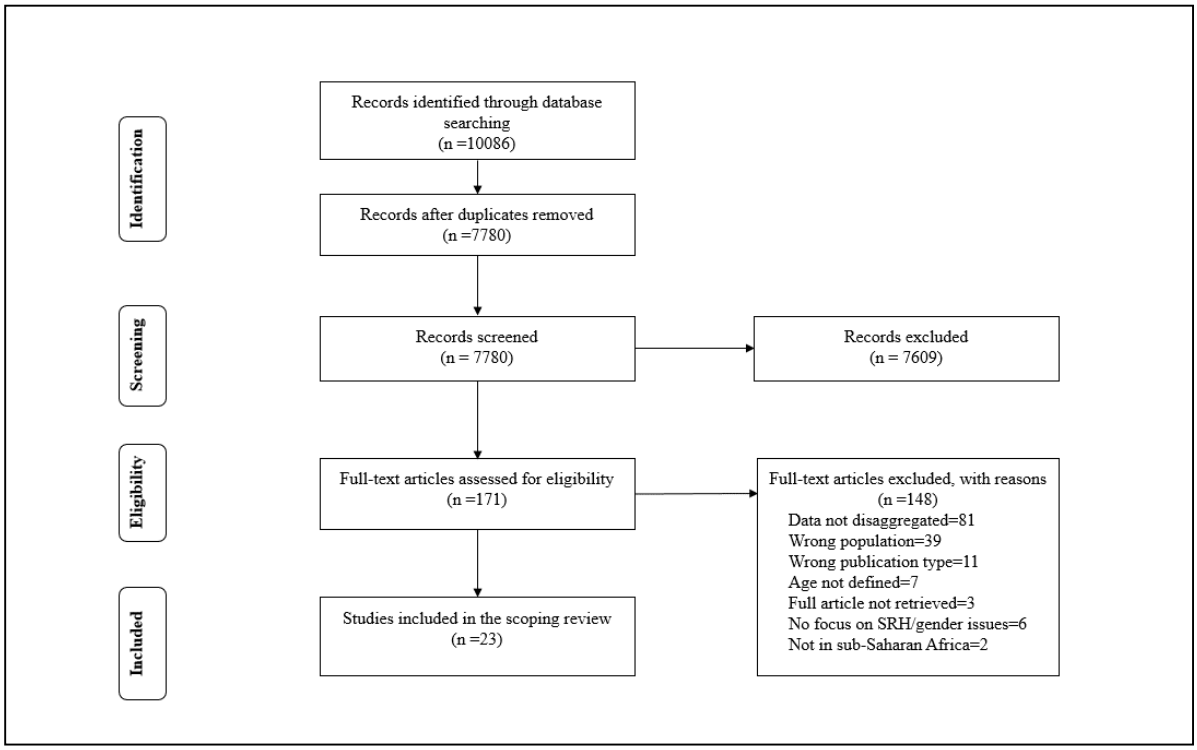

Figure 1: Literature search flow

The studies used different designs and data collection methods. Sixteen studies were based on cross-sectional data, four studies were based on randomized controlled trials data, one study used an ethnographic design, one a comparative multimethod design and one a convergent parallel mixed methods design. Ten studies applied qualitative and quantitative methods of data collection respectively, while three studies applied mixed methods. Only nine studies clearly stated that their work was guided by a theoretical framework, with each study using a different framework as shown in Table 1.

While we focused on findings from adolescents aged 10 – 14 years, study participants' ages varied. In ten studies, all participants were very young adolescents aged between 10 and 14 years while three studies included very young adolescents and adults. In six studies, participants were aged between 10 and 24 years; two studies included participants aged 10 – 19 years and adults, one study had participants aged 12 – 27 years and one study conducted in South Africa recruited participants in 8th grade (8th graders in South Africa are aged around 13 and 14 years). By sex, six studies included females only, 17 studies included both male and females while one study included boys only.

Table 1: Description of the included articles

Author, year	Study Design	Study Aims	Country, study location	Theoretical framework	Target population(age range and sex)
Ampofo (2001)	Cross-sectional study, qualitative	Exploring gendered attitudes to social relations and reproductive and sexual behaviors among young people	Ghana, eastern region	Not stated	11 – 13 years, male and female
Austrian, Soler-Hampejsek, Behrman, et al. (2020)	Randomized controlled trial, quantitative	Assessing the impact of a girls' empowerment program on social, economic, education and fertility outcomes	South Africa, rural and urban areas	Not stated	10 – 19 years, female
Cho et al. (2011)	Randomized controlled trial, quantitative	Testing whether comprehensive support to keep adolescent orphans in school can reduce HIV risk factors	Kenya, Western province	Social development model	12 – 14 years, female
Coast et al. (2019)	Comparative multimethod qualitative design, qualitative	Assessing how gender and age affect adolescent boys' and girls' experiences of SRH in two East African countries: Ethiopia and Rwanda.	Ethiopia and Rwanda	GAGE (Gender & Adolescence: Global Evidence) "3 Cs" conceptual framework	10 – 19 years, male and female; Also included peers and adults
DeLong et al. (2020),	Randomized controlled trial, quantitative	To compare and contrast reproductive health , gender equity attitudes, and intimate partner violence among married very young adolescent girls with married older adolescent girls and young women in rural Niger	Niger, rural areas	Not stated	13 – 19 years, female
De Meyer et al. (2017)	Cross-sectional study, qualitative	Exploring how gender norms emerge in romantic relationships among early adolescents living in five poor urban areas	USA, Ecuador, Scotland, Belgium, Kenya, urban poor settlements	Not stated	11 – 13 years, male and female

Falb et al. (2017)	Cross-sectional study, quantitative	Examining the association of gendered and parental attitudes of caregivers in South Kivu, Democratic Republic of Congo (DRC) with their early adolescent girls' (aged 10–14 years) experiences of violence and girls' attitudes towards intimate partner violence (IPV)	Democratic Republic of the Congo, South Kivu	Not stated	10 – 14 years, female Also included adults
Kemigisha et al. (2018)	Cross-sectional study, quantitative	Assessing the factors associated with sexual wellbeing (defined as body image, self-esteem, and gender equitable norms) in young adolescents in Uganda.	Uganda	Not stated	10 – 14 years, male and female
Kemigisha et al. (2019)	Randomized controlled trial, mixed methods	To evaluate the effectiveness of a comprehensive sexuality education (CSE) intervention for very young adolescents in Uganda	Uganda	Theory of planned behavior and the social ecological Model	11 – 15 years, male and female
Lundgren et al. (2019)	Ethnographic cohort study, qualitative	Understanding how gendered norms and practices develop during the transition from child to young adult in post-conflict northern Uganda.	Uganda	Feminist theory, social constructivist theory, ecological systems' theory	10 – 19 years, male and female
Maina et al. (2020)	Cross-sectional study, quantitative	Exploring the association between gender norms about romantic relationships and sexual experiences of very young male adolescents	Kenya, urban slum in Nairobi	Not stated	10 – 14 years, male
Merrill et al. (2018)	Convergent parallel mixed methods design, mixed methods	Exploring the preliminary outcomes of the SKILLZ Street program and the processes through which such outcomes were or were not achieved	South Africa, Gauteng province	Not stated	11 – 16 years, female
Mmari et al. (2018)	Cross-sectional study, qualitative	Comparing the perceived risks associated with entering adolescence among parents and adolescents and explore how these risks differ by gender and by cultural setting across six sites	Egypt, USA, Belgium, Nigeria, Nairobi and Shanghai, urban poor settlements	Not stated	11 – 13 years, male and female; Also included adults

Moreau et al. (2019),	Cross-sectional study, mixed methods	To construct and test a cross-cultural scale assessing the perceptions of gender norms regulating romantic relationships between boys and girls in early adolescence.	Egypt, USA, Malawi, South Africa, Bolivia, Ecuador, Scotland, Belgium, Vietnam, Nigeria, DRC, Kenya, India, Burkina Faso, China, urban poor settlements	Not stated	10 – 14 years, male and female
Ninsiima et al. (2018)	Cross-sectional study, qualitative	Exploring the gender-related sexuality norms among young adolescents in Uganda.	Uganda, Mbarara, Western Uganda, rural and urban areas	Social learning theory	12 – 14 years, male and female; Also included adults
Ninsiima et al. (2020),	Cross-sectional study, qualitative	Exploring how the intersection between poverty, unequal gender relations and restricted access to the law impacts on the sexual and reproductive choices of young women	Uganda	Not stated	12 – 14 years, female
Ojo (2014)	Cross-sectional study, quantitative	Examining age and gender differences in the premarital sexual attitudes exhibited by adolescents and young adults.	Nigeria, Lagos, Ogun & Osun in south west Nigeria	Sexual strategies theory	12 – 27 years, male and female
Ortiz-Echevarria et al. (2017)	Cross-sectional study, qualitative	Understanding the lived realities of very young adolescents in Kobe refugee camp and their related health and development needs, expectations and goals.	Ethiopia, Kobe refugee camp	Blum et al.'s conceptual framework for early adolescence	10 – 16 years, male and female; Also included adults
Özler et al. (2020)	Randomized controlled trial, quantitative	Examining the potential of adding a cash transfer component to a gender - transformative mentoring intervention that aimed to reduce sexual abuse among	Liberia, Nimba County	Not stated	13 – 14 years, female

		females in early adolescence. equip adolescent girls with the skills to make healthy, strategic life choices and to stay safe from sexual abuse using a cluster-randomized controlled trial with three arms: control, Girl Empower (GE), and GEþ.			
Ragnarsson et al. (2008)	Cross-sectional study, qualitative	Describing how young people, both boys and girls, depict and interpret male gender and sexuality in their community	South Africa, Mankweng	Not stated	12 – 14 years, male and female
Russell et al. (2014)	Cross-sectional study, quantitative	Describing the potentially preventable factors in IPV perpetration and victimization among South African 8th grade students.	South Africa, Cape Town	Jewkes' theoretical model of IPV causation	8th grade, male and female
Vu et al. (2017)	Cross-sectional study, quantitative	Describing and comparing gender norms among 10- to 14-year-olds versus 15- to 24-year-olds and to conduct a rigorous evaluation of the GEM scale's performance among these two age groups.	Uganda, Wakiso and Kampala districts	Not stated	10 – 24 years, male and female
Stark et al. (2017)	Cross-sectional study, quantitative	Assessing whether attitudes toward traditional gender norms modifies the effects of the relationship between violence exposure and future orientation in displaced girls.	Democratic Republic of the Congo, South Kivu	Role congruity theory	10 – 14 years, female adolescents; Also included adults

Gender norms and gender socialization

The findings showed that not only were gendered behaviors prevalent among boys and girls, but, such behaviors were similar in different settings (Ampofo 2001, Ragnarsson et al. 2008, Ojo 2014, Russell et al. 2014, De Meyer et al. 2017, Ortiz-Echevarria et al. 2017, Stark et al. 2017, Vu et al. 2017, Kemigisha et al. 2018, Mmari et al. 2018, Ninsiima et al. 2018, Coast et al. 2019, Lundgren et al. 2019, Moreau et al. 2019, DeLong et al. 2020, Maina et al. 2020). Ordinarily, girls assumed domestic roles presumed to be less physically demanding while boys, perceived to be stronger than girls, were socialized to take up roles that were deemed hard or challenging for girls (Ampofo 2001, Ragnarsson et al. 2008, De Meyer et al. 2017, Ortiz-Echevarria et al. 2017, Mmari et al. 2018, Ninsiima et al. 2018, Coast et al. 2019, Lundgren et al. 2019). Girls were socialized to be submissive while boys were prepared for positions that gave them dominance including in sexual and romantic relationships. Such differentiation was also reflected in the curtailing of freedom of movement for girls, unlike boys who were perceived to gain more independence in adolescence. While boys were considered strong enough to protect themselves, girls were viewed as weak and vulnerable (Ortiz-Echevarria et al. 2017, Mmari et al. 2018, Ninsiima et al. 2018, Lundgren et al. 2019), and, hence, in need of protection.

Gendered norms operated in sexual relationships, with boys expressing more sexual freedom than girls (Ampofo 2001, Ragnarsson et al. 2008, De Meyer et al. 2017, Ninsiima et al. 2018, Coast et al. 2019). For instance, in a study on gender norms and the sexuality of young adolescents in Uganda, Ninsiima et al. (2018) reported that boys were required to be active in sexual relationships and girls to be timid. In a study conducted in Ethiopia and Rwanda, boys were found to be free to experiment with sex, while girls' sexuality was highly policed (Coast et al. 2019). In all studies included in this review, adolescents perceived heterosexual relationships as the norm.

Our findings suggest that very young adolescents endorsed or challenged inequitable gender norms about sexual behaviors in almost equal measure. Both boys and girls equally endorsed inequitable gender norms, more so in intimate relationships (Ampofo 2001, Ragnarsson et al. 2008, Ojo 2014, Stark et al. 2017, Vu et al. 2017, Kemigisha et al. 2018, Ninsiima et al. 2018, Lundgren et al. 2019, Moreau et al. 2019, Maina et al. 2020). In a study on gender norms, violence and hope among girls in the Democratic Republic of the Congo (DRC), about 15% of girls reported that intimate partner violence was acceptable (Stark et al. 2017). Similarly, in a study focusing on young males' gendered sexuality in Limpopo Province, South Africa, girls approved of males having multiple sexual relationships (Ragnarsson et al. 2008). Boys were expected to take a leading and dominant role in sexual relationships (Ampofo 2001), with their sexual desires being perceived as intrinsic (Vu et al. 2017).

Among studies that compared gender attitudes among very young adolescents and older adolescents, three studies showed that very young adolescents were more likely to endorse inequitable gender norms than older adolescents (Ojo 2014, Vu et al. 2017, Kemigisha et al. 2018), while one study did not find any differences in gender attitudes by age (DeLong et al. 2020). With respect to sex differences, in South West Nigeria, Ojo (2014) found that boys were more likely than girls to hold permissive views about premarital sexual activity among young people. Adolescents who reported sexual or physical violence and early sexual debut were more likely to support inequitable gender norms (Vu et al. 2017). A Ugandan study (Ninsiima et al. 2018) found that differentiated gender roles were more common in rural areas than in urban areas, while in Ghana, Ampofo found that adolescents in matriarchal societies were more likely to endorse equitable norms than those in patriarchal societies (Ampofo 2001). These results reflect

commonalities in gender beliefs and perceptions across cultures, age groups and sexes (Ampofo 2001, Ojo 2014, Vu et al. 2017, Kemigisha et al. 2018, Ninsiima et al. 2018, Maina et al. 2020).

The mixed findings on how gender norms were challenged and negotiated (Russell et al. 2014, De Meyer et al. 2017, Ortiz-Echevarria et al. 2017, Kemigisha et al. 2018, Ninsiima et al. 2018, Lundgren et al. 2019, Moreau et al. 2019, DeLong et al. 2020, Maina et al. 2020) are suggestive of changing gender norms and beliefs in different contexts. For instance, one study in South Africa found that young people supported some domains of inequitable gender norms that promoted male superiority and violence while disagreeing with those that promoted dating abuse (Merrill et al. 2018). Similarly, in other studies, both girls (Russell et al. 2014, Kemigisha et al. 2018) and boys (Moreau et al. 2019, Maina et al. 2020) endorsed some aspects of equitable gender norms. Maina et al. (2020) found low endorsement of inequitable norms about sexual double standards among boys yet, the same boys endorsed inequitable norms about male dominance in heterosexual relationships. Ortiz-Echevarria et al. (2017) recognized dynamism of gender roles, but highlighted the existence of cultural patterns that reinforce traditional norms. Lundgren et al. (2019) highlighted knowledge, agency and aspirations as examples of internal agencies contributing to negotiation and reproduction of gender norms.

Key actors in the socialization of boys and girls into these gender norms included parents, caregivers, schools, teachers, communities, peers, religious institutions and leaders (Ampofo 2001, De Meyer et al. 2017, Falb et al. 2017, Ortiz-Echevarria et al. 2017, Mmari et al. 2018, Ninsiima et al. 2018, Coast et al. 2019, Lundgren et al. 2019, Moreau et al. 2019). For instance, in the DRC, girls living with caregivers who held gender equitable attitudes were less likely to report sexual abuse and to accept intimate partner violence (IPV) (Falb et al. 2017).

Gender norms and sexual and reproductive behaviors and outcomes

The pathways through which gender norms influenced SRH behaviors and outcomes among young adolescents was a common theme in existing studies on very young adolescents (Ragnarsson et al. 2008, Russell et al. 2014, De Meyer et al. 2017, Falb et al. 2017, Ortiz-Echevarria et al. 2017, Stark et al. 2017, Kemigisha et al. 2018, Mmari et al. 2018, Ninsiima et al. 2018, Coast et al. 2019, Moreau et al. 2019, DeLong et al. 2020, Ninsiima et al. 2020). The socialization of boys and girls often involved their early introduction to notions of proper gender behaviors and norms (Ampofo 2001, Ragnarsson et al. 2008, Ojo 2014, Russell et al. 2014, De Meyer et al. 2017, Ortiz-Echevarria et al. 2017, Stark et al. 2017, Vu et al. 2017, Kemigisha et al. 2018, Mmari et al. 2018, Ninsiima et al. 2018, Coast et al. 2019, Lundgren et al. 2019, Moreau et al. 2019, DeLong et al. 2020, Maina et al. 2020). These gender norms were often inherently inequitable with strong potential to foster power differentials among boys and girls and promote sexual double standards that diminish girls' power, voice, and agency, and promote dominance, aggression, risk-taking, sexual activity and experimentation among boys (De Meyer et al. 2017, Mmari et al. 2018, Ninsiima et al. 2018, Moreau et al. 2019). A study among very young adolescents in Southwestern Uganda showed that being sexually active was associated with lower endorsement of gender equitable norms (Kemigisha et al. 2018).

Inequitable gender norms were found to foster girls' limited agency, power and negotiation abilities in relationships, frequently putting them under pressure to demonstrate their femininity through sexual acquiescence, deference to men and boys, and expectations of material and financial support from males, often with adverse SRH outcomes (Ragnarsson et al. 2008). Research conducted in Ethiopia among refugee populations showed that many of these inequitable gender norms found expression in cultural practices such as female genital mutilation/cutting (FGM/C), seclusion, and early marriage (Ortiz-Echevarria et al. 2017, Coast et al. 2019). These

cultural practices set the stage for early childbearing, girls' limited access to education, SRH information, and knowledge about their bodies, including menstruation and several other adverse negative outcomes (Ortiz-Echevarria et al. 2017). The normative expectation for girls to be discreet about sexual matters and their own sexuality constrained very young adolescent girls in Uganda, South Africa, Malawi, and Nigeria, DRC, Kenya, and Burkina Faso, from opening up about their own sexual relations, reporting their sexual victimization, safely negotiating relationship with boys and men, and seeking life-saving SRH services, support, and information (Ragnarsson et al. 2008, Russell et al. 2014, Ortiz-Echevarria et al. 2017, Ninsiima et al. 2018, Coast et al. 2019, Ninsiima et al. 2020). In rural Ethiopia, the belief that the onset of menarche and menstruation indicated girls' marriageability and sexual readiness was not only a dynamic in girl-child marriage, it also forced girls to conceal their menarche and menstruation in order to continue schooling or avoid being married off (Ortiz-Echevarria et al. 2017, Coast et al. 2019). In doing so however, these girls may be exposed to unhygienic menstrual management practices and infections.

In the same vein, masculine ideals drove adolescent boys to experiment early with sex; initiate romantic relationships early; engage in multiple sexual partnerships; pursue reputation and peer respect through sexual activity, violence and risk-taking; and use bodily and material capital to gain authority over girls' bodies or win them over for sexual activity, all of which exposed them and their partners to harm and poor SRH (Ampofo 2001, Russell et al. 2014, Ortiz-Echevarria et al. 2017, Kemigisha et al. 2018, Mmari et al. 2018, Ninsiima et al. 2018, Coast et al. 2019). Research in South Africa showed that the construction of 'proper' manhood in terms of the capacity to provide materially for girlfriends promoted a belief among boys that they have 'the right' to demand sex from girls who have received gifts from them or to use violence to force such girls into sexual activity (Ragnarsson et al. 2008). In another South African study, the perpetration

of IPV was lower among boys who disputed ideologies of male superiority and violence while IPV victimization was also lower among girls who disagreed with ideologies of male superiority and violence (Russell et al. 2014).

Some rites of passage in SSA, including male circumcision, provide a critical pathway for behaviors that compromise the SRH of very young adolescents. Writing specifically about very young boys in South Africa, Ragnarsson and colleagues reported that the cultural belief that circumcision qualifies boys for manhood and readies them for sexual activity, encouraged early sexual debut among boys who often lacked adequate information and knowledge to protect themselves and their partners from negative SRH outcomes (Ragnarsson et al. 2008).

Barriers to addressing gender norms that influence SRH outcomes among very young adolescents

Our findings suggest that very young people's capacity to negotiate and challenge patriarchal gender norms while exploring alternative gender norms is influenced by three factors: personal factors (knowledge, agency and aspirations); social factors (socialization processes, capital, costs and consequences); and structural factors (health/educational systems, religious institutions, government policies) (Ragnarsson et al. 2008, Ortiz-Echevarria et al. 2017, Stark et al. 2017, Ninsiima et al. 2018, Coast et al. 2019, Lundgren et al. 2019, Ninsiima et al. 2020, Özler et al. 2020).

Personal factors: Limited agency for girls and women to negotiate safe sex practices was shown to have a negative effect on their SRH outcomes (Ragnarsson et al. 2008, Ortiz-Echevarria et al. 2017, Ninsiima et al. 2018, Lundgren et al. 2019, Ninsiima et al. 2020). For example, in a study conducted in Northern Uganda, Lundgren et al. found that girls' limited knowledge and myths

about contraceptives restricted their autonomy in decision-making over their reproductive behaviors (Lundgren et al. 2019).

Socio-cultural factors: For adolescent girls and women, there were critical costs and consequences of challenging patriarchy, which included stigma, sanctions and violence (Ampofo 2001, Ragnarsson et al. 2008, Ortiz-Echevarria et al. 2017, Ninsiima et al. 2018, Coast et al. 2019, Lundgren et al. 2019, Ninsiima et al. 2020). Furthermore, fear of embarrassment and loss of status were shown to motivate adolescent girls' and women's compliance with patriarchal norms (Ampofo 2001, Coast et al. 2019, Lundgren et al. 2019). In the study in Uganda conducted by Lundgren et al., girls observed that women's lack of access to capital constrained their capacity to challenge patriarchal norms and that some women were forbidden from engaging in income generating activities or making their own money, ensuring dependence on their husbands (Lundgren et al. 2019). Moreover, men were reported to use violence against women and girls as a tool or tactic to maintain their dominance (Russell et al. 2014, Stark et al. 2017, Merrill et al. 2018, Lundgren et al. 2019, DeLong et al. 2020). While these portray socio-cultural beliefs of male dominance over female, young adolescents' support for these inequitable norms across cultures may create barriers to addressing the inequitable gender norms (Lundgren et al. 2019).

Customary practices that promote early marriages (Ortiz-Echevarria et al. 2017, Özler et al. 2020) have been shown to be critical barriers to addressing gender norms. For instance, the acceptability of cultural practices such as FGM/C and early marriages, as shown in two studies conducted in Ethiopia and Rwanda (Ortiz-Echevarria et al. 2017, Coast et al. 2019), is a barrier to addressing gender inequitable norms. A study among adolescents and adults in a refugee camp in Ethiopia demonstrated that male dominance, early marriages and harmful traditional practices such as FGM/C were a reality for adolescent girls in the study setting (Ortiz-Echevarria et al. 2017), yet,

young people rarely discussed or questioned practices such as FGM/C in public (Ortiz-Echevarria et al. 2017), perhaps, due to fear of consequences for challenging patriarchal norms.

Structural factors: Education, religious institutions, health systems, poverty, policies, legal and justice systems were critical structural barriers to addressing gender norms in relation to SRH by reinforcing patriarchal norms in these settings (Stark et al. 2017, Coast et al. 2019, Lundgren et al. 2019, Ninsiima et al. 2020, Özler et al. 2020). Despite legal provisions criminalizing rape, sexual violence, and sexual harassment in Rwanda and Ethiopia, Coast et al. (2019) attributed low rates of reporting such occurrences to victim blaming, especially for rape, with girls often blamed for provoking a sexual assault. Lundgren et al. (2019) argued that girls' access to family planning services would give them power to make informed choices about their reproductive behaviors, thus challenging male dominance over reproductive decisions. While a study among displaced girls in the DRC showed that fewer years of education was independently associated with more exposure to violence, ascribing to prescriptive gender norms was associated with negative effects on hope for girls who had been victims of physical and sexual violence regardless of their education status (Stark et al. 2017). In Western Uganda, Ninsiima et al reported that structural weaknesses in the justice system including ill equipped police and health care services coupled with poverty and unequal gender relations restricted girls' ability to exercise their sexual and reproductive rights, leaving victims powerless and vulnerable (Ninsiima et al. 2020).

Interventions aimed at improving gender equitable norms among very young adolescents in SSA

Five studies (Cho et al. 2011, Merrill et al. 2018, Kemigisha et al. 2019, Austrian, Soler-Hampejsek, Behrman, et al. 2020, Özler et al. 2020) reported on the evaluation of interventions that have been implemented to, among other outcomes, improve gender equitable norms among

very young adolescents. Two interventions (Cho et al. 2011, Kemigisha et al. 2019) targeted both boys and girls, while the rest targeted only girls. Two interventions (Merrill et al. 2018, Kemigisha et al. 2019) were school-based, while the rest were delivered in community settings. With the exception of one study (Merrill et al. 2018), where the study team used a convergent parallel mixed-methods design involving pre- and post-intervention assessments, the four remaining studies used randomized designs to assess the effects of the intervention. The interventions were implemented in Kenya (Cho et al. 2011), Liberia (Özler et al. 2020), South Africa (Merrill et al. 2018), Uganda (Kemigisha et al. 2019), and Zambia (Austrian, Soler-Hampejsek, Behrman, et al. 2020).

Except for Özler et al. (2020), who found that Girl Empowered program had significant positive effects on gender attitudes, overall, the other interventions had no or modest effects on increasing gender equitable norms among adolescents. The Girl Empowered program, which was described as a gender transformative mentoring intervention, was implemented among girls aged 13 – 14 years in rural, Nimba County in Liberia (Özler et al. 2020) and had significant positive effects on gender attitudes as assessed by the gender attitudes index comprising of the Gender Equity Index and Attitudes Towards IPV Index.

Similar to the Adolescent Girls Empowerment Program (AGEP) (Austrian, Soler-Hampejsek, Behrman, et al. 2020) and the SKILLZ Street Program (Merrill et al. 2018) that both targeted very young adolescent girls, the Girl Empowered program offered girls life skills sessions facilitated by local female mentors. The Girl Empowered curriculum, for example, covered the following topics: sense of self; feelings and emotions; social networks; protection and safety; financial literacy; reproductive health; leadership and empowerment; and setting life goals. Unlike the other interventions, however, the Girl Empowered curriculum also included caregiver training sessions,

which aimed to familiarize caregivers with the content of the girls' curriculum and content, to enable them to reinforce the skills that the girls learned, and to encourage them to support and protect girls in their communities. The SKILLZ Street Program—a soccer-based life skills program—on the other hand, included a supplementary SMS platform that participants could access additional information on key intervention topics and information on local health services (Merrill et al. 2018).

Both the Girls Empowered program (Özler et al. 2020) and AGEP (Austrian, Soler-Hampejsek, Behrman, et al. 2020) offered girls training in financial literacy and supported the girls to set up individual savings. The Girl Empowered program also gave caregivers a cash incentive for girls' participation in the program in one of the study arms (Özler et al. 2020), while the AGEP program provided girls with a voucher that they could redeem to access free wellness and SRH services.

As noted, only two programs targeted both boys and girls. Cho et al. (2011) hypothesized that supporting both girls and boys to stay in school would increase equitable gender attitudes. In their randomized controlled trial conducted among adolescent orphans aged 12 – 14 years in western Kenya, they found that a lower proportion of adolescents who received a comprehensive community based intervention aimed at keeping adolescents in school endorsed IPV. All participating households received mosquito nets, blankets and food supplies. Adolescents in intervention households also received uniforms and school fees and could receive additional support to address challenges, such as lack of sanitary towels, that increased school absenteeism. The intervention, however, had no significant effect on gender equity scores.

Kemigisha et al. reported on a comprehensive sexuality education intervention implemented in 33 primary schools in South Western Uganda (Kemigisha et al. 2019). The theory-based intervention, which aimed to enhance knowledge, attitudes and practices related to sexual health, comprised 11

lessons delivered by trained volunteer undergraduate university students. Topics covered were puberty, relationships and emotions, decision making, self-esteem skills, reporting of physical and sexual violence, knowing one's rights, sexually transmitted infections, HIV/AIDS and stigma, prevention of pregnancy, sexuality and gender, and sexuality and media influence. At the end of the intervention, there was no significant difference between adolescents in the intervention and control group in endorsement of gender equitable norms (Kemigisha et al. 2019), which were assessed using 11 items (e.g., "On average boys are cleverer than girls" and "If there is a sick person at home, only a girl should stay home to care for the sick one as the boy goes on with school" (Kemigisha et al. 2018).

Discussion

This scoping review aimed to explore and describe recent literature on gender norms and SRH behaviors among very young adolescents in sub-Saharan Africa. While the review demonstrates limited but increasing focus on gender norms and SRH among very young adolescents, the available evidence highlights commonalities on how inequitable gender norms are propagated across regions (Ampofo 2001, Ojo 2014, Vu et al. 2017, Kemigisha et al. 2018, Ninsiima et al. 2018, Maina et al. 2020). The study findings also underscore the harmful effects of inequitable gender norms on adolescent SRH and well-being (Ragnarsson et al. 2008, Russell et al. 2014, Ortiz-Echevarria et al. 2017, Coast et al. 2019, Ninsiima et al. 2020).

The review demonstrates a limited focus on boys and SRH outcomes for boys. While girls are often perceived to be at a disproportionate risk of poor SRH outcomes (Fonck et al. 2005, Fiaveh et al. 2015, Mmari et al. 2018, DeLong et al. 2020), inadvertent failure to focus on boys may limit their engagement in gender equality debates, programs and policies and may derail or delay achievements of intended results in gender transformative programming (Ruane-McAteer et al.

2019). Ruane-McAteer et al. (2019) conducted an evidence and gap map and systematic review of reviews on interventions addressing men, masculinities and gender equality in SRH programs globally and found that only eight percent of included gender-transformative interventions, majority of which were in relation to violence against women/girls, engaged men/boys. While these findings majorly reflect girls' heightened risk for poor SRH, they also highlight the marginalization of boys and men in gender and SRH research. As gender norms are conceptualized in relation to men and women, these results underscore the need for greater focus on boys, especially at the young age when behaviors likely to influence future health trajectories are being formed.

Scarcity of evidence limits the critical review of how gender norms impact on SRH behaviors of very young adolescents in humanitarian settings, those living with disabilities as well as sexual minorities. Only one study focused on adolescents in humanitarian settings—Kobe refugee camp in Ethiopia—and found that FGM/C and child marriages were prevalent in the setting (Ortiz-Echevarria et al. 2017). This finding reflects those of a scoping review on barriers and facilitators for sexual and reproductive health and rights of young people in refugee contexts globally, whereby, Tirado et al. (2020) found 14 studies conducted in sub-Saharan Africa that included very young adolescents. Only three of the studies were published in peer-reviewed journals and the remaining 11 studies were in grey literature (Tirado et al. 2020).

None of the studies we reviewed focused on adolescents living with disabilities. In their studies conducted in KwaZulu-Natal, South Africa and south-western Nigeria, respectively, Hanass-Hancock (2009) and Afolayan (2015) reported that sexual abuse and violence were prevalent among people living with disability, disproportionately affecting women and girls. Disability stereotypes such as negative presentation of women and girls living with disabilities as helpless,

incompetent, asexual and intellectually challenged diminishes women's sexual and reproductive agency and reinforces male dominance in intimate relationships (Afolayan 2015).

The review findings also depict normalization of heterosexual relationships, despite extant evidence on same-sex relationships in SSA, albeit among older adolescents and young people (Mucherah, Owino, and McCoy 2016, Francis 2017). Similar to findings by Woog and Kågesten (2017) none of the reviewed studies focused on sexual minorities. While the evidence gap on sexual minorities could also be attributed to criminalization of same-sex relationships in a majority of countries in SSA (Müller et al. 2018, Izugbara et al. 2020), there is increasing regional effort targeting SRH needs of the sexual minorities (African Commission on Human and Peoples' Rights 2014). Altogether, these marginalized and minority groups of young people are often adversely affected by poor SRH outcomes as their stigmatization and social exclusion expose them to sexual risk-taking, sexual violence, gender-based violence, and early marriages (Hanass-Hancock 2009, Afolayan 2015, Mucherah, Owino, and McCoy 2016, Francis 2017, Tirado et al. 2020), outcomes that are often associated with inequitable gender norms.

