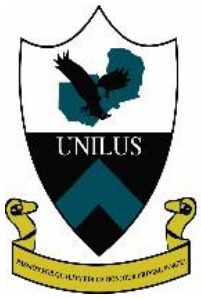

UNIVERSITY OF LUSAKA

SCHOOL OF MEDICINE AND HEALTH SCIENCES

RISKY SEXUAL BEHAVIOURS AND THEIR CORRELATES AMONG COLLEGE AND UNIVERSITY STUDENTS IN SUB-SAHARAN AFRICA: A META-ANALYSIS

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MPH19114979

A Research Dissertation submitted in partial fulfillment of the requirements of a Master of Public Health

APRIL 2022

Dedication

I dedicate this paper to my dad, Mr Lungu Godfrey.

Acknowledgement

Foremost among my gratitude is that I have been given the chance and strength to finish my studies thanks to Jehovah. I would also like to thank my supervisor, Dr. Chela Clement, for all his insightful comments and ideas during the preparation and writing of my dissertation. Dr. Richard Mutemwa and Professor Kazonga Eustarckio are also worthy of praise for their fatherly guidance and inspiration. Dr. Chitangala M. Frederick and Dr. Chiluba C. Brian, I thank you for all your thoughtful remarks.

My gratitude also goes to my parents, Godfrey Lungu and Priscilla Chomba, for their constant encouragement, love, and support over the course of my academic career. Adorophina Zulu, thank you so much for all your support, attention, and love. Finally, I would want to thank my grandma, Joyce Musonda, for all her help, words of encouragement and for always believing in me. I also thank my family members, Christian brothers and sisters, classmates, and friends for their support during my years of education.

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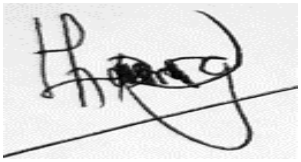
Declaration

I, **Anderson Lungu** hereby declare that this work is solely mine and all work of other people have been fully recognized. Furthermore, the work presented herein has are no point been hitherto produced or presented at the University of Lusaka or without any doubt any other institution for a related purpose.

Signed		Date:	12th April 2022
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Abstract

Introduction: Students at higher education institutions are often overlooked when it comes to reproductive health interventions because they are assumed to be aware of HIV/AIDS risks/preventative strategies and reproductive health difficulties. Young people may continue to engage in behaviours that put them at higher risk of HIV infection, STIs, and unintended pregnancy unless age-appropriate and institution-targeted interventions are introduced.

Methods: To find the most relevant peer-reviewed publications in Sub-Saharan Africa that have been published in the recent ten years, a meta-analysis was undertaken to select main peer-reviewed articles. In order to find relevant papers for inclusion in the meta-analysis, we examined databases such as Pubmed, African Journals Online, Science Direct, and Google Scholar, as well as reference lists from significant publications. Random effects were used in Meta XL to assess the aggregate influence of each outcome.

Results: Study participants in Sub-Saharan Africa were included in 28 studies, totaling 18495 participants. Majority of the studies were from Ethiopia (n = 18) followed by Nigeria (n = 3), South Africa (n = 3) while the remainder of the studies were from Kenya, Zambia, Togo, Cameroon, and Togo. Over half (51.0 percent) of college and university students were predicted to engage in sexual behaviour (95 percent CI: 43.0 percent - 59.0 percent). Multi-partner sexuality was associated with a prevalence rate of 36.0% (95% Confidence Interval [CI]: 30.0-42.0%), inconsistent condom use was associated with a prevalence rate of 53.0% (CI: 46-61.0%), and at least one risky sexual behaviour was associated with a prevalence rate of 65.0% (48.0-81.0%). When it comes to having numerous sexual partners, men were three times more likely than women [OR: 3.05; 95% CI: 2.59 – 4.37] to have several partners. Males were 2,99 times more likely than women to participate in at least one risk sexual behaviour [OR: 2,99; 95% CI: 1,40 – 6,40]. There was a link between watching porn and having more than one relationship, however this study found no significant outcomes [OR: 2.67; 95 percent CI: 0.81 – 8.83]. There was a 3.81 [OR: 3.81; 95 percent CI: 1.99 – 7.27] increase in the likelihood of several sexual partners and at least one risky sexual behaviour when drinking alcohol. Drinking alcohol had neither a favourable or negative effect on the usage of condoms [OR: 1.17; 95 percent CI: 0.24–5.57].

Conclusion: Sub-Saharan African universities and colleges continue to have high rates of risky sexual behaviour. Risky sexual behaviours such as irregular condom usage and many sexual partners persist among university students.

Chapter 1

Introduction

1.0 Introduction

The context of the investigation and the problem statement are highlighted in this section of the dissertation. This study is justified by these two components, which give an overview of risky sexual behaviour in Sub-Saharan Africa.

1.1 Background

Risky Sexual Behaviour (RSB) is any behaviour that enhances one's chances of developing sexually transmitted illnesses or becoming pregnant unintentionally (Hart et al., 2004). Multiple sexual partners, a history of unprotected sex to use condoms or inconsistent usage, trading money for sex, and conducting sexual intercourse while under the influence of alcohol are all examples of risky behaviours (Hart et al., 2004; Alamrew et al., 2013). Adolescents make up most of the population in under-developed nations, particularly in Sub-Saharan Africa (Yarinbab et al., 2018). Promoting safe sex and encouraging contraceptive use would significantly reduce sex-related morbidity and death caused by adolescent pregnancy, abortion, and HIV/AIDS while also reducing the population increase (Yarinbab et al., 2018).

Globally, 14,000 people are infected with HIV every day, with more than 95 percent of new infections happening in underdeveloped nations because of unsafe sexual behaviour (WHO, 2006). Sub-Saharan Africa also has the highest HIV load; in 2016, around 260,000 adolescents aged 15 to 19 were newly infected with HIV worldwide, with 200,000 of them living in 23 priority countries, the majority of which are sub-Saharan African nations (UNAIDS, 2017). Early sexual debuts, many sexual relationships, and condomless sexual intercourse have all been observed among young individuals in the African region (Melesse et al., 2020; Folayan et al., 2015; Bankole et al., 2007).

The frequency of harmful sexual behaviours among teenagers has grown in recent years in a number of developing countries. Adolescence is a time of discovery and experimentation for teenagers, particularly when it comes to sexual behaviour. As a result, dangerous sexual behaviours such as early sexual encounters, many sexual partners, unprotected sexual activity, and irregular partners such as commercial sex workers are quite common (UNAIDS, 2008; Abdurahim and Tohti, 2010).

Young individuals are more prone to HIV infection than older people because of their incapacity to negotiate safer sexual practises and their eagerness to try new things in life

(Sanjobo et al., 2016). Young people between the ages of 15 and 24 account for around 33% of all new HIV infections (UNAIDS, 2018). A person's risk of developing sexual ill-health begins with the commencement of risky sexual behaviour, which is most frequent among teenagers, and continues for as long as the risky behaviors are maintained (Amare et al., 2019).

Because of their tendency for participating in risky sexual behaviour that results in the acquisition of sexually transmitted infections (STIs), most university students are in their early twenties and are considered to be the most at-risk demographic group in terms of STI acquisition (Kassie et al., 2019; Shiferaw et al., 2014; Tura et al., 2012). Their early sexual encounters and inconsistent condom use put them at a high risk of developing sexually transmitted infections (STIs) and HIV (Ngidi et al., 2016; Talwar et al., 2015). When it comes to young people, particularly university students, early sexual debut and inadequate condom use have been associated to a lower success rate for prevention programmes (Kebede et al., 2018; Abera et al., 2019).

Another study found that university students are more likely than the general population to engage in unprotected sex, have several sex partners, engage in sex with more mature partners, engage in casual sex, and have sexual relations while under the influence of alcohol or drugs (Somba et al., 2014; Kassie et al., 2019; Kebede et al., 2018; Abera et al., 2019).

Despite the fact that college and university students are at a critical period in their development as sexual risk takers, little attention is devoted to them. University and college students are presumed to be well informed of HIV hazards and prevention methods. However, actual observation and previous study findings suggest that the contrary is the case (Regassa and Kedir, 2011; Agajie et al., 2015; Natae, 2017). For most teenagers, college signifies a step toward more independence from their family environment. It allows children to form new acquaintances and have multiple possibilities to engage in sexual interactions, and it exposes them to tendencies such as sensation seeking, sensation seeking, impatience, eagerness, substance abuse, and turning to various risky sexual behaviors as a result of a lack of youth-friendly recreational facilities are all characteristics of young people today (Dingeta et al., 2012; Staton et al., 1999; Town, 2015).

The vast number of new and old HIV infections among young people can be attributed to the prevailing risky sexual behaviors among young people. Furthermore, several scholars have claimed that students are more prone to participate in dangerous sexual behaviours because of the environmental and social pressures they face in higher education (Cooper, 2002; Jones et al., 2018; Crimmins and Seigfried-Spellar, 2014). Unless context-based interventions focusing on this at-risk age group, college and university youths may persist in risk behaviours that place them at increased risk of HIV infection, sexually transmitted infections (STIs), and unplanned pregnancy (Dida et al., 2015; Gebremedhin and Rh, 2013). As a result, measures to minimise the prevalence of risky sexual behaviour must consider the projected pooled prevalence and related characteristics.

1.2 Statement of the Problem

In many developing nations, notably in Sub-Saharan Africa, the youth community is characterised by many and contemporaneous partners, unprotected premarital sex, transactional, commercial, and intergenerational sex, and early sexual debut (Alamrew et al., 2013; Richter et al., 2015; Menon et al., 2016). With the greatest rates of HIV infection among young people, this region of the globe remains the most severely afflicted (UNAIDS, 2014). Risky sexual behaviours have been linked to the development of HIV and AIDS, as well as undesired pregnancies, among young people in low-income countries, according to several studies conducted in this region Cherie and Berhane, 2012; Adeniyi et al., 2018).

Due to their dangerous sexual behaviours, students pursuing their education at higher-learning facilities, face an increased chance of developing HIV and other related infections (Cherie & Berhane, 2012). Given this situation, research into unsafe sex and associated HIV/AIDS factors among youths in higher education institutions is necessary, as the magnitude of HIV infection in this group is expected to continue to rise., posing a threat to our communities' developmental prospects in Sub-Saharan Africa.

Given the number of research conducted in this region of Africa, we need to do a meta-analysis. To the best of our knowledge, no such study has been implemented. No quantitative synthesis has been undertaken in the last five years to combine the data and offer estimates of harmful sexual behaviours. While some studies have been conducted in various sections of Sub-Saharan Africa, the majority of them have concentrated on country-specific investigations, with nothing published to establish regional evidence on risky sexual behaviors.

1.3 Significance of the Study

Young people account for over a quarter of the population in Sub-Saharan Africa (SSA), and this proportion is predicted to grow considerably by 2050 (UNICEF, 2015). Adolescents and young adults go through a unique "transition phase" during which their families and society do not exactly classify them as children or adults, and during which the typical attitude of the parents is gradually overridden by classmates and friends of the same age (McCauley et al., 1995). Aside from beginning to practice sexual activities and developing increased sexual curiosity, young adults are also at risk for developing avoidable sexual health problems during this period of transition to self-realization (McCauley et al., 1995; Merluzzi and Nairn, 1999).

This study, which focuses on adolescents, gives a comprehensive understanding of the factors that contribute to the continuing HIV prevalence among young people. In addition, it provides us with an opportunity to gain a comprehensive understanding of the factors that influence sexual behaviour, specifically the socio-economic, socio-demographic, and psychosocial factors that are significant in determining the final outcome of individual human sexual behaviours adopted by youths.

This information will be critical in giving the necessary guidelines for decision-making in areas pertaining to behaviour modification initiatives in this population, and it will, in the long run, aid in the reduction of HIV prevalence and its long-term consequences for overall national development. When it comes to the reasons why teenagers engage in hazardous sexual activities, a meta-analysis can give a concise synthesis of the data that is needed to guide successful interventions targeted at improving this condition. The most important intervention in the fight against HIV/AIDS is behaviour modification. As a result, doing a meta-analysis to synthesis pertinent papers in order to present a holistic picture of the situation in Sub-Saharan Africa is a valuable endeavour.

1.4 Scope of the Study

This is study was limited to studies conducted in Sub-saharan Africa, over the past 10 years. The study was further restricted to prevalence studies that have been conducted in this region only. The focus was on risk sexual behavior that exist at higher learning institutions such as colleges and universities.

Chapter 2

Literature Review

2.0 Introduction

This part of this report starts with an introduction of risky sexual behaviour, a discussion of the most common risky sexual behaviours in Sub-Saharan Africa, and a discussion of the factors linked to a risky sexual behaviour, specific risky behaviors among students in higher-learning institutions of Sub-Saharan Africa.

2.1 Risky Sexual Behavior

Sexual behaviour refers to any activity that seeks to gratify a person's sexual needs or desires at a given point in time. Sexual behavior as a subject has been explored in various areas such reproductive health, sexual relationships, sexually transmitted infections, and contraception. While sexual behaviour and expression are both natural occurrences, the circumstances in which they are exhibited can render them aberrant or dangerous (Chawla and Sakar, 2019). While the research has looked at several dangerous behaviours, there is still debate over what constitutes a risky behaviour "sexual behaviour that is high-risk (HRSB). "High-risk sexual behaviour" is a word that may be used interchangeably with "risky sexual behaviour." "Researchers have classified STIs as sexual practises that expose a person to the risk of catching STIs, such as the human immunodeficiency virus (HIV), and hence have an impact on their health (Chawla and Sakar, 2019).

Risky sex, on the other hand, can be described as any sexual behaviour that raises the possibility of an adverse outcome, either psychological or physical (CDC, 2012; Cooper, 2010a; Cooper, 2010b). In other words, risky sex is one that often has negative impact on one's health or overall wellbeing. These negative outcomes often coexist with large social, economic, and health expenses for those immediately affected, as well as the society as a whole (CDC, 2009). The behaviour that has been labelled as "risky sex" has evolved over time. Exercising sexual acts without protection (oral and/or anal) against pregnancy or sexually transmitted infections (STIs), engaging in sexual activity without consent, having sex with multiple partners, substance or alcohol consumption during or before sex, selecting risky sexual partners, failing to discuss risks associated with sexual activity, and engaging in sexual activity with high-risk

partners are all characterize risky sexual behaviour (Cooper, 2002; Cooper, 2010a; Donohew et al., 2000; O'Hare, 2001; Slaymaker et al., 2018). A person who engages in one or more of these acts increases their chance of developing a sexually transmitted illness like HIV/AIDS. Furthermore, risk behaviour occurs when people who are aware they have an STD engage in unprotected intercourse, putting both the individual and their partner at risk (Vesely et al., 2004; Harris et al., 2006).

Frequent intercourse is frequently regarded as harmful behaviour, however, because it is commonly linked with exclusive sexual partners and is not generally associated with negative outcomes, it is not seen as harmful sex in the traditional sense (Cooper et al., 1998). Sexual behaviours are only considered "risky" when they have the potential to cause bodily and/or psychological harm, either directly or indirectly. Failure to guard against STIs or pregnancy, as well as choosing poor or hazardous sexual partners, can all lead to bad outcomes including STIs, unintended pregnancy, or sexual assault.

Safe sex, on the other hand, is defined as when two people share in sexual relations when they take all the necessary measures to avoid infections such HIV/AIDS and other related sexually transmitted infections. People can prevent catching or transmitting the virus unknowingly if they have regular tests and receive early diagnosis (Public Health England, 2017). "Safer sex" the practise of having sexual relations with a decreased risk of transmitting (getting or passing on) a sexually transmitted infection (STI), as defined by the British Association for Sexual Health and HIV (BASHH) (2019). Another aspect of safe sex is a sexual practise that follows rules to reduce the risk of sexual infection transmission (Dekeke & Sandy, 2014).

2.1 Risky Sexual Practices in Sub-Saharan Africa

2.1.1 Sexual activity prevalence and age at first sex among university and college students

According to research conducted in Sub-Saharan Africa, the majority of university and college students have previously had sex and participate in sexual activity before marriage (premarital sex). The majority of research show that university and college students start having sexual relations during their adolescent (10–19 years).

In a survey of 411 university students in Cameroon, it was shown that more than 3 quarters (81%) of them were actively involved and engaged in sexual activities. At sexual debut, the average age was 18 years ± 3. Sex before marriage was reported in 93 percent of the cases (Noubiap et al., 2015). Similarly, a major cross-sectional study of college students in Gauteng and the Northwest Provinces of South Africa revealed that 8 in 10 participants reported that they actively involved in sexual intercourse while 7 in 10 had had sex in the last three months

(Madiba et al., 2016). A prevalence study done among 427 young people enrolled at the University of Zambia found a substantially lower prevalence of sexual engagement when compared to the previous two investigations. According to the research, 205 pupils (48%) admitted to having sex (Yang et al., 2019).

Noubiap et al. (2015) found that the average age at first sex was 17.6 ± 2 years in a study concentrating on early sexual debut. The prevalence of early sexual debut among young people pursuing higher education at a tertiary institution was 17.9% [95 percent confidence interval: 14.4 percent – 24.4 percent] according to the research by Yosef and colleagues (2020). In other situations, however, it was discovered that while most of the young people, that is 41 percent (n = 195) had their first sexual encounter during late adolescence (15 – 19 years), 14 percent (n = 67) had their first sex as early as 7 – 14 years (Mbuthia et al., 2019).

Similarly, a prevalence study in Ibadan of Nigeria reports that the majority (65.3 percent) had practiced sexual activity in the past year (Oharume, 2020). In addition, a study done in Ethiopia found that nearly one-third of all study participants (28.34 percent) had had sex once or more times. Male compared to females were more likely to have had sex. After starting university, one-fifth of these students had their first sexual experience (Yedemie, 2020).

Darre et al. (2018) reports that more than fifty percent of 316 students at the University of Lomé, Togo, had already experienced sexual intercourse. The mean age of first sex experience was 17.9 ± 3.2 years, and 70.3 percent of the participants were heterosexual. Similarly, a descriptive cross-sectional survey of 300 undergraduates in Port Harcourt, Nigeria, observed that more than half (52.0%) of the respondents were on a relationship with either a female or male student, and 144 (52.0%) had ever had sexual intercourse. In Nigerian universities, over 40% (48.6%) of study subjects were actively involved in sexual activity, with the mean age of sexual debut being 17.0 ± 4.5 years (Imaledo et al., 2012).

According to the findings of another study conducted among 1060 students in University in Mahikeng, South Africa, the mean age at first sex for girls was 18 years which was 2 years higher than the mean age at first sex for boys at 16 years (Mturi and Gaearew, 2014).

According to a South African survey (n = 576), 38 percent reported vaginal sex in the previous two months. Seven percent (7%) of women and 43% of men said they had been in concurrent relationships in the previous year, and 24% knew or suspected partner non-monogamy (Hoffman et al., 2017). Similarly, facility-based cross-sectional research of 797 regular undergraduate students at Mekelle found that roughly 44% of those who had sex in the past 12 months did so in a hazardous manner. Fun, lack of information, trusting sexual partners, and lack of availability to a condom were all significant causes for risky sex (Embaye et al., 2020).

Dingeta et al. (2012), investigated over 1000 (n = 1,286) undergraduates at a higher learning institution in Ethiopia during the first quarter of the year 2010. The goal was to develop and gather data on socio-demographic and characteristics of unsafe sexual intercourse. When compared to the bulk of the studies analysed, this one found a substantially lower prevalence of sexual activity, with just 355 (28%; 95 percent CI: 26% – 31%) students reporting having had sex at least one or more times. After starting university, one-fifth of these students (22.8 percent) had their first sexual encounter. Approximately 6 in 10 of the research participants who had engaged in sexual activity stated that they had engaged in sexual activity with partners of the same sex as themselves (Dingeta et al., 2012).

According to a descriptive cross-sectional study of 918 students that employed multistage sampling to choose participants, males (54.1 percent) were more likely than girls to be in a sexual relationship (47.3 percent) (Moktagle and colleagues, 2021). There have been several further studies performed at higher learning institutions among higher education students, with results ranging from 40 percent to 60 percent of students who were sexually active (Mbuthia et al., 2019; Duru et al., 2019).

2.1.2 The Prevalence of Risky Sexual Behavior and Unsafe Sex

Rather than focusing on distinct risky sexual behaviours, some studies looked at risky sexual behaviour as a single outcome variable. Details of these studies and their respective findings are presented in this section.