This scoping review also shows a grim picture on the nexus between inequitable gender norms and poor SRH outcomes among very young adolescents and highlights major policy and policy implementation gaps that may impede the realization of the Sustainable Development Goal 5 on achieving gender equality and empowering all women and girls (UNFPA [Year not indicated]). Early marriages, sexual violence, FGM/C, and other harmful traditional practices are prevalent in SSA contexts and adversely affect girls (Hervish and Clifton 2012, UNFPA 2019). For instance, an analysis of Demographic and Health Survey data from 34 sub-Saharan African countries showed that 54% of women and girls aged 20 – 24 years were married before the age of 18 years (Yaya, Odusina, and Bishwajit 2019). While most countries in SSA criminalize child marriages

(The African Committee of Experts on the Rights and Welfare of the Child 2015), Mashikwa and colleagues indicate that some countries have a provision for child marriages with parental consent (Maswikwa et al. 2015). Similarly, while most countries have laws that prohibit FGM/C, the practice remains pervasive in many practicing communities (Shell-Duncan, Naik, and Feldman-Jacobs 2016). The seemingly limited effect of policy and legal frameworks calls for an urgent need to harmonize policies and laws on child protection across the region, and strengthen legal and law enforcement frameworks to ensure that policies and laws are implemented accordingly. Moreover, these findings highlight an urgent need for countries to ensure multilateral collaborations in policy implementation to ensure that social, cultural and structural provisions that encourage harmful traditional practices are completely abandoned.

Despite inequitable gender norms being associated with poor SRH outcomes among very young adolescents, this age-group is also highly neglected in terms of gender and SRH programming in SSA. Our review found only five peer-reviewed articles describing intervention studies that focused on very young adolescents (Cho et al. 2011, Merrill et al. 2018, Kemigisha et al. 2019, Austrian, Soler-Hampejsek, Behrman, et al. 2020, Özler et al. 2020) Two these interventions focused on boys and girls and three on girls alone, again highlighting the exclusion of boys in programming (Blum et al. 2019). However, we do recognize that there are recently completed but unpublished interventions targeting very young adolescents. For example, the DREAMS (Determined, Resilient, Empowered, AIDS-free, Mentored and Safe) initiative aims to reduce HIV incidence rates among adolescent girls and young women (AGYW) in 10 countries in SSA. The DREAMS core package of interventions includes individual level (empowering AGYW and reducing their risk of HIV and violence) and contextual level interventions (strengthening families through economic and parenting support, mobilizing community to address social norms and

reducing HIV risk in male sex partners) (Gourlay et al. 2019). In some contexts, such as in Nairobi, Kenya, DREAMS target population included very young adolescents aged 10 - 14 years (Birdthistle et al. 2018, Saul et al. 2018). The Adolescent Girl Initiative-Kenya (Austrian et al. 2016), a randomized controlled trial conducted in two marginalized settings in Kenya—Kibera informal settlement, Nairobi County and Wajir County—with a long-term goal to delay childbearing for adolescent girls by improving their wellbeing. The study followed adolescents aged 11 – 14 years for a period of two years and implemented four sector-specific interventions—violence prevention, education, health and wealth creation. At the end of the 2-year intervention, there was no effect on gender attitudes (Austrian, Soler-Hampejsek, Kangwana, et al. 2020). The HERStory intervention (South African Medical Research Council 2020), implemented in South Africa among AGYW aged 10 – 24 years included a comprehensive package of health, education and support services for AGYW in and out of school. Overall, the intervention provided access to comprehensive HIV, TB and SRH services and commodities, rights-based SRH education, support to keep girls in school, therapeutic services for abused children, financial literacy and career development, vocational programs to promote economic empowerment, interventions to maximize social support. AGYW who participated in the program made safer decisions, felt more empowered and less vulnerable to influence from peer and boyfriends. Also, the intervention enhanced AGYW's agency to negotiate contraceptive use with partners (South African Medical Research Council 2020).

Reviewed interventions approached gender norms in regard to young people's SRH from a multilayered perspective including comprehensive sexuality education, life skills, financial literacy and support, SRH services, food supplies, school support, protection and safety, leadership and empowerment (Cho et al. 2011, Kemigisha et al. 2019, Austrian, Soler-Hampejsek, Behrman,

et al. 2020, Özler et al. 2020). Further, most interventions targeted individual adolescents. However, gender is a social construct (Brickell 2006, Davis 2007), and thus, interactions that an individual has with their proximal and distal environments are likely to influence their gender attitudes and behaviors. In the current review, the only intervention—Girl Empowered program—that showed significant positive changes in gender attitudes also included caregiver training sessions, which aimed to enable caregivers to reinforce the skills that girls learned, and to encourage them to support and protect girls in their communities (Özler et al. 2020). Interventions need therefore to consider and take into account other facets of social interactions. For instance, socio-ecological theorists argue that individual behavior is influenced by different layers of the eco-system including individual characteristics, their immediate environment (e.g. family and peers), and distal environments (e.g. institutional and community level factors) as well as the macro-level factors (e.g. the policy environments) (Golden and Earp 2012). The insignificant or marginally significant effects on gender norms warrants further review of what works to address inequitable gender norms among young adolescents in SSA.

Reviewed interventions mainly focused on improving girls sexual and reproductive agency (Merrill et al. 2018, Austrian, Soler-Hampejsek, Behrman, et al. 2020, Özler et al. 2020) by empowering them to reject traditional harmful practices and inequitable gender norms, and to make informed decisions about their sexual and reproductive behavior. This approach implies a personal responsibility to reject inequitable gender norms. However, existing evidence suggests that gendered norms and beliefs inherent in contexts that young people live may limit their agency sexual relationships (Tolman, Anderson, and Belmonte 2015, Ninsiima et al. 2018). The emphasis on agency among young people notwithstanding, there is little precision and consistency regarding what t sexual and reproductive agency means for young girls (Tolman, Anderson, and Belmonte

2015), a limitation that may pose challenges in designing and assessing the impact of gender transformative interventions.

Strengths and limitations of the review

This is the first review to focus on gender norms and sexual behaviors among very young adolescents in SSA. While we did not assess the strength of the literature reviews given the nature of scoping reviews, the findings are important in highlighting the emerging evidence and gaps in adolescent SRH. The review focused only on peer reviewed articles covering SSA and published in English. While this demonstrated rigor in the evidence generated, considering only peer reviewed articles and only those in English may have excluded important findings reported in study reports, gray literature materials, and in other languages.

Conclusions

This review is timely in that it demonstrates the limited but increasing evidence on gender norms and very young adolescents' SRH and accentuates several research, program and policy gaps that need to be addressed to improve adolescents' SRH. The review underscores the importance of focusing on very young adolescents, who because of their developmental stage, are susceptible to pressure to conform to socio-cultural expectations. The review highlights the need for gender transformative programs targeting not only adolescent girls, but also boys, and demonstrates the early adolescence age as a window of opportunity for gender transformative programming when behaviors are being formed. While a majority of the reviewed interventions focused on individual level factors, need interventions should address contextual factors that are likely to influence negotiation and reproduction of gender norms. Similarly, there is need to address policy gaps, either in design or in implementation. This review shows that lack of or failure to implement national laws and policies aimed at addressing inequitable gender norms and harmful traditional

practices impacts on women and girls' health and wellbeing as evidenced by their disproportionate share of poor SRH outcomes. Thus, there is need to devise mechanisms and frameworks that will ensure development and/or effective implementation of policies and laws across the SAA region. Findings also demonstrate significant gaps in our current understanding of gender norms and adolescents SRH and highlight the need for more research including longitudinal studies to understand how gender attitudes change over time and how these changes influences SRH behaviors as adolescents transit to adulthood.

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4.3.2. Gender norms about romantic relationships and sexual experiences among very young male adolescents in Korogocho slum in Kenya

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Gender norms about romantic relationships and sexual experiences among very young male adolescents in Korogocho slum in Kenya

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Compliance with ethical standards

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Ethical approval: This study was approved by AMREF Health Africa Ethics and Scientific Review Committee (Ref. AMREF-ESRC P399/2017) and University of the Witwatersrand Human Research Ethics Committee (Medical) (Ref. M1711112). The National Council for Science, Technology and Innovation in Kenya gave the permit (Ref: NACOSTI/P/58043/27160) to conduct the study in Kenya. Written informed parental/guardian consent and adolescent assent were obtained prior to conducting the interviews.

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Author contribution:

BM, YS and CK conceptualized the study. BM and BO led data analysis while CK and YS supported the analysis and reviewed the results. BM drafted the manuscript. All authors reviewed and approved the manuscript.

Abstract

Objective: To investigate the association between gender norms about romantic relationships and sexual experiences of very young male adolescents (VYMA) living in Korogocho slum in Nairobi, Kenya.

Methods: We used cross-sectional data from a sample of 426 VYMA living in Korogocho slum. We conducted an exploratory factor analysis and confirmatory factor analysis to, respectively, explore and validate the factor structure underlying gender norms scale items. We used structural equation modelling to assess the association between gender norms and sexual experiences of VYMA.

Results: We found high endorsement of heteronormative beliefs about romantic relationships and low endorsement of sexual double standards. Sexual experience was associated with low endorsement of heteronormative beliefs, being pre-pubertal, school absenteeism, and being below recommended grade for age. Sharing a sleeping room with more than two people, been born outside Nairobi, and living in households headed by older persons lowered the likelihood of sexual experience.

Conclusions: Our findings underscore the need for further research to understand how gender norms evolve as young boys transition through adolescence to adulthood and how these changes impact on sexual behaviors

Key words: Early male adolescents, sexual behaviors, gendered norms, urban informal settlements, Kenya

Introduction

Gender norms, which are widely understood to refer to social expectations of appropriate roles and behaviors for males and females (Ratele 2015; Ridgeway and Correll 2004; Ryle 2011), are increasingly being recognized as drivers of health and well-being. The scripts for appropriate behavior based on one's sex are informed by collective beliefs about what most people do (descriptive norms), perceptions of what people ought to do (injunctive norms), and observing what popular people do (cohesive norms) (Addis and Mahalik 2003). While there are a number of factors contributing to gender inequalities (Kågesten et al. 2016), gender theorists show that stereotypical gender norms promote inequalities between men and women (Connell and Messerschmidt 2005; Ridgeway and Correll 2004; Ryle 2011). These gender inequalities negatively influence sexual and reproductive health behaviors resulting in sexual coercion and abuse, intimate partner violence, unplanned pregnancies, sexually transmitted infections (STIs) and HIV (Firestone et al. 2003; Nyamhanga and Frumence 2014), issues that impact on an individual's wellbeing across the life course.

While gendered norms are learned and enacted throughout the life course (Ridgeway and Correll 2004; Ryle 2011), it is in early adolescence—the period between 10 – 14 years—that intensification of gender learning takes place (Hill and Lynch 1983; Pettitt 2004). The intensification of gender learning is attributed to developmental changes taking place in early adolescence, including pubertal maturation and interest in romantic relationships (Pettitt 2004). It is in this period that gendered behaviors in romantic relationships begin to emerge. Gender norms vary across social and cultural contexts (Nyamhanga and Frumence 2014; Shefer et al. 2015),

hence, norms within contexts in which young adolescents live are likely to influence how they behave as sexual beings (Izugbara and Undie 2008; Shefer et al. 2015).

Whereas extensive research has been conducted on how gender norms affect girls' and women's health (Firestone et al. 2003; Nyamhanga and Frumence 2014; Ratele 2015), there is little, but growing, focus on the interrelationship between gender norms and men's sexual health (Addis and Mahalik 2003; Ratele 2015; Shefer et al. 2015), especially among early adolescents (10 – 14 years), also referred to as very young male adolescents (VYMA) (De Meyer et al. 2017; Gevers et al. 2013; Kågesten et al. 2016; Ray et al. 2012). A systematic review on gender attitudes in early adolescence found that boys endorse gender norms that promote inequalities between men and women (Kågesten et al. 2016). The review also recognizes the scarcity of data on gender norms in early adolescence noting that majority of studies reviewed were from North America and Western Europe (Kågesten et al. 2016).

Extant literature posits sexual development as a normative continuum from friendship to romantic relationships and ultimately to penetrative sexual relationships (Gevers et al. 2013; Tolman and McClelland 2011). It is in early adolescence that sexual development intensifies as young people experience pubertal changes (Galambos et al. 1990). Sexual behaviors in early adolescence are sporadic and unplanned and include normative and risky behaviors (Hensel et al. 2008). With some exceptions (Kabiru et al. 2010; Kagesten et al. 2018), most studies on sexual behaviors in sub-Saharan Africa have typically overlooked non-penetrative forms of sexual behaviors that are important markers of sexual experience (Folayan et al. 2015; Marston et al. 2013; McGrath et al. 2009), and thus little evidence on the prevalence of such behaviors among early adolescent boys exist.

Social and cultural expectations may prevent men from protecting themselves from sexual risks without jeopardizing their masculine identities (Izugbara and Undie 2008; Ratele 2015; Shefer et al. 2015). It is therefore important to understand, at an early age, how gender norms may affect males' sexual health and behaviors. This study investigates the association between endorsement of gender norms about romantic relationships and sexual experiences of VYMA living in Korogocho slum in Nairobi, Kenya's capital city. Acknowledging the wide range of sexual experiences in early adolescence (Kabiru et al. 2010; Kagesten et al. 2018), we include both penetrative and non-penetrative sexual experiences as markers of sexual development.

Methods

Study design and setting

This study used cross-sectional data collected in December 2018 from 426 VYMA aged 10 – 14 years living in households covered by the Nairobi Urban Health and Demographic Surveillance System (NUHDSS) in Korogocho informal settlement. Korogocho is one of the most congested slums in Nairobi with a population of about 200,000 in an area of 0.5 km^2 (Beguy et al. 2015). The slum is characterized by high levels of crime, social and physical insecurity, unemployment, overcrowding and limited access to health (Beguy et al. 2015). The NUHDSS provided an accessible sampling framework for this study.

Study population

The June 2018 NUHDSS enumeration list was used as a sampling frame to identify boys aged 10 to 14 years at the time of data collection. From the eligible 1,878 boys, a random sample of 550 boys, stratified by age, was drawn, of whom 426 (78%) were successfully interviewed. Of the 124 boys who were not reached, about half (n=65) had moved out of the surveillance area, 26 were

away for an extended period or their structures had been demolished, and 25 could be not traced. Two boys had died since the NUHDSS enumeration listing was done, one boy refused to be interviewed and two parents refused to have their child interviewed. Data from three boys were excluded from the analysis as they did not respond to the sexual behavior questions.

Data collection procedures

Data collection tools used in this study were developed during phase 1 of the Global Early Adolescent Study (GEAS). The GEAS is the first international study to focus on gender norms and sexuality among very young adolescents (Chandra-Mouli et al. 2017). The questionnaires covered information related to the individual, family, peers, school, neighborhood, media, adolescent physical and mental health, sexual behaviors, empowerment, future aspirations and gender norms about romantic relationships in early adolescence. Additional questions on household characteristics were administered to parents/guardians of participating boys. Data were collected electronically using android tablets loaded with SurveyCTO v12.2. Seventeen trained male interviewers administered the questionnaire using computer-assisted personal-interviews.

The process of data collection was structured. First, we identified households of sampled adolescents using the NUHDSS listing information. A parent/guardian in the household was approached, provided with information about the study and requested for permission to allow the sampled adolescent to participate in the study and also for the parent/guardian to be interviewed on household characteristics. If they gave permission, they were requested to provide written informed consent for their own participation and for their son/male ward to be interviewed. A household characteristics questionnaire was then administered to the parent/guardian, after which a card with a unique number and NUHDSS identification details were given. This card was proof

that the parent/guardian had given informed consent for the adolescent to participate in the study and they had been interviewed about their household characteristics. The sampled adolescent was required to bring this card to the interview site and if they assented to participate in the study, they would be interviewed. All the cards were collected after the adolescent interview. To provide a safe environment for conducting interviews and to ensure privacy and confidentiality during the interview process, all adolescent interviews were conducted at a local school within the NUHDSS site.

Measures

Outcome variables

The outcome of interest is sexual experience, conceptualized as having engaged in penetrative and/or non-penetrative sexual activities. Penetrative activities for the purpose of this study comprise penile-vaginal or penile-anal sexual intercourse while non-penetrative activities include being in love, spending time alone, holding hands, kissing, hugging/cuddling, touching, flirting over the phone, sharing sexual pictures of themselves and oral sex. While sexual intercourse is often used as the main marker of sexual experience (Gevers et al. 2013; Marston et al. 2013), several studies show that young people engage in other forms of non-penetrative sexual behaviors such as kissing, spending time alone, and cuddling among others, in a continuum or concurrently with sexual intercourse (Bankole et al. 2007; Kabiru et al. 2010; Kagesten et al. 2018). A significant proportion of adolescents engaging in non-penetrative sexual behaviors may not have engaged in any penetrative behaviors (Kabiru et al. 2010).

Sexual experience questions were structured such that they only captured experiences in romantic/sexual contexts. We first introduced the sexual behavior module as follows “Now we

would like to ask you about things that YOU might have done together with someone else as more than just friends (i.e. with a boyfriend/girlfriend).” This was followed by questions referring to sexual experiences such as, i) Have you ever spent time alone with someone you were in love with in a private space without any adults around? ii) Have you ever held hands with someone you were in love with? As sexual experiences among young people are sporadic (Bankole et al. 2007; Hensel et al. 2008), lifetime engagement (ever) rather than current (engaged in sexual activity in the last 12 months) was used.

Explanatory variables

The main explanatory variable was the multidimensional gender norms scale, comprising 46 items measuring individual beliefs about gender norms. Responses to the items were provided on a 5-point Likert-scale ranging from “agree a lot” (=1) to “disagree a lot” (=5). In addition, the questionnaire had a code for “don’t know” and “refused to answer” responses. In the present analysis, don’t know responses were combined with the neutral group of “neither agree nor disagree” while “refused to answer” responses were treated as missing data. Missing data ranged from 0% to 1% per gender norm item. Using factor analysis, we extracted four factors from the gender norms scales items corresponding to four domains of sexual double standards, heteronormative sexual relationships, stereotypical views about toughness and weakness in relationships and relational autonomy (see supplementary material). The scale’s overall reliability was high (Cronbach alpha=0.79), however two factors namely ‘relational autonomy’ and ‘stereotypical views about toughness’ had an internal consistency lower than 0.6 (0.543 and 0.485 respectively) and were not included in subsequent analyses.

Data on a range of exogenous variables, which based on existing literature (Bankole et al. 2007; Houck et al. 2012; Kagesten et al. 2018) are associated with adolescent sexual behavior, were collected. They included age, ethnicity, religion, place of birth, pubertal maturation (which was self-assessed through questions about onset of genital growth, hair growth and/or voice change for boys), household size, number of rooms in the house, sleeping arrangements, parental survivorship, age of the household head, grade for age, and school absenteeism during the past month. Two exogenous variables (grade for age and school absenteeism during the past month) had missing values for two boys who were out of school at the time of the study.

Statistical analysis

All descriptive analyses were performed using STATA version 15 (StataCorp, College Station,TX) and all regressions were performed using Mplus version 7.4 (Muthén and Muthén 1998–2015). Having determined the factor structure of the gender norms scale (see supplementary material), we calculated a mean score on each of the factors (subscales) such that higher scores indicated greater endorsement of gendered attitudes in romantic relationships and compared these mean scores between those reporting engagement in sexual activities and those who did not. Within the structural equation modeling (SEM) framework, (see for example Kline (2015)), the sexual experiences outcome was regressed on the gender norms factors as well as on the selected exogenous variables. Exogenous variables to be adjusted for in the SEM model were selected based on univariate multiple probit model: exogenous variables found to be significant at $p \leq 0.1$ in the univariate multiple model (data not shown) were included in the SEM model. Age was included even if it was not significant as we wished to adjust for its effect. As such seven exogenous variables; age, place of birth, pubertal maturation, sleeping arrangements, age of household head, grade for age and school absenteeism were adjusted for in the SEM model. Confirmatory factor

analysis (CFA) and SEM models were identified by setting the scales of the factors equal to one; and standardized estimates were requested.

For both the CFA and SEM, a probit link function was assumed as it is also the default in Mplus for categorical data. Similar to CFA, the SEM model fit was evaluated using the comparative fit index (CFI), Tucker-Lewis index (TLI), root mean squared error of approximation (RMSEA), and standardized root mean square residual (SRMR). A reasonably good fitting model is obtained when SRMR is ≤0.08, RMSEA is ≤0.06, and CFI and TLI are ≥0.95. A model with CFI- and TLI-values of at least 0.90 is deemed acceptable (Hu and Bentler 1999). We also report here that the factor structure of the gender norms scale reported in Table S2 was not distorted by including structural relations in the model.

Results

Descriptive findings

Table 1 shows the sexual experiences of the participants. In total, 24% of boys had ever been in love, 19% had ever been in a romantic relationship and 22% reported at least one sexual experience. About 7% of boys reported sexual intercourse. Among those who reported sexual experience (n=93), experiences ranged from spending time alone with someone they were in love with (90%) to anal sex (3%).

Table 1: Sexual and romantic experiences among very young male adolescents in Korogocho slums, Kenya, 2018

Characteristic	% (col)	n [Unweighted]
Ever been in love (N=426)	**23.9**	**102**
Ever been in a relationship (N=426)	**19.3**	**82**
Relationship status (n=82)		
In a current relationship	42.7	35
In a past relationship	57.3	47
Sexual experience (N=426)	**21.8**	**93**
Type of sexual experience (n=93)		
Spent time alone	96.8	90
Held hands	46.2	43
Hugged/cuddled	35.5	33
Kissed	11.8	11
Flirted/shared sexual picture	5.4	5
Touched/fondled private parts	26.9	25
Sexual intercourse	31.2	29
Oral sex	5.4	5
Anal sex	3.2	3

Table 2 presents boys' sexual experience by their background characteristics. The proportion of boys reporting any sexual activity varied by age, ethnicity, religion (denomination), pubertal maturation, sleeping arrangements, grade for age and school absenteeism, factors that were all found to be significantly associated with sexual experience at bivariate level. Place of birth and age of the household head were found to be marginally significant (90% confidence interval).

Table 2: Proportions of very young male adolescents living in Korogocho slums by background characteristics, Kenya 2018.

Characteristic	**Total (N)**	**Number ever had sexual experience**	**Percent (row) ever had sexual experience**	**P-value**
Age				**0.019**
10 - 12	260	47	18.1	
13 - 14	166	46	27.7	
Ethnicity				**0.026**
Kikuyu	135	35	25.9	
Luo	107	30	28.0	
Luhya	64	14	21.9	
Somali/Garre/Borana/Gabra/Banna	90	10	11.1	
Others	30	4	13.3	
Religion (denomination)				**0.007**

Christian	307	76	24.8	
Muslim	96	10	10.4	
None	23	7	30.4	
Place of birth				0.085
Nairobi	315	75	23.8	
Outside Nairobi	111	18	16.2	
Pubertal maturation				**<0.001**
Started puberty	197	58	29.4	
Not started puberty	229	35	15.3	
Household size				0.336
2 - 5 persons	234	47	20.1	
5 persons and above	192	46	24.0	
Household rooms				0.123
One room	182	35	19.2	
Two rooms	177	47	26.6	
Three or more rooms	67	11	16.4	
Sleeping arrangements				**<0.001**
1 – 2 people	71	26	36.6	
3 – 4 people	184	26	14.1	
5 or more people	171	41	24.0	
Parental survivorship				0.704
Both parents alive	367	79	21.5	

One/both parents dead	59	14	23.7	
Age of household head				0.080
Below 50 years	241	60	24.9	
50 years and above	185	33	17.8	
Grade for age				**0.041**
Recommended grade or above	283	53	18.7	
Below recommended grade	141	39	27.7	
School absenteeism				**0.037**
Never missed school	233	42	18.0	
Missed school one or more times	191	50	26.2	

Endorsement of gender norms about romantic relationships

As shown in Table 3, there was low endorsement to the sexual double standard scale, with no major differences between those with and without sexual experience. Low endorsement of sexual double standard score means that boys did not agree with the conventional belief that girls and boys should be judged differently relative to the same sexual behavior. While there was overall high endorsement of heteronormativity in romantic relations, boys who reported no sexual activity were more likely to endorse heteronormativity in romantic relationships than those reporting any sexual activity. High endorsement of heteronormative romantic relationships implies that boys supported beliefs of male dominance and passivity of females in romantic relationships

Table 3. Endorsement of gender norms about romantic relationships by sexual experience among very young male adolescents in Korogocho slums, Kenya 2018

Gender norms domains	Ever had sexual experience	Never had sexual experience
Sexual double standard (Mean score)	2.3	2.4
Heteronormative romantic relationships (Mean score)	3.1	3.9

Associations between sexual experiences and gender norms

Table 4 shows the associations between the gender norms factors and VYMA's sexual experiences, after adjusting for age of the boys, place of birth, pubertal maturation, sleeping arrangements, age of household head, grade for age, and school absenteeism using SEM. The heteronormative romantic relationships subscale had a significant inverse association with sexual experience meaning that boys who endorsed norms of male dominance in romantic relationships were less likely to have had a sexual experience. The sexual double standards subscale was not significantly associated with sexual experience.

Boys who had not experienced any pubertal changes, those below the recommended grade for age and those who had missed school at any time during the six months preceding the survey were more likely to report sexual activity. On the other hand, being born outside Nairobi, sleeping in a room with two or more people and living in a household where the head was aged 50 years or older was associated with a lower likelihood of reporting any sexual activity. The SEM model provided an acceptable fit to the data [fit statistics: CFI= 0.90; TLI= 0.90, RMSEA= 0.05 (0.04-0.06), WRMR= 1.34] (Table S3).

Table 4: Association between gender norms endorsement domains and sexual behavior of very young male adolescents in Korogocho slums, Kenya 2018

Parameter	**Sexual experience**		
	Estimate	**Standard error**	**P-value**
Gender norms factors			
Sexual double standard	0.045	0.065	0.490
Normative romantic relationships	-0.384	0.063	**<0.001**
Age			
10-12	Ref		
13-14	0.128	0.154	0.406
Place of birth			
Nairobi	Ref		
Outside Nairobi	-0.288	0.145	**0.047**
Pubertal maturation			
Started puberty	Ref		
Not started puberty	0.330	0.146	**0.024**
Sleeping arrangements			
1 – 2 people	Ref		
3 – 4 people	-0.644	0.176	**<0.001**
5 or more people	-0.299	0.177	0.091

Age of household head			
Below 50 years	Ref		
50 years and above	-0.295	0.143	**0.039**
Grade for age			
Recommended grade or above	Ref		
Below recommended grade	0.296	0.135	**0.028**
School abseentism (past month)			
Never missed school	Ref		
Ever missed school	0.348	0.139	**0.012**

Discussion

The current study examined the association between gender norms and sexual experiences among VYMA aged 10 – 14 years living in Korogocho slums in Nairobi, Kenya. Firstly, we examined sexual experiences among VYMA and found that about one in five boys reported penetrative or non-penetrative sexual experiences with the majority reporting non-penetrative sexual experiences. This finding suggests that young boys begin being romantically involved at an early age, confirming findings from past studies globally (Bankole et al. 2007; Kagesten et al. 2018) showing that young boys may engage in a diverse range of intimate or romantic activities, even if they report that they have never had penetrative sexual intercourse. Early involvement in intimate or romantic activities may increase the likelihood of sexual risk behaviors that could ultimately lead to poor health outcomes (Kagesten et al. 2018; Kugler et al. 2017; Shefer et al. 2015). For

instance, a study conducted among male and female students in 7^{th} – 12^{th} grades in the US found that early sexual intercourse predicted having more than one partners in the year preceding the study (Kugler et al. 2017).

Secondly, we examined the extent to which VYMA endorsed gendered beliefs about romantic relationships and examined the association between the gender constructs and sexual behavior. Our findings showed two constructs that were relevant to this study namely sexual double standards and heteronormative romantic relationships. Sexual double standards measured the extent to which boys endorsed beliefs that boys and girls should be judged differently relative to the same sexual behaviors, while heteronormative romantic relationships measured the belief about male dominance and passivity of females in romantic relationships. While low endorsement of sexual double standard resonates with evolving social expectations towards sexual permissiveness (Xiayun et al. 2012), high endorsement of heteronormative romantic relationships shows that social norms governing how men and women relate in romantic relationships exist and is a portrayal of gender dynamics and power imbalances in romantic and sexual relationships (De Meyer et al. 2017).

The inverse relationship between endorsement of heteronormative romantic relationships and sexual experiences at multivariate level even when we controlled for exogenous variables is important for adolescent research. This finding contradicts past research suggesting that traditional beliefs about male dominance in romantic relationships are associated with early sexual debut (Ampofo 2001) and could be interpreted in different ways. First, while VYMA exhibit an understanding of social expectations about romantic relationships and the power dynamics in heterosexual relationships, they are yet to project these beliefs into their sexual activities.

Secondly, with majority of gender equality programs targeting girls and women (Birdthistle et al. 2018; Kågesten et al. 2016), it is probable that girls are empowered to make informed and autonomous decisions about their sexual activities, and thus diminishing male dominance in sexual relationships. As such, as they are involved in sexual and romantic relationships, boys may re-assess gender norms and adapt their values and personal beliefs.

The finding that boys who were born outside Nairobi, majority of whom were born in rural areas of Kenya, were less likely to report sexual activity is noteworthy. While we did not find any available evidence on differentials in sexual behaviors among adolescent boys in urban slums by migration status, studies comparing sexual behaviors of adolescent boys in rural and urban areas report mixed findings (Folayan et al. 2015; Ray et al. 2012). For instance, a study among rural and urban adolescents in India found that urban boys were less likely to be involved in penetrative sexual activity (Ray et al. 2012). On the other hand, a study conducted in rural and urban South Africa found that urban adolescents were more likely to have had a non-penetrative sexual experience compared to rural adolescents (Peltzer 2006). Though Peltzer (2006) combined data from both male and female adolescents, the findings are important in defining rural-urban differentials in sexual outcomes among adolescents. Rural-urban differentials in sexual socialization could explain our findings that boys born in urban informal settlements are likely to start engaging in sexual activity early (Folayan et al. 2015). Folayan et al. (2015) argue that availability and accessibility of sexually explicit media in urban settings may expose young people to social pressure to engage in sexual activity earlier than their rural counterparts. Moreover, the harsh conditions in urban slums in Kenya, which includes poor housing and poverty, exposes young people to sexual activity at an early age (De Meyer et al. 2017).

Our study also found that boys who had not started puberty were more likely to have had a sexual experience compared to those who reported pubertal changes. This finding suggests that some boys begin to engage in sexual activities before they reach puberty. Past findings on pubertal timing and sexual experiences of adolescent boys are mixed (Bello et al. 2017; Halpern et al. 1993). Using panel data, Halpern et al. (1993) argue that the association between pubertal changes and sexual experiences is not solely based on changes in hormonal levels but also due to social stimuli. Early exposure to sexual activity and content may exert pressure on VYMA to engage in sexual activity. De Meyer et al. (2017) found that adolescents in urban slums in Nairobi were exposed to sexual activity at an early age. Our findings underscore the need for programs to target pre-pubertal young people who live in contexts that expose them to sexual risks at an early age.

Boys who slept in a room with more than two people were less likely to have had a sexual experience. Dodoo et al. (2007) argue that when young people share a sleeping room with adults, they are likely to be socialized to early sexual activity due to lack of the privacy necessary for the adults to engage in sexual activity. Despite the early socialization, we also argue that sharing a room with more people does not offer young boys the privacy needed to engage in sexual activity within the household. The finding that living in households headed by older persons (>50 years) was associated with a lower likelihood of engaging in sexual activity may point to differentials in parental monitoring and intergenerational gaps in the socialization processes. Parental monitoring and supervision has been found to be an important influence on adolescents' sexual behaviors (Telzer et al. 2018), and monitoring and supervision styles are likely to differ between older and younger parents. While we did not find existing literature on association between age of household head and sexual experiences among adolescent boys, Izugbara (2015) found that girls living in households with older adult heads were less likely to report a pregnancy.

Boys who were below their recommended grade for age and those who had missed school had a higher likelihood of engaging in sexual activity. Literature suggests that schooling is a protective factor and is associated with later sex debut among boys (McGrath et al. 2009). School absenteeism may provide young boys with unsupervised time away from school, where opportunities to engage in sexual activity could arise. Being below recommended grade for age is often seen as an indicator for poor academic performance. Our finding that being below recommended grade for age was associated with a higher likelihood for sexual experience confirms past findings that young people who are doing well in school are less likely to engage in risky sexual behavior (Houck et al. 2012).

Our findings should be interpreted in light of the following limitations. First, this study focused on VYMA living in an informal urban settlement and thus generalization of these findings is limited to populations living in similar settings. Second, this study used cross-sectional data and so, causal relationships between endorsement of heteronormative beliefs and sexual experiences cannot be determined. Third, measures used in this study were self-reported, with a possibility of social desirability bias. While data collectors were well trained to conduct interviews ensuring utmost privacy and confidentiality, there still existed potential to under-report or over-report some of the measures, especially on gender beliefs and sexual experiences.