According to qualitative research conducted in South Africa, despite being adequately informed about the perceived dangers associated with risky sexual behaviours, students continue to engage in hazardous behaviours such as condomless sexual intercourse, multiple sexual partners, and alcohol use during or before sexual intercourse (Mthembu et al., 2019). An investigation done at the University of Zambia found that 148 (72.2 percent) of 427 college students indulged in risky sexual behaviour in the preceding 12 months, according to the findings of the research (Yang et al., 2019). Furthermore, according to a systematic review and meta-analysis involving 18 studies and 10, 218 participants, the estimated pooled prevalence of risky sexual behaviours among college and university students was 42 percent (Amare et al., 2019). In Ethiopia, a study indicated a comparable frequency of risky sexual behaviour 41 percent of sexually active respondents participated in hazardous sexual behaviours, according to the survey (Alamrew et al., 2013).

Furthermore, according to the data analysed in one study, around 6% of students who had sexual experience had interacted with other students of the same sexual orientation. Half of the males who had had sexual interaction did so with a commercial sex worker, according to the

survey (Yedemie, 2020). In contrast, a study in Niger discovered a substantially greater prevalence of risk behaviour, with 64.3 percent (257) presently participating in risky sexual behavior and 47 percent (n = 187) now engaging in risky sexual behavior (Ebuenyi et al., 2020). In a survey of 579 students done at Dambi Dollo University, it was shown that lifetime risky sexual behaviour was greater in males than girls, with 181 (54.8%) and 54 (21.7%), respectively. Adolescent respondents 19 years or younger were less likely to practice unsafe sexual behaviour throughout their lives (Turi, 2020).

2.1.3 Condom Use Prevalence and Consistent Condom Use

Condom usage and consistent condom use among university and college students were also addressed in several of the research evaluated. Condom use and consistency are still low, according to observations.

When asked if they had ever used a condom, the majority of students said they had only done so once in a blue moon. For example, Mthembu et al. (2019) discovered that condom use was widespread yet inconsistent. According to another survey, more than half of respondents (62.2 percent) wore a condom during their first sexual experience (Yosef et al., 2020). Darre et al. (2018) found that 55.3 percent of people who utilised contraception also used condoms. In contrast, just 23.1 percent of sexually active single students used condoms on a regular basis (Oharume, 2020). In a survey done in Kenya's Coastal area, a lower prevalence of regularly using condoms of 32.5 percent was found in the previous twelve months (Mbuthia et al., 2019). In another survey, more than two-thirds (n = 1,821, 67 percent) of participants said they wore a condom during their most recent sexual contact, according to the report., while barely half (n = 1,624, 53 percent) said they used condoms on a regular basis. In this survey, a high number of persons (n = 2,589, or 79 percent) can encourage their partner to use a barrier contraceptive, and 1,632 (54 percent) would decline to engage in sexual activity if their partner did not do so. When a barrier method such as condom is not used, 416 male students (52%) would not deny sexual contact if they were not wearing one (Madiba et al., 2016).

Unprotected sexual intercourse was reported by 38.4% of sexually active respondents in Ethiopia, according to the study (Alamrew et al., 2013). In South Africa, condom use was 90% at the last intercourse, but only 53% of women (53%) and 73 percent of men (68%) used condoms for dual protection after two months (Hoffman et al., 2017). Similarly, 86.7 percent of Nigerian university students have "ever used" condoms, claiming pregnancy prevention (91.7 percent) and STD prevention (89.1 percent) as the top reasons for condom use (Duru et al., 2020).

2.1.4 Prevalence of Multiple Sexual Partners and Other Risky Sexual Practices

In addition to irregular condom usage, premarital sex, and the general practise of risky sexual behaviours, the review also identified studies on many sexual partners, transactional sex, and commercial sex, among other topics. The prevalence of these subtle risky sexual behaviours is discussed here.

In the previous six months, 26.7 percent of people in Ibadan, Nigeria, had several sex partners, according to a prevalence study (Oharume, 2020). Alamrew et al. (2013) found that over 40 percent (45.3%) of people actively involved in sexual intercourse had many partners with whom they had sexual intercourse with (Alamrew et al., 2013). This is comparable to the prevalence reported by Darre et al. (2018), who found that 49 percent of students had more than one sexual partner, with 16 percent having at minimum of 5 partners, and 22 percent having just one sexual intercourse each month (Darre et al. 2018). A study by Duru et al. (2020) found that over half of the participants (49.6%) had more than one sexual relationship.

Nigeria has far lower rates, with just 13% of people who are sexually active having only one sexual partner in their lifetime (Imaledo et al., 2012). Males reported having more sexual partners (n = 114, 46%) than females (Moktagle et al., 2021). A single sexual partner accounted for 50.4 percent of the population (Duru et al., 2020). Similarly, a lot of male students (n=699, 64 percent) reported several sexual partnerships in the previous 12 months than female students (n=1,096, 34 percent) (Madiba et al., 2016).

In terms of alcohol use, transactional sex, and commercial sex, a descriptive prevalence study of 300 students in Port Harcourt, Nigeria, observed that 61% of the study subjects had ever consumed alcohol, with 36 percent being users at the time of study (Imaledo et al., 2012). Only 13 percent of people have had sex in return for presents, and 5.1 percent of those who had sexual relations in return for presents did it with their friend. According to other surveys, half of all guys who have had sexual experience have done so with a female sex worker. Approximately 6 in 10 participants said they had only used a condom on rare occasions (Dingeta et al., 2012). When researchers in South Africa looked at university students during the preceding 12 months, they discovered that a substantial number engaged in paid sex (n = 13, 5 percent) and had one-night stands (n = 68, 28 percent) in the past 12 months (p = 0.001). (Moktagle et al., 2021).

2.2 Factors Associated with Risky Sexual Behavior in Sub-Saharan African

2.2.1 Psychosocial Factors

Pornography viewing, suicide attempts, depression, peer pressure, and watching romantic films are all psychosocial variables that impact risky sexual behaviour.

Having previously had sex was strongly linked with pornography watching. The study revealed that pornography viewing was associated with four-fold increase in the odds of having sex and an increasing age of one year was associated with 30% in the odds of having had sex. Viewing pornography was also a significant risk factor for multiple sexual partners as it increased the likelihood of having a 3 lifetime sexual partners (Noubiap et al., 2015). Similarly, a systematic review and meta-analysis indicated that viewing pornography was positively connected with risky sexual behaviour [OR: 4.74, 95 percent CI: 3.21-7.00] (Amare et al., 2019). Similarly, those who watched romantic films had a higher chance of practicing high-risk sex later in life than those who did not watch such films (Tur, 2020). Furthermore, a study focusing on early sexual initiation found that viewing pornography age of 18 years increased the chances of early sexual onset 4 times as much when compared to viewing it at a later stage (Yosef et al., 2020). Participants with a history of suicide attempts were 6 times more likely to practice risky sexual behaviours, according to a study done among university students in Zambia (Yang et al., 2019). Similarly, having a sexually active close friend was linked to having several sexual partners [AOR: 5.99; 95 percent CI: 3.66–9.81] (Alamrew et al., 2013).

According to Ebuenyi et al. (2020), within a group of 400 students, the rates of depression, suicide thoughts, and attempted suicide were 62.3 percent (249), 18.0 percent (72), and 14.3 percent (54) respectively. Depression (aOR: 1.83; 95 percent CI: 1.15 – 2.92) was also a significant predictor of hazardous sexual behaviour, according to the research.

2.2.2 Socioeconomic and Demographic Factors

Sex, age, religion, and place of residence were shown to be the key socio-demographic characteristics that influenced risky sexual behaviour.

Male gender and urban origin were both associated with a 3-fold increase in the likelihood of having a sex at much younger age. Age, early sexual onset, having occasional partners all significantly increase the risk of having a minimum of 3 lifetime sexual partners among university students. Muslim religious affiliation on the otherhand reduced the likelihood of having at least 3 sexual partners by 80%. There was a link between having casual sexual partners and less inconsistent condom use. Study findings further indicate that there was a 50% decrease in consistent condom use among students with casual partners compared to those without (Noubiap et al., 2015). Similarly, in a study of university students in Zambia, which found that older individuals [OR: 1.30, 95 percent CI: 1.12–1.51] had higher probability of practicing risky sex (Yang et al., 2019).

In a comprehensive desk-study, being male was positively related with risky sexual behaviours [OR: 2.35, 95 percent CI: 1.20, 4.59] (Amare et al., 2019). Similarly, male students had 4-fold

odds than female students to practice lifetime harmful sexual behaviour (Turi, 2020). Furthermore, according to the findings of a qualitative study done in South Africa, male participants were found than female students to report unsafe sexual practices (Mthembu et al., 2019).

More specifically, the males who stated that their partner did not use contraceptives were 6 times more likely to use condoms consistently during their sexual encounters, while the males who stated that they used condoms for double protection as opposed to single protection were 3 times more likely to use condoms consistently during their sexual encounters (Hoffman et al., 2017). Additionally, in their study, Mbuthia et al. (2019) discovered that the male gender was associated with previously experiencing sexual relations, having sexual relations at a young age, having multiple sexual partners, using condoms inconsistently, and having sex when intoxicated by alcohol (Mbuthia et al., 2019).

In another study, multivariate logistic regression analysis revealed that male participants faced seven times more odds of ever having sex than female participants [aOR: 7.6; 95 percent CI: 4.51-34.87]. Study subjects belonging to the Tiv tribe and male sex were also more likely to engage in sexual relations among those aged 25 and up ($p = 0.001$). Females (98%) were more likely than males (83%) to use a condom during their most recent sexual encounter, but there the study found no evidence in a favour of the relationship existing between age, sex, ethnicity, or religion and condom usage in the most recent sexual activity among study subjects (Duru et al., 2020).

In addition, individual factors such as whether the previous school was mixed or single sex, whether one's parents were alive or if one was a total orphan, marital status, and whether parents disapproved of sex before marriage were linked to sexual behaviour. Religious affiliation was only marginally related to sexual behaviour (Musiime and Mungisha, 2015; Alamrew et al., 2013).

While gender was a significant predictor in most studies, other studies found the opposite. For example, Mturi and Gaearew (2014) found that females were more inclined towards engaging in harmful sexual practices compared to male participants from a multivariate perspective (Mturi and Gaearew, 2014). However, it was discovered that being under the age of 18 years was protective against sex before marriage [aOR: 0.42; 95 percent CI: 0.27 – 0.73] (Sendo, 2014).