Conclusion

The inverse association between endorsement of heterosexual gender beliefs and sexual activity highlight the need for further research to understand how gender norms evolve as young boys transition through adolescence to adulthood and how these changes impact on sexual behaviors in order to inform programming particularly in settings like urban slums where young people may be

at high risk for early sexual debut. Early adolescence presents a window of opportunity for early interventions to promote gender equitable norms and healthy sexual behaviors.

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Suplementary materials

International Journal of Public Health

Gender norms about romantic relationships and sexual experiences among very young male adolescents in Korogocho slum in Kenya

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Factorial structure of the gender norms scale

For the gender norm scale, we first performed an exploratory factor analysis (EFA) to explore the factor structure underlying the 46 gender norms scale items. The EFA was likelihood-based using a robust weighted least squares estimation method with Geomin rotation. Factors were retained on the basis of the Kaiser's 'eigenvalue rule' which suggests retaining eigenvalues larger than 1. In addition, we also observed the scree plot. A sharp drop in the scree plot signals that subsequent factors are ignorable as the amount of information in each successive factor is less than in its predecessors. Internal consistency of items on a factor was measured using Cronbach's alpha coefficient. A minimum Cronbach's alpha of 0.60 is considered adequate. A factor loading of ≥0.4

was considered salient. If an item loaded on more than one factor, it was considered to load on the factor with the higher standardized loading. Thus, item cross-loadings were fixed to zero, else the model would be non-identified resulting into computational problems. Items that did not load well on any of the identified factors were dropped. Next, a confirmatory factor analysis (CFA) was performed to validate the factor structure proposed by the EFA.

Seventeen items did not load well on any factor; that is, they had a factor loading <0.4 on all factors and were dropped from the analysis. Thus, the analyses were performed on 30 items. Supplementary Table S1 presents a complete list of items which were dropped from the analysis.

Using EFA, four factors were extracted, corresponding to four domains of sexual double standards, heteronormative sexual relationships, stereotypical views about toughness and weakness in relationships and relational autonomy. The four domains accounted for 49% of the variability in the 29 items. Model fit was evaluated using the comparative fit index (CFI), Tucker-Lewis index (TLI), root mean squared error of approximation (RMSEA), and standardized root mean square residual (SRMR). A reasonably good fitting model is obtained when SRMR is ≤0.08, RMSEA is ≤0.06, and CFI and TLI are ≥0.95. A model with CFI- and TLI-values of at least 0.90 are deemed acceptable. The 4-factor solution summarized the 29 items reasonably well (fit statistics: CFI= 0.967; TLI= 0.955, RMSEA= 0.057 (0.052-0.063), SRMR= 0.055; Table S2). The EFA solution is presented in supplementary Table S2.

Thirteen items (i.e., items 1, 3, 5, 7, 9, 11, 12, 14, 15, 17, 21, 23, 30) loaded on the ‘sexual double standard’ factor which measured the extent to which boys and girls were judged differently relative to the same sexual behaviors; 6 items (i.e., items 6, 8, 18, 20, 22, 27) loaded on the ‘heteronormative romantic relationships’ factor, measuring the beliefs that boys should play an

active role and dominate romantic relationships while girls should be passive; 7 items (i.e., items 4, 10, 13, 16, 24, 25, 28) loaded on the 'relational autonomy' factor, a construct that measured the extent to which the belief that boys had more freedom in romantic relationships was endorsed; and 3 items (items 40 – 42) loaded on the 'stereotypical views about toughness' factor measuring the belief that male physical strength is important in romantic relationships

The CFA model results verified the hypothesized factor structure. Table S4 shows the standardized factor loadings and factor correlations. The scale's overall reliability was high (Cronbach alpha=0.79), however two factors namely 'relational autonomy' and 'stereotypical views about toughness' had an internal consistency lower than 0.6 (0.543 for the 'relational autonomy' factor and 0.485 for the 'stereotypical views about toughness') and were not included in subsequent analysis. (Table S4).

Table S1. Gender norm scale items that did not load well on any factor and were thus dropped from the analysis, Kenya 2018

Gender norm scale items
2. A boy and a girl your age should be able to spend time together alone if they want to
19. Boys feel they should have girlfriends because their friends do
26. In general, if an adolescent girl says "no" to sex her boyfriend will dump her
29. It's the girl's responsibility to prevent pregnancy
31. Girls should avoid playing sports with boys because they get hurt easily
32. Boys should be raised tough so they can overcome any difficulty in life

33. Girls should avoid raising their voice to be lady like

34. Boys should always defend themselves even if it means fighting

35. Girls are expected to be humble

36. Girls should always fight back if boys try to take advantage of them

37. Girls need their parents protection more than boys

38. Boys should be able to show their feelings without fear of being teased

39. Boys who behave like girls are considered weak

43. Boys and girls should be equally responsible for household chores

44. A woman's role is taking care of her home and family

45. A man should have the final word about decisions in the home

46. A woman should obey her husband in all matters

Table S2. Exploratory factor analysis solution for the gender norms scale, Kenya 2018

Items	**Factors**			
	F1	**F2**	**F3**	**F4**
1. A girl will lose interest in studying if she has a boyfriend	0.520*	-0.285*	0.014	0.022
3. Girls your age often get into "trouble" when they have boyfriends	0.619*	-0.162*	-0.154*	0.083
4. A boy should be able to have a girlfriend if he wants to	-0.042	0.210*	0.554*	0.177*
5. Boys have girlfriends for fun more than love	0.446*	0.090	0.081	0.035

6. It’s normal for a boy your age to want a girlfriend	0.114*	0.478*	0.200*	0.025
7. Girls who have boyfriends are irresponsible	0.564*	-0.353*	0.004	0.058
8. Boys should have girlfriends to discover love	0.012	0.427*	0.349*	0.026
9. Boys like girls who wear revealing clothes	0.471*	0.071	0.099	-0.044
10. A girl should be able to have a boyfriend if she wants to	-0.023	0.248*	0.549*	0.076
11. Girls are the victims of rumors if they have boyfriends	0.600*	0.070	-0.110	0.071
12. Boys tell girls they love them when they don't	0.513*	0.059	0.045	-0.124*
13. A boy should have more than one girlfriend to gain experience	-0.238*	0.268*	0.407*	0.099
14. Adolescent girls should avoid boys because they trick them into having sex	0.582*	0.006	-0.187*	0.071
15. Boys have girlfriends to show off to their friends	0.536*	0.022	0.134*	-0.045
16. A girl should have more than one boyfriend to gain experience	-0.202*	0.287*	0.435*	0.140*
17. Boys generally compete for the prettiest girls	0.562*	0.281*	0.018	-0.043
18. A girl can have a boyfriend as long as she continues working well in school	0.016	0.879*	-0.068	-0.034
20. A boy can have a girlfriend as long as he continues working well in school	0.029	0.900*	-0.018	0.011
21. Adolescent boys lose interest in a girl after they have sex with her	0.364*	0.161*	0.048	-0.147*
22. It’s normal for a girl to want a boyfriend at your age	0.121*	0.489*	0.222*	0.041
23. Adolescent boys fool girls into having sex	0.589*	0.012	0.111	-0.063
24. It is ok for an adolescent girl to have sex as long as she avoids getting pregnant	-0.010	0.410*	0.417*	-0.009

25. In general, a girl should only have sex with someone she loves	0.206*	-0.021	0.772*	-0.013
27. It is ok for an adolescent boy to have sex as long as he avoids getting a girl pregnant	0.005	0.405*	0.390*	-0.092
28. In general, a boy should only have sex with someone he loves	0.147	-0.112	0.835*	-0.089
30. Girls should be proud of their bodies as they become women	0.554*	0.002	-0.057	0.068
40. It's important for boys to show they are tough	0.060	-0.020	0.147*	0.452*
41. It is okay to tease a girl who acts like a boy	0.024	0.023	0.000	0.861*
42. It is okay to tease a boy who acts like a girl	0.007	-0.007	0.013	1.041*
Factor correlations				
F1	1			
F2	0.123*	1		
F3	0.110	0.410*	1	
F4	0.051	0.131*	0.138*	1

Table S3. Fit statistics for the exploratory factor analysis and confirmatory factor analysis for the gender norm scale items and the structural equation model, Kenya 2018

Number of factors	CFI[α]	TLI[β]	RMSEA[∞] (90%CI)	SRMR[δ]
EFA				
1	0.65	0.63	0.16 (0.16-0.17)	0.17
2	0.82	0.79	0.12 (0.12-0.13)	0.12
3	0.94	0.92	0.07 (0.07-0.08)	0.07
4	0.97	0.96	0.06 (0.05-0.06)	0.06
5	0.98	0.97	0.05 (0.04-0.05)	0.05
CFA				WRMR
4	0.91	0.89	0.06 (0.06-0.07)	1.49
SEM	0.90	0.90	0.05 (0.04-0.06)	1.34

Note: [α]CFI(Comparative fit index) compares the fit of a target model to the fit of an independent, or null, model; [β]TLI(Tucker-Lewis index) is an incremental fit index, with a higher value indicating a better model fit; [∞]RMSEA (root mean squared error of approximation) is a parsimony-adjusted index of the difference between observed covariance matrix per degree of freedom and the hypothesized covariance matrix; [δ]SRMR (standardized root mean square residual) gives the square-root of the difference between the residuals of the sample covariance matrix and the hypothesized model

Table S4. Confirmatory factor analysis model for the gender norms scale among very young male adolescents in Korogocho slums, Kenya, 2018

Items	Factors			
	Sexual double standard	**Heteronormative romantic relationships**	**Relational autonomy**	**Stereotypical views about toughness and weakness**
1. A girl will lose interest in studying if she has a boyfriend	0.427			
3. Girls your age often get into "trouble" when they have boyfriends	0.516			
5. Boys have girlfriends for fun more than love	0.510			
7. Girls who have boyfriends are irresponsible	0.435			
9. Boys like girls who wear revealing clothes	0.534			
11. Girls are the victims of rumors if they have boyfriends	0.590			
12. Boys tell girls they love them when they don't	0.537			

14. Adolescent girls should avoid boys because they trick them into having sex	0.525	
15. Boys have girlfriends to show off to their friends	0.580	
17. Boys generally compete for the prettiest girls	0.657	
21. Adolescent boys lose interest in a girl after they have sex with her	0.421	
23. Adolescent boys fool girls into having sex	0.613	
30. Girls should be proud of their bodies as they become women	0.525	
6. It's normal for a boy your age to want a girlfriend		0.634
8. Boys should have girlfriends to discover love		0.683
18. A girl can have a boyfriend as long as she continues working well in school		0.783
20. A boy can have a girlfriend as long as he continues working well in school		0.853
22. It's normal for a girl to want a boyfriend at your age		0.660

27. It is ok for an adolescent boy to have sex as long as he avoids getting a girl pregnant	0.673		
4. A boy should be able to have a girlfriend if he wants to		0.710	
10A girl should be able to have a boyfriend if she wants to		0.716	
13. A boy should have more than one girlfriend to gain experience		0.548	
16. A girl should have more than one boyfriend to gain experience		0.618	
24. It is ok for an adolescent girl to have sex as long as she avoids getting pregnant		0.713	
25. In general, a girl should only have sex with someone she loves		0.748	
28. In general, a boy should only have sex with someone he loves		0.699	
40. It's important for boys to show they are tough			0.526
41. It is okay to tease a girl who acts like a boy			0.900
42. It is okay to tease a boy who acts like a girl			1.001

Factor correlations

Sexual double standard	1			
Normative romantic relationships	0.223	1		
Stereotypical views about toughness and weakness	0.095	0.754	1	
Relational autonomy	0.074	0.174	0.256	1
Cronbach Alpha	0.648	0.715	0.543	0.485

Note: Data are standardized factor loadings and factor correlation

Addendum: Correction to the published article

Correction to: Gender norms about romantic relationships and sexual experiences among very young male adolescents in Korogocho slum in Kenya (https://doi.org/10.1007/s00038-020-01364-9)

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The authors would like to correct an error in the publication of the original article. The error is described below and correct details provided:

Error:

On page 503, Table 4, the labels on pubertal maturation variables were swapped. This resulted in an erroneous interpretation of the finding on page 502 and discussion of the finding on 503 and 504.

Correction:

Table 4: Association between gender norms endorsement domains and sexual behavior of very young male adolescents in Korogocho slums, Kenya 2018

Parameter	**Sexual experience**		
	Estimate	**Standard error**	**P-value**
Gender norms factors			
Sexual double standard	0.045	0.065	0.490
Normative romantic relationships	-0.384	0.063	**<0.001**
Age			
10-12	Ref		
13-14	0.128	0.154	0.406
Place of birth			
Nairobi	Ref		
Outside Nairobi	-0.288	0.145	**0.047**
Pubertal maturation			
Not started puberty	Ref		
Started puberty	0.330	0.146	**0.024**
Sleeping arrangements			
1 – 2 people	Ref		
3 – 4 people	-0.644	0.176	**<0.001**
5 or more people	-0.299	0.177	0.091
Age of household head			
Below 50 years	Ref		
50 years and above	-0.295	0.143	**0.039**

Grade for age			
Recommended grade or above	Ref		
Below recommended grade	0.296	0.135	**0.028**
School absenteeism (past month)			
Never missed school	Ref		
Ever missed school	0.348	0.139	**0.012**

Results: Associations between sexual experiences and gender norms

Page 502: Second paragraph, first sentence

Boys who had experienced any pubertal changes, those below the recommended grade for age and those who had missed school at any time during the 6 months preceding the survey were more likely to report sexual activity.

Discussion

Page 503, last paragraph extending to page 504

First sentence: Our study also found that boys who reported pubertal changes were more likely to have had a sexual experience compared to those who reported no pubertal changes suggesting that pubertal changes are associated with initiation of sexual activity. Sexual development is a major component of pubertal maturation (10, 133)

Page 504, first paragraph (same paragraph as above), last sentence

Our findings underscore the need for programs to target young boys as they get into puberty especially those that live in contexts that expose them to sexual risks at an early age

Additional references

Fortenberry JD (2013) Puberty and adolescent sexuality. Hormones and Behavior 64(2):280-287 doi:https://doi.org/10.1016/j.yhbeh.2013.03.007

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4.4. Parent and peer contexts and boys' gender beliefs about romantic relationships

This section presents the results of a manuscript titled "Parental and peer influence on gender beliefs about romantic relationships among very young male adolescents in Korogocho informal settlement, Nairobi, Kenya" The manuscript has been submitted to PLOS ONE journal

Parental and peer influence on gender beliefs about romantic relationships among very young male adolescents in Korogocho informal settlement, Nairobi, Kenya.

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Abstract

Purpose

Inequitable gender beliefs have been shown to impact on boys' safe transitions through adolescence with potential negative implications for their behaviour, health and wellbeing. In the present study, we examined whether parental and peer characteristics are associated with endorsements of inequitable gender beliefs among boys aged 10 – 14 years living in Korogocho informal settlement in Nairobi.

Methods

We conducted a cross-sectional survey with a random sample of 426 boys selected from the Nairobi Urban Health and Demographic Surveillance System in Korogocho. Structural equation modelling was used to assess the association between parental and peer characteristics and gender beliefs among the young boys.

Results

Being close to the father was significantly associated with a higher likelihood of endorsing gender beliefs about sexual double standards—beliefs that girls and boys should be judged differently for the same sexual behavior—compared to not being close. Compared to no/low comfort, having average or high comfort discussing with caregiver about worries and problems increased the likelihood of endorsing heteronormative beliefs about romantic relationships—beliefs about male dominance in such relationships. Caregiver's approval of romantic relationships in early adolescence lowered the likelihood of endorsing heteronormative beliefs about romantic relationships. Having friends who had engaged in kissing, touching sexually, or sex was significantly associated with a lower likelihood of endorsing sexual double standard beliefs

compared to not having such friends. Boys with up to three female friends and those with friends who were in romantic relations were less likely to endorse heteronormative gender beliefs about romantic relationships compared to those who had none. In contrast, boys with up to three close male friends were more likely to endorse heteronormative beliefs about romantic relationships than those with no close male friends.

Conclusion

Our findings show that parents and peers have both positive and negative influence on very young adolescent boys' gender beliefs about romantic relationships and highlight the importance of engaging parents and peers in gender-transformative interventions for development of positive gender beliefs

Background

Gender socialization—a process in which individuals develop their own gender identity by exploring, negotiating and consolidating beliefs, practices and attitudes associated with being male (masculine) or female (feminine) (1-3)—is a key developmental process in early adolescence. Past studies on gender socialization have mainly focused on qualitative exploration of gender norms, beliefs and attitudes. Findings from past studies suggest that gender learning is context-based and begins at an early age (4-7) with parents and peers considered as socializing agents likely to influence the foundations of gendered beliefs and attitudes (8-12). Associated with their developmental stage—which encompasses biological, social, cognitive and physical developments—young boys may be prone to external influences and pressures and are at increased risk of adopting masculine ideologies that are unhealthy (13).

Studies among older adolescents and men suggest that cultural and social expectations and expressions of masculinity in many settings may expose men and boys to health risks including risky sexual behaviors and poor sexual health outcomes (14-17). In a study conducted among South African men aged 18 – 49 years, perpetration of sexual violence was associated with less equitable views on gender relations, including sexual entitlement (18). Another study examining the association between gender norms and sexual behaviors of Jamaican men aged 19 – 54 years found that men with moderate and high support for inequitable gender norms were more likely to engage in risky sexual behaviors including multiple sex partnerships and unprotected sex with a non-regular partner (19).

In the current study, we examine the association between parental and peer characteristics and gender beliefs about romantic relationships among boys aged 10 – 14 years in Korogocho informal settlement, in Nairobi, Kenya. Parents generally demonstrate typical gender behaviors for men and

women and therefore may be considered primary gender role models for their children (12, 20, 21), relaying gender ideals and expectations directly or indirectly (7, 12, 22)

Parental characteristics have been associated with masculinity development among young boys (4, 11, 12, 20, 23). For example, in a longitudinal study conducted among children aged 6 years in northeastern United States of America to assess the role that parents' gendered ideologies and behavior play in development of gender role-attitudes, boys whose fathers endorsed egalitarian beliefs held fewer stereotypes about the opposite gender than those whose fathers endorsed gender inequitable beliefs (12).

Peer relationships and influences are also central in shaping masculinities (6, 8-10). In a systematic review on factors that shape gender attitudes in early adolescence globally, Kågesten, Gibbs, Blum et al. (23) argued that peers are central in establishing and upholding gender norms with male peer groups enforcing competition, toughness and heterosexual prowess, findings also reported by Epstein and Ward (24). In a study assessing the degree to which peer gender norms are associated with perpetration of intimate partner violence (IPV) among Tanzanian men aged 15 years and older, Mulawa, Reyes, Foshee et al. (25) found that peer network gender norms were associated with the risk of IPV perpetration and argued that peer networks characterized by inequitable gender norms may reflect a normative social environment to demonstrate male dominance and power within their romantic relationships.

A large pool of existing literature on parental and peer influences on gender beliefs comes from studies involving older male adolescents and adult men with critical evidence gaps among very young male adolescents (ages 10 – 14 years), especially in the sub-Saharan African region. Very young male adolescents are at a critical stage of human development (1, 26) and are prone to social influences likely to impact their gender beliefs and behaviors with negative implications for their

health and wellbeing (14, 17, 27). The challenging social contexts in urban informal settlements such as high rates of unemployment, peer networks and a dominant youth masculinity (28-30), may increase boys' vulnerability to endorsing inequitable gender norms as a way of exerting dominance in relationships (29, 31).

Theoretical framing

We employed the Bioecologial Theory of Development, developed by Bronfenbrenner (32) and Connell's theory of gender and power (33, 34) to examine the parental and peer characteristics associated with boys' gender beliefs about romantic relationships in early adolescence. The bioecological theory examines human development as a process influenced by interactions between the individual and his environment. The theory identifies five contexts within an of the ecosystem—micro-, meso-, exo-, macro- and chrono-systems that are likely to influence behaviour. Parents and peers form part of the microsystems—proximal factors likely to influence gendered beliefs (32).

Connell's theory of gender and power is important in understanding how masculinities are socially structured (33). By focusing on gender norms about sexual and romantic relationships, this study hinges on what Connell refers to as "*gendered division of power"* in reference to authority, control and coercion in sexual relationships (33).

Methods

Study design, setting and sample

We conducted a cross-sectional study in December 2018 among 426 boys aged 10 – 14 years living in households covered by the Nairobi Urban Health and Demographic Surveillance System

(NUHDSS) in Korogocho informal settlement. Details of the study methodology (study, design, population and data collection procedures) are described by Maina, Orindi, Sikweyiya et al. (35).

Measures

Outcome variable

Gender belief: The development of the gender belief factors is described elsewhere (35). We focus here on two gender domains of sexual double standards (Cronbach's alpha of 0.65) and heteronormative gender beliefs about romantic relationships (Cronbach's alpha of 0.72) assessing support for inequitable gender beliefs in romantic relationships among very young male adolescents participating in the study. The two domains were measured using 19 items on a 5-point Likert-scale ranging from "agree a lot" (=1) to "disagree a lot" (=5) such that a higher score meant higher endorsement of inequitable gender norms in romantic relationships. Supplementary Table S1 lists the items included in each gender domain. High endorsement of gender beliefs about sexual double standards in romantic relationships meant that boys agreed with the beliefs that girls and boys should be judged differently for the same sexual behavior. High endorsement of heteronormative beliefs about romantic relationships meant that boys believed in male dominance and female passivity in heterosexual romantic relationships.

Explanatory variables

Background characteristics: Background characteristics included age, ethnicity, religion and self-reported pubertal maturation. Boys were regarded as mature if they reported that they had experienced any of the following bodily changes; enlargement of penis/testicles, growth of pubic hair, voice deepening, development of a moustache/beard, or having a wet dream.

Parental factors: We asked adolescents who their primary caregiver was; that is, the person who mostly took care of the adolescent boy. We also enquired about parental survivorship. Parental connection was measured using i) a composite score assessing how comfortable boys were talking with their primary caregiver about things that worried them, changes in their bodies and problems with romantic partners, ii) whether boys felt close to their mothers/main female caregiver, iii) whether boys felt close to their fathers/main male caregiver. Parental monitoring was a composite measure which included boys' views on whether their primary caregiver knew who their friends were by name, their grades or how they were doing at school, and where they usually were. Boys were also asked if their primary caregiver approved of them having a romantic partner at that time.

Peer context: We asked adolescents about the number of close male and female friends they had and frequency of time spent with friends. Peer norms were measured using questions that assessed boys' perceptions about the number of their friends who perceived romantic relationships as important, having sex as important, were involved in romantic relationships, and who had either kissed, touched/been touched sexually or had had sex. Responses were categorized as none and some/all. We also asked adolescents how many of their friends smoked cigarettes, drank alcohol or used illicit drugs. Responses were categorized as none or some/all.

Analysis

First, we described the study participants by their background, parental and peer characteristics and gender beliefs score. Parental connectedness and parental monitoring were computed as composite measures. Responses for each of the parental connectedness item ranged from 1=not at all comfortable, 2=not very comfortable, 3=somewhat comfortable, 4=very comfortable. Responses "not at all comfortable" and "not very comfortable" were combined into one category coded "0" While responses "somewhat comfortable" and "very comfortable" were combined into

one category coded "1". Row totals were then obtained, ranging from 0 to 3. Row totals were coded as follows: 0 and 1 were coded as 0=none/low connection; row totals of 2 were coded as 1=average connection; and row totals of 3 were coded as 2=high connection. For parental monitoring items, responses ranged from 1=Not true at all, 2=Not very true, 3=Somewhat true, 4=Very true. Responses "not true at all" and "not very true" were combined into one category coded "0" While responses "somewhat true" and "very true" were combined into one category coded "1". Row totals were then obtained, ranging from 0 to 4. Row totals of 0, 1 and 2 were coded as 0=no/low monitoring; row totals of 3 were coded as 1=high connection. For the gender belief score, we present the mean scores for the two factors included in the study as described by Maina et al (35), together with the standard deviation (SD) (35). Scores were computed as a mean score across items; with each

individual item score ranging from 1 to 5, based on the 5-point Likert scale. Mean scores were considered lower if they were below 2.5 and higher if they were 2.5 and higher. Next, using the original measures on the 5-point Likert scale, we fitted a structural equation model (SEM) (36) whereby the two domains of gender beliefs were regressed on background, parental, and peer characteristics to examine the characteristics associated with gender beliefs about romantic relationships (Figure 1). As our sample was too small to fit the SEM model at once, we adopted a two-step approach. In the first step, we fitted a confirmatory factor model (CFA) (i.e., a measurement model) to provide factor score estimates. In the second step, the obtained factor scores were used as input values (outcomes) in a linear regression model to assess structural relationships. The measurement model fit was adequate [fit statistics: Comparative fit index (CFI)=0.92, Tucker-Lewis index (TLI)=0.91, and root mean squared error of approximation (RMSEA) = 0.07 90% confidence interval (CI) 0.6–0.08)]. A reasonably good fitting model is

obtained when CFI and TLI are ≥0.90 (37) and RMSEA is between 0.05 and 0.08 (38). Bivariate models were run first and explanatory variables found to be significant at 10% were included in a multivariable model. Model reduction was then done in a step-wise regression fashion at P≤0.05 (39). Descriptive analyses were performed using STATA version 15 (StataCorp, College Station, TX, USA). SEM analyses were performed in R (R Core Team, 2019) using lavaan package (40)

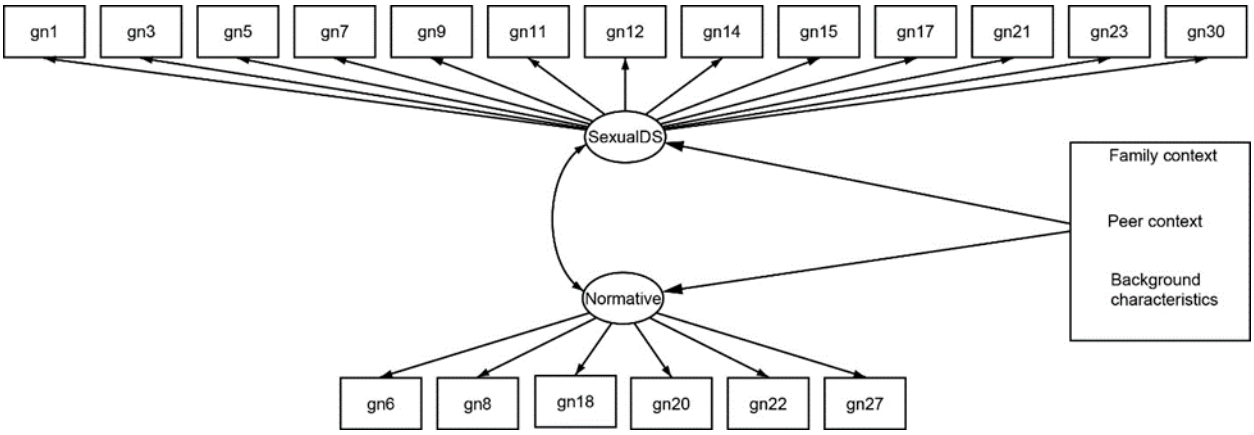

Figure 1. Pictorial representation of the model relating gender belief and parents and peer context. "SexualDS" stands for sexual double standards; "Normative" stands for heteronormative beliefs about romantic relationships; and "gn"stands for gender norm scale items

Results

Descriptive findings

Table 1 presents background, parental and peer characteristics of the study participants. We also present mean scores for each gender beliefs domain. We interviewed 426 very young male adolescents (referred to as 'boys' henceforward) aged 10 – 14 years with a mean age of 12 years (SD=1.41). Slightly more than half of the boys did not report any pubertal changes. The majority of boys had both parents alive, with either their biological mother or father being their primary caregiver. About four in ten boys were not comfortable speaking with their caregiver about things

that worried them, changes in their bodies and problems in romantic relationships. A majority of boys reported high parental monitoring.

Table 1: Characteristics of the study participants, 2018

Characteristics	**Number of boys**	**Percentage of boys**
Background characteristics		
Age		
10 – 12 years	260	61.0
13 – 14 years	166	39.0
Pubertal maturation		
Pre-pubertal	229	53.8
Started puberty	197	46.2
Ethnicity		
Kikuyu/Embu/Meru/Kamba	163	38.3
Luo	107	25.1
Luhya	64	15.0
Others*	92	21.6
Religion		
Christian	307	72.1
Muslim	96	22.5
None	23	5.4
Parent characteristics		

Parental survivorship		
Both parents alive	367	86.2
One/both parents dead	59	13.8
Primary caregiver		
Mother/father	370	86.9
Other relatives/non-relatives	56	13.1
Comfort talking with primary caregiver		
None/low	172	40.4
Average	201	47.2
High	53	12.4
Feels close to mother		
No	48	11.3
Yes	378	88.7
Feels close to father		
No	159	37.3
Yes	267	62.7
Perceived caregiver approval of romantic relationships		
Not true	388	91.1
True	38	8.9
Parental monitoring		
Low/none	92	21.6

High	334	78.4
Peer characteristics		
Number of close female friends		
None	245	57.5
One, two or three	143	33.6
Four and above	37	8.7
Number of close male friends		
None	6	1.4
One, two or three	220	51.6
Four and above	200	46.9
Time spent with close friends		
None/rarely	102	23.9
Often	324	76.1
Friends who perceive romantic relationships as important		
None	259	60.8
Some, all	167	39.2
Friends who perceive having sex as important		
None	355	83.3
Some, all	71	16.7
Friends in romantic relationships		
None	285	66.9
Some/most	141	33.1

Friends who have either kissed, touched or had sex		
None	330	77.5
Some/most	96	22.5
Friends use of recreational drugs and alcohol		
None	394	92.5
Some/all	32	7.5
Gender belief		
Mean score on sexual double standards subscale (SD)		2.4 (0.8)
Mean score on heteronormative beliefs about romantic relationships scale (SD)		3.7 (1.1)

* Somali, Garre, Borana, Gabra, Banna, and non-Kenyans

While 56% of boys reported no close female friends, only 1% reported no close male friends. For about 39% of boys, some/all of their friends perceived romantic relationships as important while for at least a third, some/all of their peers were in romantic relationships.

The mean gender score for the sexual double standards domain was 2.4, demonstrating a lower endorsement of gender beliefs that boys and girls should be judged differently for the same sexual behaviors. The mean gender score for the heteronormative beliefs about romantic relationships was 3.7 demonstrating a higher endorsement of male dominance and passivity of females in romantic relationships.

Bivariate and multivariate associations

Table 2 presents the unadjusted and adjusted results for models examining the association between background, parental and peer characteristics and gender beliefs.

Background characteristics and gender beliefs

In the unadjusted model, older boys (13 – 14 years)were significantly less likely to endorse gender beliefs about sexual double standards and heteronormative beliefs about romantic relationships than those who were younger while boys from Somali/Garre/Borana/Gabra/Banna ethnic groups were significantly more likely to endorse both sexual double standards and heteronormative beliefs about romantic relationships than Kikuyu/Embu/Meru/Kamba boys. These associations did not persist in the adjusted model. Compared to Christians, boys of Muslim faith were significantly more likely to endorse heteronormative beliefs about romantic relationships in the unadjusted and adjusted models.