2.2.3 Knowledge, Attitudes, and Influence on Risky Sexual Behavior

Knowledge about dangerous sexual behaviours and their repercussions might impact attitudes, which can lead to risky sexual behaviour. This section summarises the findings of the research

examined and emphasises the role of knowledge and attitudes in students' hazardous sexual behaviours.

Due to a lack of preparation, most students had condomless sex at the time of their first sexual encounter. Negative attitudes toward condoms, particularly those provided by the government, continue to deter students from using them regularly (Mthembu et al., 2019). A similar observation was reported in a research of Zambian university students, which found that those who expressed sexual liberalism had a double odd of participating in any hazardous sexual behaviour (Yang et al., 2019).

According to the findings of a qualitative study on social context and risky sexual behavior, risky sexual behaviors among teenage college students are deeply embedded in the quality of sex education provided by parents throughout early adolescence (Odii et al., 2020). As a consequence, teenagers who did not receive effective sex education throughout early adolescence were more likely to engage in deviant sex and have multiple sexual partners (Odii et al., 2020). Adolescents from religious and/or autocratic families who did not get sex education as children engaged in risky sexual behavior in university. Due to limited access to sex education throughout early adolescence, adolescent undergraduate students raised in rural areas engaged in risky sex practices (Odii et al., 2020).

In a study focusing on early sexual initiation, poor understanding of sexually transmitted diseases was revealed to be a factor related with early sexual initiation [aOR: 8.69; 95 percent CI: 3.52-21.5] (Yosef et al., 2020). Taking a Sexual and Reproductive Health (SRH) course was found to be protective against hazardous sex practices [aOR: 0.49; 95 percent CI: 0.28–0.85] (Embaye et al., 2020). In contrast, students who had received sexual and reproductive health education were more likely to participate in risky sexual behavior throughout their lifetimes (Turi, 2020).

Finally, wherever there was a high degree of information regarding the dangers of premarital and unprotected sex, it altered students' sexual behaviour in some way (Musiime and Mungisha, 2015).

2.2.4 Drug and Alcohol Abuse, as well as Other Factors

The use of alcohol and other drugs that influence the neurological system and lead individuals to lose their inhibitions is referred to as substance abuse. Smoking, alcohol consumption, and other substances are examples of these substances. Aside from these substances, other factors that influence risky sexual behaviours, such as physical activity, are discussed in this section.

Alcohol usage [OR: 2.68; 95 percent CI: 1.67-4.33] was shown to be positively linked with risky sexual behaviour in a systematic review and meta-analysis (Amare et al., 2019). Similarly, heavy drinking [OR: 8.38; 95 percent CI: 4.60–15.27] was linked to a variety of risky sexual behaviours (Yang et al., 2019). Similarly, individuals who reported lifetime alcohol consumption were at a higher risk of getting involved or taking part in sexual relations (Imaledo et al., 2012). In a study of Ethiopian students, having more than one sexual partner was 3 times more likely to occur among alcohol consumers compared to non-consumers (Alamrew et al., 2013).

A comparable conclusion was reached in a study of Zambian university students, which showed that individuals who did not get enough physical activity [OR: 2.25; 95 percent CI 1.05–4.84] were far more likely to engage in harmful sexual behavior (Yang et al., 2019).

In comparison to non-visitors, pupils who had ever frequented nightclubs faced even a greater likelihood of practicing lifetime unsafe sexual intercourse. Study participants who had ever been inebriated or consumed khat had a greater chance of engaging in lifelong hazardous sexual behaviour than their peers (Turi, 2020). Unprotected sex was also linked to alcohol consumption. The results showed that alcohol consumption increased tripled the likelihood of its occurrence among those who consumed it. The study further highlighted that frequency of nightclub visits reduce the practice of unprotected sex by 75% for those who went once a week and by 55% for those who went twice in a given week (Alamrew et al., 2013).

Those who started drinking after starting college were 4 times far more likely [aOR: 3.05; 95 percent CI: 1.51-4.32] to start sex before marriage than those who did not. Similarly, this study revealed that ever consuming khat after starting college was positively linked with premarital sex [AOR: 2.60; 95 percent CI: 0.62-1.43). (Sendo, 2014).

Alcohol use was also a risk factor for initiating sexual activity in a study of Nigerian female university students. Only 8.9% of the 1,861 non-users had sex four weeks before to the study, compared to 147 (26.9%) of the 547 students who used alcohol. Unprotected sex was shown to be unrelated to drug use: as compared to non-users, a somewhat smaller number of substance users indulged in sex without a condom in their most recent encounter (Oye-Adeniran et al., 2014).

Furthermore, having at least two sexual partners in the preceding year showed a statistically significant association with alcohol intake on all levels (global, situational, and event) for both males and females, even after correcting for confounders, according to one study. Even after controlling for possible confounders, the odds ratios of irregular condom usage with a new partner were significant for men who frequently drunk alcohol with sexual activity [OR: 1.75;

95 percent CI: 1.01–3.08]. Although not statistically significant, females who often drunk alcohol with sexual activity were twice as likely to use a condom with a new partner (Choudhry et al., 2014).

Chewing khat was shown to be a factor related with early sexual initiation in a study concentrating on early sexual initiation (Yosef et al., 2020). Yosef et al. (2020) reveal that khat chewing increased the chances to about 7-fold. Most of the studies have focused on primary data collection of factors associated with risky sexual behaviours, with very few regional studies focusing on statistically combining the regional prevalence of several risky behaviours and their related factors in Sub-Saharan Africa, according to the literature review provided.

Chapter 3

Objectives and Research Questions

3.0 Introduction

This chapter highlights the general objective and specific objectives that this meta-analysis sought to achieve.

3.1 General Objective

To investigate the correlates of risky sexual behaviour among university and college students in sub-Saharan Africa.

3.2 Specific Objectives

1. To determine the pooled estimate of risky sexual behaviour among university and college students in sub-Saharan Africa.
2. To determine socio-demographic and psychosocial predictors of risky sexual behaviour among university and college students in sub-Saharan Africa.
3. To establish the effect of substance abuse on risky sexual behaviours among university and college students in sub-Saharan Africa.

3.2 Research Questions

1. What is the pooled estimate of risky sexual behaviour among university and college students in sub-Saharan Africa?
2. What are the socio-demographics and psychosocial predictors of risky sexual behaviour among university and college students in sub-Saharan Africa?
3. What is the effect of substance use on risky sexual behaviours among university and college students in sub-Saharan Africa?

Chapter 4

Methodology

4.0 Introduction

In this chapter of the dissertation, we highlight the methodology which guided this study. The chapter discusses the study design and search strategy, study selection and eligibility, data extraction, quality assessment and data collection, statistical methods and analysis and concludes with ethical considerations.

4.1 Study design and Search Strategy

This meta-analysis involved primary quantitative articles published in the past ten years (2012 – 2021) in Sub-Saharan Africa.

We searched databases such as PubMed, African Journals Online, Science Direct and Google Scholar, and other sources by searching references of selected articles.

To conduct our search in PubMed, we used the following terms and keywords:

"prevalence OR epidemiology OR magnitude OR incidence AND risky sexual behaviour OR risky behaviour AND associated factors OR predictors OR determinants OR risk factors AND college OR higher institution OR university AND students OR student OR learner OR learners AND" Low income" OR "Least developed countr* OR "Low to middle income" OR "Under developed nation" OR "sub-Saharan Africa" OR "poor countr*" OR "Third world countr*" OR "Global south" OR "LMIC" OR MH "Developing countries" OR MH "Africa south of the Sahara"." A similar approach was applied with Google Scholar, using the specific subject heading as advised for each database.

4.2 Study Selection and Eligibility Criteria

Inclusion criteria:

- **Participants:** This review covered research on hazardous sexual behavior and its factors among college and university students in Sub-Saharan Africa. Individuals aged 15 and above, regardless of gender, were eligible to participate.
- **Setting:** Sub-Saharan African studies undertaken at the institutional level.
- **Outcome:** The frequency of risky sexual behaviors as defined by the communicable disease control (CDC).
- Only quantitative cross-sectional study designs were considered.
- Journal articles are the sole publication types.

- Only studies in English were included in the review.

Exclusion criteria:

- Review articles and studies with a response rate below 80% and an assessment score below 50% were excluded from the meta-analysis.

4.3 Data extraction

Two researchers used a data extraction tool to retrieve the data. The title, author, year of study and publication, design of the study, sample size, data collection technique, research subjects, study location, response rate, sampling techniques, and definition of risky sexual behavior were all included in the tool.

4.4 Quality assessment and data collection

4.5 Publication bias and heterogeneity

A critical appraisal tool developed by the Joanna Briggs Institute (JBI) was utilised to conduct a meta-analysis of statistical data. An evaluation checklist for each research design type is included in this tool. Two separate reviewers used this tool to analyze articles before they were included in the final review. Discussion and the presence of a third reviewer helped to address any disagreements amongst the reviewers. Quality assessment scores of at least 50% and response rates of at least 80% were included in the final meta-analysis.

4.6 Statistical methods and analysis

Meta XL was used to do the meta-analysis. The aggregate estimate with 95 percent confidence intervals was presented using forest plots. Using a random-effects model implemented in Microsoft Excel Add-in Meta-XL software, version 5.3, a meta-analysis was performed to determine the prevalence of risky sexual behavior and specific risky sexual behaviors. The effect of chosen factors on the practice of risky sex was assessed by calculating odds ratios (OR) and 95 percent confidence intervals (95 CIs). Testing for homogeneity was done using I squared.

4.7 Ethical considerations

The study did not require access to human subjects as it is a desk-based project. However, it is essential to mention that all primary research articles included in this study were thoroughly screened to determine if they met the required ethical requirements and principles. The study was not registered.

Chapter 6

Results

6.0 Introduction

The findings of the meta-analysis are presented in this chapter. It describes the findings of the literature search, the papers included in the meta-analysis, the pooled prevalence results for risky sexual behaviors, and ends with socio-demographic, psychological, and drug use characteristics associated with risky sexual behaviors.