Table 2. Variations in endorsement of gender beliefs by background characteristics, parental and peer contexts with endorsement of gender beliefs

Characteristic	Sexual double standards				Heteronormative belief about romantic relationship			
	Unadjusted		Adjusted		Unadjusted		Adjusted	
	Est. (SE)	p-value	Est. (SE)	p-value	Est. (SE)	p-value	Est. (SE)	p-value
Background characteristics								
Age (ref: 10 - 12 years)								
13 - 14 years	-0.20 (0.08)	**0.018**	-0.15 (0.09)	0.092	-0.21 (0.08)	**0.009**	-0.09 (0.08)	0.254
Pubertal maturation (ref: reached puberty)								
Pre-pubertal	-0.14 (0.08)	0.091			-0.12 (0.08)	0.124		
Ethnicity (ref: Kikuyu/Embu/Meru/Kamba)								
Luo	0.12 (0.11)	0.285			-0.01 (0.10)	0.899		
Luhya	0.22 (0.13)	0.083			-0.03 (0.12)	0.796		
Somali/Garre/Borana/Gabra/Banna	0.24 (0.11)	**0.039**			0.34 (0.11)	**0.002**		

Others	-0.14 (0.17)	0.408			0.32 (0.16)	**0.048**		
Religion (ref: Christian)								
Muslim	0.12 (0.10)	0.209	0.12 (0.10)	0.250	0.32 (0.09)	**0.001**	0.20 (0.09)	**0.025**
None	-0.03 (0.18)	0.853	0.04 (0.18)	0.809	-0.25 (0.17)	0.155	-0.17 (0.16)	0.281
Parental characteristics								
Parental survivorship (ref: Both parents alive)								
One/both parents dead	-0.20 (0.12)	0.097	-0.01 (0.13)	0.923	-0.14 (0.11)	0.205	-0.10 (0.11)	0.377
Primary caregiver (ref: Mother/father)								
Others	-0.17 (0.12)	0.155			-0.07 (0.12)	0.568		
Comfort talking with caregiver (ref: None/low)								
Average	0.09 (0.09)	0.332	0.04 (0.09)	0.630	0.38 (0.08)	**<0.001**	0.26 (0.08)	**0.001**
High	-0.03 (0.13)	0.806	-0.09 (0.13)	0.508	0.30 (0.12)	**0.015**	0.35 (0.12)	**0.003**
Feels that close to mother (ref: No)								
Yes	0.06 (0.13)	0.636			0.18 (0.12)	0.139		

Feels that close to father (ref: No)								
Yes	0.36 (0.08)	**<0.001**	0.33 (0.09)	**<0.001**	0.12 (0.08)	0.157	-0.003 (0.08)	0.974
Primary caregiver approves romantic relationships (ref: Not true)								
True	-0.01 (0.14)	0.923	0.03 (0.15)	0.867	-0.78 (0.13)	**<0.001**	-0.59 (0.13)	**<0.001**
Parental monitoring (ref: Low/none)								
High	-0.02 (0.10)	0.872			-0.04 (0.10)	0.679		
Peer characteristics								
Number of female friends (ref: None)								
One, two or three	-0.04 (0.09)	0.652	0.02 (0.09)	0.806	-0.33 (0.08)	**<0.001**	-0.18 (0.08)	**0.023**
Four and above	-0.06 (0.15)	0.674	0.02 (0.16)	0.899	-0.44 (0.14)	**0.002**	-0.08 (0.14)	0.551
Number of male friends (ref: None)								
One, two or three	0.13 (0.35)	0.700	0.03 (0.35)	0.927	0.69 (0.33)	**0.038**	0.64 (0.31)	**0.038**
Four and above	0.16 (0.35)	0.653	0.07 (0.35)	0.853	0.49 (0.33)	0.143	0.49 (0.31)	0.112
Time spent with friends (ref: None/rarely)								
Often	-0.004 (0.10)	0.965			0.09 (0.09)	0.308		

Friends who think romantic relationships are important (ref: None)								
Some, all	-0.06 (0.08)	0.449	0.18 (0.10)	0.092	-0.42 (0.08)	**<0.001**	-0.08 (0.09)	0.363
Friends who think having sex is important (ref: None)								
Some, all	-0.04 (0.11)	0.690			-0.29 (0.10)	**0.007**		
Friends in romantic relationships (ref: None)								
Some/most	-0.29 (0.09)	**0.001**	-0.24 (0.11)	**0.023**	-0.50 (0.08)	**<0.001**	-0.24 (0.09)	**0.011**
Friends who've either kissed, touched or had sex (ref: None)								
Some/most	-0.19 (0.10)	**0.052**	-0.08 (0.11)	0.485	-0.42 (0.09)	**<0.001**	-0.09 (0.10)	0.334
Friends who've used drugs or alcohol (ref: None)								
Some/all	-0.19 (0.16)	0.230	-0.14 (0.16)	0.375	-0.47 (0.15)	**0.002**	-0.25 (0.14)	0.078

Parental characteristics and gender beliefs

In the unadjusted model, boys who reported that they were close to their father were more likely to endorse sexual double standards in romantic relationships than those who were not close to their fathers. This association remained significant in the adjusted model. Boys who were comfortable speaking with their primary caregiver about issues they were experiencing, body changes and romantic relationships were more likely to endorse heteronormative beliefs about romantic relationships than those who were uncomfortable discussing these issues with their caregiver. This association was significant in both the unadjusted and adjusted models. Boys whose caregiver approved of romantic relationships were less likely to endorse heteronormative beliefs about romantic relationships than those whose caregivers disapproved of romantic relationships in early adolescence. This association was significant in both unadjusted and adjusted models.

Peer characteristics and gender beliefs

Boys with friends who were involved in romantic relationships were significantly less likely to endorse gender norms about sexual double standards in romantic relationships compared to those without friends in romantic relationships. The significant association was observed in both unadjusted and adjusted models. In addition, compared to boys who had no friends who had ever kissed, touched someone or been touched sexually, or had sex, boys who reported that some or all of their friends had ever engaged in these activities were significantly less likely to endorse sexual double standard beliefs in the unadjusted model.

Peer perceptions and behaviors were negatively associated with the likelihood of endorsing inequitable heteronormative beliefs about romantic relationships. For instance, boys with friends who thought romantic relationships and having sex were important were significantly less likely to endorse heteronormative beliefs about romantic relationships. Similarly, boys who had friends

who were involved in romantic relationships, who had kissed, touched/fondled or had sex, or used drugs or alcohol were significantly less likely to endorse heteronormative beliefs about romantic relationships than boys who reported that none of their friends were involved in these activities in the unadjusted model. While having one to three close male friends was associated with high endorsement of heteronormative beliefs, having at least one female friend, was negatively associated with endorsement of heteronormative beliefs about romantic relationships in the unadjusted model. In the adjusted model, having one to three female friends compared to none, and having friends involved in romantic relationships compared to none were associated with a less likelihood of endorsing heteronormative beliefs. In contrast, having one to three male friends was associated with a significantly higher likelihood of endorsing heteronormative beliefs about romantic relationships compared to having no male friends in both models.

Discussion

Our study adds to the limited but growing body of literature on gender beliefs in early adolescence and examines the association between contextual factors—parental and peer characteristics—and endorsement of gender beliefs about romantic relationships. Research conducted in sub-Saharan Africa has associated inequitable gender norms with poor male health outcomes, including sexual health (18, 41-43). Such norms, which support inequalities between men and women begin to be learnt at an early age, with learning being intensified in early adolescence (4, 44, 45).

We found that both parents and peer characteristics influence gender beliefs about romantic relationships among boys living in Korogocho informal settlement in Nairobi. As part of the micro-systems influencing adolescents' behaviors (32), parents are regarded as key agents of gender socialization, and particularly for boys, relaying and reinforcing norms about masculine behaviors. Parents serve as models for gendered beliefs and behaviors (11, 12) by directly or indirectly

encouraging gendered behaviors (7). Thus, our findings support existing evidence on the role of parents in influencing gender attitudes.

In our study, boys who felt comfortable talking with their primary caregiver about problems they were experiencing, body changes and romantic relationships were more likely to endorse heteronormative beliefs about romantic relationships and support of gender inequitable romantic relationships. Similarly, boys who felt close to their fathers were more likely to endorse sexual double standards in romantic relationships, which also supports gender-inequitable romantic relationships. Being close to a parent may signify a direct connection and openness with the caregiver, creating a conducive environment for gender socialization. Thus, our findings suggest prevailing gender-inequitable norms in Korogocho informal settlement (7). Studies conducted with older boys and men in Korogocho suggest a patriarchal society whereby men play the role of provider, and dominate household decision-making, romantic and sexual relationships (29, 46). As a result, boys growing up in Korogocho are likely to be socialized towards adopting such inequitable beliefs and behaviors, with parents being a key socializing agent. Living in patriarchal societies, boys could also be endorsing behaviors they observe from their caregivers (7, 12). Studies have also shown that boys often receive gendered messages with definite gender roles for male and females, including in romantic relationships (12, 21). Parental influence on endorsement of gender beliefs about romantic relationships may depend on the specific messages communicated. Our findings highlight the need for gender-transformative interventions with parents, including fathers, in this setting to support them to shift their gender inequitable attitudes and practices (47).

Although romantic relationships are considered as normative aspects of adolescent sexual development in some contexts (48, 49), they are discouraged in many sub-Saharan African settings

(21, 50). Our findings show that boys whose caregivers approved of romantic relationships were significantly less likely to endorse heteronormative beliefs about romantic relationships than those whose caregivers disapproved such relationships in early adolescence. We argue that caregivers who approve romantic relationships in early adolescence may view such relationships as normative (26, 49), and are likely to engage their sons in conversations about gender equitable relationships. It is also possible that caregivers who approve romantic relationships in early adolescence hold less conservative views and may therefore be more likely to question gender inequitable norms, and transmit the same beliefs to their children. However, this finding should be interpreted with caution due to the small proportion (9%) of caregivers who approved of romantic relationships in early adolescence.

The association between having female friends and lower endorsement of heteronormative beliefs about romantic relationships is notable. Widman, Choukas-Bradley, Helms et al. (51) argue that boys are highly susceptible to peer influence regarding sexual behavior. By yielding to peer norms and expectations, boys are likely to gain social status and peer rewards (8, 9). The association between having close female friends and lower endorsement of heteronormative beliefs about romantic relationships could be attributed to increased attention to empower women and girls to achieve gender equity. Increased focus towards eliminating gender inequalities that disadvantage girls and women empowers girls and women to take active roles in regard to their sexual and reproductive behaviors (52). In retrospect, boys are likely to realign their values and beliefs towards the changing gender dynamics in romantic relationships(20, 134). We also argue that having close female friends could enable boys to question unequal gender norms. In a study of the role of friendship sex composition and peer violence, Haynie, Steffensmeier and Bell (53), found that having female friends reduced males' involvement in serious violence. The negative

association between having friends in romantic relationships and endorsement of gender beliefs in romantic relationships could indicate diminishing male dominance in romantic relationships and realignment of male values and beliefs in such relationships . Given boys' conformity to group norms, this association implies changes in group dynamics towards more equitable gender norms in romantic relationships and could be attributed to increased attention to empower women and girls to achieve gender equity (52, 54, 55).

In our study, boys of Muslim faith were significantly more likely to endorse heteronormative gender beliefs about romantic relationships compared to boys of Christian faith. Siraj (56), (57) asserts that religion plays an influential role in the construction of masculine identity among Muslims whereby religious teaching largely support traditional gender norms associated with male dominance and submissiveness and passivity of women in relationships.

Limitations

This study is not without limitations. It focuses on very young male adolescent in an urban informal settlement and thus findings can only be generalized to similar populations in similar settings. There could be potential to under-report or over-report on gender beliefs based on socially desirable responses. Lastly, while this study advances the evidence on gender beliefs in early adolescence, the narrow selection of contextual factors—parents and peers—excludes other agents likely to influence gender beliefs even within family settings.

Conclusion

In conclusion, our findings show that parents and peers influence very young adolescent boys' gender beliefs about romantic relationships and suggest a need for engaging boys' parents and peer networks for programs that aim to transform inequitable gender norms. Evidence from

elsewhere, for instance, shows that involving caregivers in gender transformative training programmes contributes to significant positive changes in gender attitudes (52)

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Table S1. The 19 items used to measure gender norms. The statement was like “The following questions are about adolescents or people your age, for each statement, we would like to know how much YOU agree or disagree with each statement”.

Items
Sexual double standard
gn1. A girl will lose interest in studying if she has a boyfriend
gn3. Girls your age often get into "trouble" when they have boyfriends
gn5. Boys have girlfriends for fun more than love
gn7. Girls who have boyfriends are irresponsible
gn9. Boys like girls who wear revealing clothes
gn11. Girls are the victims of rumors if they have boyfriends
gn12. Boys tell girls they love them when they don't
gn14. Adolescent girls should avoid boys because they trick them into having sex
gn15. Boys have girlfriends to show off to their friends
gn17. Boys generally compete for the prettiest girls
gn21. Adolescent boys lose interest in a girl after they have sex with her
gn23. Adolescent boys fool girls into having sex
gn30. Girls should be proud of their bodies as they become women
Heteronormative beliefs about romantic relationships
gn6. It’s normal for a boy your age to want a girlfriend
gn8. Boys should have girlfriends to discover love
gn18. A girl can have a boyfriend as long as she continues working well in school
gn20. A boy can have a girlfriend as long as he continues working well in school

gn22. It's normal for a girl to want a boyfriend at your age

gn27. It is ok for an adolescent boy to have sex as long as he avoids getting a girl pregnant

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The items had 5 response scale of "Agree a lot" (=1), "agree a little" (=2), "neither agree nor disagree" = (3), "disagree a little" (=4), and "disagree a lot" = (5)

5. Discussion

This study focused on the co-construction of masculinities and sexual development among VYMA living in a slum in Nairobi, Kenya. The study addresses pertinent issues of how masculine norms influence male sexual development in early adolescence, which ultimately impacts male sexual health. In this Chapter, I discuss the results in light of existing literature and the theoretical framework and reflect on the study's contribution to current knowledge. The Chapter is structured in line with the study objectives and begins with discussing the strengths and limitations of the study. Next, I discuss the qualitative findings about boys' conceptualisation of masculinity, including the ambivalent nature of masculinity conceptualisation in this age group, which is often confounded by the socialisation messages they receive and masculine performances in the community. I also discuss boys' perceptions about the linkages between masculinity and sexual development in early adolescence. This is followed by a discussion on quantitative findings about the sexual behaviours of VYMA who participated in the study and associated factors followed by a discussion about gender beliefs about romantic relationships, the role of parents and peers in influencing gender beliefs about romantic relationships and the association between gender beliefs about romantic relationships and sexual behaviours. . The last section discusses the contexts that shape adolescent boy's sexual behaviours and focuses on individual, family, peer and neighbourhood characteristics. In this chapter, I also present a revised conceptual framework, which, pictorially, summarises the findings of the study and the linkages between the different study concepts.

5.1. Limitations and strengths of the study

These results are discussed in light of the study's limitations and strengths. With respect to limitations; first, gender is a social construct that is dependent on the context that one lives in. As

such, the study findings are specific to Korogocho slum and may not be generalisable to other populations. The limited generaliseability notwithstanding, the findings are useful in understanding the co-construction of masculinity and sexual development in early adolescence and could be used for comparative studies with VYMA in other contexts. Second, given the nature of the study, I recognise the possibility of recall bias associated with the assessment of past behaviours and experiences such as sexual experiences. On the same note, I also recognise the potential for over-reporting or under-reporting sexual behaviours because of the stigma associated with pre-marital sex as well as socially desirable masculine beliefs and expectations. To reduce reporting biases, young well-trained male research assistants conducted interviews with VYMA. In addition, the interviews were conducted in a private space and interviewers trained to reassure participants of data confidentiality. Lastly, given the non-temporal nature of the data collected in this study, I did not determine causal linkages between gender beliefs about romantic relationships and sexual behaviours among VYMA

With respect to its strengths, VYMA are a vastly neglected and marginalised age group in regard to gender and SRH health research, policies and programming. In the recent past, many scholars have advocated for the inclusion of boys and men in general in the gender debate (16, 21, 135) as well as for increased focus on male sexual and reproductive health (26, 49, 136-138). This study, therefore, adds to the growing literature on masculinity and VYMA sexual behaviours and provides new insights on different contexts that shape VYMA masculinities and sexual behaviours. Second, in exploring sexual behaviours, the study used a comprehensive indicator, focusing on both penetrative and non-penetrative sexual behaviours, which are both important in understanding sexual development. The study also triangulated quantitative and qualitative data collected from

VYMA following a sequential explanatory strategy. This strategy was important for understanding the quantitative findings as discussed later.

5.2. Conceptualisation of masculinity and sexual development

Our qualitative interviews with boys suggest that socialisation into masculine norms revolved around family life and responsibility with a man expected to be financially stable to enable him to support and provide for his family. Other expectations included being of good character—including avoidance of violence, alcohol and substance abuse, and sexual infidelity. Religion was an important masculine trait, especially, for boys of the Muslim faith. In line with existing evidence (16, 21, 139-141) this study found that gender socialisation processes were unstructured with boys learning masculine expectations from different sources including parents, teachers, media, peers and other members of the community (109, 142-144). Messages about gender expectations were passed across either verbally, or through observing what other men in the community did or did not do, or through watching, listening and reading information from different media sources. The unstructured system of gender learning demonstrated a complex and ambivalent process in which boys co-construct their masculinity.

From an early age, boys learnt about differentiated roles for girls/women and boys/men, which also implied rejection of roles, responsibilities and behaviours considered unmasculine or effeminate, such as domestic chores. Further, although boys often performed duties traditionally meant for girls such as cleaning utensils or mopping the house, they did so to ‘help’ their sisters or mothers. Some boys had started transitioning towards more masculine activities such as working in construction sites or riding motorbike taxis, which were regarded as masculine roles in the study context. This shows that while gender socialisation begins early in childhood, the assumption of

masculine responsibilities is likely to begin later in life, moreso, as boy's transit from childhood to adulthood.

Boys were socialised to avoid premarital sex, sexual infidelity, violence and sexual risk-taking, traits that existing evidence associates with being masculine (31, 39, 43, 145-147), and which boys observed as prevalent among older men in the study setting. However, boys termed such behaviours as 'unmasculine'. Given that the socialisation process also took place through observing what older men did/did not do, boys were likely to associate practices such as violence and sexual risk-taking with the expression of masculinity. Boys who reported sexual experiences termed the experiences as masculine, contrary to the key messages they had received about pre-marital sexual activity. Although observing older boys' and men's sexual behaviours in the slum contexts may encourage early initiation of sexual activity for some boys, it is also possible that power structures to control boys' early initiation of sexual activity existed given that only a small proportion of boys had actually initiated sexual activity. Such power structures included parents and teachers, as shown from the qualitative findings, and provided boys with information and guidance on gendered roles and expectations within the society.

Media was cited as a source of masculine information, and although positive information about masculinity can be accessed through media, there is sufficient evidence which demonstrates that some information may be potentially harmful and may express masculinity in terms of sexual risk-taking and men's dominance in sexual relationships (148, 149). However, the current study found mixed reactions on how media shaped boys' masculine conceptualisation with some indicating that, indeed, the media was likely to influence boys negatively. In a study conducted among boys aged 16 – 19 years in Tanzania, Sommer, Likindikoki and Kaaya (150) argued that the influx of Western images of sexuality and sexual interactions was likely to create a potentially problematic

clash of conservative and modern values and expectations, more so in regard to masculine behaviour.

Similar to existing literature, parents and teachers were often cited as trusted sources of information about masculine expectations (151). However, past studies have documented challenges with parent-child communication especially in regard to sexuality (141, 152-156). In particular, there is limited communication about sexuality between parents and sons (75, 153). Similar challenges have been documented with the delivery of SRH education in schools which often excludes topics on gender roles and expectations (157-159). In SSA, such challenges are exacerbated by the socio-cultural taboos around adolescent sexuality (156, 159-161).

Taken together, these findings demonstrate the complexities surrounding co-construction of masculinities especially during a period when young boys are undergoing major life transitions that are likely to influence their future health trajectories (76, 150, 162, 163). Specifically, boys growing up in Korogocho slum receive contradictory messages about masculinity from different sources.

5.2.1. Dominant masculinity

Boys observed portrayals of male dominance not only in romantic relationships but also in family headship and control of resources. Men often resorted to violence if they felt their positions were threatened regardless of the context (16, 40, 164). For instance, boys observed that men were against women taking up paid work as they perceived this as a challenge to masculinity—men's role as the family breadwinner and head—often resulting into a feeling of fragility with a likelihood of triggering gender-based violence (165). Additionally, women finding paid work meant competing with men for the few job opportunities available, reducing men's chances of finding work and meeting their masculine obligations which leads to gender role conflict (40, 164,

166). By challenging dominant masculinities and finding paid work, women magnified the flaws in how masculinities are conceptualised, and such flaw presents a window of entry for interventions to challenge gender-inequitable norms.

5.2.2. Idealised masculinity

The ideal form of masculinity was conceptualised in terms of independence, that is, financial stability and ability to provide for and protect one's family; as well as physical characteristics and emotional strength, which aligns with notions of hegemony (20). Additionally, specific to Muslim boys, religion was an important masculine attribute. While hegemony entails the "conventionally idealised form of masculine character"(20), for boys in this study, the dominant attributes did not characterise the ideal masculinity, regardless of being a common practice in the society. This depicted a complex interplay between the traditional views of masculinity and the boys' conceptualisation of ideal masculinity which needs to be acknowledged within research on boys/men and masculinities.

5.2.3. Masculinity and sexual development

Key to masculine norms are beliefs governing sexual relationships. Conventional masculine norms not only focus on men's domestic roles and responsibilities such as family provision and protection (16, 167-169), but also on men's conduct in regard to romantic relationships, often giving men dominance and diminishing women's power in sexual decision-making (147, 170-173). In essence, the findings of this study show that young boys are socialised to delay sexual activity until when they are older and ready to begin a family. However, I found that for some boys, development of masculinities was associated with sexual behaviour in early adolescence and that the slum context may have influenced this association. Although boys were socialised to delay sexual activity until marriage, maintain sexual fidelity and shun sexual risk-taking and violence, boys observed adult

men in the society expressing the same behaviours that boys were socialised to avoid. Sexual and reproductive health interventions that engage VYMA in slum contexts therefore need to consider the community and social norms that are likely to affect positive behaviour changes among young boys.

Early exposure and engagement in sexual activity among boys raise some concerns. While only a small proportion of early adolescent boys reported sexual activity, existing research shows that the proportion of boys engaging in sexual activity increases with age (91). Additionally, boys often have limited access to SRH information (21, 153). The silence that surrounds young boys' sexuality could be liable for the limited availability of basic information and education that boys need to understand their changing bodies and make informed decisions in regard to their sexuality.

5.3. Sexual behaviours among VYMA

While it is often socially unacceptable for very young adolescents, both boys and girls, to be sexually active (156, 174-178), the results of this study show that young boys are not naïve to sexual activity, as about 22% reported sexual involvement. The findings of this study also show variations in sexual behaviours, ranging from vaginal sex—which has in the past been viewed as a marker for sexual development—to a range of non-penetrative sexual behaviours that are important in understanding sexual development (15, 95, 115). Though limited literature exists within SSA, studies conducted elsewhere have found that young people's involvement in romantic and sexual relationships is both sequential and progressive (179, 180). In a sample of Canadian 5th to 8th graders (mean age 12.28 years (SD=1.11 years)), Connolly, Craig, Goldberg et al. (180) found sequential progression through different stages in romantic relationships among adolescents of European and Caribbean descent. Similarly, in a study among young boys and girls aged 12 – 21 years in the USA that used data from National Longitudinal Study of Adolescent Health,

O'Sullivan, Cheng, Harris et al. (179) found that the sequence of sexual events progressed from less (romantic and social interactions) to more intimate (sexual) behaviours. In contrast, in a study conducted among adolescent boys and girls aged 12 – 14 years in four SSA countries, Bankole, Biddlecom, Guiella et al. (115) found no consistent progression pattern in sexual behaviours.

As sexual activity in early adolescence is frowned upon in many contexts in SSA (75, 181), the prevalence of sexual behaviours among VYMA raises concerns that young boys may be engaging in sexual activity without requisite knowledge and information on safe sex practices. Previous studies suggest that very young boys are rarely targeted in SRH discussions as they are perceived to be at low risk for poor SRH outcomes (75, 153, 156, 182-187). As boys initiate sexual activity with limited SRH information, they are at increased risk of poor SRH outcomes including sexually transmitted infections such as HIV, sexual violence, and early fatherhood. Taken together, these findings underscore the need for age-appropriate and context-based sexuality education targeting young boys before a majority become sexually active. However, it is also important to understand the factors that influence sexual behaviours among VYMA. Some of these factors are discussed in the following sub-sections.

5.4. Gender beliefs about romantic relationships

Early adolescence is a critical developmental stage that lays a foundation for lifelong health trajectories (8, 188). Gender inequalities in sexual relationships begin to manifest in early adolescence, as young people conform to society's belief systems. Norms and beliefs acquired during this period are likely to shape adolescents' vulnerability to poor SRH outcomes (114, 189) with implications that extend beyond adolescence. Understanding the ways in which gender norms influence sexual development in this developmental stage is critical.

Using a gender norms scale developed, validated and piloted in the context of the Global Early Adolescent Study (190), I identified two sub-scales that were relevant to the study population—*sexual double standards* measuring the extent to which boys and girls were judged differently relative to the same sexual behaviours and *heteronormative beliefs about romantic relationships* measuring the beliefs that boys should play an active role and dominate heterosexual romantic relationships while girls should be passive. The study findings indicated low endorsement of sexual double standards, which implied that boys believed that boys and girls should not be judged differently in romantic relationships. The findings also show that boys endorsed heteronormative beliefs about romantic relationships implying that boys endorsed gender-differentiated roles in romantic relationships with boys being dominant and girls' being passive. These findings demonstrate the dynamics and fluidity of gender constructs in romantic and sexual relationships (98, 191). Low endorsement of sexual double standards, in particular, demonstrate the potential for social change and suggest changing gender dynamics in romantic relationships. Bordini and Sperb reviewed the literature on sexual double standards published between 2001 and 2010 and found that while sexual double standards were identifiable, sexual behaviours and situations influencing such experiences were changing (192). Further, they argued that premarital sex and sexual intercourse outside committed relationships were more acceptable for both genders while other facets of sexuality continued to be based on different criteria for men and women (192).

These changes could be partly attributed to gender transformative programming and the empowerment of girls to take charge of their sexual and reproductive choices with boys adapting to the changing gender dynamics in relationships. It will be important, though, to explore this argument from girls' perspective by interrogating the influence of gender empowerment programmes on girls' interpersonal relationships, more so romantic relationships. High

endorsement of heteronormative beliefs in romantic relationships demonstrates how gender is structured and the strong gendered systems inherent in the study context and aligns with Connell's concepts of sexual division of power and hegemony (20, 52). The high endorsement of heteronormative beliefs is also illustrative of potential barriers to gender transformative programming in regard to shifting power and dominance from men/boys in romantic relationships. Taken together, the finding on gender beliefs suggest that new dimensions of gender equality are likely to challenge the traditional conceptualisations of male and female sexuality leaving boys to adapt to more moderate gendered views about romantic relationships while balancing gender equality and male authority (134).

5.5. The role of parents and peers in influencing gender beliefs about romantic relationships

Bronfenbrenner (79) highlights the importance of the interaction between individual factors and proximal factors, among them parents and peers in influencing the development of behaviour. Parents and peers have often been perceived to inform foundations of gender beliefs and attitudes (145, 150, 193, 194), and are often considered primary gender role models. Similar to findings from the qualitative analysis demonstrating the contradictions in the gender socialisation process for VYMA, the findings from the quantitative analysis on the role of parents and peers demonstrate a similar pattern. For instance, having a parental connection is associated with a higher likelihood of endorsing inequitable gender norms, while having a caregiver who approves romantic relationships is associated with lower likelihood of endorsing inequitable gender norms. A similar observation is made with regard to peer characteristics. Boys may experience intense pressure to conform to peer expectations to gain social status and peer rewards (51, 195). Accordingly, parents and peers may project prevailing social norms, which suggests a need to not only address

individual-level factors in gender-transformative programming but also existing social norms. The finding that having close female friends is significantly associated with a lower likelihood of boys endorsing inequitable gender beliefs is worth noting. Connell and Messerschmidt (2005) argues that masculinity is conceptualised as relational to femininity and points out the centrality of women/girls to notions of masculinity. In contexts where much programming focuses on empowering girls and championing gender equality by challenging traditional notions of masculinity (134), such a finding may imply that boys perceive girls as equal partners. Such a perception may also results from empowering girls to challenge gender inequitable norms that prevent them from having equitable relationships with boys. However, there is need for further research to explore whether gender equality programmes for girls have an influence on co-construction of masculinity among boys.

5.6. Gender beliefs about romantic relationships and sexual behaviours

Masculine norms about romantic relationships are often inequitable, fostering power differentials between boys and girls (26, 49) and may lead to risky sexual behaviours such as early sexual debut, multiple sexual partnerships, sexual coercion, and unsafe sex practices (28, 31, 32, 38, 49, 138). However, contrary to existing literature that traditional beliefs about male dominance in romantic relationships are associated with early initiation of sexual activity, this study found that high endorsement of heteronormative beliefs in romantic relationships was inversely associated with sexual experiences among boys. The inverse relationship between endorsement of heteronormative beliefs about romantic relationships and sexual experiences could imply that while boys endorse these inequitable beliefs, they are yet to project those beliefs in romantic relationships. This argument is consistent with studies conducted among older boys and men, which show significant associations between masculine norms about sexual relationships and risky sexual behaviours (49,

53). Additionally, due to the increasing number of gender equality programmes targeting girls, girls may be more likely to make autonomous decisions about their sexuality, diminishing male dominance. Consequently, boys are likely to reassess their beliefs and values in romantic relationships and adapt accordingly. With early adolescence being referred to as a period of intense gender learning not only in regard to family and community responsibilities but also in reference to boys' sexuality (16, 21, 196), our finding points to a need to target boys with gender-transformative interventions during this period as they navigate through the masculinity development process.

5.7. Contexts that shape adolescent boys' sexual behaviours

In sections 5.4 and 5.6, I discussed adolescent boys' gender beliefs about romantic relationships, how such beliefs are associated with boys' sexual behaviours and some of the contexts that shape boys' gender beliefs. In this section, I discuss contexts that influence adolescent boys' sexual development. I frame these contexts within the Bioecological theory of development (79, 116) drawing on the results of the quantitative and qualitative analysis. I structure these contexts in reference to the individual, family (including household and parental characteristics), peer and community characteristics and the overall macro structures governing how people behave and relate with each other.

5.7.1. Individual characteristics

The findings show that pubertal maturation is a key factor influencing sexual activity among VYMA, confirming evidence from past studies which refers to puberty as the hallmark of sexual development (8, 10, 150, 197, 198). However, the influence of puberty on sexual behaviour was marginal when parental and peer contexts were taken into consideration, exemplifying the role of proximal contexts in influencing boys' sexual behaviour. Pubertal maturation is associated with

the onset of adulthood. Wellings, Collumbien, Slaymaker et al. (199) argue that, as boys get into puberty, the social pressure stemming from masculinity norms may lead boys to engage in unsafe sexual practices, including early sexual debut.

Being born outside Nairobi, mainly in the rural areas of Kenya was associated with a lower likelihood of having had a sexual experience. Though few studies compare sexual behaviours among very young boys in rural and urban slums in SSA, published studies mainly conducted among older populations and girls suggest contextual differences. For instance, Peltzer (200) found that adolescents in urban areas in South Africa were more likely to have had sexual experiences compared to adolescents in rural areas. Such differences are suggestive of differences in sexual socialisation processes. Dodoo, Zulu and Ezeh (201) found that urban populations living in slums of Kenya were more likely to exhibit risky sexual behaviours. Such risky behaviours were significantly associated with socio-economic deprivation (201). Unlike in urban slums, boys in rural areas may be growing up in familial circles surrounded by a social control and support system that offers a protective environment against early engagement in romantic activities (202). In contrast, boys growing up in urban slums are likely to live with nuclear families in structures that offer no privacy and at the same time within communities that manifest high levels of sexual risk-taking (1, 42, 64, 203, 204). Additionally, boys in urban slums are likely to spend considerable time unsupervised while parents work. Previous studies show that adolescents who are unsupervised for significant durations are more likely to engage in sexual risk behaviours (205-207). Urban-rural differences in adolescents' sexual behaviour may also stem from the greater availability and access to sexually explicit media in urban settings unlike in the rural areas where there exists limited access to such media Folayan, Adebajo, Adeyemi et al. (208). In this study,

qualitative findings also indicate that urban slums are rife with sexual risk-taking, which directly or indirectly socialises young boys to early sexual debut.

Boys who were below the recommended grade for age and those who had missed school were more likely to report sexual experiences. Past studies have associated school absenteeism with poor academic performance (209, 210). Siziya, Muula and Rudatsikira (209) posit that truancy (referring to school absenteeism) may be an indicator of other socially dysfunctional behaviours. Being below recommended grade for age may suggest poor academic performance, which has been associated with a greater likelihood of engaging in sexual activity in some studies (210).

5.7.2. Family characteristics

Within the bioecological framework, family contexts are considered part of the primary contexts (micro-systems) likely to influence adolescent sexual behaviour (79, 116). We found that sharing a sleeping room with more than two people and living in households where the household head was aged 50 years or older was associated with a lower likelihood of boys reporting sexual experience. Living with several people in the single room dwellings typical of urban slums may limit opportunities for sexual activity because of the lack of privacy. However, such protection may only be applicable to sexual activity happening within the household.

Living in households headed by an adult aged 50 years and older compared to a younger head of the household was associated with a lower likelihood of engaging in sexual activity. This finding is consistent with that of Izugbara who found that girls were less likely to report a pregnancy if they lived in a household with an older head (211). In our study context, older household heads imply those aged 50 years and older. Literature focusing on intergenerational differentials in parenting as well as SRH communication suggests that traditionally, there existed structured ways of SRH communication and stringent measures to monitor and control young people's sexual

behaviours (212). Members of the extended family were instrumental in transmitting SRH information (212, 213). Families headed by older persons may, therefore, be more likely to adopt traditional ways of parenting, marked by stricter control. However, further interrogation of how parents' characteristics may influence adolescent sexual behaviour is warranted.

Perceived parent/caregiver's approval of romantic relationships was associated with a sexual experience. In many SSA contexts, romantic relationships among young adolescents are discouraged (9) and yet, there exist documented challenges with parent-child communication on sexual matters, especially among boys (17, 141, 153). Increasing acceptance of adolescent romantic relationships as part of normative development (9, 10, 153, 197) may influence parents' approval of romantic relationship. While only a small proportion of adolescents indicated that their parents approved of their romantic relationship, the significant effect of parental approval of such relationships on sexual experience warrants further research to understand the circumstances under which parents approve of romantic relationships in early adolescence especially in contexts where adolescent sexuality is largely forbidden (9, 198).