6.1 Results of Literature Search

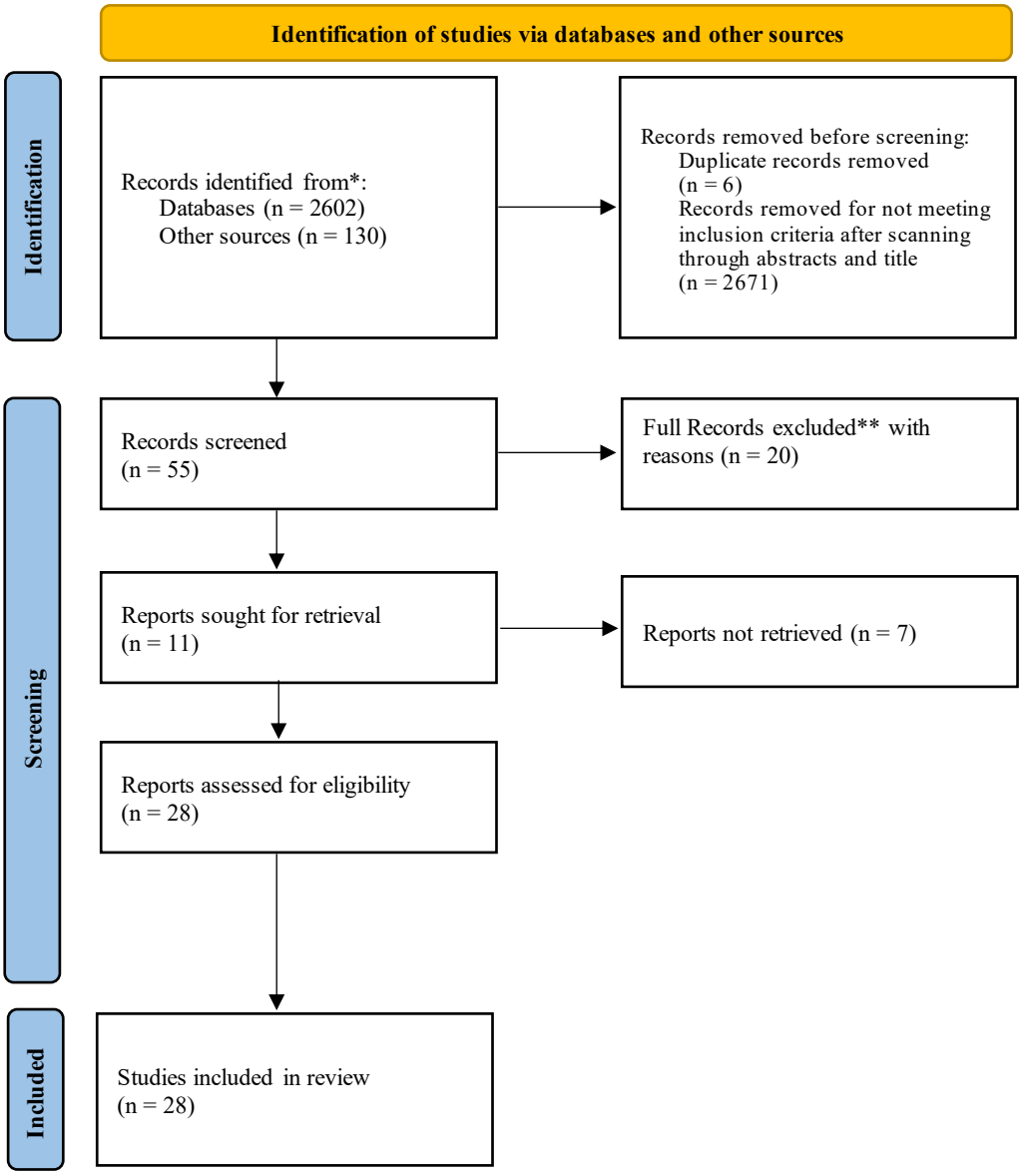

Figure 1 PRISMA Flowchart for the Literature Search

Our initial search yielded 2512 articles (Pubmed central = 2602; Other Sources = 130). Several articles at this stage were excluded from our studies because they were duplicates (n = 6) and did not meet our inclusion criteria (n = 2671), which left us with 55 articles as indicated through their titles. Our possible studies for inclusion were further restricted to 28 after the screening process, which included reading through the abstracts. Several studies (n = 27) were discarded throughout this process, including those that employed qualitative research methods, focused on youths and adolescents in informal settings, were from areas other than Africa, and had no complete articles accessible. For this analysis, a total of 28 papers matched our inclusion criteria.

6.2 Description of Studies Included

The review included 28 studies (18495 participants) carried out in Sub-Saharan Africa at selected colleges and Universities. Most of the studies included in the review were from Ethiopia (n = 18), followed by Nigeria (n = 3), South Africa (n = 3), Kenya (n = 1), Togo (n = 1), Zambia (n = 1) and Cameroon (n = 1). Most of these studies were carried out in universities (n = 20) compared to colleges (n = 8). Additionally, the study with the highest number of participants was conducted by Madiba and Mokgatle (2016), followed by Mturi and Gaearew (2014). All the studies included in this review were conducted from 2012 through 2021.

Table 1 Summary of Studies Included in the Review and Meta-analysis (n = 28)

Author	Prevalence	Ever Had Sex	Sample Size	Country	Level of Institution
Alamrew et al. (2012)	50.71	391	771	Ethiopia	College
Yigzaw et al. (2013)	38.95	372	955	Ethiopia	University
Mekonnen et al. (2013)	33.33	238	714	Ethiopia	College
Gebresllassie et al. (2013)	25.59	151	590	Ethiopia	College
Negeri (2013)	49.07	422	860	Ethiopia	University
Debebe and Solomon (2014)	54.64	330	604	Ethiopia	University
Derbie et al. (2014)	28.28	97	343	Ethiopia	University
Fantahun et al. (2015)	56.98	147	258	Ethiopia	College
Noubiap et al. (2015)	80.78	332	411	Cameroon	University
Tololu (2016)	49.02	201	410	Ethiopia	College
Woldeyohannes et al. (2017)	28.90	161	557	Ethiopia	University
Kebede et al. (2017)	60.63	174	287	Ethiopia	University
Yarinbab et al. (2017)	35.05	116	331	Ethiopia	College
Akibu et al. (2017)	54.30	328	604	Ethiopia	University
Mbuthia et al. (2019)	59.41	281	473	Kenya	University
Duru et al. (2020)	47.13	238	505	Nigeria	University
Ebuenyi et al. (2020)	78.00	312	400	Nigeria	University
Abera (2019)	40.39	206	510	Ethiopia	University
Mturi and Gaearew (2014)	85.28	904	1060	South Africa	University
Azwihangwisi et al. (2016)	70.53	146	207	Ethiopia	University
Turi (2020)	37.65	218	579	Ethiopia	University
Darre et al. (2018)	51.90	164	316	Togo	University
Derese et al. (2014)	33.52	243	725	Ethiopia	University
Imaledo et al. (2012)	51.99	144	277	Nigeria	University
Madiba and Mokgatle (2016)	80.21	2947	3674	South Africa	College
Mokgatle et al. (2021)	50.00	459	918	South Africa	University
Yang et al. (2018)	48.01	205	427	Zambia	College
Embaye et al. (2020)	41.15	300	729	Ethiopia	University

6.3 Pooled Estimates for Prevalence of Sexual Activity in Sub-Saharan Africa

The prevalence of sexual activity at colleges and universities in Sub-Saharan Africa ranged from 26.0 percent to 81 percent, according to various works of literature. The aggregated prevalence of sexual activity among college and university students was estimated to be 51.0 percent (95 percent CI: 43.0% – 59.0%) (**Figure 2**).

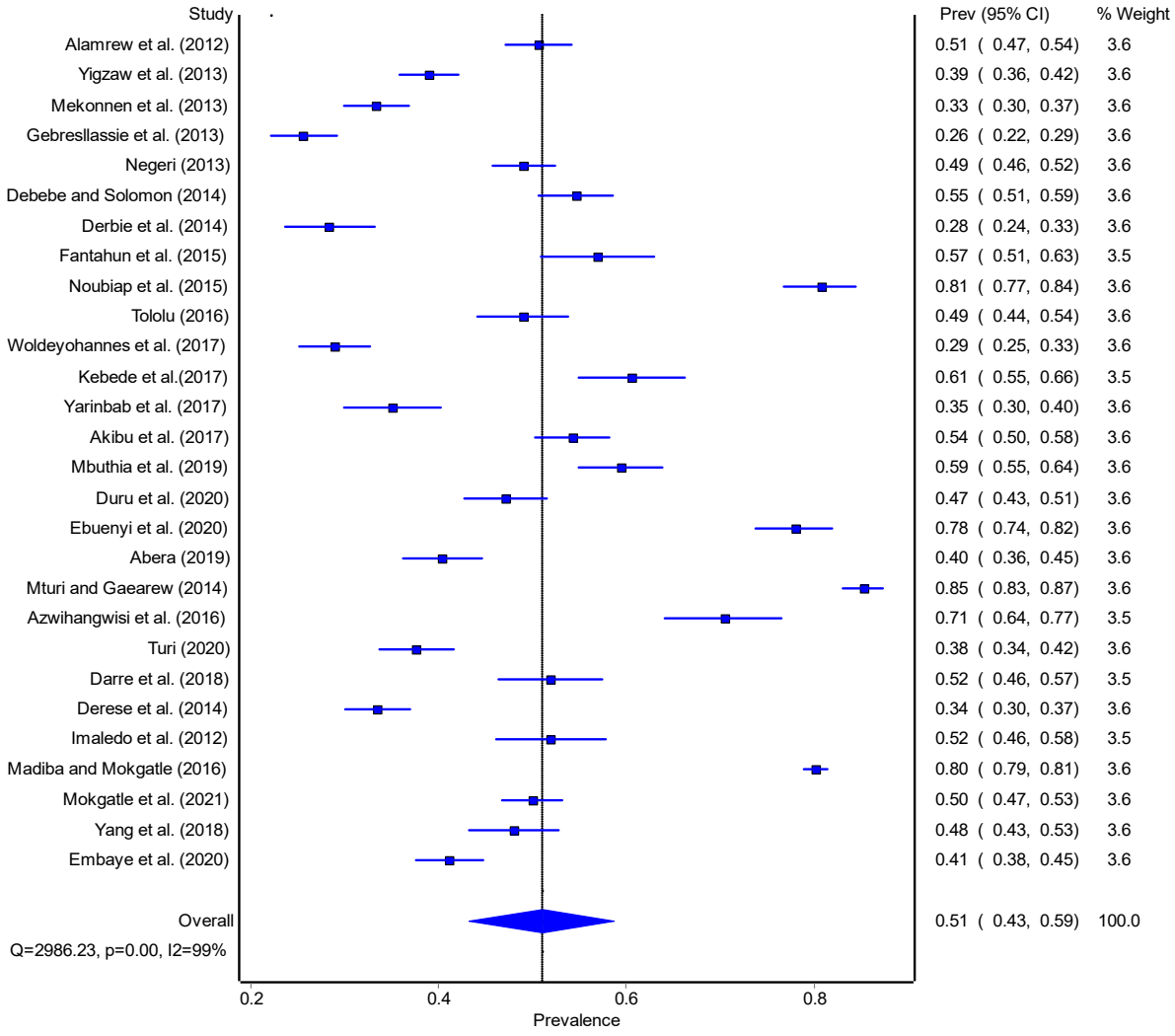

Figure 2 Forest plot for the results of the random-effects meta-analysis showing study and pooled prevalence estimates for sexual activity among college and university students in Sub-Saharan Africa (n = 28)

6.4. Prevalence of Risky Sexual Behaviours among Students in Colleges and Universities of Sub-Saharan Africa

6.4.1 Prevalence of Multiple Sexual Partners

Fifteen (n = 22) studies reported this risky sexual behaviour in their studies. The prevalence of having more than one sexual partner ranged from 12% to 65%. Through the meta-analysis, the pooled prevalence was 36.0% (95% CI: 30.0% - 42.0%) (**Figure 3**).