5.7.3. Peer characteristics

Peers are considered part of the primary contexts (micro-systems) that are likely to influence adolescent sexual behaviour (79, 116) and play a central role in the formation of sexual attitudes and behaviours (145, 214, 215). There is also existing evidence that with increasing age and especially as pubertal changes set in, family influence on adolescent behaviours tend to diminish and peer influence gains prominence (17, 51, 214-217).

We found that peer characteristics were more prominently associated with boys' sexual behaviour than parental characteristics. The relationship between peer characteristics and boys' sexual behaviours were more prominent especially for boys who often spent time with friends, those with

peers who perceived romantic relationships as important and those who had friends in romantic relationships. Unlike girls, boys gain more freedom of movement as they get into puberty (11, 16) and are therefore likely to spend more unsupervised time with friends outside the home, with an opportunity to experiment with socially unacceptable behaviours, including sexual activity (209, 210). These findings are important given that many SRH programmes targeting adolescents focus on individual-level characteristics rather than social norms that are likely to influence behaviour (28, 55, 183). Social norms are constructed within the communities that boys live (16, 89, 112) and studies have shown that boys are likely to adhere to social norms for fear of being stigmatised or facing social sanctions (16, 40, 164).

5.7.4. Neighbourhood characteristics

Community and societal influences are likely to affect boys' present and future sexual health and wellbeing (218). As boys transit through puberty, they achieve greater autonomy and are likely to spend most of their time outside the familial grounds often with limited parental monitoring and supervision (11, 16). Time spent outside the home coupled with increased autonomy in decision-making and the diminished influence of family on boys' sexual behaviours highlight the importance of focusing on neighbourhood factors and how they influence boys' sexual experiences.

While further analysis examining whether social capital—neighbourhood cohesion, security and social control—is associated with boys' sexual experiences using quantitative data was ongoing at the time of writing this thesis, the qualitative findings give a glimpse of how neighbourhood factors are perceived to influence boys' sexual behaviours. In the qualitative interviews, boys acknowledged early exposure to sexual activity and sexual risk-taking. Boys attributed sexual risk-taking among older males to alcohol and substance use, which they indicated was prevalent within

their neighbourhoods. High alcohol consumption and substance use was linked to high poverty levels, which limited men's ability to meet their masculine expectations. Failure to meet masculine obligations has been linked to fragile masculinities that heighten the likelihood of compensatory behaviours (25, 40). Such compensatory behaviours, as boys noted, included sexual risk-taking, a portrayal of male sexual prowess, which has been associated with power and dominance in sexual relationships. Men therefore demonstrate their dominance through sexual activity regardless of their failure to meet masculine expectations. Young boys observing such adult men are likely to adopt these risky behaviours if they view them as a masculine attribute.

Boys also noted that financial and material deprivation led to transactional sex. They reported observing older men 'buy sex' from women and young girls. One boy also narrated how he gave his girlfriend money with the expectation that she would have sex with him. Giving money or gifts in expectation of sex may give men and boys a feeling of entitlement and control over women's and girls' sexuality, which reduces the likelihood of safe sex practices (64, 134, 219). In a study conducted in South Africa, financial provision was perceived to give boys 'the right' to demand sex from girls who had received gifts from them (138), a masculine attribute often associated with ideologies of male superiority. Boys were likely to adopt such observed behaviours if they related them to masculinity. These findings demonstrate the need to address the high levels of poverty that characterise urban slums in order to not only to curb the exploitation of women and girls by men and boys as a result of financial and material provision but also improve male sexual health.

There were mixed perspectives in regard to media, with boys citing media as sources of both positive and negative masculine attributes—including sexual norms— the latter often being associated with internet use. Studies suggest an increase in sexually explicit content in mainstream media (220), the internet and social media (149, 221). Through consistent exposure, more so

during a period when behaviours are being formed, boys may adopt such sexually suggestive traits as the ideal masculine traits which may lead to early experimentation with sexual activity.

5.8. Revised conceptual framework

The revised conceptual framework illustrating the relationship between the key variables is presented in Figure 3. The framework was revised based on the qualitative and quantitative findings from this study and draws linkages on the conceptualisation of masculinity, gender beliefs, sexual development and associated factors as emerging from the study findings. The dark-shaded shapes represent the different levels of the Bioecological framework (79) and the components or variables included in the study, under each level. The grey shade shows the gender belief structure as depicted by Connell's theory of gender and power (20, 52). The dotted lines show the interactions between different components of the conceptual framework

At the core of the revised conceptual framework is the adolescent boys whose characteristics are important in shaping masculine traits and sexual behaviour. Pubertal maturation, religion, and schooling characteristics were important factors. These individual characteristics interact with proximal factors i.e. factors within boys' immediate environment, or the micro-systems, including peer characteristics (number of close friends, close friends who have had sexual experiences, and those that perceive romantic relations as important); family characteristics such as parents' closeness, parents' approval of romantic relationships, age of household head, household living arrangements) and sexual partners i.e. the place/role of girlfriends in masculinity and sexual development.

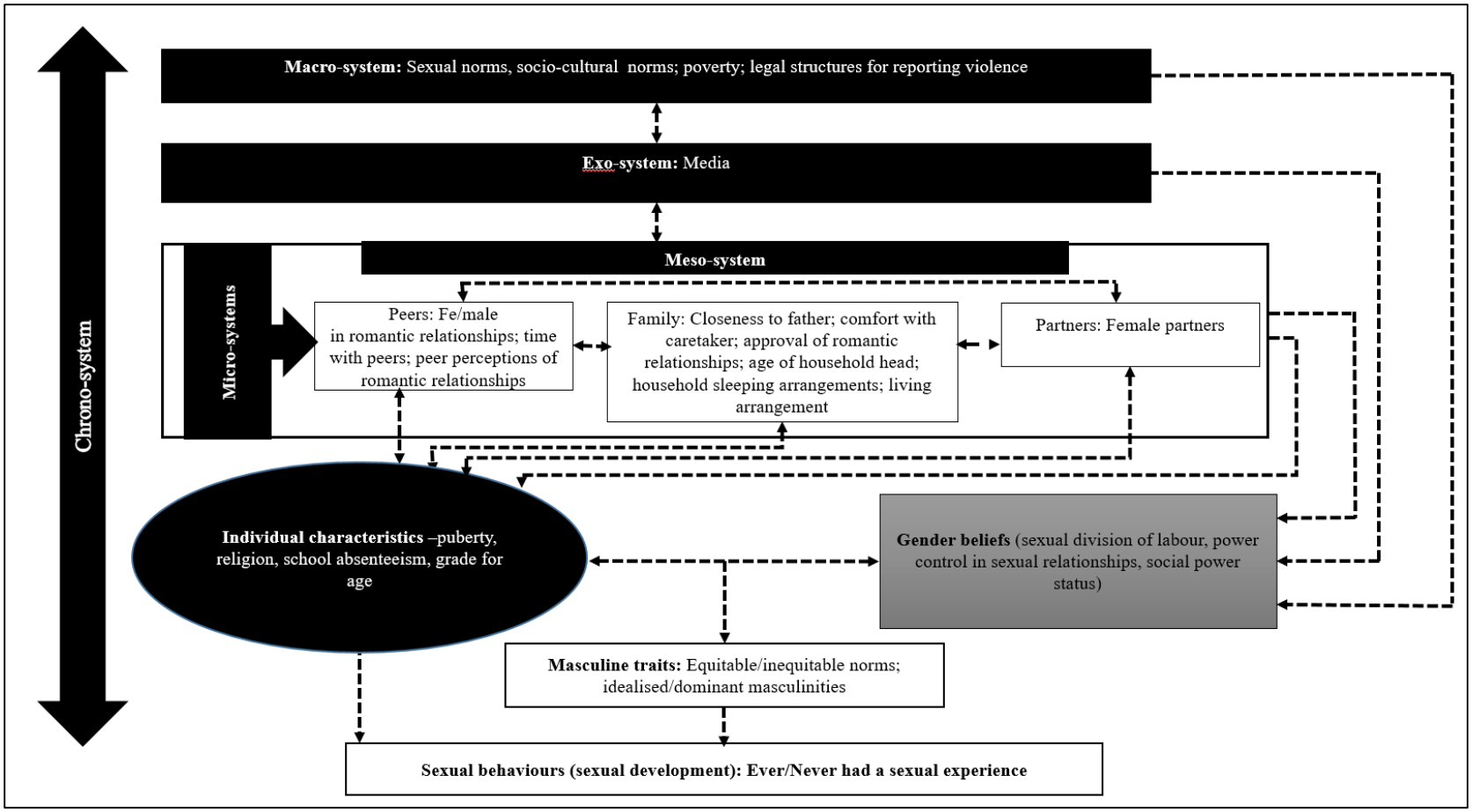

Figure 3: Revised conceptual framework

The micro-systems interact with the individual factors, individually or collectively to inform behaviour. In the exosystem, which does not directly interact with the individual but operates through the microsystems, media was found to influence behaviour. In the outermost level, i.e. macro system, social and cultural contexts such as sexual norms (high prevalence of risky sexual activities), socio-cultural norms, systemic poverty and legal frameworks that criminalised violence were important in shaping masculinity and sexual development. The different layers and levels of the conceptual framework influenced gender norms and how they were structured, which aligns with the Theory of Gender and Power. Defined roles for men existed both in boys' conceptualisation and in what they observed from the community. These consequently influenced how boys shaped their masculine traits, which also included endorsing or not endorsing masculine traits in romantic relationships, and in turn influenced their sexual behaviour.

The Chronosystem captures the changes over time. In this framework, the chronosystem captures intergeneration differences in masculinity conceptualisations and behaviours. Life transitions such as transitions from childhood to adulthood that influence changes in masculine conceptualisation and behaviours over time are captured under the chronosystem, depicting how masculinity can be dynamic over time

6. Conclusions, and study implications for research, programmes and policy

The study results highlight the multifaceted determinants of adolescent boys' sexual development, who, because of their developmental stage may be prone to external influences and pressures (16, 26, 143). For instance, the findings imply the presence of individual, structural and social factors that influence adolescent sexual development and suggest that slum environments may uniquely influence adolescent sexual development. In this regard, SRH programmes targeting male sexual

health should not only focus on individual factors but rather use a bio-ecological perspective to understand and improve SRH outcomes for boys and men. The findings also highlight the need for longitudinal research to understand how these different contexts evolve over time to influence sexual behaviour in middle and late adolescence. Further research is also warranted to explore the co-construction of masculinities and sexual development among VYMA in other contexts—rural and other non-slum urban areas.

The findings depict a complex interplay between the traditional views of masculinity and the boys' conceptualisation of ideal masculinity, highlighting the complexities and the contradictions in masculinity co-construction. These findings underscore the need to explore concepts of dissonance within research on men and masculinities, and to focus on interventions on what works to facilitate a safe transition to adulthood for VYMA. For instance, boys' views of infidelity in sexual relationships and marriages, sexual aggression, sexual violence, and drug use as some of unmasculine traits could be used to advance positive cultural values in gender transformative programming(222). Such conceptualisation of unhealthy masculinity, moreso at an early age, presents an opportunity for enhancing positive gender ideologies among very young adolescents.

The early exposure to sexual activity and the observed existence of sexual risk-taking practices in the study context suggest a need for targeted inclusion of boys in gender-transformative SRH programmes. This is important because studies suggest that boys are less reached with SRH programmes and have poor SRH knowledge and access to SRH information, yet, they are the sexual partners of young girls (16, 28, 135). This finding is also important for informing programmatic work. For instance, the finding that young boys are socialised to delay sexual activity until marriage, maintain sexual fidelity and shun sexual risk-taking and violence is important for health interventions that engage VYMA in this context. Considering the prevalence

of these same behaviours in the slum settings, and the strong influence social norms have on shaping behaviours, programmes should reach boys early and work with them to ensure a safe and positive transition through the adolescence period. The findings of sexual activity also underscore the need for age-appropriate comprehensive sexuality education.

Though the quantitative findings show that endorsement of heteronormative gender attitudes was associated with a lower likelihood of sexual experience, the qualitative findings show that boys are likely to perceive sexual activity as a masculine trait implying that masculine ideologies are likely to influence sexual behaviour from an early age. Early adolescence therefore presents a window of opportunity for influencing equitable masculine ideologies among adolescent boys (16). Additionally, future interventions should recognise sexual development as a normative rather than a risky developmental process in order to promote healthy behaviours and outcomes.

Poverty emerged as a key factor contributing to gender-based violence. While policies addressing job creation should be promoted, programmes should be tailored to suit the specific needs of populations living in urban slums. This will ensure that women, who are often at the brink of economic violence are protected and have equal opportunity, as men, to live and work in favourable conditions and environments. Additionally, exploring what works in engaging men and boys towards gender-equitable relationships and decision making will be important for countering gender role conflicts. As economic hardships coupled with masculine dominance increase the likelihood of men's perpetration of gender-based violence, programmes that aim to transform dominant masculine norms need to empower boys to recognise and challenge contextual expectations that are often unattainable (164).

While an in-depth interrogation of theories was beyond the scope of this study, future research should consider historical and local theorisation of masculinities and sexualities. Many gender

scholars in SSA utilise theories developed in the global North, yet, context is a key factor in gender development (223). Understanding historical and local theorisation of masculinities and sexualities is also important for gender transformative programming as gender scripts are embodied and objectified in the social structure. Such understanding is helpful in identifying the most effective tools to change gender ideologies and practices that are rooted in history and practice in an African setting.

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8. Appendices

8.1. Faculty of Health Sciences approval

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG | FACULTY OF HEALTH SCIENCES

10 January 2018
Person Number: 1617548

PAG

Ms Beatrice Maina
P.O. Box 53563
City Square
Nairobi 00200

Dear Ms Maina

Doctor of Philosophy in Public Health: Approval of Protocol

We have pleasure in advising you that your title has been approved;

Title: Investigating the social co-construction of masculinity (ies) and sexual development among very young male adolescents in Korogocho slum in Nairobi, Kenya

Yours sincerely

Miss Thando Mbolekwa
On behalf of Mrs Sandra Benn
Faculty Registrar

UNIVERSITY OF THE WITWATERSRAND
10 JAN 2018
FACULTY OF HEALTH SCIENCE
YORK ROAD, PARKTOWN
2193
JOHANNESBURG

8.2. AMREF Health Africa research ethical clearance

amref health africa

Amref Health Africa in Kenya

REF: AMREF – ESRC P399/2017

January 9, 2018

Beatrice W. Maina.
African Population and Health Research Center
P.O Box 10787-00100, Nairobi
Tel No: 020 400 1000
Email: bmaina@aphrc.org

Dear Dr. Maina,

RESEARCH PROTOCOL: INVESTIGATING THE SOCIAL CO-CONSTRUCTION OF MASCULINITY(IES) AND SEXUAL DEVELOPMENT AMONG VERY YOUNG MALE ADOLESCENTS IN URBAN SLUMS IN NAIROBI, KENYA

Thank you for submitting your protocol to the Amref Health Africa Ethics and Scientific Review Committee (ESRC).

This is to inform you that the ESRC has approved your protocol. The approval period is from January 8, 2018 to January 7, 2019 and is subject to compliance with the following requirements:

a) Only approved documents (informed consents, study instruments, advertising materials etc.) will be used.
b) All changes (amendments, deviations, violations etc.) are submitted for review and approval by Amref ESRC before implementation.
c) Death and life threatening problems and severe adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the ESRC immediately.
d) Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to Amref ESRC immediately.
e) Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period (attach a comprehensive progress report to support the renewal).
f) Clearance for export of biological specimen or any form of data must be obtained from Amref ESRC, NACOSTI and Ministry of Health for each batch of shipment/export.
g) Submission of an executive summary report within 90 days upon completion of the study. This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/or plagiarism.

Please do not hesitate to contact the ESRC Secretariat (esrc.kenya@amref.org) for any clarification or query.

Yours sincerely,

Prof. Mohamed Karama
Chair, Amref Health Africa ESRC
CC: Dr. George Kimathi, Director Institute of Capacity Development, Amref Health Africa and Vice Chair Amref Health Africa ESRC
Samuel Muhula, Monitoring & Evaluation and Research Manager, Amref Health Africa Kenya

8.3. University of Witwatersrand HREC (Medical) clearance

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

R14/49 Ms B Maina

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
CLEARANCE CERTIFICATE NO. M1711112

NAME: (Principal Investigator)	Ms B Maina
DEPARTMENT:	School of Public Health Medical School University
PROJECT TITLE:	Investigating the social co-construction of maculinity(ies) and sexual development amongst very young male adolescents in Korogocho urban slums in Nairobi, Kenya
DATE CONSIDERED:	24/11/2017
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Dr Y Sikweyiya
APPROVED BY:	Dr CB Penny, Chairperson, HREC (Medical)
DATE OF APPROVAL:	23/10/2018

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary on 3rd floor, Phillip V Tobias Building, Parktown, University of the Witwatersrand, Johannesburg.
I/We fully understand the conditions under which I am/we are authorised to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated from the research protocol as approved, I/we undertake to resubmit to the Committee. **I agree to submit a yearly progress report**. When a funder requires annual re-certification, the application date will be one year after the date of the meeting when the study was initially reviewed. In this case, the study was initially reviewed in **November** and will therefore reports and re-certification will be due early in the month of **November** each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature

24/10/2018
Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

8.4. APHRC Ethics review committee approval

A global center of excellence, consistently generating and delivering relevant scientific evidence for policy and action in Africa

Our ref: HCS/2017/129

October 4, 2017

University of the Witwatersrand
Human Research Ethics Committee
South Africa

Dear Sir/Madam,

ETHICS REVIEW OF PROTOCOL

The research protocol ***"Investigating the social co-construction of masculinity and sexual development among very young male adolescents in urban slums in Nairobi, Kenya"*** has been reviewed by APHRC's Internal Review Board for scientific merit and ethical review and has been adjudged to be sound in both respects.

We look forward to ethical clearance.

Sincerely,

Dr. Catherine Kyobutungi
Executive Director, APHRC

African Population and Health Research Center, Inc.
APHRC Campus, 2nd Floor, Manga Close-Off Kirawa Road, Kitisuru • P.O. Box 10787, 00100 - Nairobi, Kenya
Office Line: +254 20 4001000 • Office Cell: +254 722 205 933 or 733 410 102 • Fax: +254 20 4001101
Email: info@aphrc.org •Website: www.aphrc.org •Twitter: @aphrc

8.5. NACOSTI research permit

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014.

CONDITIONS

1. The License is valid for the proposed research, location and specified period.
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RESEARCH LICENSE

Serial No.A 22540

CONDITIONS: see back page

THIS IS TO CERTIFY THAT:
MISS. BEATRICE WAITHERERO MAINA
of UNIVERSITY OF WITWATERSRAND, 0-100 Nairobi,has been permitted to conduct research in *Nairobi County*

on the topic: *INVESTIGATING THE SOCIAL CO-CONSTRUCTION OF MASCULINITY(IES) AND SEXUAL DEVELOPMENT AMONG VERY YOUNG MALE ADOLESCENTS IN KOROGOCHO SLUM IN NAIROBI, KENYA.*

for the period ending:
14th January,2020

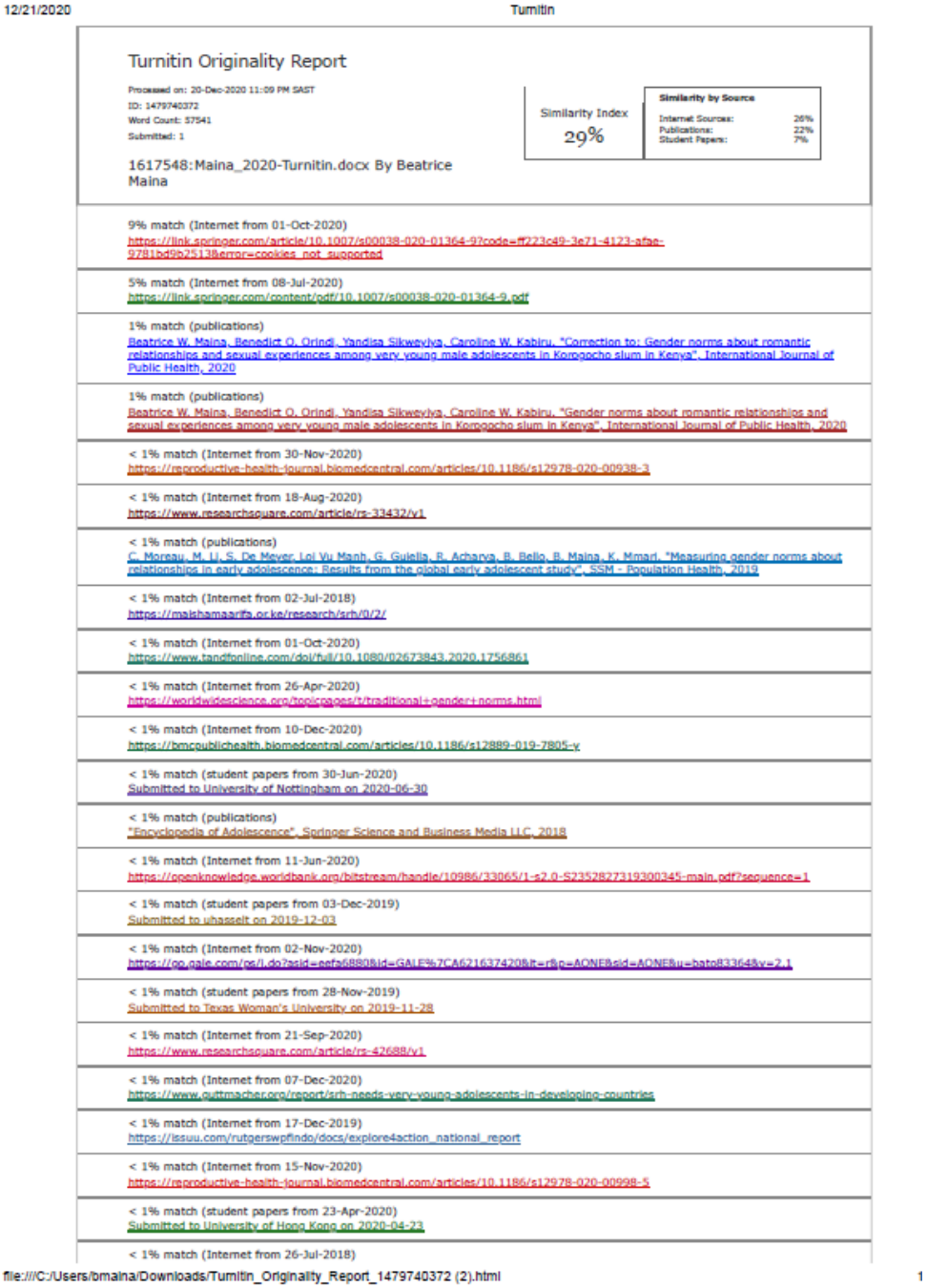
Permit No : NACOSTI/P/19/58043/27160
Date Of Issue : 14th January,2019
Fee Recieved :Ksh 2000

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation

8.6. Plagiarism declaration

8.6.1. Turnitin report



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Beatrice W. Maina, Benedict O. Orindi, Yandisa Sikweyiya, Caroline W. Kabiru, "Correction to: Gender norms about romantic relationships and sexual experiences among very young male adolescents in Korogocho slum in Kenya", International Journal of Public Health, 2020

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8.6.2. Published journal articles as part of the results section

Investigating the social co-construction of masculinity(ies) and sexual development among very young male adolescents in Korogocho slum in Nairobi, Kenya

A thesis submitted to the faculty of Health Sciences, University of the Witwatersrand, in fulfillment of the requirements for the degree of Doctor of Philosophy

By

Beatrice Waitherero Maina

Student No. 1617548

Publications and manuscripts

The following peer reviewed publications and manuscripts are included as part of this thesis. They form the results chapter of the thesis. The first two manuscripts are already published in the indicated journals and are likely to be detected by Turnitin as plagiarised work. For this reason, the allowed similarity index may be exceeded.

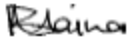
1. **Maina BW**, Orindi BO, Sikweyiya Y, Kabiru CW. Gender norms about romantic relationships and sexual experiences among very young male adolescents in Korogocho slum in Kenya. International Journal of Public Health. 2020; 65:497-506. doi: 10.1007/s00038-020-01364-9. **Published**

2. **Maina, BW**, Sikweyiya, Y, Fergusson L, Kabiru CW. Conceptualisations of masculinity and sexual development among very young adolescent boys in an urban slum in Kenya. Culture, Health and Sexuality. Culture Health & Sexuality. 2020; doi:10.1080/13691058.2020.1829058. **Published online**

3. **Maina, BW**, Orindi, BO, Sikweyiya, Y, Fergusson L, Kabiru CW. Parental and peer influence on gender beliefs about romantic relationships among very young male adolescents in Korogocho informal settlement, Nairobi, Kenya. **Manuscript**

4. **Maina, BW,** Sikweyiya, Y, Fergusson L, Kabiru CW. Parental and peer influence on sexual experiences among very young male adolescents in Korogocho informal settlement, Nairobi, Kenya. **Manuscript**

5. **Maina, BW,** Izugbara, C, Sikweyiya Y, Kabiru CW. Gender norms and sexual behavior among early adolescents in sub-Saharan Africa: A scoping review: A book chapter for the Routledge Handbook of African Demography edited by Prof. Clifford Odimegwu. **Submitted**

Signature of candidate:  Date: December 18, 2020

8.6.3. Co-author declarations for manuscripts published in the thesis

Co-author declaration: Caroline W. Kabiru

Investigating the social co-construction of masculinity(ies) and sexual development among very young male adolescents in Korogocho slum in Nairobi, Kenya

A thesis submitted to the Faculty of Health Sciences, University of the Witwatersrand, in fulfillment of the requirements for the degree of Doctor of Philosophy, by Beatrice Waitherero Maina.

As per the University of the Witwatersrand requirements for thesis that include published work, a declaration from each co-author is included

By signing this declaration, the co-author agrees to the use of the following article(s) by the student as part of her Thesis.

1. Maina, BW, Orindi, BO, Sikweyiya, Y, Kabiru, CW. Gender norms about romantic relationships and sexual experiences among very young male adolescents in Korogocho slum in Kenya. International Journal of Public Health. 2020; 65:497-506. doi: 10.1007/s00038-020-01364-9.
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3. Maina, BW, Izugbara, C, Sikweyiya, Y, Nandongwa, I, Kabiru, CW. Gender norms and sexual behavior among early adolescents in sub-Saharan Africa: A scoping review: A book chapter for the Routledge Handbook of African Demography edited by Prof. Clifford Odimegwu. Submitted
4. Maina, BW, Orindi, BO, Sikweyiya, Y, Ferguson L, Kabiru CW. Parental and peer influence on gender beliefs about romantic relationships among very young male adolescents in Korogocho informal settlement, Nairobi, Kenya. Manuscript
5. Maina, BW, Sikweyiya, Y, Ferguson L, Kabiru CW. Parental and peer influence on sexual experiences among very young male adolescents in Korogocho informal settlement, Nairobi, Kenya. Manuscript

Name: Caroline W Kabiru

Signed: _____ Date: December 16, 2020

Co-author declaration: Yandisa Sikweyiya

Investigating the social co-construction of masculinity(ies) and sexual development among very young male adolescents in Korogocho slum in Nairobi, Kenya

A thesis submitted to the Faculty of Health Sciences, University of the Witwatersrand, in fulfillment of the requirements for the degree of Doctor of Philosophy, by Beatrice Waitherero Maina.

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5. Maina, BW, Sikweyiya, Y, Ferguson L, Kabiru CW. Parental and peer influence on sexual experiences among very young male adolescents in Korogocho informal settlement, Nairobi, Kenya. Manuscript

Name: Yandisa Sikweyiya

Signed: _ _____ Date: 16 December 2020_____

Co-author declaration: Laura Ferguson

Investigating the social co-construction of masculinity(ies) and sexual development among very young male adolescents in Korogocho slum in Nairobi, Kenya

A thesis submitted to the Faculty of Health Sciences, University of the Witwatersrand, in fulfillment of the requirements for the degree of Doctor of Philosophy, by Beatrice Waitherero Maina.

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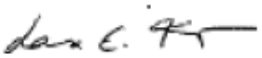
3. Maina, BW, Sikweyiya, Y, Ferguson, L, Kabiru, CW. Parental and peer influence on sexual experiences among very young male adolescents in Korogocho informal settlement, Nairobi, Kenya. Manuscript.

Name: Laura Ferguson

Signed:  Date: 15th December, 2020

Co-author declaration: Benedict O. Orindi

Investigating the social co-construction of masculinity(ies) and sexual development among very young male adolescents in Korogocho slum in Nairobi, Kenya

A thesis submitted to the Faculty of Health Sciences, University of the Witwatersrand, in fulfillment of the requirements for the degree of Doctor of Philosophy, by Beatrice Waitherero Maina.

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2. Maina, BW, Orindi, BO, Sikweyiya, Y, Ferguson, L, Kabiru, CW. Parental and peer influence on gender beliefs about romantic relationships among very young male adolescents in Korogocho informal settlement, Nairobi, Kenya. Manuscript

Name: Benedict O. Orindi

Signed:  Date: 15th December, 2020

Co-author declaration: Chimaraoke Izugbara

Investigating the social co-construction of masculinity(ies) and sexual development among very young male adolescents in Korogocho slum in Nairobi, Kenya

A thesis submitted to the Faculty of Health Sciences, University of the Witwatersrand, in fulfillment of the requirements for the degree of Doctor of Philosophy, by Beatrice Waitherero Maina.

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Name: Chimaraoke Izugbara

Signed: _____ Date: _____Dec, 15, 2020

Co-author declaration: Ivy Nandongwa

Investigating the social co-construction of masculinity(ies) and sexual development among very young male adolescents in Korogocho slum in Nairobi, Kenya

A thesis submitted to the Faculty of Health Sciences, University of the Witwatersrand, in fulfillment of the requirements for the degree of Doctor of Philosophy, by Beatrice Waitherero Maina.

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Name: Ivy Nandongwa

Signed: Ivy Nandongwa Date: 15/12/2020

Signer ID: ZQ05IYL782...
15 Dec 2020, 23:00:35, EAT

8.7. Quantitative study instrument

8.7.1. Household characteristics questionnaire

Section A. Household Roster

Thank you for participating in this short survey, which is intended to be completed by a parent or guardian of the child in the Study. In this questionnaire, when we say "the child," we mean the child in your household who is participating in the Study. This may be your child, related to you in another way, or not related to you. Your responses will help us better understand the child in your home and his or her life as a young adolescent.

A1a. What is the child's sex?

- ❍ Male
- ❍ Female

A1b. What is the child's age?

- ❍ 10
- ❍ 11
- ❍ 12
- ❍ 13
- ❍ 14

A1c. What is the child's relationship to the head of the household?

- ❍ Husband or wife
- ❍ Son or daughter
- ❍ Son-in-law or daughter-in-law
- ❍ Grandson or granddaughter
- ❍ Brother or sister
- ❍ Nephew or niece
- ❍ Other
- ❍ Don't know
- ❍ Refuse to answer

A2. How many people usually live or sleep here?

_____

Now we will ask you a set of questions about all members of the household **other than** the child, up to 10 people. If there are more than 10 people living in your home, please select the 10 people closest to the child. For each person who usually lives here, please provide the following.

Now, let's begin with **you**.

A2iia. What is your sex?

- ❍ Male
- ❍ Female

A2iiia. How old are you in years?

- ❍ 9 or younger
- ❍ 10-14
- ❍ 15-19
- ❍ 20-29
- ❍ 30-39
- ❍ 40-49
- ❍ 50 or older
- ❍ Don't know
- ❍ Refuse to answer

A2iva. What is your relationship to the head of the household?

- ❍ Head (Please be sure to indicate only ONE head of the household)
- ❍ Husband or wife
- ❍ Son or daughter
- ❍ Son-in-law or daughter-in-law
- ❍ Grandson or granddaughter
- ❍ Father or mother
- ❍ Father-in-law or mother-in-law
- ❍ Brother or sister
- ❍ Other
- ❍ Don't know
- ❍ Refuse to answer

A2va. What is your relationship to the child?

- ❍ Father or mother
- ❍ Stepfather or stepmother
- ❍ Brother or sister
- ❍ Grandfather or grandmother
- ❍ Uncle or aunt
- ❍ Other
- ❍ Don't know
- ❍ Refuse to answer

A2via. Are you the child's primary caregiver?

- ❍ Yes (Please be sure to indicate only ONE primary caregiver)
- ❍ No
- ❍ Don't know
- ❍ Refuse to answer

A2ib. Is there a **2nd** person who lives in the household?

- ❍ Yes
- ❍ No **Skip to A3**

A2iib. What is his or her sex?

- ❍ Male
- ❍ Female

A2iiib. How old is he or she in years?

- ❍ 9 or younger
- ❍ 10-14
- ❍ 15-19
- ❍ 20-29
- ❍ 30-39
- ❍ 40-49
- ❍ 50 or older
- ❍ Don't know
- ❍ Refuse to answer

A2ivb. What is his or her relationship to the head of the household?

- ❍ Head (Please be sure to indicate only ONE head of household)
- ❍ Husband or wife
- ❍ Son or daughter
- ❍ Son-in-law or daughter-in-law
- ❍ Grandson or granddaughter
- ❍ Father or mother
- ❍ Father-in-law or mother-in-law
- ❍ Brother or sister
- ❍ Other
- ❍ Don't know
- ❍ Refuse to answer

A2vb. What is his or her relationship to the child?

- ❍ Father or mother
- ❍ Stepfather or stepmother
- ❍ Brother or sister
- ❍ Grandfather or grandmother
- ❍ Uncle or aunt
- ❍ Other
- ❍ Don't know
- ❍ Refuse to answer

A2vib. Is he or she the child's primary caregiver?

- ❍ Yes (Please be sure to indicate only ONE primary caregiver)
- ❍ No
- ❍ Don't know
- ❍ Refuse to answer

[REPEAT A2ib to A2vib FOR UP TO 10 PEOPLE]

If the child's primary caregiver does **NOT** live in the home:

A2vii. Since you indicate that no one among the people living in the household is the child's primary caregiver, who, in your opinion, is? For example, another family member not living in the house, or another person not living in the house.

_____

Refuse to answer

If the head of the household does **NOT** live in the home:

A2iix. Since you indicate that no one among the people living in the household is the head of the household, who, in your opinion, is? For example, another family member not living in the house, or another person not living in the house.

_____

Refuse to answer

If the child's mother does **NOT** live in the household:

A3. Is the child's mother still alive?

- ❍ Yes
- ❍ No
- ❍ Don't know
- ❍ Refuse to answer

If the child's father does **NOT** live in the household:

A4. Is the child's father still alive?

- ❍ Yes
- ❍ No
- ❍ Don't know
- ❍ Refuse to answer

Section B. Household Characteristics

B1. Do you rent or own your home?

- ❍ Rent
- ❍ Own
- ❍ Living here with someone else who owns the home
- ❍ Other
- ❍ Refuse to answer

B2. How many rooms are there in the home you live in, now?

- ❍ 1
- ❍ 2
- ❍ 2
- ❍ 4
- ❍ 5
- ❍ 6
- ❍ 7
- ❍ 8
- ❍ 9
- ❍ 10
- ❍ 11
- ❍ Refuse to answer

B3. Which of the following do you have in your home that is in working order? B3a. Electricity
- Yes
- No
- Don’t know
- Refuse to answer

B3b. Indoor running water
- Yes
- No
- Don’t know
- Refuse to answer

B3c. Toilet (in-home)
- Yes
- No
- Don’t know
- Refuse to answer

B3d. Shower, bath, or both
- Yes
- No
- Don’t know
- Refuse to answer

B3e. Bicycle
- Yes
- No
- Don’t know
- Refuse to answer

B3f. Motorbike/motor scooter
- Yes
- No
- Don’t know
- Refuse to answer

B3g. Car or truck
- Yes
- No
- Don’t know
- Refuse to answer

B3h. Cell/mobile phone
- Yes
- No
- Don’t know
- Refuse to answer

B3i. Television/TV
- Yes
- No
- Don’t know
- Refuse to answer

B3j. Radio
- Yes
- No
- Don’t know
- Refuse to answer

B3k. Satellite dish/DSTV
- Yes
- No
- Don’t know
- Refuse to answer

B3l. DVD player
- Yes
- No
- Don’t know
- Refuse to answer

8.7.2. Adolescent questionnaire

This survey will be administered to adolescent boys aged 10-14 years

A.1. FIELD WORKER'S CODE

A.3. STRUCTURE ID

A.4. HOUSEHOLD ID

A.6. RESPONDENT'S ID

A.9. RESULT OF INTERVIEW

1. Complete
2. Incomplete
3. Absent for extended period
4. Out-migrated
5. Refused
6. Structure not located
7. Structure located but whereabouts of respondent unknown
8. Parent/guardian refused
9. Dead
10. Incapacitated
11. Other (specify) _____]

A10: CONSENT

A.10a. Parent/guardian consent obtained?

1. Yes
2. No

A.10a1. ENTER DATE WHEN PARENT/GURADIAN CONSENT WAS OBTAINED:
(dd/mm/yyyy)

A.10b. Individual consent obtained?

1. Yes
2. No

A.10b1. ENTER DATE WHEN INDIVIDUAL CONSENT WAS OBTAINED:
(dd/mm/yyyy)

A.16 RESPONDENT'S RELATIONSHIP TO HOUSEHOLD HEAD

0. Self
1. Spouse
2. Bio daughter/son
3. Step/adopt daughter/son
4. Bio mother/father
5. Step mother/father
6. Bio sister/brother
7. Step sister/brother
8. Maternal uncle/aunt
9. Paternal uncle/aunt
10. Maternal grandparent
11. Paternal grandparent
12. Cousin
13. Niece/nephew
14. Brother in-law
15. Sister in-law
16. Mother/father in-law
17. Spouse's other wife
18. Other relative
19. Other non-relative

A.17 ENTER INTERVIEW DATE:
(dd/mm/yyyy)

A.18 ENTER INTERVIEW START TIME
[24 HOUR CLOCK]:

SOCIODEMOGRAPHICS

Introduction:

This survey is being asked of boys, some your age, some younger, some older, and in many different cultures. Some of the items will apply to you, while others may not.

IA1. How old are you?

_____ years old

IA1a. When were you born?

[Enter date of birth (dd/mm/yyyy)]

IA2. Are you currently enrolled in school?

0. No
1. Yes
2. It is currently holiday break or vacation; otherwise, I would be going to school

996. Refuse

IA3. Including you, how many people typically sleep in the same room as you?

0. I sleep alone
1. 1 other person
2. 2 or 3 other people
3. 4 or more other people

996. Refuse to answer

IA4.What is your race/ethnicity?

1. Kikuyu
2. Luo
3. Luhya
4. Kamba
5. Kisii
6. Kalenjin
7. Somali
8. Borana
9. Garre
10. Other_____(Specify)

996. Refuse to answer

IA5A. Were you born in Korogocho

0. No
1. Yes

998. Don't know
996. Refuse to answer

(→If Yes to IA5A (born in Korogocho), skip to 1A6)

If No or don't know to IA5A

IA5B. How old were you when you began living in Korogocho?

Age in years _____

998. Don't know
996. Refuse to answer

IA5C. When you came to Korogocho, where did you come from?

1. Other slum in Nairobi
2. Other non-slum in Nairobi
3. Another city/urban area in Kenya
4. A rural area of Kenya (Specify County)
5. Another country

998. Don't know
996. Refuse to answer

IA6. What is your religion?

0. I do not have a religion
1. Catholic
2. Protestant
3. Pentecostal/Charismatic
4. Other Christian
5. Muslim
6. Other

998 Don't know
996. Refuse to answer

(→ If "I do not have a religion" or "Do not know" or "Refuse to answer", skip to IIA1)

IA7. How important is religion to you?

1. Not important at all
2. Not very important
3. Somewhat important
4. Very important

996. Refuse to answer

IA8. In the past month, how often did you attend religious services (example: at a church, temple, or mosque)?

0. Never
1. Once this past month
2. Two or three times a month
3. Once a week or more

996. Refuse to answer

FAMILY
Structure

IIA1. Who is the person who most looks after you/takes care of you? This is sometimes called your primary or main caretaker (Choose 1)

0. There is no one who looks after me
1. Mother
2. Father
3. Step-mother
4. Step-father
5. Brother
6. Sister
7. Grandmother
8. Grandfather
9. Aunt
10. Uncle
11. Other adult family member (specify)
12. Other adult non-family member (specify)
997. Other_____
996. Refuse to answer

IIA1_other11 What other adult family member takes care of you? _____

IIA1_other12 What other adult non-family member takes care of you? _____

IIA1_other997 What other person takes care of you? _____

IIA1b [If IIA1= Other adult family member, other adult non-family member, other] Is your main caretaker male or female?

1. Male
2. Female

IIA2bro. How many brothers do you have? This includes step-brothers as well as those who do not live with you.

NUMERICAL
0. None**(→ If 0 (zero) to IIA2bro (no brothers), skip to IIA2sis)**
999. Don't know
996. Refused

IIA2bro_old. How many of them are older than you?

NUMERICAL (Cannot be greater than IIA2bro)
0. None
999. Don't know
996. Refused

IIA2sis. How many sisters do you have? This includes step-sisters as well as those who do not live with you.

NUMERICAL
0. None **(→ If 0 (zero) to IIA2sis (no sisters), skip to IIA3)**
999. Don't know
996. Refused

IIA2sis_old. How many of them are older than you?

NUMERICAL (Cannot be greater than IIA2sis)
0. None
999. Don't know
996. Refused

IIA3. Have any members of your immediate family died, like a parent, or a brother or sister?

0. No
1. Yes
996. Refused

(→ If No to IIA3 (no death in family), skip to IIB1)

IIA3a. If yes to IIA3: Who died? (Select all that apply)

1. Mother
2. Father
3. Brother or sister
996. Refused

Family Connection/Communications

IIB1. Who do you usually talk to if you have worries or concerns?
(Pick <u>the one</u> you are most likely to talk to)

1. Mother/main female caretaker
2. Father/main male caretaker
3. Brother
4. Sister
5. Friends
6. Grandparent
7. Other family member
8. Teacher
9. Someone at a school clinic, health center or youth center like a doctor, nurse or social worker

997. Other (specify_____)
15. I do not speak to anyone when I have questions or worries

IIB1_other. Who would be another person you usually talk to if you have worries or concerns? _____

IIB2. How comfortable do you feel talking with [response IIA1] about:

IIB2a. Things that worry you
IIB2b. Changes with your body
IIB2c. Problems with boyfriend or girlfriend

1. Not at all comfortable
2. Not very comfortable
3. Somewhat comfortable
4. Very comfortable

997. Not applicable (no boy-/girlfriend)
996. Refuse to answer

IIB3. Do you feel that [response IIA1] cares about what you are thinking and feeling?

1. Not at all
2. Not much
3. Somewhat
4. A lot

999. Don't know
996. Refused

IIB4. Do you feel close to your mother/main female caretaker? (By close, we mean that you can talk to that woman and tell her about personal and important things)

1. Not at all
2. Not much
3. Somewhat
4. A lot

999. I have no mother or female caretaker
999. Don't know
996. Refused

IIB5. Do you feel close to your father/main male caretaker? (By close, we mean that you can talk that man about personal and important things)

1. Not at all
2. Not much
3. Somewhat
4. A lot

999. I have no father or male caretaker
999. Don't know
996. Refused

Family Monitoring

IIC To what extent are these things true about [response IIA1]?
IIC1a. Knows who my friends are by name
IIC1b. [Item displayed only if in school, if IA3=1] Knows my grades/how I am doing in school
IIC1c. Usually knows where I am

1. Not true at all
2. Not very true
3. Somewhat true
4. Very true

996. Refused
999. Don't know

Family Expectations

IIC. To what extent are these things true about what [response IIA1] expects of you?
IIC2a. [Item displayed only if in school, if IA3=1] Have good grades
IIC2b. [Item displayed only if out of school, if IA3=0] Return to school
IIC2c. Graduate from high school
IIC2d. Go to university

1. Not true at all
2. Not very true
3. Somewhat true
4. Very true

996. Refused
999. Don't know

IIC3. [Response IIA1] approve(s) of me having a boyfriend/girlfriend at this time in my life.
(Is this:

1. Not true at all
2. Not very true
3. Somewhat true
4. Very true

996. Refused
999. Don't know

IIC4. When does [response IIA1] expect you to marry?

1. After primary school
2. After secondary school
3. After I graduate from university or college
4. When I decide that I want to marry
5. They don't expect me to marry

996. Refused
999. Don't know

PEERS
NUMBER OF CLOSE FRIENDS

Now I will ask you a few questions about your friends, <u>NOT</u> counting the people in your family.

IIIA1. How many close friends (boys and/or girls) do you have? (By close friends, I mean those that you can talk about feelings and share secrets.)

IIIA1a. Male friends
IIIA1b. Female friends

NUMERICAL
0. None
999. Don't know
996. Refused

If "None" for both males and females, skip to section IV.

IIIB. During a normal week, how often do you spend time with your close friends outside of school?

1. Never (no times per week)
2. Not very often (1 or 2 times a week)
3. Often (3-4 times a week)
4. Very often (nearly every day)

996. Refused

PERCEIVED PEERNORMS (CLOSE FRIENDS)

IIIC1. How many of your close friends think that it is important to"

IIIC1a. Attend school regularly
IIIC1b. Study hard
IIIC1d. Be good in sports
IIIC1e. Be popular with people your age
IIIC1f. Pay attention to their appearance
IIIC1g. Have a boyfriend or girlfriend
IIIC1h. Have sexual intercourse

1. None
2. Few
3. Most
4. All

999. Don't know
996. Refused

IIIC2. In general, how many of your close friends do you think:

IIIC2a. Smoke cigarettes (tobacco)
IIIC2b. Drink alcohol (store bought or home brewed)
IIIC2c. Use drugs
IIIC2d. Have dropped out of school permanently

1. None
2. Few
3. Most
4. All

999. Don’t know
996. Refused

SCHOOL: CONNECTEDNESS AND ASPIRATIONS

(If not in school, IA3=0 skip to IVA8)

School Connectedness

IVA1. What grade or class are you in?

1. Primary Grade 1
2. Primary Grade 2
3. Primary Grade 3
4. Primary Grade 4
5. Primary Grade 5
6. Primary Grade 6
7. Primary Grade 7
8. Primary Grade 8
9. Secondary Form 1
10. Secondary Form 2
11. Secondary Form 3
12. Secondary Form 4
13. Vocational/trade school

999. Don’t know
996. Refused

IVA2. How much school do you think you will complete?

1. Primary Grade 1
2. Primary Grade 2
3. Primary Grade 3
4. Primary Grade 4
5. Primary Grade 5
6. Primary Grade 6
7. Primary Grade 7
8. Primary Grade 8
9. Secondary Form 1
10. Secondary Form 2
11. Secondary Form 3
12. Secondary Form 4
13. Vocational/trade school

999. Don’t know
996. Refused

IVA3. Compared with others students in your class, how well do you think you are doing with your grades?

1. A lot worse

2. Worse
3. About the same
4. Better
5. A lot better
999. Don't know
996. Refused

IVA4. Have you thought about dropping out of school this year?

0. Never
1. Yes, sometimes
2. Yes, a lot
999. Don't know
996. Refused

IVA5. Do you feel that there is an adult (a teacher or someone else) in school who really cares about you as a person?

0. No, no one really cares
1. Yes, some of the time
2. Yes, all the time
999. Don't know
996. Refused

IVA6. Do you feel that there is an adult (a teacher or someone else) in school who really cares about how well you are doing in school?

0. No, no one really cares
1. Yes, some of the time
2. Yes, all the time
999. Don't know
996. Refused

IVA7. During the past month, how many days did you miss school for any reason except when school was closed or for holidays?

0. None
1. 1-2 days
2. 3-5 days
3. More than 5 days
999. Don't know
996. Refused

(→ If None or Don't know to IVA7 (did not miss any days), skip to IVB1.)

IVA8. [If yes IVA7 (missed school)] What were the main reasons you missed school last month? (Check all that apply)

1. Sick

2. Lack of school fees
3. Help out at home
4. Babysit younger brothers/sisters
5. Work to earn money
6. Hang out with friends
7. Studying for exam

997. Other_____ (specify)
999. Don't know
996. Refused

IVA8a_other. Please specify what those other reasons were for missing school._____

IV.A.10 Out of school

(→ If in school, IA3=1, skip to IVB1)

Some young people who are participating in this study are not in school right now, or have never have been in school. If that is true for you we would like to make sure we include your thoughts.

IVA9. Have you ever been in school?

0. No
1. Yes

999. Don't know/not sure
996. Refused

(→ If No or Don't Know/not sure to IVA9, skip to IVA12)

IVA10. [If Yes to IVA9]. What is the highest grade or class you completed?

1. Primary Grade 1
2. Primary Grade 2
3. Primary Grade 3
4. Primary Grade 4
5. Primary Grade 5
6. Primary Grade 6
7. Primary Grade 7
8. Primary Grade 8
9. Secondary Form 1
10. Secondary Form 2
11. Secondary Form 3
12. Secondary Form 4
13. Vocational/trade school

999. Don't know/not sure
996. Refused

IVA11.How long has it been since you left school?

1. Less than 1 year
2. Between 1 to 2 years
3. Between 2 to 3 years
4. More than 3 years

IVA12. What are some of the main reasons you are not in school? (Check all that apply)

1. Lack of school fees, uniforms, materials
2. Got pregnant/made girlfriend pregnant
3. Got married
4. Sickness
5. Needed/wanted to earn money
6. Not a good student/failed in school
7. Not interested

997. Other_____ (specify)
999. Don't know
996. Refused

IVA12_other Please specify the other reason you are not in school._____

School Structure

(→ If out of school IA3=0 skip to VA1)

IVB1. Which best describes the <u>students</u> in your school? They are…

1. All girls
2. All boys
3. Both boys and girls

996. Refused

IVB2. What kind of school do you go to?

1. Public school
2. Private, non-religious or secular school
3. Religious school

997. Other type of school_____ (specify)
999. Don't know
996. Refused

IVB2_other. Please specify the other type of school you go to._____

IVB3. Which best describes the <u>teachers</u> in your school?

1. Mostly women (very few or no men)
2. Mostly men (very few or no women)
3. Both men and women

996. Refused

IVB4. All schools are different. Which of the following are available for students to use at your school?

IVB4a. Toilets or latrines with doors?
IVB4b. Running water
IVB4c. Soap
IVB4d. Computers
IVB4e. Sports or other clubs

0. No
1. Yes
999. Don't know/not sure
996. Refused

Neighborhood

Cohesion

VA1. The following questions are about adults in your neighborhood. That is, people who live in the same area, but are not your family or relatives. Tell me how much you think that the following is true.

VA1a. People in my neighborhood look out for and help their neighbors
VA1b. People in my neighborhood can be trusted
VA1c. People in my neighborhood know who I am
VA1d. People in my neighborhood care about me

1. Not true at all
2. Not very true
3. Somewhat true
4. Very true
999. Don't know
996. Refused

Perceived Social Control

VA2. How likely is it that an adult in your neighborhood would do something like intervene if children or teenagers were?

VA2a. Damaging property
VA2b. Spraying paint on walls (graffiti)
VA2c. Bullying or threatening another person
VA2d. Fighting with another person
VA2e. Doing something illegal in the neighborhood like selling drugs

1. Very unlikely
2. Not very likely
3. Somewhat likely

4. Very likely
999. Don't know
996. Refused

Neighborhood Safety

VA3 How much you think that the following are true about safety in your neighborhood?

VA3a. There are a lot of safe places where people my age can spend time outdoors in my neighborhood
VA3b. Every few weeks, an adolescent or adult in my neighborhood gets beaten up or mugged
VA3c. Every few weeks, some adult in my neighborhood gets beaten up or mugged
VA3d. I have seen people using or selling drugs in my neighborhood
VA3e. In the morning or later in the day, I have often seen drunk people on the streets in my neighborhood
VA3f. Most adults in my neighborhood respect the law
VA3g. I feel safe when I walk in my neighborhood during the day
VA3h. People in my neighborhood often damage or steal each other's property
VA3i. I feel safe walking in my neighborhood by myself at night
VA3j. Boys or girls are often harassed or called names in my neighborhood

1. Not true at all
2. Not very true
3. Somewhat true
4. Very true
999. Don't know
996. Refused

VA4. Sometimes children feel unsafe or threatened when they are in their neighborhood, on the way to school, or in school. For example, afraid of being attacked, bullied or being hurt. Has this happened to you?

0. Never
1. Rarely
2. Sometimes
3. Often
999. Don't know
996. Refused

(→If never or don't know to VA4 (do not feel unsafe), skip to VA8)

VA5. Can you tell me where you feel unsafe or threatened? (Select all that apply)

VA5_1. In your neighborhood
VA5_2. On the way to school
VA5_3. In your classroom
VA5_4. On the playground, gym, or sports field in school

0. No

1. Yes
999. Don't know
996. Refused

VA6. If Yes to VA5_1 or VA5_2: Who or what makes you feel unsafe or threatened in your neighborhood?
(Select all that apply)

1. Adults
2. Boys or girls your age
3. Other things (example: dogs, other animals, car accidents)

996. Refused

VA6_other. Please specify what makes you feel unsafe or threatened.

_____

VA7. If Yes to VA5_3 or VA5_4: Who or what makes you feel unsafe or threatened in school?
(Select all that apply)

1. Teachers or other adults
2. Classmates or other students
3. Other things (example: dogs, other animals, car accidents)

996. Refused

VA7_other. Please specify what makes you feel unsafe or threatened.

_____

VA8. Is there a person who you would go to if you felt threatened or unsafe?

0. No
1. Yes
999. Don't know
996. Refused

(→ If No to VA8 (no one they would go to), skip to VA10)

VA9. Who would you go to for help or advice if you felt unsafe or threatened?
(Select all that apply)

1. Parent/caretaker
2. Sibling
3. Other family member
4. Friend
7. Boyfriend/girlfriend
9. Teacher or coach

10. Religious leader
11. Police
997. Other____ (specify)
996. Refused

VA9_other. Please specify the other person you would go to for help or advice if you felt unsafe or threatened. _____

VA10. Do you ever carry a weapon like a gun, razor, or a club for protection?

0. Never
1. Rarely
2. Sometimes
3. Often
999. Don't know
996. Refused

Media

The following questions are about your access to and use of media, for example: TV, radio, movies, computers, Internet, mobile phones.

VIA1. For each item, please tell me if you have access to it.
VIA1a. Television
VIA1b. Radio
VIA1c. Computer/laptop /tablet (eg. iPad) with internet connection
VIA1d. Cell/mobile phone
VIA1f. Social media account such as Facebook, Twitter, etc.

0. No, do not have
1. Yes, but don't have my own
2. Yes, I have my own
997. Other _____ (specify)
996. Refused

VIA2. [If in school (IA3=1)] On a typical school day, how many hours total do you spend watching TV/movies, playing computer or video games, using the Internet, chatting to friends online or on a mobile phone, or using other media?

0. None (I do not use electronic media)
1. About 1 hour
2. About 2 hours
3. About 3 hours
4. Between 4 and 5 hours
5. More than 5 hours
996. Refuse to answer

VIA3. [Skip if IIIA1a=0 and IIIA1b=0; have no friends] How often do you do the following?

VIA3a. Contact your friends using texting or other social media
VIA3b. Talk to your friends directly by phone or computer (for example, using a phone or video call)

0. Never (never includes "do not have a phone")
1. Less than weekly
2. Weekly
3. Daily

996. Refuse to answer

VIA4. Sometimes young people watch pornography, that is, movies or videos that show people's genitals (private parts) during sexual scenes. Have you seen this type of program before?

0. Never
1. Occasionally
2. Yes, often
3. Yes, very often

996. Refuse to answer

Health literacy/information

VIIA1. Have you heard of HIV/AIDS?

0. No
1. Yes

999. Don't know
996. Refuse to answer

VIIA2. Have you heard about condoms that men can put on before having sexual intercourse? By sexual intercourse we mean when a man puts his penis in a woman's vagina

0. No
1. Yes

999. Don't know
996. Refuse to answer

VIIA3. [If VIIA2=1] Have you seen a condom?

0. No
1. Yes

999. Don't know
996. Refuse to answer

VIIA4. Here are some statements about pregnancy and HIV. Please tell me whether you think the statement is true, or false, or whether you don't know.

VIIA4_1. A girl can get pregnant the first time that she has sexual intercourse.
VIIA4_2. A boy/girl can get HIV the first time he/she has sexual intercourse.
VIIA4_3. A girl can get pregnant after kissing or hugging.
VIIA4_4. A girl can swallow a pill every day to protect against pregnancy.
VIIA4_5. Using a condom can protect against pregnancy.
VIIA4_6. Using a condom can protect against HIV.
VIIA4_7. You can get HIV through kissing.
VIIA4_8. A girl can have a shot or injection that will protect against pregnancy.
VIIA4_9. A girl or boy can swallow a pill before having sex that will protect against HIV.
VIIA4_10. A girl can use herbs to prevent a pregnancy.
VIIA4_11. A boy can get a girl pregnant before he has his first ejaculation
VIIA4_12. A boy can be fertile every day of the month
VIIA4_13. It normal for a girl to have periods that don't come at the same time each month?

0. False
1. True
999. Don't know
996. Refuse to answer

VIIA5. If an adolescent girl in your neighborhood needed contraception (birth control), do you think she would know where to get it?

0. No
1. Maybe
2. Yes
997. Don't know what it is/don't understand
999. Don't know
996. Refuse to answer

VIIA6. The following questions are about your knowledge or experience using health services. Tell me how much you think that the following is true.

VIIA6a. I know where to go if I am sick
VIIA6b. I know where to go to get condoms
VIIA6f. I would feel too shy or embarrassed to go get a condom if I needed it

0. No
1. Yes
997. Don't know what it is/don't understand
999. Don't know
996. Refuse to answer

ADOLESCENT HEALTH

You are doing really great so far. Now we are going to talk about your health and your body.

VIIIA1. In general, how is your health?

1. Poor
2. Fair
3. Good
4. Excellent

999. Don't know
996. Refuse to answer

VIIIA2. How much do you weigh (kgs)

Kgs___

999. Don't know
996. Refuse to answer

(→ If weight is known, record self-reported weight and also request VIIIA2a to take actual weight)
(→ If Don't know or Refuse to answer, skip toVIIIA2a.and request to take actual weight)

VIIIA2a. RECORD ACTUAL WEIGHT MEASURED

_____kgs

999. Refused to be measured

VIIIA3. What is your height? (Centimeters)?

Cm___

999. Don't know
996. Refuse to answer

(→ If height is known, record self-reported height and also request VIIIA3a to take actual height)
(→ If Don't know or Refuse to answer, skip toVIIIA2a.and request to take actual height)

VIIIA3a. RECORD ACTUAL HEIGHT MEASURED

_____

999. Refused to be measured

VIII4. How do you think of yourself in terms of your weight?

1. Much too thin
2. A bit too thin

3. About the right weight
4. A bit too fat
5. Much too fat
999. Don't know
996. Refuse to answer

VIIIA5. How do you think of yourself in terms of your height?

1. Much too tall
2. A bit too tall
3. About the right height
4. A bit too short
5. Much too short
999. Don't know
996. Refuse to answer

VIIIA6 As children grow up, their bodies start to change. Thinking about your body, how fast do you feel you are maturing/changing compared with other [insert biological sex of respondent, e.g. boys/girls] your age?

1. Faster
2. About the same
3. Slower
999. Don't know
996. Refuse to answer

Pubertal Maturation

VIIIC1. Have you started puberty? (By puberty we mean have your penis or testicals become larger or have you developed pubic hair?)

0. No
1. Yes
999. Don't know
997. I don’t understand the question
996. Refuse to answer

VIIIC2. Do you speak in a deeper voice now than when you were younger?

0. No
1. Yes
999. Don't know
997. I don’t understand the question
996. Refuse to answer

(→ If No to VIIIC2, skip to VIIIC3)

VIIIC2a. If Yes to VIIIC2 (speak in a deeper voice): How old were you when your voice changed?

1. <9 years old
2. 9-10 years old
3. 11-12 years old
4. 13-14 years old

999. Can't remember
996. Refuse to answer

VIIIC3 Have you started to grow some hair on your face like a mustache or beard?

0. No
1. Yes

999. Don't know
996. Refuse to answer

VIIIC3a If yes to VIIIC3: How old were you when you began growing a beard or mustache?

1. <9 years old
2. 9-10 years old
3. 11-12 years old
4. 13-14 years old

999. Can't remember
996. Refuse to answer

Ask if VIIIC1=1

VIIIC4 Have you ever had wet dreams? (A time when you woke up realizing that your bed was wet from liquid (semen) that came out of your penis while you were asleep)?

0. No
1. Yes

999. Don't know
997. I don't understand the question
996. Refuse to answer

Body Comfort

VIIID1. Boys/girls have different feelings about their bodies and the changes they experience. Here are some statements about how you feel about your body. Please tell me how much you agree or disagree with each.

VIIID1a. On the whole, I am satisfied with my body
VIIID1b. I worry about the way that my body looks
VIIID1c. I like the way I look
VIIID1d. I like looking at my body
VIIID1e. I feel like I am beautiful
VIIID1f. I often wish my body were different
VIIID1g. I am worried that my body is not developing normally

1. Agree a lot
2. Agree a little
3. Neither agree, nor disagree
4. Disagree a little
5. Disagree a lot

996. Refuse to answer

(→ If the respondent answered No to genital development (VIIIC1), voice change (VIIC2), and facial hair growth (VIIIC3), skip to VIIID3)

VIIID2. If Yes to puberty/body changes: During the teenage years, boys' bodies change in many ways, at different times. I would like to know how you feel about some of these changes. Please tell me how much you agree or disagree with the following statements.

VIIID2a. I like the fact that I am becoming a man
VIIID2b. I like that response [IIA1] may treat me more like an adult now
VIIID2c. In general, I am proud of the pubertal changes I am going through

1. Agree a lot
2. Agree a little
3. Neither agree, nor disagree
4. Disagree a little
5. Disagree a lot

996. Refuse to answer

VIIID3. Have you talked with anyone about the body changes that happen as boys grow up?

0. No
1. Yes

996. Refuse to answer

(→ If No to VIIID3 (did not talk with anyone about puberty), skip to section VIIID4)

VIIID3a. If Yes to VIIID3 (talked to someone regarding pubertal changes): Who did you talk to? (You may select more than one person)

1. Mother/female caregiver
2. Father/male caregiver
3. Sister
4. Brother
5. Other family member
6. Friend/peer
7. Doctor/nurse or other person at a health center

997. Other _____ (specify)

996. Refuse to answer

VIIID3a_other Please specify the other person you talked to about pubertal changes._____

VIIID4. Have you ever discussed the following topics with anyone?

VIIID4a. Sexual relationships
VIIID4b. Pregnancy and how it occurs
VIIID4c. Contraception
VIIID4d. HIV/AIDS
VIIID4x. Only ask if wet dreams **VIIIC4=1: How to take care of yourself once you start having wet dreams**

0. No
1. Yes
999. Don't understand
997. I don't understand the question
996. Refuse to answer

(→ If No or can't remember to all items in VIIID4 (did not talk about sex/pregnancy/ contraception/HIV), skip to section IX.)

VIIID5a. If yes to VIIID4a: Sexual relationships;
Who did you talk to about sexual relationships? (You may select more than one person)

1. Mother/female caregiver
2. Father/male caregiver
3. Sister
4. Brother
5. Other family member
6. Friend/peer
7. Doctor/nurse or other person at a health center

997. Other _____ (specify)
996. Refuse to answer

VIIID5a_other Please specify the other person you talk to about sexual relationships._____

VIIID5b. If yes to VIIID4b talked about pregnancy and how it occurs;
Who did you talk to about pregnancy? (You may select more than one person)

1. Mother/female caregiver
2. Father/male caregiver
3. Sister
4. Brother
5. Other family member
6. Friend/peer
7. Doctor/nurse or other person at a health center

997. Other _____ (specify)
996. Refuse to answer

VIIID5b_other Please specify the other person you talk to about pregnancy.

_____

VIIID5c. If yes to VIIID4c talked about contraception
Who did you talk to about contraception? (You may select more than one person)

1. Mother/female caregiver
2. Father/male caregiver
3. Sister
4. Brother
5. Other family member
6. Friend/peer
7. Doctor/nurse or other person at a health center

997. Other _____ (specify)
996. Refuse to answer

VIIID5c_other. Please specify the other person you talk to about contraception.

_____

VIIID5d. If yes to VIIID4d talked about HIV/AIDS
Who did you talk to about HIV/AIDS? (You may select more than one person)

1. Mother/female caregiver
2. Father/male caregiver
3. Sister
4. Brother
5. Other family member
6. Friend/peer
7. Doctor/nurse or other person at a health center

997. Other _____ (specify)
996. Refuse to answer

VIIID5d_other. Please specify the other person you talk to about HIV/AIDS.

_____

VIIID5e. If yes to VIIID4x talked about wet dreams
Who did you talk to about wet dreams? (You may select more than one person)

1. Mother/female caregiver
2. Father/male caregiver
3. Sister
4. Brother
5. Other family member
6. Friend/peer

7. Doctor/nurse or other person at a health center
997. Other _____ (specify)
996. Refuse to answer

VIIID5e_other. Please specify the other person you talk to about your wet dreams

_____

MENTAL HEALTH

During adolescence, we know that people your age often experience emotional ups and downs, for example feeling really happy one day and really sad another day. That is normal. Here we would like to better understand if you experience emotional lows a lot. Also, we want to know if you have had experiences that might have caused you to feel very sad or low.