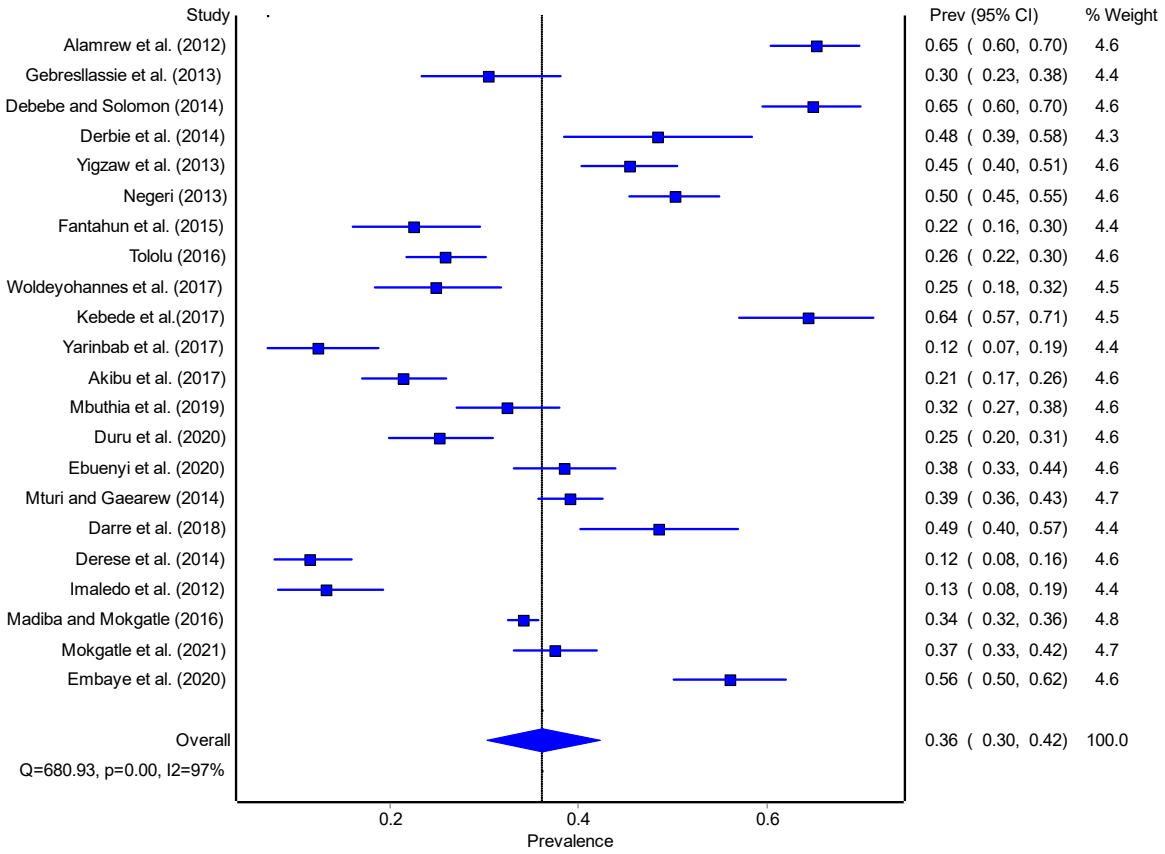

Figure 3 Forest plot for the results of the random-effects meta-analysis showing study and pooled prevalence estimates for multiple sexual partners among college and university students in Sub-Saharan Africa (n = 22)

6.4.2 Prevalence of Inconsistent Condom Use

Fourteen studies were combined systematically to produce the pooled prevalence for inconsistent condom use among college and university students in Sub-Saharan Africa. The results revealed that the prevalence ranged from 27.0% to 83.0%. After using the random-effects model, the results obtained showed that the overall prevalence was 53% (95% CI: 46.0% - 61.0%) **(Figure 4).**

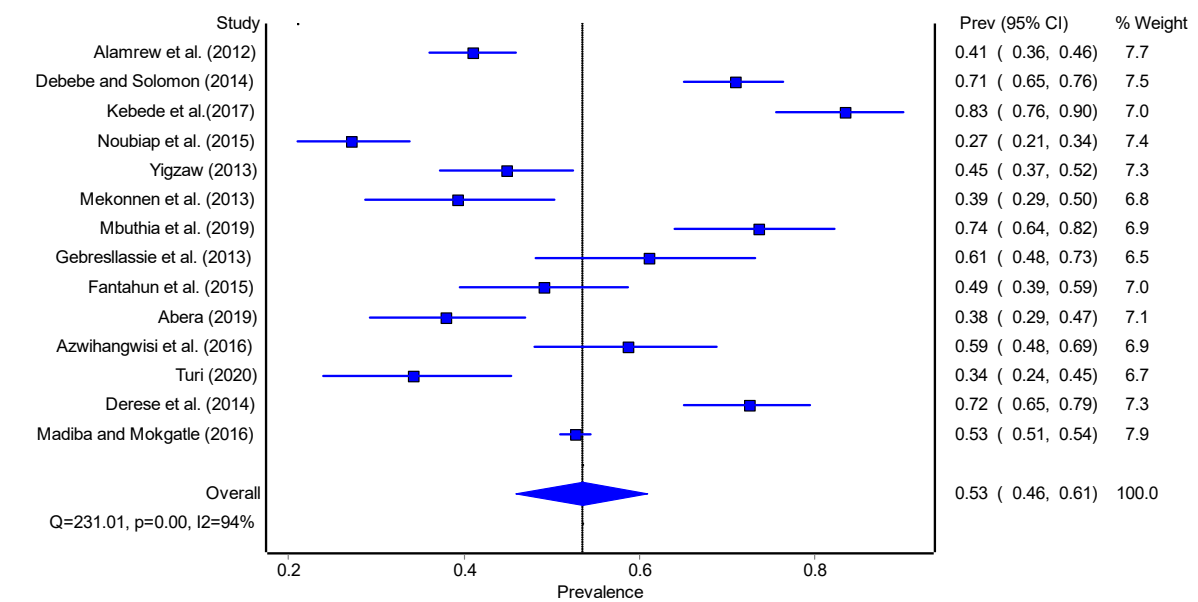

Figure 4 Forest plot for the results of the random-effects meta-analysis showing study and pooled prevalence estimates for condom use among college and university students in Sub-Saharan Africa (n = 14)

6.4.3 Prevalence of Overall Risky sexual Behaviours

Seven studies in the reviewed literature reported risky sexual behaviours defined as having at least one of the following:

- Multiple sexual partners
- Unprotected sexual intercourse
- Sexual intercourse under alcohol influence
- Early age at sexual intercourse

From the reviewed literature, this prevalence ranged from 41.0% to 95%. The pooled estimate for the prevalence was found to be 65% (95% CI: 48.0% - 81.0%) **(Figure 5).**

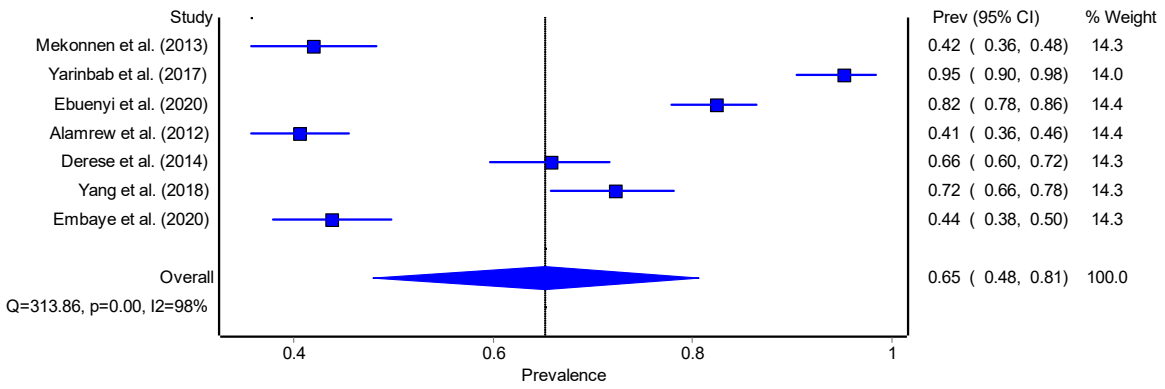

Figure 5 Forest plot for the results of the random-effects meta-analysis showing study and pooled prevalence estimates for risky sexual behavior among college and university students in Sub-Saharan Africa (n = 7)

6.5 Factors Influencing Risky Sexual Behaviour among Students in Colleges and Universities of Sub-Saharan Africa

6.5.1 Socio-demographic Factors Influencing Risky Sexual Behaviour

6.5.1.1 Sex and Multiple Sexual Partners

Eight studies were utilized for this analysis. Overall, all the studies reported that being male increased having more than one sexual partner. Overall, this study also reports that being male was associated with a 3.36 [OR: 3.36; 95% CI: 2.59 – 4.37] higher chance of having more than one sexual partner compared to being female (**Figure 6**).