Depression

IXA. We would like to know a little about how you are feeling. Tell me how much you agree with the following statements:

IXA1a. In general, I see myself as a happy person
IXA1b. I blame myself when things go wrong
IXA1c. I worry for no good reason
IXA1d. I am so unhappy I can't sleep at night
IXA1e. I feel sad
IXA1f. I am so unhappy I think of harming myself

1. Agree a lot
2. Agree a little
3. Neither agree, nor disagree
4. Disagree a little
5. Disagree a lot

996. Refuse to answer

Adverse Childhood Experiences

IXB1. Now we would like to ask whether as a child you ever experienced any of these things. You may not want to tell us, and that is OK, but the reason we are asking is that it will help us better understand who you are and what you have experienced.

IXB1a. Have you ever been scared or felt really bad because grown-ups called you names, said mean things to you, or said they didn't want you?
IXB1b. Have you ever been scared that your parents or other adults were going to hurt you badly (so that you were injured or killed)?

IXB1c. Have you ever felt like you are not loved or cared about?
IXB1d. Have you ever felt like you have no one that protects you?
IXB1e. Has there ever been a time of your life when you were totally on your own and had to take care of yourself for more than a short time?
IXB1f. Have your parents/guardian ever drank too much alcohol or used drugs so they came home and were really abusive to you or your family?
IXB1g. Has there ever been a time when your family did not have enough food because they had no money?
IXB1h. Have you ever seen your mom being hit, beaten or threatened?
IXB1i. Have you ever seen your mother or father so sad that they couldn't take care of you?
IXB1j. Have any of your parents ever been in prison/jail?
IXB1k. Has your family ever been forced to leave your home/house?
IXB1l. Has an adult ever touched you in your private parts except when being bathed?
IXB1m. Has an adult ever attempted or forced you to have sexual intercourse?

0. Never
1. Sometimes
2. Often

999. Don't know
996. Refuse to answer

Bullying and Gender Based Violence

IXC1. During the last six months, have you seen any of your <u>male</u> peers <u>bully or threaten</u> someone? By bullying we mean making threats, spreading rumors against someone, attacking someone verbally or excluding someone from a group on purpose.

0. No, I have not seen them bully/threaten someone
1. Yes, I have seen them bully/threaten both boys and girls
2. Yes, I have seen them bully/threaten girls
3. Yes, I have seen them bully/threaten other boys

999. Don't know
996. Refuse to answer

IXC2. During the last six months, have you seen any of your <u>female</u> peers bully or threaten someone?

0. No, I have not seen them bully/threaten someone
1. Yes, I have seen them bully/threaten both boys and girls
2. Yes, I have seen them bully/threaten boys
3. Yes, I have seen them bully/threaten other girls

999. Don't know
996. Refuse to answer

IXC3. During the last six months, have you seen any of your <u>male</u> peers start a <u>physical fight</u> with someone?

0. No, I have not seen them start a fight against someone

1. Yes, I have seen them start a fight against both boys and girls
2. Yes, I have seen them start a fight against girls
3. Yes, I have seen them start a fight against other boys

999. Don't know

996. Refuse to answer

IXC4. During the last six months, have you seen any of your female peers start a <u>physical fight</u> with someone?

0. No, I have not seen them start a fight against someone
1. Yes, I have seen them start a fight against both boys and girls
2. Yes, I have seen them start a fight against boys
3. Yes, I have seen them start a fight against other girls

999. Don't know

996. Refuse to answer

IXC5. During the last six months, has someone touched you in a way that you did not want to be touched?

0. No
1. Yes

998. Can't remember

999. Don't know

996. Refuse to answer

IXC6. If Yes to IX1 or IXC2 (witnessed bullying by male or female peer): The last time you saw peers bully or threaten someone, did you try to do something (told them to stop, or called for help)?

0. No
1. Yes

998. Can't remember

999. Don't know

996. Refuse to answer

IXC7. During the last six months, have you been teased or called names by someone?

0. No
1. Yes, by both boys and girls
2. Yes, by a boy
3. Yes, by a girl

998. Can't remember

999. Don't know

996. Refuse to answer

(→ If No or can't remember to IXC7 (no bullying victimization), skip to IXC10)

If yes IXC7 about teased or called names

IXC8 If you were teased or called names, do you think this was because:

IXC8a: You are a boy
IXC8b: The person thought you were acting like a girl

0. No
1. Yes
998. Can't remember
999. Don't know
996. Refuse to answer

IXC9. If yes to IXC7 (bullying victimization): The last time you were bullied or threatened was this in person (face-to-face), or by using the Internet/social media?

1. In person/face-to-face
2. Internet/social media
3. Both in person and through the Internet/social media
999. Don't know
996. Refuse to answer

IXC10. During the last 6 months have you ever been slapped, hit or otherwise been physically hurt by a boy or girl in a way that you did not want?

0. No
1. Yes, by both boys and girls
2. Yes, by a boy or boys
3. Yes, by a girl or girls
999. Don't know
996. Refuse to answer

IXC11. During the last 6 months, have you bullied or threatened another boy or girl for any reason?

0. No
1. Yes, by both boys and girls
2. Yes, by a boy or boys
3. Yes, by a girl or girls
999. Don't know
996. Refuse to answer

IXC12 In the last 6 months, have you ever slapped, hit or otherwise physically hurt another boy or girl in a way that they did not want?

0. No
1. Yes, by both boys and girls
2. Yes, by a boy or boys
3. Yes, by a girl or girls
999. Don't know
996. Refuse to answer

Alcohol and Substance Use

IXD1. Have you ever <u>drank</u> alcohol (except for religious purposes)?

0. No
1. Yes
999. Don't know
996. Refuse to answer

(→ If No or don't know or refused to answer to IXD1 (never used alcohol), skip to IXD4)

IXD2. How old were you when you had your first drink of alcohol?

1. 8 or younger
2. 9 years old
3. 10 years old
4. 11 years old
5. 12 years old
6. 13 years old
7. 14 years old

999. Don't know/can't remember
996. Refuse to answer

IXD3. In your lifetime, how often have you gotten drunk or very high from drinking alcohol?

0. Never
1. Once/ 1 time
2. 2-3 times
3. 4 or more times

999. Don't know/can't remember
996. Refuse to answer

IXD4. In your lifetime have you ever smoked cigarettes, a pipe, or chewed tobacco?

0. No
1. Yes

999. Don't know
996. Refuse to answer

(→ If No or Don't know or refused to answer to IXD4 (never smoked/chewed tobacco), skip to IXD6)

IXD5. If yes to IXD4 (smoked/chewed): How many cigarettes do you normally smoke?

0. I do not smoke
1. 1 cigarette a week or less
2. Less than 1 cigarette a day
3. 2-5 cigarettes a day
4. More than 5 cigarettes a day

999. Don't know
996. Refuse to answer

IXD6. Have you ever used (smoked or eaten) marijuana (grass, weed, pot, bhangi)?

0. No
1. Yes
999. Don't know
996. Refuse to answer

IXD7. Have you ever used any other drugs that were not given to you to treat an illness? (These are sometimes referred to as "street drugs" such as Kuber, msi, jet fuel, cocaine, heroin, crack, mrambe, mandrax, miracle juice, petrol, glue/gum, injectable

0. No
1. Yes
999. Don't know
996. Refuse to answer

ROMANTIC RELATIONSHIPS

Now we are interested in romantic relationships between young people your age in your community, and about your own experience with liking someone as more than just friends.

Sometimes two young people really like each other and try to spend private time together. Some people call this dating or having a boyfriend or girlfriend. This can happen between any two young people.

XA1. At what age do you think most girls in your community start having boyfriends?

NUMERICAL
999. Don't know
996. Refuse to answer

XA2. At what age do you think most boys in your community start having girlfriends?

NUMERICAL
999. Don't know
996. Refuse to answer

XA3. How important is it to you to have a girlfriend or boyfriend right now?

0. Not at all important
1. Not very important
2. Somewhat important
3. Very important
999. Don't know
996. Refuse to answer

If XA3=2, 3 i.e. to have a boy or girl friend is very important or somewhat important go to Xa4; otherwise skip to XA5

XA4. **Why is it important for you to have a boy/girlfriend?**

1. I want to be cared for
2. I want to be popular
3. I want to be loved
4. I want to be protected

997. Other
999. Don't know
996. Refuse to answer

XA4e_other Please specify the other reason why having a boy/girlfriend is important

_____

XA5.Do you have any close friends your age who have had boyfriends or girlfriends?

0. No, I have no close friends
1. No, none of my close friends
2. Yes, some of my close friends
3. Yes, most of my close friends

999. Don't know
996. Refuse to answer

XA6. Have you ever felt that you were in love with a boy or a girl?

0. No, neither
1. Yes, with a girl
2. Yes, with a boy
3. Yes, with both boys and girls

999. Don't know
996. Refuse to answer

(If No or don't know to XA6 (never been in love), skip to XA11;
If XA6=1 or 2, skip to XA8;

XA7. [If XA6=3] The last time you were in love, was it with a boy or girl?

1. A boy
2. A girl

999. Don't know
996. Refuse to answer

XA8. The last time you were in love, did this person like you back?

0. No
1. Yes
2. Not sure

999. Don't know
996. Refuse to answer

XA9. Did you tell other people that he/she was your [girlfriend (if XA6=1 or XA7=2) boyfriend (if IXA6=2 or XA7=1)]?

0. No
1. Yes
999. Don't know
996. Refuse to answer

XA10. Did you ever have to keep the relationship secret from your [response IIA1]?

0. No
1. Yes
999. Don't know
996. Refuse to answer

XA11. Today which statement <u>best</u> describes you? (Select one)

0. I have never been in a romantic relationship
1. I am not currently in a romantic relationship, but I have had a boy-/girlfriend in the past
2. I have more than one girlfriend
3. I have more than one boyfriend
4. I have a girlfriend
5. I have a boyfriend
6. I am engaged to be married to someone
7. I am married

999. Don't know
996. Refuse to answer

(→ If answer IXA11=0 I have never been in a romantic relationship, **skip to XB9**

XA12. If in current relationships XA11=7, 6, 5,4,3,2

XA12_1. [If has a boyfriend If XA11=5 or 3] Can you talk to [response IIA1] about your boyfriend?
XA12_2. [If has a girlfriend If XA11=4 or 2] Can you talk to [response IIA1] about your girlfriend?

0. No
1. Yes
999. Don't know
996. Refuse to answer

Current or Most Recent Boyfriend/Girlfriend

If XA11=0, has never been in a romantic relationship, skip toXB9

The following questions are about your current or most recent relationship

If "more than one boyfriend" IXA11=3 or the same for "more than one girlfriend" IXA3=2, Pick the one that is the most important for you.

XB1. Can you give me the initial (first letter) of this person?

ALPHABETICAL
999. Don't know
996. Refuse to answer

XB2. How old is [response XB1]?

NUMERICAL
999. Don't know
996. Refuse to answer

XB3a. [If current: IXA11=7, 6, 5, 4, 3, 2] Generally, how often do you spend time alone with [response XB1]?

XB3b. [If past: IXA11=1] Generally, how often did you spend time alone with [response XB1]?

0. Never
1. Very rarely
2. Once a week or less
3. 1-2 times a week
4. 3-4 times a week
5. Every day

999. Don't know
996. Refuse to answer

XB4. **How much do you agree or disagree with the following statements about your relationship with [response XB1?**

If current: IXA11=7,6,5,4,3,2

XB4a_1 There are times when **response XB1** cannot be trusted
XB4a_2 response XB1 makes me feel good about myself in a way my friends can't
XB4a_3 I sometimes do things because **response XB1**is doing them
XB4a_4 response XB1 often influences what I do
XB4a_5 I sometimes do things because I don't want to lose **response XB1**'s respect
XB4a_6 response XB1 sometimes wants to control what I do
XB4a_7 Sometimes I don't know quite what to say to **response XB1**
XB4a_8 I would be uncomfortable having intimate conversations with **response XB1**
XB4a_9 Sometimes I find it hard to talk about my feelings with **response XB1**
XB4a_10 I feel comfortable talking with **response XB1** when I have a problem
XB4a_11 Sometimes I feel I need to watch what I say to **response XB1**
XB4a_12 response XB1cares about me
XB4a_13 I am very attracted to **response XB1**
XB4a_14 The sight of **response XB1** turns me on

XB4a_15 I would rather be with **response XB1** than anyone else
XB4a_16 response XB1 always seems to be on my mind
XB4a_17 response XB1 and I are practically inseparable

If past: IXA11=1

XB4a_1 There were times when X could not be trusted
XB4a_2 response XB1 made me feel good about myself in a way my friends couldn't
XB4a_3 I sometimes did things because **response XB1** was doing them
XB4a_4 response XB1 often influenced what I did
XB4a_5 I sometimes did things because I didn't want to lose **response XB1**'s respect
XB4a_6 response XB1 sometimes wanted to control what I do
XB4a_7 Sometimes I didn't know quite what to say to **response XB1**
XB4a_8 I would be uncomfortable having intimate conversations with **response XB1**
XB4a_9 Sometimes I found it hard to talk about my feelings with **response XB1**
XB4a_10 I felt comfortable talking with **response XB1** when I had a problem
XB4a_11 Sometimes I felt I needed to watch what I said to **response XB1**
XB4a_12 response XB1cared about me
XB4a_13 I was very attracted to **response XB1**
XB4a_14 The sight of X turned me on
XB4a_15 I would have rather been with **response XB1** than anyone else
XB4a_16 response XB1 always seemed to be on my mind
XB4a_17 response XB1 and I were practically inseparable

1. Agree a lot
2. Agree a little
3. Neither agree, nor disagree
4. Disagree a little
5. Disagree a lot

999 Don't know
996 Refuse to answer

XB5. The following questions are about fights you may have had with response XB1

XB5_1 Has [response XB1] ever thrown something at you?
XB5_2 Has [response XB1] ever pushed, shoved, or grabbed you?
XB5_3 Has [response XB1] ever slapped you in the face or head with an open hand?
XB5_4 Has [response XB1] ever hit you?

0. No
1. Yes, one time
2. Yes, several times

999. Don't know
996. Refuse to answer

XB6_1 Have you ever thrown something at [response XB1]?
XB6_2 Have you ever pushed, shoved, or grabbed [response XB1]?
XB6_3 Have you ever slapped response XB1] in the face or head with an open hand?
XB6_4 Have you ever hit [response XB1]?

0. No
1. Yes, one time

2. Yes, several times
999. Don't know
996. Refuse to answer

XB7. Have you ever told [response XB1]: "I love you"?

0. No
1. Yes
999. Don't know
996. Refuse to answer

XB8. Did [response XB1] ever tell you he/ she loved you?

0. No
1. Yes
999. Don't know
996. Refuse to answer

XB9. [If XA11=0 or 1] Young people have different reasons for not having boyfriends or girlfriends. What are the most important reasons that you do not have a boyfriend/girlfriend now? (You may select more than one reason)

1. I am too young
2. My parents/primary caregiver would be very angry
3. It would interfere with my work
4. I would get a bad reputation
5. It is against my culture/religion
6. I want to but do not have the opportunity
7. I am afraid of the consequences for my future
8. I don't trust boys
9. I don't trust girls
999. Don't know
996. Refuse to answer

SEXUAL BEHAVIOR

The following are questions about sexual behaviors. At times people your age do not understand the questions and at times they are uncomfortable. Whatever the reason, you should feel free not to answer any question or if you are embarrassed or uncomfortable with the questions being asked please feel free to stop. How much to answer is completely your choice and no one will criticize you for not wanting to go on.

First, we will ask some questions about what you think your close friends might have done together with someone as more than just friend, like someone they are in love with [e.g. boyfriend and girlfriend].

XC1. Have any of your close friends kissed with a boyfriend or girlfriend?

0. No, none
1. Yes, some

2. Yes, most
999. Don't know
997. Don't understand the question
996. Refuse to answer

XC2. Have any of your close friends touched another boy or girls' private parts (e.g. breasts or genitals)?

0. No, none
1. Yes, some friends
2. Yes, many friends
999. Don't know
997. Don't understand the question
996. Refuse to answer

XC3. Have any of your close friends had sex (sexual intercourse)? This is when a man or boy puts his penis inside a girl's or woman's vagina.

0. No, none
1. Yes, some friends
2. Yes, many friends
999. Don't know
997. Don't understand the question
996. Refuse to answer

Now we would like to ask you about things that YOU might have done together with someone else as more than just friends (i.e. with a boyfriend/girlfriend). Remember that you can skip any question that you do not feel comfortable answering.

XC4. [If XB3a or XB3b is not 0,999,996, (has spent time alone with partner) automatically recode as "yes" + sex from XA11 and skip to XC5]
Have you ever spent time alone with someone you were in love with in a private space without any adults around?

0. No
1. Yes, with a boy
2. Yes, with a girl
999. Don't know
997. Don't understand the question
996. Refuse to answer

XC5. Have you ever held hands with someone you were in love with?

0. No
1. Yes, with a boy
2. Yes, with a girl
999. Don't know
997. Don't understand the question
996. Refuse to answer

XC6. Have you ever hugged or cuddled with someone you were in love with? By this we mean when two young people hold each other close as more than just friends, to show love or affection.

0. No
1. Yes, with a boy
2. Yes, with a girl
999. Don't know
997. Don't understand the question
996. Refuse to answer

XC7. Have you ever kissed or been kissed by someone on the lips or with your tongue?

0. No
1. Yes, with a boy
2. Yes, with a girl
999. Don't know
997. Don't understand the question
996. Refuse to answer

XC8. Have you ever flirted with someone using a phone, email, or social media?

0. No
1. Yes, with a boy
2. Yes, with a girl
999. Don't know
997. Don't understand the question
996. Refuse to answer

XC9. Have you ever sent a sexual picture of yourself to someone using the phone, email, or social media?

0. No
1. Yes, to a girl
2. Yes, to a boy
999. Don't know
997. Don't understand the question
996. Refuse to answer

XC10. [If XC2 different from "don't understand"] Have you ever touched another boy or girls' private parts or been touched by someone? By touching, we mean touching boys' or girls' private parts, breasts or other body parts in a sexual way.

0. No
1. Yes, a with a girl
2. Yes, with a boy
999. Don't know
997. Don't understand the question
996. Refuse to answer

XC11. [If XC3 different from "don't understand"] Have you ever had sexual intercourse?

0. No, never
1. Yes, one time
2. Yes, several times
999. Don't know
997. Don't understand the question
996. Refuse to answer

XC12. Have you ever put your mouth on someone's genitals (private parts), or has someone put their mouth on your genitals (private parts)? Some people call this oral sex.

0. No, never
1. Yes, one time
2. Yes, several times
999. Don't know
997. Don't understand the question
996. Refuse to answer

XC13. Have you ever had anal sex? (This is when a man or boy puts his penis inside someone else's anus.)

0. No, never
1. Yes, one time
2. Yes, several times
999. Don't know/can't remember
997. Don't understand the question
996. Refuse to answer

(NOTE TO INTERVIEWER: Software creates a grid based on the activities that the respondent says that he/she ever did. For each behavior, they are asked to list the <u>age at first time</u>. If interviewer administered, ask in relation to each behavior that the respondent indicated 'yes' to).

XC14. How old were you when you first …[Insert activities below only if 'yes' earlier]?

XC14a. Spent time with someone in a private space without any adults around
XC14b. Held hands
XC14c. Cuddled/hugged
XC14d. Kissed on the lips or with tongue
XC14e. Flirted with someone using a phone or social media
XC14f. Sent a sexual picture of yourself
XC14g. Touched someone else's genitals (private parts) in a sexual way
XC14h. Had oral sex
XC14i. Had sexual intercourse
XC14j. Had anal sex

NUMERICAL
999. Don't know
998. I never did that
996. Refuse to answer

(→ Ask only if Yes to XC10 (touching private parts), else skip to XC16a)

XC15a. The first time you either touched or were touched by someone (touching private parts, breasts or other parts of the body in a sexual way), what was your relationship to this person?

1. It was my boyfriend/girlfriend
2. A boy or girl in school or the community other than a boyfriend/girlfriend
3. It was my husband/wife
4. It was a stranger
5. It was a sex worker
6. It was my father or mother
7. It was my brother or sister
8. It was another relative
9. It was a teacher

997. Other _____ (specify)
996. Refuse to answer

XC15a_other Please specify the other person you touched or who touched you: _____

XC15b. How old was this person?

1. Same age as me
2. Younger than me
3. 1-2 years older than me
4. 3-4 years older than me
5. 5 or more years older than me

999. Don't know
996. Refuse to answer

XC15c. The first time you were either touched or were touched by someone, would you say you were willing, somewhat willing or not willing at all to? Willing means you gave permission or said it was OK, or that you did it because you wanted to and not because someone made you.

1. Very willing
2. Somewhat willing
3. Not really willing
4. Not willing at all

999. Don't know
996. Refuse to answer

XC15d. Young people touch each other for different reasons. Please tell me which of the following statements best describes the first time you touched or were touched by someone.

XC15d_1. I wanted to show love

XC15d_2. I was curious about it
XC15d_3. My friends pressured me
XC15d_4. I felt obliged to my boyfriend/girlfriend
XC15d_5. I was threatened
XC15d_6. The person insisted and would not take "no" for an answer
XC15d_7. I was promised money or gifts
XC15d_8. I was physically forced
XC15d_9. I threatened or physically forced the person
XC15d_10. Other: _____

0. No
1. Yes
999. Don't know
996. Refuse to answer

XC15d_10_other Please specify the other reason why you touched or were touched by someone: _____

(→ Ask only if Yes to XC12 (oral sex), else skip to XC17a)

XC16a. The first time you had oral sex with someone (put one's mouth on someone's genitals in a sexual way or vice versa), what was your relationship to this person?

1. It was my boyfriend/girlfriend
2. A boy or girl in school or the community other than a boyfriend/girlfriend
3. It was my husband/wife
4. It was a stranger
5. It was a sex worker
6. It was my father or mother
7. It was my brother or sister
8. It was another relative
9. It was a teacher
10. I was paid

997. Other _____ (specify)
996. Refuse to answer

XC16a_other. Please specify the other person you had oral sex with: _____

XC16b. How old was this person?

1. Same age as me
2. Younger than me
3. 1-2 years older than me
4. 3-4 years older than me
5. 5 or more years older than me

999. Don't know
996. Refuse to answer

XC16c. The first time you had oral sex with someone, would you say you were willing, somewhat willing or not willing at all to? Willing means you gave permission or said it was OK, or that you did it because you wanted to and not because someone made you.

1. Very willing
2. Somewhat willing
3. Not really willing
4. Not willing at all

999. Don't know
996. Refuse to answer

XC16d. Young people have oral sex for different reasons. Please tell me which of the following statements best describes the first time you had oral sex with someone.

XC16d_1. I wanted to show love
XC16d_2. I was curious about it
XC16d_3. My friends pressured me
XC16d_4. I felt obliged to my boyfriend/girlfriend
XC16d_5. I was threatened
XC16d_6. The person insisted and would not take "no" for an answer
XC16d_7. I was promised money or gifts
XC16d_8. I was physically forced
XC16d_9. I threatened or physically forced the person
XC16d_10. I was given alcohol or drugs
XC16d_11. Other: _____

0. No
1. Yes

999. Don't know
996. Refuse to answer

XC16d_11_other Please specify the other reason why you had oral sex: _____

(→ Ask only if Yes to XC11 (sexual intercourse), else skip to XI)

XC17a. The first time you had sexual intercourse with someone, what was your relationship to this person?

1. It was my boyfriend/girlfriend
2. A boy or girl in school or the community other than a boyfriend/girlfriend
3. It was my husband/wife
4. It was a stranger
5. It was a sex worker
6. It was my father or mother
7. It was my brother or sister
8. It was another relative
9. It was a teacher

997. Other _____ (specify)

996. Refuse to answer

XC17a_other Please specify the other person you had sexual intercourse with: _____

XC17b. How old was this person?

1. Same age as me
2. Younger than me
3. 1-2 years older than me
4. 3-4 years older than me
5. 5 or more years older than me

999. Don't know
996. Refuse to answer

XC17c. The first time you had sexual intercourse with someone, would you say you were willing, somewhat willing or not willing at all to? Willing means you gave permission or said it was OK, or that you did it because you wanted to and not because someone made you.

1. Very willing
2. Somewhat willing
3. Not really willing
4. Not willing at all

999. Don't know
996. Refuse to answer

XC17d. Young people have sexual intercourse for different reasons. Please tell me which of the following statements best describes the first time you had sexual intercourse with someone.

XC17d_1. I wanted to show love
XC17d_2. I was curious about it
XC17d_3. My friends pressured me
XC17d_4. I felt obliged to my boyfriend/girlfriend
XC17d_5. I was threatened
XC17d_6. The person insisted and would not take "no" for an answer
XC17d_7. I was promised money or gifts
XC17d_8. I was physically forced
XC17d_9. I threatened or physically forced the person
XC17d_10. I was given alcohol or drugs
XC17d_11. Other: _____

0. No
1. Yes

999. Don't know
996. Refuse to answer

XC17d_11_other Please specify the other reason why you had sexual intercourse

_____

XC17e. The first time you had sexual intercourse, do you remember if you or your partner did anything to protect against pregnancy or sexually transmitted infections?

0. No
1. Yes
999. Don't know
996. Refuse to answer

(→ If No or Don't know to XC17e, skip to XC17g)

XC17f. If yes to XC17e, what method(s) were used? (Select all methods that apply)

1. Male condom
2. Pill
3. Injection
4. Female condom
5. Foam/jelly
6. Periodic abstinence/rhythm
7. Withdrawal
8. Emergency contraception
9. Male sterilization
10. IUD/Coil
11. Implant
997. Other (specify)
996. Refuse

XC17f_other. [If XC17f=997 other] What other method did you use? _____

XC17g. The first time you had sexual intercourse, were you under the influence of alcohol or drugs?

0. No
1. Yes
999. Don't know
996. Refuse to answer

Sex with current or last partner

Questions XD1 to XD7 asked only if respondent has ever had sex XC11=1 or 2, else skip to XI

Now we will ask some questions about what you have done together with [response XB1], your current or last boyfriend/girlfriend or partner.

XD1. [If ever had sex XC11=1 or 2] Have you ever had sexual intercourse with [response XB1]?

0. No
1. Yes
999. Don't know
996. Refuse to answer

XD2. [If XD1=1 (has had intercourse with [response XB1])] Do you feel that having sex with [response XB1] has led to a closer relationship between you two?

0. No
1. Yes
999. Don't know
996. Refuse to answer

XD3. [If XD1=1 (has had intercourse with [response XB1])] Some people are worried about sexually transmitted diseases. How concerned are you about getting an STD from [response XB1]?

0. Not at all concerned.
1. Not really concerned
2. Somewhat concerned
3. Very concerned
997. Don't know what this is
999. Don't know
996. Refuse to answer

XD4. [If XD1=1 (has had intercourse with [response XB1]) AND is a boy with a girlfriend/wife] Some people are worried about pregnancy. How concerned are you about getting [response XB1] pregnant?

0. Not at all concerned.
1. Not really concerned
2. Somewhat concerned
3. Very concerned
999. Don't know
996. Refuse to answer

XD5. [If XD1=1 (has had intercourse with [response XB1]) AND XA11=7,6,5,4,3,2 (has a current partner)] Are you and [response XB1] doing anything to avoid a pregnancy?

0. No
1. Yes
999. Don't know
996. Refuse to answer

XD6. [If XD5=1 (using contraception)] What are you doing to avoid pregnancy? (Select all that apply)

1. Male condom
2. Pill
3. Injection
4. Female condom
5. Foam/jelly

6. Periodic abstinence/rhythm
7. Withdrawal
8. Emergency contraception
9. Male sterilization
10. IUD/Coil
11. Implant
997. Other (specify)
996. Refuse

XD6oth. [If XD6=997 other] What other method did you use? _____

XD7. [If XD5=0 (not using contraception)] Young people have different reasons for not using contraceptives (birth control). Tell me which reasons best describe why you and [response XB1] did not use birth control? (Select as many as apply)

1. I was too embarrassed to talk about using birth control
2. I wanted to get [response XB1] pregnant
3. Things were out of control
4. It was too hard to get [response XB1] to use birth control with me
5. Birth control interferes with enjoyment
6. I didn't know where to get birth control
7. I didn't want to seem too eager for sex
8. I didn't think I could get pregnant
9. I never really thought about it
10. I can't afford it
997. Other (specify)
999. Don't know
996. Refuse to answer

XD8. Do you think that you will have sexual intercourse with someone in the next year?

0. No
1. Yes
2. Maybe
999. Don't know
996. Refuse to answer

XD9. Here are some statements about adolescent pregnancy. Please indicate whether you agree a lot, agree a little, disagree a little, or disagree a lot.

XD9_1. Adolescent girls who get pregnant should have an abortion if they are not married

XD9_2. Adolescent girls who get pregnant should have an abortion because they are too young to raise children

XD9_3. Adolescent girls who get pregnant should have an abortion to stay in school

1. Agree a lot
2. Agree a little
3. Neither agree, nor disagree

4. Disagree a little
5. Disagree a lot

996. Refuse to answer

Empowerment

Freedom of movement

XIA1. Can you tell me how often you are allowed to do the following alone (without an adult present)?

XIA1a. Go to after-school activities (like sports clubs)
XIA1b. Go to a party with BOYS and GIRLS
XIA1c. Meet with friends after school
XIA1d. Go to community center/movies/youth center
XIA1e. Go to church/mosque/temple or religious center
XIA1f. Visit a friend of the opposite sex (e.g. visit a girl if you are a boy or visit a boy if you are a girl)

0. Never
1. Rarely
2. Sometimes
3. Often

999. Don't know

996. Refuse to answer

Voice

XIB1. How often are the following statements true for you?

XIB1a. My parents or guardians ask for my opinion on things
XIB1b. My parents or guardians listen when I share my opinion
XIB1c. My friends ask my advice when they have a problem
XIB1d. If I see something wrong in school or the neighborhood I feel I can tell someone and they will listen
XIB1e. I can speak up in class when I have a comment or question
XIB1f. I can speak up when I see someone else being hurt
XIB1g. I can ask adults for help when I need it

0. Never
1. Rarely
2. Sometimes
3. Often

999. Don't know

996. Refuse to answer

Behavioral Control/Decision-Making

XIC1. How often are you able to make each of the following decisions on your own, without an adult?

XIC1a. What clothes to wear when you are not in school/working
XIC1b. What to do in your free time
XIC1c. What to eat when you are not at home
XIC1d. How much education you will get (eg. [site specific])
XIC1e. Who you can have as friends
XIC1f. Decide WHEN to marry on your own
XIC1g. Decide WHO you will marry on your own

0. Never
1. Rarely
2. Sometimes
3. Often

999. Don't know
996. Refuse to answer

Economic Empowerment

XID1. Some young people take up jobs for which they are paid. Others sell things, have a small business or do work for family or neighbors for which they make some money. Over the past 6 months have you done any chores or activities for which you got paid money?

0. No
1. Yes

999. Don't know
996. Refuse to answer

(→ If XID1=0 (has not made money), skip to XID4)

XID2. What did you do in the last 6 months to earn money? (Check as many as apply)

1. Day labor or temporary work
2. Worked for family (such as parents or relatives)
3. Worked for neighbors or friends
4. Doing occasional jobs for pay
5. Providing services (such as babysitting, hair styling, nail art, selling things like water or cigarettes, washing cars)
6. Begging, panhandling or garbage-picking
7. Part- or full-time job
8. Got an allowance from [response IIA1] or another caretaker

996. Refuse to answer

XID3. Whose idea was it that you work to earn money? (Select all that apply)

0. My idea alone
1. Mother/father
2. Boyfriend/girlfriend
3. Other friend
4. Other family member

997. Other _____

996. Refuse to answer

X1D3oth. [If X1D3=997 other] Which other person suggested that you work to earn money? _____

XID4. In the past 6 months have you received gifts of money? (Including from a boyfriend or girlfriend)?

0. No
1. Yes

999. Don't know

996. Refuse to answer

(→ If XID4=0 (has not received gifts of money), skip to XII1)

XID5. If you did get money over the past 6 months where did you get the money from? (Select all that apply)

1. Mother/father
2. Boyfriend/girlfriend
3. Other friend
4. Other family member

997. Other

996. Refuse to answer

X1D5oth. [If X1D6=997 other] Which other person gave you money? _____

XID6. Who decided how the money you earned/received over the past 6 months was spent? (Select all that apply)

0. Me
1. Mother/father
2. Boyfriend/girlfriend
3. Other friend
4. Other family member
5. There was never a discussion; it was expected that I give it to my family

997. Other

996. Refuse to answer

X1D6_other. [If X1D5=997 other] Which other person decided how the money you earned or received was spent? _____

Future Expectations

In this section we would like to better understand at what age you expect certain things will happen to you in your life.

XII1. I will read some other things that happen in the life of most people. Please tell me if you think they will happen to you, and if so at what age.

XII**1b. Hair growth/voice change**
XII**1c. Leave school forever**
XII**1d. First child**
XII**1e. First job**
XII**1f Marry**

0. Will never happen
1. Will happen
2. Has already happened

999. Don't know
996. Refuse to answer

XII2. [If XII1n is "Will happen"]: At what age do you think these things will happen to you?