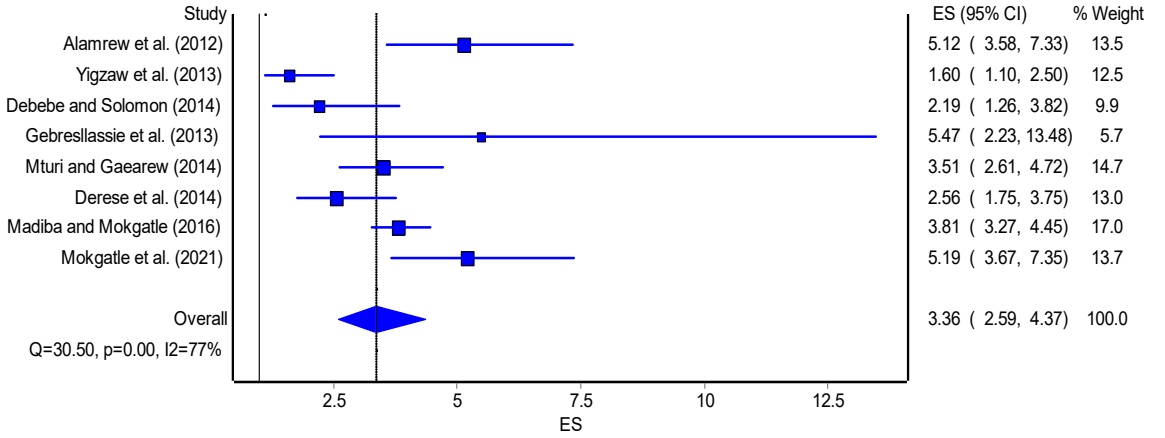

Figure 6 Forest plot for the results of the random-effects meta-analysis showing study and pooled odds ratio estimates for the effect of sex on multiple sexual partners among college and university students in Sub-Saharan Africa (n = 8)

6.5.1.2 Sex and Consistent Condom Use

Two studies were assessed to determine the effect of sex on consistent condom use. The literature revealed that similar results. Males were more likely to demonstrate consistent condom use compared to female students. This review reveals a non-significant pooled odds ratio of 1.42 (0.70 – 2.88) (**Figure 7**).

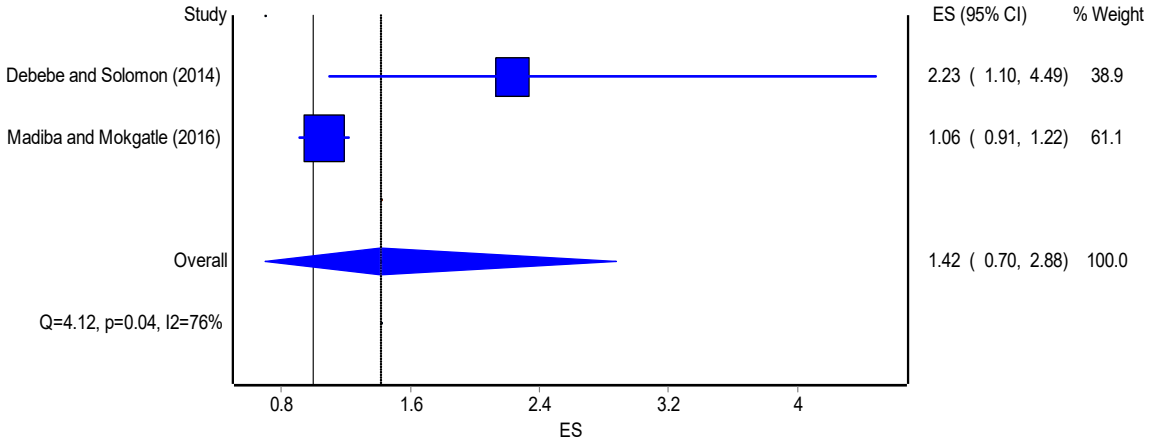

Figure 7 Forest plot for the results of the random-effects meta-analysis showing study and pooled odds ratio for the effect of sex on consistent condom use among college and university students in Sub-Saharan Africa (n = 2)

6.5.1.3 Sex and Risky Sexual Behaviour

This analysis only included two studies. The results indicated that males were 2.99 times more likely to engage in risky sexual behaviour than females (OR: 2.99; 95% CI: 1.40 – 6.40) (**Figure 8**).

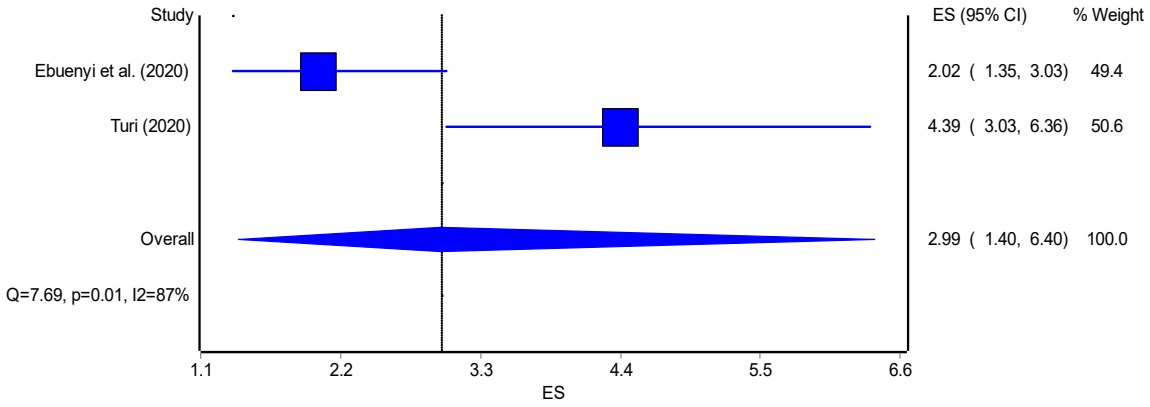

Figure 8 Forest plot for the results of the random-effects meta-analysis of 2 studies on odds ratio for the effect of sex on risky sexual behaviour among college and university students in sub-Saharan Africa

6.5.2 Psychosocial Factors and Risky Sexual Behaviours

6.5.2.1 Porn and Multiple Sexual Partners

We considered two research studies to evaluate the impact of porn on having more than one sexual partner. Both studies found that watching porn increased the likelihood of having more than one sexual partner; however, Yigzaw et al. (2013) found no significant results. According to this study, viewing pornography increases the likelihood of hazardous sexual behavior by 2.67 [OR: 2.67; 95 percent CI: 0.81 – 8.83] as compared to not seeing (**Figure 9**). However, this result was not significant at 5%.

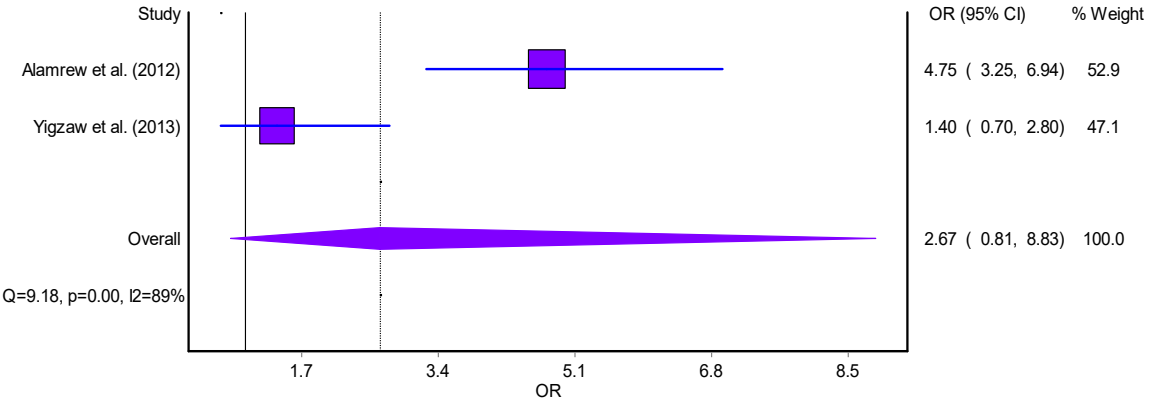

Figure 9 Forest plot for the results of the random-effects meta-analysis showing study and pooled odds ratio estimates for effect of viewing porn on multiple sexual partners college and university students in Sub-Saharan Africa (n = 2)

6.5.3 Substance Use and Risky Sexual Behaviours

6.5.3.1 Alcohol and Multiple Sexual Partners

Risky behaviours include alcohol consumption and smoking. The study included four studies in this part and reports that alcohol was consistently observed to be a risk factor for having more than one sexual partner. According to the pooled estimate, alcohol intake is related with a 3.81 increase in the chance of having many sexual partners [OR: 3.81; 95% CI: 1.99 – 7.27] (**Figure 10**).

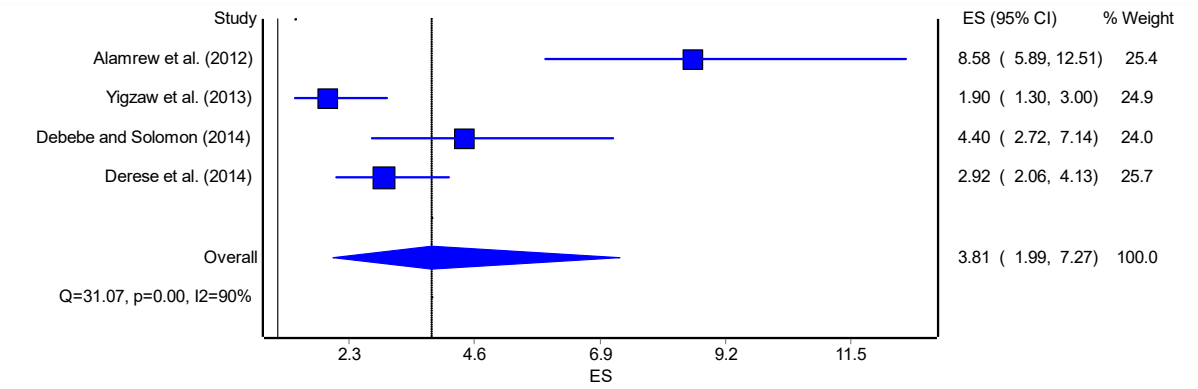

Figure 10 Forest plot for the results of the random-effects meta-analysis showing study and pooled odds ratio estimates for effect of alcohol consumption on having multiple sexual partners among college and university students in Sub-Saharan Africa (n = 4)

6.5.3.2 Alcohol and Condom Use

Two studies were assessed to determine the influence of alcohol on condom use. The literature revealed mixed results. Alcohol had either a negative (increase) or positive (decrease) on consistent condom use. This review reports a non-significant pooled odds ratio estimate of 1.17 [OR: 1.17; 95% CI: 0.24 – 5.57] **(Figure 11).**