XII**2b. Hair growth/voice change**
XII**2c. Leave school forever**
XII**2d. First child**
XII**2e. First job**
XII**2f. Marry**

1. 10-14
2. 15-19
3. 20-24
4. 25-29
5. 30 or more

999. Don't know
996. Refuse to answer

XII**31. [If XII1d IS NOT= 0, 999 or 996] How many children do you think that you will have in your lifetime?**

NUMERIC

0. None

999. Don't know
996. Refuse to answer

8.7.3. Gender Norms Instrument

(Note: This instrument will not be used as a stand-alone tool but will be integrated within Health Instrument while ensuring a smooth flow of the questions)

The following questions are about adolescents or people your age, for each statement, we would like to know how much YOU agree or disagree with each statement.

The response options for each statements are:

1. Agree a lot
2. Agree a little
3. Neither agree nor disagree
4. Disagree a little
5. Disagree a lot

999. Don't know
996. Refuse to answer

GN1	A girl will lose interest in studying if she has a boyfriend
GN2	A boy and a girl your age should be able to spend time together alone if they want to
GN3	Girls your age often get into "trouble" when they have boyfriends
GN4	A boy should be able to have a girlfriend if he wants to
GN5	Boys have girlfriends for fun more than love
GN6	It's normal for a boy your age to want a girlfriend
GN7	Girls who have boyfriends are irresponsible
GN8	Boys should have girlfriends to discover love
GN9	Boys like girls who wear revealing clothes
GN10	A girl should be able to have a boyfriend if she wants to
GN11	Girls are the victims of rumors if they have boyfriends
GN12	Boys tell girls they love them when they don't

GN13	A boy should have more than one girlfriend to gain experience
GN14	Adolescent girls should avoid boys because they trick them into having sex
GN15	Boys have girlfriends to show off to their friends
GN16	A girl should have more than one boyfriend to gain experience
GN17	Boys generally compete for the prettiest girls
GN18	A girl can have a boyfriend as long as she continues working well in school
GN19	Boys feel they should have girlfriends because their friends do
GN20	A boy can have a girlfriend as long as he continues working well in school
GN21	Adolescent boys lose interest in a girl after they have sex with her
GN22	It's normal for a girl to want a boyfriend at your age
GN23	Adolescent boys fool girls into having sex
GN24	It is ok for an adolescent girl to have sex as long as she avoids getting pregnant
GN25	In general, a girl should only have sex with someone she loves
GN26	In general, if an adolescent girl says "no" to sex her boyfriend will dump her
GN27	It is ok for an adolescent boy to have sex as long as he avoids getting a girl pregnant
GN28	In general, a boy should only have sex with someone he loves
GN29	It's the girl's responsibility to prevent pregnancy
GN30	Girls should be proud of their bodies as they become women

The following questions are about adolescents or people your age, for each statement, we would like to know how much YOU agree or disagree with each statement. The response options for each statements are:

1. Agree a lot

2. Agree a little
3. Neither agree nor disagree
4. Disagree a little
5. Disagree a lot

999. Don’t know

996. Refuse to answer

GN31	Girls should avoid playing sports with boys because they get hurt easily
GN32	Boys should be raised tough so they can overcome any difficulty in life
GN33	Girls should avoid raising their voice to be lady like
GN34	Boys should always defend themselves even if it means fighting
GN35	Girls are expected to be humble
GN36	Girls should always fight back if boys try to take advantage of them
GN37	Girls need their parents’ protection more than boys
GN38	Boys should be able to show their feelings without fear of being teased
GN39	Boys who behave like girls are considered weak
GN40	It's important for boys to show they are tough
GN41	It is okay to tease a girl who acts like a boy
GN42	It is okay to tease a boy who acts like a girl
GN43	Boys and girls should be equally responsible for household chores
GN44	A woman’s role is taking care of her home and family
GN45	A man should have the final word about decisions in the home
GN46	A woman should obey her husband in all matters

8.7.4. Distress screening

To be asked at the end of survey (link to respondent ID)

"We are now finished with the questions. Thank you so much for talking to me, you did a really great job!"

[Enter survey finalization code to close the survey]

dstrss1. "I know the some of the questions that I asked may have been sensitive or uncomfortable for you to talk about. Can you tell me how are you feeling right now?"

[Interviewer should fill out the below options based on what the respondent tells them (e.g. ok, good, worried, upset) or their impression of how the respondent is feeling]

1. Good (happy, not at all upset)
2. Ok (not happy or upset)
3. Somewhat worried/upset
4. Very worried/upset
5. Reported abuse

dstrss1a. [If dstrss1=3 or 4, ask:] If you are comfortable telling me, please tell me what has upset or worried you? (String) _____

[If dstrss1=4 or 5, ask:]. If the respondent reports abuse or that they are very worried/upset:

"Based on your saying to me [or showing] that our interview may have upset you, I would like to share this with my supervisor so that we can let you know where to find help that might be useful. If ok with you, we will also talk to your mother (or father)/guardian so that they can help you" [If the adolescent does not want to share this with his/her parents/guardians, help them identify another adult they could talk with].

dstrss2. Action taken: _____

dstrss3. If the respondent does not report abuse, and is not very worried/upset:

"We have talked about many things today that you might have more questions about [give examples e.g. romantic relationships, sex, bullying or violence]. I want to give you this card with numbers and locations for organizations [say the local names] that work with young people your age. You might have heard of some, and some might be new to you. If you have questions or want to talk to someone, you can call them and they will try to help you."

Interviewer assessment

Interviewer, please complete the questions below based on your own observation and assessment of the entire interview process, and the respondent.

dstrss4. How did you find the respondent's cooperation?

1. Very good
2. Moderate (ok)
3. Bad
4. Very bad

dstrss4a [If dstrss4=3 or 4] Please explain why bad or very bad _____

dstrss5. How accurate/true did you find the respondent's answers?

1. Very accurate/true
2. Somewhat accurate/true
3. Not very accurate/true
4. Highly inaccurate (the responses should not be trusted)

dstrss5a. [If dstrss5=3 or 4] Please explain why can't be trusted _____

dstrss6. How did you find the respondent's understanding of the questions discussed?

1. Very good (understood perfectly)
2. Moderate (understood ok)
3. Bad (did not understand many of the questions)
4. Very bad (did not understand at all)

dstrss6a [If dstrss6=3 or 4] Please explain about their not understanding_____

dstrss7. How did you find the respondent's concentration and attentiveness during the interview?

1. Very good (highly concentrated/attentive)
2. Moderate/ok (somewhat concentrated/attentive)
3. Bad (could not concentrate for many parts of the interview)
4. Very bad (could not concentrate at all)

dstrss7a. [If dstrss7=4] Please explain why very bad at concentration_____

dstrss8. About how many breaks did you take during the full interview?

_____ Number of breaks

dstrss9. Other comments about the interview _____

This concludes our interview. Thank you very much for your time

8.8. Qualitative interview guide

In-depth interviews with very young male adolescents

Note: Parent refers to biological parent or the primary caregiver/guardian

A: General questions:

1. How old are you?
2. Do you go to school?
3. What grade are you in (If not in school, "what grade did you reach"?
4. Who do you normally live with?
5. How many brothers and sisters do you have?

B: Gender socialization

1. When I say the word "man", what comes to your mind? And a "boy" of your age?
2. How should a man generally behave? (Probe for sexual activity, financial provider, need to prove, masculinity) How should a boy of your age behave?
    a. Here in your neighborhood, what defines a man and do you think it is different in other settings? If so, how?
    b. How are you expected to behave? What responsibilities/roles do you have?
    c. What happens if you act differently from how you are expected to behave?
    d. How different are the roles/expectations of a man from a woman here in Korogocho? And of a boy from a girl?
    e. What happens when young boys/men do not behave in a manner that is acceptable for boys/ men within Korogocho? (Give examples of socially/culturally unacceptable norm earlier mentioned by the respondent and ask if a man was found doing that, what would happen)
    f. What is it like to be a young boy living in Korogocho?
3. How do young boys learn of what is expected of them as men in Korogocho? What rules do they need to follow? And rules from who? Probe for peers and family (siblings, parents)

a. How else do young boys learn of what is expected of them? Probe for media, including social media
b. Who do you think is best placed to teach you how to be a man in Korogocho and why?

4. What messages have you received from your family about behaving like a man, specifically the roles of men?
   a. What did your parents/guardians tell you about being/becoming a man? Probe for messages received from mothers/female guardians and from fathers/male guardians as appropriate
      - What do you think of these messages?
   b. What did your siblings tell you about being/becoming a man? Probe for messages received from sisters and from brothers as appropriate
      - What do you think of these messages?
   c. What did your peers taught you tell you about being/becoming a man? Probe for messages received from female and from male peers as appropriate
      - What do you think of these messages?
5. How do you think most men behave in the following situations and why?
   a. When at home with their family)?
   b. When they go out with their wives/girlfriends?
   c. When they are attacked by a man/woman in a violent way?
6. Women/girls are increasingly taking up roles that were traditionally meant for men/boys both at home and outside the home.
   a. How does this affect the role of men in the society?
   b. How do men react to this?
   c. What are your thoughts about men and boys taking up roles that were traditionally meant for women and girls at home and outside home?

C: Sexual development and socialization

Sexual development

7. What changes have you noticed in your body in regard to your sexual development? How do you feel about them?

8. Where did you learn about how your body changes during puberty? Where did you learn how to take care of yourself? Where did you learn about sex? (Probe for mass media, parents, friends, teachers, religious figures. Probe for type of information received, timeliness and opinion of the information.)
    a. Have you ever talked with anyone in your family about the changes in your body?
        - If so, who did you talk to? What did you talk about? What specific messages did they give you about sexual development? (Probing for parents and siblings)
    b. Have you ever talked with anyone outside your family about the changes in your body?
        - If so, who did you talk to? What did you talk about? What specific messages did they give you about sexuality development? (Probe for peers)
    c. Is there a specific person you would prefer to discuss with about the changes occurring in your body? Who is the person and why?
9. Where can boys in Korogocho go if they want to talk to someone about their sexual development? Have you ever visited those places?
    a. If ever visited any place: Did you get the help you wanted? How comfortable did you feel at the place? How were you treated?

Sexual socialization

10. When I say "sex", what first comes to mind?
11. What do you know/have you learnt about sex? When? Where? By who?
12. Do you know of anyone about your age who has ever had sex? How did you get to know about it?
13. How often do you talk about romantic relationships and sex with your peers?
    a. What do you actually talk about?
    b. How many of your peers have girlfriends?
    c. How many have ever engaged in any form of sexual activity such as kissing, cuddling, sexual intercourse?
14. What does engaging in sexual activity mean to you? And to your peers?
15. How often do you talk about romantic relationships and sex with your siblings?
    a. What do you actually talk about?

b. Do you know if any of your siblings is in a romantic relationship?
    - Having sex or engaged in any form of sexual behavior? How did you know?

16. How often do you talk with your parents about sex and romantic relationships?
    a. Who do you mainly talk with? If they mainly talk with a male parent/guardian, probe why not a female parent/guardian and vice versa)
    b. What do you actually talk about? What messages have you received from your parents? Probe for both father and mother or either as maybe applicable.
    c. What is your opinion about these messages?
17. What is your most preferred source of information about sex? And why?

Sexual behaviors

18. Have you ever engaged in any sexual activity? (Probe for both penetrative and non-penetrative activities)

[Ever engaged in any sexual behavior]

19. The first time you engaged [Pick only one activity (Pick one penetrative activity if mentioned, otherwise, pick oral sex, fondling, cuddling, kissing, spending time alone, or holding hands, in that order)] what was going through your mind?
    a. What made you engage in [activity]? (Probe for social pressure, transactional etc.)
    b. How did engaging [activity] make you feel as a boy/man?
    c. Have you continued to engage in this or other sexual activities? How often?
    d. If you've had sexual/anal intercourse: Do/Did you use any kind of protection? (which method, who took initiative, who obtained)
    e. How many different partners have you engaged in sexual activities with?
    f. Generally, how old are the sexual partners (very old, slightly older, same age, younger)
    g. Do you think you will engage in such or a similar activity in the near future? Why or why not?
20. Do you think your parents are/were aware of your relationship and/or sexual activities?
    a. [If so] How did they get to know and what was their reaction?
    b. [If not] Would you tell them about it? Why so?

[Never engaged in any sexual behaviors]

21. Do you ever think about sex/sexual behaviors? What do you think about and why? (Probe for concerns, social pressure etc)
    a. When is it the right moment for a boy to have sex? Why?
22. Have you ever had a girlfriend? If yes, have you ever talked with her about sex? Tell me what you talked about
    a. If never had a girlfriend; Do you intend to have a girlfriend in the near future (up to 12 months)? Do you think you will talk with her about sex/sexual behaviors? What do you think you will talk about?
23. When that time for you to have a girlfriend comes, do you think you will let your parents know? Why is that so?

8.9. Parent/guardian information sheet and informed consent forms

8.9.1. Information sheet for interviews with very young male adolescents

Project Title	Investigating the social co-construction of masculinity(ies) and sexual development among very young male adolescents in urban slums in Nairobi, Kenya
Purpose of the Study	The purpose of study is to learn about how young boys grow up as adolescent boys in this community, the gendered messages they perceive, the relationships they form and how these relationships are connected to some of the health issues young people face as adolescents.
Procedures	Participation in this study is voluntary. If you agree for your son to participate and he agrees, first, you will be interviewed about your household and then your son will be interviewed. A male interviewer will administer the questionnaire to your son using mobile phone technology (where the questions and response options are programmed in a tablet) to conduct the interview. If you like, you will also be able to see a printed copy of the questionnaire. Your son will be asked information on some personal and family characteristics (age, sex, and sibling), school experience, and relationships with family members and peers. They will also answer questions about their experience and knowledge about puberty and body changes and their health. They will answer a set of questions about their attitudes towards gender roles among boys and girls of their age. The questionnaire should take on average one and a half hours to complete. If you and your son are invited to participate in further discussions (in-depth interviews) and you and him have given informed consent and assent respectively, you will be contacted at a later date and will be informed of the interview date and venue for both you and your son. Each discussion will take around one and a half hours to complete. In total, we will include about 30 boys and their parents/guardians in our follow-up qualitative interviews.
Potential Risks and Discomforts	There are no major risks to being in this study, but discussions may address topics that are very personal, such as relationship with others, sexual behaviors, and experiences with violence. If your child feels uneasy/distressed talking about these topics, he can choose to skip them, or if at any point he feels uncomfortable and wants to stop, he is free to do that also. If any questions, make your child uncomfortable or he is distressed he will be provided a phone number at the end of the interview for someone who will assist him in getting the help he needs. In addition, with your child's approval, you will be informed about your child's

	distress and you will be assisted with referral information in order for your child to get professional help.
Potential Benefits	Neither you nor your son will benefit directly from participation in this study. It is however possible that participating in the study may help enhance your sons comfort in discussing sexual health matters and empower him to seek more information about the physiological and social transitions he may be experiencing. It is also expected that your comfort in discussing sexuality issues with your son will be enhanced.
Privacy/Confidentiality	We will do everything we can to keep the information you and your son shares with us confidential. We will conduct interviews at [name of school] to ensure privacy. We will not share any study records or notes with anyone outside the research team. We will also not share any information your son provides with you. At the end of the study, all study data will be de-identified, including information collected from the Nairobi Urban Health and Demographic Surveillance System (NUHDSS), meaning no one, not even the research team, will know who provided the information. These de-identified data will be stored by the research team and may be used in the future for other studies. The results of the study will be presented and reported on. However, neither you nor your son will be identified in any publications or presentations resulting from this study. We will also tell your son he does not have to tell anyone he participated in the study or about the information he provided if he doesn't want to. We will also tell your son he does not have to tell you what information he provided if he doesn't want to. Study records will be stored in a locked filing cabinet and/or a password protected computer and only accessible to the research team. All handwritten notes will be entered into a computer and destroyed as soon as that is complete. All audio-recorded interviews will be kept in a password protected computer for a period of 2 years then erased if a publication has resulted, otherwise for 6 years in no publication appears. While efforts will be made to keep information confidential, absolute confidentiality cannot be guaranteed and personal information may be disclosed if required by law.
Medical Treatment	There will be no medical treatment associated with the study.
Compensation	There will be no compensation for you or your son's participation in the study. However, your son will be provided with a snack during the course of the interview.
Right to Withdraw and Questions	If your son feels uncomfortable with some of the questions on the questionnaire or the follow-up qualitative interview, he is free not to answer without fear of reprisal. He is also free to withdraw from the study at any time. Similarly, it is possible you may feel uncomfortable

	with some of the questions on the parent/guardian survey or the qualitative interview. If this happens you do not have to answer the questions you are not comfortable with, or any of the questions, and you can stop participating in the survey at any time without fear of reprisal.
Participant Rights	Participation in this study is voluntary meaning it is you and your son's decision whether or not to participate in this study. Nothing bad will happen to you or your son and there is no penalty if you or your son choose not to participate, or if you want to stop participation at any time. If you decide not to allow your son to participate or he decides not to participate or stops at any time we will respect the decision and we will not ask why the decision was made.
Reimbursements	Parents/guardian who will be invited to participate in the qualitative study will be reimbursed their transport costs at a rate of $3 per participant.
Contact details	You have the right to ask any questions you may have about this research. If you have any questions about this study or the results, you can contact the following: The study principal investigator: Beatrice Maina, African Population and Health Research Center APHRC Campus, Manga Close, Off Kirawa Road, Nairobi, Kenya P.O. Box 10787- GPO - 00100 Tel: 020 400 1000/0722 205933/0733 410102 Email: bmaina@aphrc.org Study supervisors: Dr. Caroline Kabiru, Population Council-Kenya Email: carolinekabiru@gmail.com Tel: +254 725966148 Dr. Yandisa Sikweyiya, South Africa Medical Research Council, Email: yandisa.sikweyiya@mrc.ac.za Tel: +27 76 3656169 For any ethical concern you may have, please contact: Ethics & Scientific Review Committee African Medical & Research Foundation (AMREF) P.O. Box 27691, Nairobi

	Tel: (20) 6994000 This study has been approved by the Human Research Ethics Committee (Medical) of the University of the Witwatersrand, Johannesburg ("Committee"). A principal function of this Committee is to safeguard the rights and dignity of all human subjects who agree to participate in a research project and the integrity of the research. If you have any concern over the way the study is being conducted, please contact the Chairperson of this Committee who is Professor Clement Penny, who may be contacted on telephone number (+27) 11 717 2301, or by e-mail on Clement.Penny@wits.ac.za. The telephone numbers for the Committee secretariat are (+27) 11 717 2700/1234 and the e-mail addresses are Zanele.Ndlovu@wits.ac.za and Rhulani.Mukansi@wits.ac.za Thank you for reading this Study Information Sheet. October 2018

8.9.2. Consent form for adolescent survey

QUANTITATIVE SURVEY WITH VERY YOUNG MALE ADOLESCENTS

Study title: Investigating the social co-construction of masculinity(ies) and sexual development among very young male adolescents in Korogocho slum in Nairobi, Kenya

	YES	NO
PARTICIPATING IN THIS STUDY This research study has been explained to me, including risks and possible benefits (if any), procedures, and other important things about the study. I have been given the opportunity to ask questions about the project.	☐	☐
I understand that all procedures for this study have been approved by the Human Research Ethics Committee (Medical) at the University of the Witwatersrand, South Africa and the Ethics and Scientific Review Committee at AMREF (African Medical and Research Foundation) Health Africa, Kenya	☐	☐
I understand that my son will not benefit directly from the research done using the data he provided.	☐	☐
I agree to allow my son to participate in the project. Taking part in the project will entail being interviewed. I understand that I may withdraw him or he may withdraw from the study at any time.	☐	☐
USE OF THE INFORMATION PROVIDED I am in agreement that data collected from my son may be stored in a data repository and used for the purposes described above	☐	☐
I am in agreement that data generated may be made available as stated above	☐	☐
I am in agreement that the information my son has supplied in the list of questions and the information from the measurements taken from him may be used as stated above	☐	☐
I agree that some or all the data provided by my son may be stored in a database and that these may be shared with other researchers according to the processes and procedures of this study by using my son's study code or another code that de-identifies my son's data (or preserves the confidentiality of the information he provided).	☐	☐
I understand that every time a new study is done using the data my son provided, permission will be sought from the ethics committee for the study to make sure that it is used only for the purposes stated above.	☐	☐

PARTICIPANT NAME:		

_____ _ _/_ _/_ _ _ _

Signature/mark/thumbprint Date (dd/mm/yyyy)

8.9.3. Consent form for in-depth interviews with very young male adolescents

Study title: Investigating the social co-construction of masculinity(ies) and sexual development among very young male adolescents in Korogocho slum in Nairobi, Kenya

	YES	NO
PARTICIPATING IN THIS STUDY This research study has been explained to me, including risks and possible benefits (if any), procedures, and other important things about the study. I have been given the opportunity to ask questions about the project.	☐	☐
I understand that all procedures for this study have been approved by the Human Research Ethics Committee (Medical) at the University of the Witwatersrand, South Africa and the Ethics and Scientific Review Committee at AMREF (African Medical and Research Foundation) Health Africa, Kenya	☐	☐
I understand that my son will not benefit directly from the research done using the data he provided.	☐	☐
I agree to allow my son to participate in the project. Taking part in the project will entail being interviewed. I understand that I may withdraw him or he may withdraw from the study at any time.	☐	☐
USE OF THE INFORMATION PROVIDED I am in agreement that data collected from my son may be stored in a data repository and used for the purposes described above	☐	☐
I am in agreement that data generated may be made available as stated above	☐	☐
I am in agreement that the information my son has supplied in the list of questions may be used as stated above	☐	☐
I agree that some or all the data provided by my son may be stored in a database and that these may be shared with other researchers according to the processes and procedures of this study by using my son's study code or another code that de-identifies my son's data (or preserves the confidentiality of the information he provided).	☐	☐
I understand that every time a new study is done using the data my son provided, permission will be sought from the ethics committee for the study to make sure that it is used only for the purposes stated above.	☐	☐
PARTICIPANT NAME:		

_____ _ _/_ _/_ _ _ _

Signature/mark/thumbprint Date (dd/mm/yyyy)

8.9.4. Consent form for audio recording during in-depth interviews with very young male adolescents

Study title: Investigating the social co-construction of masculinity(ies) and sexual development among very young male adolescents in Korogocho slum in Nairobi, Kenya

I ……. voluntarily agree to allow my son (show his name) to participate in this study. The research has been explained to me and I understand what his participation will involve. I understand that the interview will be audio-recorded and that the audio recording will be kept in a password protected computer for a period of two years, if a publication appears, otherwise for six years, if there is no publication, after which it will be erased.

I agree that the interview will be audio recorded YES [ ] NO [ ]

…… (Signature)
…… (Name of participant)
…… (Date)

8.10. Adolescent information sheet and informed assent forms

8.10.1. Information sheet for interviews with very young male adolescents

Project Title	Investigating the social co-construction of masculinity(ies) and sexual development among very young male adolescents in urban slums in Nairobi, Kenya
Purpose of the Study	The purpose of study is to learn about how young boys grow up as adolescent boys in this community, the messages they are aware of about how men/boys and women/girls are expected to behave, the relationships they form and how these relationships are connected to some of the health issues young people face as adolescents.
Procedures	Participation in this study is voluntary. Your parent/guardian has given us permission to talk with you. If you agree to participate a male interviewer will ask you questions using a questionnaire installed in a tablet (where the questions and response options are programmed) to conduct the interview. You will be asked questions on some personal and family characteristics (age, sex, and whether you have brothers and sisters), school experience, and relationships with family members and peers. You will also answer questions about your experience and knowledge about puberty and body changes, sexual behaviours and your health. You will be asked to answer a set of questions about your attitudes towards gender roles among boys and girls of your age. If invited to participate in the follow-up interviews and you agree, a male interviewer will talk with you. The interview should take around one and a half hours to complete.
Potential Risks and Discomforts	There are no major risks to being in this study, but discussions may address topics that are very personal, such as relationship with others, sexual behaviors, and experiences with violence. If you feel uneasy/distressed talking about these topics, you can choose to skip them, or if at any point you feel uncomfortable and want to stop, you are free to do that also. If any questions, make you uncomfortable you will be provided with a phone number at the end of the interview for someone who will assist you in getting the help you need. In addition, with your approval, the interviewer will inform your parent/guardian about your distress and assist them with referral information in order for you to get professional help.
Potential Benefits	You will not benefit directly from participation in this study. It is however possible that participating in the study may help enhance your comfort in discussing sexual health matters such as reproductive health and sexual relationships and give you more confidence to seek more information about the changes that are occurring in your body

	and body functions and changes in relationships (for instance with peers, siblings, parents) that you may be experiencing.
Privacy/Confidentiality	We will do everything we can to keep the information you and your parent/guardian share with us confidential. We will conduct interviews at [name of school] to ensure privacy. We will not share any study records or notes with anyone outside the research team. We will also not share any information you provide with your parents/guardian. At the end of the study, we will remove all information that could identify you from our data, including information obtained from data that is regularly collected by the African Population and Health Research Center from people living in this informal settlement. This means no one, not even the research team, will know who provided the information. After removing all the identifying information, data will be stored by the research team and may be used in the future for other studies, but only if the necessary approvals have been given. The results of the study will be presented and reported on. However, you will not be identified in any publications or presentations resulting from this study. You do not have to tell anyone you participated in the study or about the information you provided if you don't want to. You do not have to tell your parent/guardian what information you provided if you don't want to. Study records will be stored in a locked filing cabinet and/or a password protected computer and only accessible to the research team. All handwritten notes will be entered into a computer and destroyed as soon as that is complete. While efforts will be made to keep information confidential, absolute confidentiality cannot be guaranteed and personal information may be disclosed if required by law.
Medical Treatment	There will be no medical treatment associated with the study.
Compensation	There will be no compensation for your participation in the study. However, you will be provided with a snack during the course of the interview
Right to Withdraw and Questions	Also, it is possible you may feel uncomfortable with some of the questions on the survey. If this happens you do not have to answer the questions you are not comfortable with, or any of the questions, and you can stop participating in the survey at any time.
Participant Rights	Participation in this study is voluntary meaning it is you and your parents'/guardians' decision whether or not you participate in this study. Nothing bad will happen to you and there is no penalty if you choose not to participate, or if you want to stop participation at any

	time. If you decide not to participate or stop at any time we will respect the decision and we will not ask why the decision was made.
Contact details	You have the right to ask any questions you may have about this research. If you have any questions about this study or the results, you can also contact the following: The study principal investigator: Beatrice Maina, African Population and Health Research Center APHRC Campus, Manga Close, Off Kirawa Road, Nairobi, Kenya P.O. Box 10787- GPO - 00100 Tel: 020 400 1000/0722 205933/0733 410102 Email: bmaina@aphrc.org Study supervisors: Dr. Caroline Kabiru, Population Council-Kenya Email: carolinekabiru@gmail.com Tel: +254 725966148 Dr. Yandisa Sikweyiya, South Africa Medical Research Council, Email: yandisa.sikweyiya@mrc.ac.za Tel: +27 76 3656169 For any ethical concern you may have, you can contact: Ethics & Scientific Review Committee African Medical & Research Foundation (AMREF) P.O. Box 27691, Nairobi Tel: (20) 6994000 This study has been approved by the Human Research Ethics Committee (Medical) of the University of the Witwatersrand, Johannesburg ("Committee"). A principal function of this Committee is to safeguard the rights and dignity of all human subjects who agree to participate in a research project and the integrity of the research. If you have any concern over the way the study is being conducted, please contact the Chairperson of this Committee who is Professor Clement Penny, who may be contacted on telephone number (+27) 11 717 2301, or by e-mail on Clement.Penny@wits.ac.za. The telephone numbers for the Committee secretariat are (+27) 11 717

	2700/1234 and the e-mail addresses are Zanele.Ndlovu@wits.ac.za and Rhulani.Mukansi@wits.ac.za Thank you for reading this Study Information Sheet. October 2018

8.10.2. Assent form for adolescent survey

QUANTITATIVE INTERVIEW WITH VERY YOUNG MALE ADOLESCENTS

Study title: Investigating the social co-construction of masculinity(ies) and sexual development among very young male adolescents in Korogocho slum in Nairobi, Kenya

	YES	NO
PARTICIPATING IN THIS STUDY		
This research study has been explained to me, including risks and possible benefits (if any), other options for treatments or procedures, and other important things about the study. I have been given the opportunity to ask questions about the project.	☐	☐
I understand that all procedures for this study have been approved by the Human Research Ethics Committee (Medical) at the University of the Witwatersrand, South Africa and the Ethics and Scientific Review Committee at AMREF (African Medical and Research Foundation) Health Africa, Kenya	☐	☐
I understand that I will not benefit directly from the research done using the data I provided.	☐	☐
I agree to participate in the project. Taking part in the project will entail being interviewed. I understand that I may withdraw from the study at any time.	☐	☐
USE OF THE INFORMATION PROVIDED		
I am in agreement that data collected may be stored in a safe and password protected central storage area (data repository) and used for the purposes described above	☐	☐
I am in agreement that data generated may be made available as stated above	☐	☐
I am in agreement that the information I have supplied in the list of questions and the information from the measurements taken (my height and weight) may be used as stated above	☐	☐
I agree that some or all the data I have provided may be stored in a safe and password protected electronic file (database) and that these may be shared with other researchers according to the processes and procedures of this study by using a code that removes all identifying information from the data I provided (or preserves the confidentiality of the information I provided).	☐	☐

I understand that every time a new study is done using the data I provided, permission will be sought from the ethics committee for the study to make sure that it is used only for the purposes stated above.	☐	☐

PARTICIPANT NAME:

_____ _ _/_ _/_ _ _ _

Signature/mark/thumbprint Date (dd/mm/yyyy)

8.10.3. Assent form for in-depth interview

IN-DEPTH INTERVIEWS WITH VERY YOUNG MALE ADOLESCENTS

Study title: Investigating the social co-construction of masculinity(ies) and sexual development among very young male adolescents in Korogocho slum in Nairobi, Kenya

	YES	NO
PARTICIPATING IN THIS STUDY		
This research study has been explained to me, including risks and possible benefits (if any), other options for treatments or procedures, and other important things about the study. I have been given the opportunity to ask questions about the project.	☐	☐
I understand that all procedures for this study have been approved by the Human Research Ethics Committee (Medical) at the University of the Witwatersrand, South Africa and the Ethics and Scientific Review Committee at AMREF (African Medical and Research Foundation) Health Africa, Kenya	☐	☐
I understand that I will not benefit directly from the research done using the data I provided.	☐	☐
I agree to participate in the project. Taking part in the project will entail being interviewed. I understand that I may withdraw from the study at any time.		
USE OF THE INFORMATION PROVIDED		
I am in agreement that data collected may be stored in a safe and password protected central storage area (data repository) and used for the purposes described above	☐	☐
I am in agreement that data generated may be made available as stated above	☐	☐
I am in agreement that the information I have supplied in the list of questions and the information from the measurements taken (my height and weight) may be used as stated above	☐	☐
I agree that some or all the data I have provided may be stored in a safe and password protected electronic file (database) and that these may be shared with other researchers according to the processes and procedures of this study by using a code that removes all identifying information from the data I provided (or preserves the confidentiality of the information I provided).	☐	☐
I understand that every time a new study is done using the data I provided, permission will be sought from the ethics committee for the study to make sure that it is used only for the purposes stated above.	☐	☐

PARTICIPANT NAME:

_____ _ _/_ _/_ _ _ _

Signature/mark/thumbprint Date (dd/mm/yyyy)

8.10.4. Assent form for audio recording during in-depth interviews

IN-DEPTH INTERVIEWS WITH VERY YOUNG MALE ADOLESCENTS

Study title: Investigating the social co-construction of masculinity(ies) and sexual development among very young male adolescents in Korogocho slum in Nairobi, Kenya

I ……. voluntarily agree to participate in this study. The research has been explained to me and I understand what my participation will involve. I understand that the interview will be audio-recorded and that the audio recording will be kept in a password protected computer for a period of two years, if a publication appears, otherwise for six years, if there is no publication, after which it will be erased.

I agree that the interview will be audio recorded YES [ ] NO [ ]

…… (Signature)
…… (Name of participant)
…… (Date)

8.11. Data collectors' confidentiality agreement form

Confidentiality Agreement

As a member of the field team for the study on "Investigating the Social Co-Construction of Masculinity and Sexual Development among Very Young Male Adolescents in Urban Slums in Nairobi, Kenya", you will have access to confidential information shared by study participants in Korogocho. The study team considers the entire interview process to be confidential in nature. Because of the confidentiality and sensitivity of the interview process, you have a responsibility not to discuss or disclose any information relating to the interviews to persons or parties who are not authorized to be privy to such information. Your full cooperation in this matter will be appreciated.

Please sign the statement below indicating your agreement to keep all matters relating to the screening and interviews confidential.

As a member of the field team for the study on "Investigating the Social Co-Construction of Masculinity and Sexual Development among Very Young Male Adolescents in Urban Slums in Nairobi, Kenya", I agree to keep confidential all matters relating to the interviews, and I further agree not to discuss or disclose any information about the interview process, the study participants, or the information shared during the interviews with persons or parties who are not authorized to be privy to such information.

Name (print): _____

Signature: _____

Date: _____