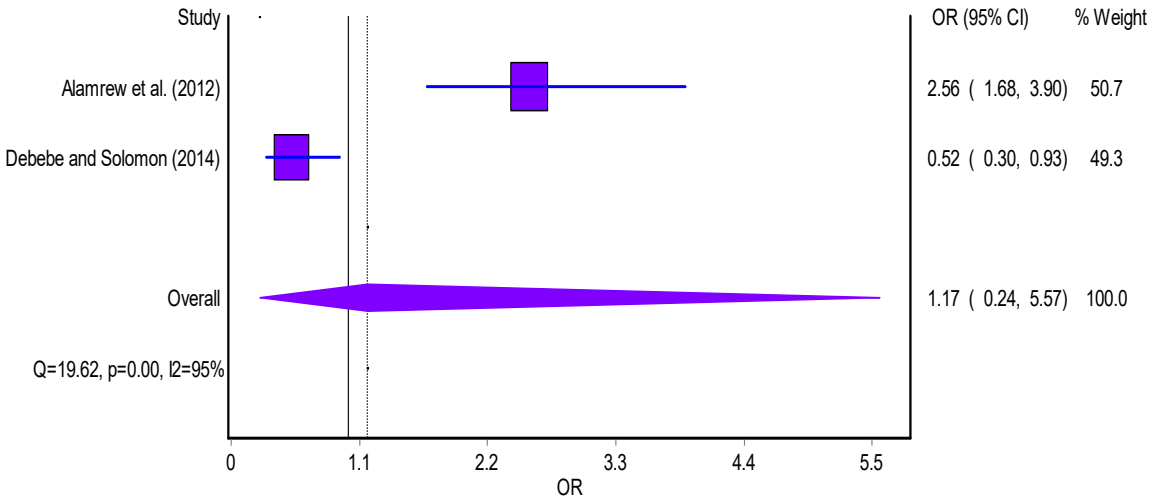

Figure 11 Forest plot for the results of the random-effects meta-analysis showing study and pooled odds ratio estimates for effect of alcohol consumption on condom use among college and university students in Sub-Saharan Africa (n = 2)

6.5.3.3 Alcohol and Risky Sexual Behaviour

Only three studies were utilized for this analysis. All three studies indicated that alcohol consumption was a risk factor for increased risky sexual behaviour. This review indicated that alcohol consumers had 3.92 times [OR: 4.03; 95% CI: 1.87 – 8.72] high likelihood of to practicing risky sexual behaviours than non-consumers **(Figure 12).**

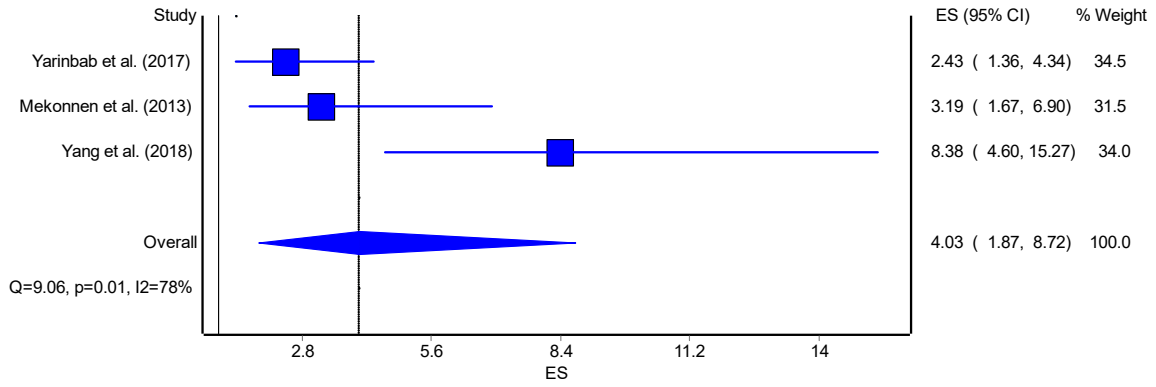

Figure 12 Forest plot for the results of the random-effects meta-analysis showing study and pooled odds ratio estimates for effect of alcohol consumption on risky sexual behavior among college and university students in Sub-Saharan Africa (n = 3)

Chapter 7

Discussion

7.0 Introduction

Chapter 7 explains the findings and compares them to what others have discovered. In this chapter, the author explains the findings considering the study's goals.

7.1 Prevalence Estimate for Sexual Activity and Risky Sexual Behaviors based on a Pooled Prevalence Estimate

The incidence of sexual activity and many sexual partners among college and university students was found to be relatively high in this study. In addition, more than half of college and university students engaged in at least one risky sexual behaviour and did not routinely use condoms. This suggests that unsafe sexual behaviours are still prevalent among university and college students. As a result, immediate action is needed to deter dangerous sexual behaviour among university and college students.

These findings are close to, but much greater than, those published in an Ethiopian comprehensive review and meta-analysis, which shows a sexual activity prevalence of around 42 percent. This difference could be due to the research used which had varied inclusion criteria. This study looked at outcomes from nations in Sub-Saharan Africa.

This general trend in developing nations can be explained by the fact that teenagers in most under-developed countries, notably in Sub-Saharan Africa, have grown increasingly prone to dangerous sexual behaviours. Early sexual activity, multiple sexual partners, condomless sexual intercourse, and irregular partners such as commercial sex workers characterize the age group that is mostly at university or college, and they typically engage in these high - risk sexual behaviors (UNAIDS, 2008; Abdurahim and Tohti, 2010).

The prevalence estimates for sexual activity, multiple sexual partners, unprotected sexual intercourse, and sexual activity while under the influence of alcohol are a public health concern among university and college students. These findings suggest that university and college students are at risk for STIs as a result of their risky sexual behaviours and lack of preventive practises (WHO, 2016). Because of early age at first sex, inconsistent condom use, multiple sexual partners, and sexual intercourse while under the influence of alcohol, the identified risky sexual behaviours in this meta-analysis indicate that adolescents and young people in higher learning institutions continue to face an increased risk of acquiring STIs and HIV (Ngidi et al., 2016; Talwar et al., 2015).

If nothing is done to address this issue, the negative consequences will include significant societal, financial, and health care expenditures for both young people and society as a whole (CDC, 2009). Failure to utilise STI or pregnancy protection, as well as choosing poor or dangerous sexual partners, may continue to result in undesirable outcomes such as STIs, unintended pregnancy, or sexual assault.

7.2 Socio-demographic Factors Linked to Dangerous Sexual Behavior

Being male was revealed to be a risk factor for engaging in at least one hazardous sexual behaviour and having several sexual partners in this study. Aside from Africa, similar observations have been made in other locations (Amare et al., 2019; Scull et al., 2020).

The concept of gender norms can be used to explain this observation. According to experts, internalized gender stereotypes may urge males to follow the macho ideal of sexual adventurer, while females may feel forced to pursue the stereotyped image of feminine receptivity (Shearer et al., 2005). As a result, males may face increasing pressure to engage in many informal partnerships, while females may feel more pressure to consent to important relationship decisions (Shearer et al., 2005). Power inequalities between couples of the opposite can be exacerbated by gender stereotypes, which can also obstruct good communication between partners. Male students who aspire Due to the stereotype of taciturn masculinity, some men may be more reluctant and/or less qualified to communicate to their girlfriends about STIs, fertility control, and even the emotional ramifications of participating in sexual intercourse with another person than females. Men are acculturated to avoid uncomfortable or emotional conversations even as children thus prefer to aspire to the stereotype of taciturn masculinity which leaves them at a greater disadvantage (Anthony, 2008; Wood, 1995).

Females, unlike men, frequently have sexual encounters within the framework of a stable, committed relationship, which is related with love and trust, according to studies (Petersen et al., 2010). They appear to have a larger desire for a steady companion with whom they may have sexual interactions and place a higher importance on his or her loyalty. Women place a premium on affection and social status, whereas males place a premium on physical appeal (Romello-Estudillo, 2014).

Aside from the statistically significant findings, the meta-analysis also revealed that sex was not related with consistent condom use. This might be due to the fact that this meta-analysis included fewer trials that reported on gender and consistent condom usage. Females, on the other hand, are more prone than males to use condoms inconsistently, according to certain

research (Mehra et al., 2014). This result has been explained by the low frequency of condom effectiveness in females (Mehra et al., 2014) (Mehra et al., 2014).

7.3 Psychosocial and Risky Behaviours and their Influence on Risk Sexual Behaviors

Although both studies found that watching porn increased the likelihood of having several sexual partners, Yigzaw et al. (2013) found no significant outcomes. According to this study, there was no evidence of real link between high-risk sex and pornography watching. This is in contrast to earlier research, which have found that pornography is a powerful predictor of harmful sexual behavior because it increases viewers' sexual desire, which is contrary to the findings of the current study. Thus, the finding in our study could be due to a shift in attitude and avoidance of risky sexual behaviours as a result of increased knowledge, which could obscure the effect of pornography on risky sexual behaviour even if people were watching it. One possible explanation for this phenomenon is that males who view pornography on purpose are more interested in sexual health concerns in general. With enough information, this theory would indicate that online pornography searching is not always related with dangerous sexual behaviour.

Alcohol consumption was independent of consistent condom use in this study. This goes against the findings of previous research that have found substantial results (Fisher et al., 2010; Shuper et al., 2009). The non-significant finding might could be because most of the individuals in the research examined were light drinkers who were not substantially inebriated enough to lose sight of better sexual behaviours. Alcohol intake was likewise shown to have no significant relationship with condom usage in the research. Brown and Vanable (2007) discovered that drinking alcohol before a sexual interaction was highly associated with unprotected sexual intercourse experiences between casual partners.

Alcohol, on the other hand, had a substantial impact on many sexual partners as well as overall hazardous sexual behaviour. Alcohol abuse has been linked to an increased desire to participate in harmful sexual practices, such as several sexual partners, unprotected sex, and having sex with someone they have just met (unintended) (Hingson et al., 2002; Sander et al., 2010; Townsend et al., 2010). This could be as a result of excessive drinking of alcohol which has the potential to increase the risk of an individual engaging in unexpected sexual activities or failing to apply protective measures when having sex (i.e., risky sexual practises) (Valois et al., 1999).

Furthermore, studies have demonstrated that consuming alcohol might lead to risk taking during sexual activity via behavioural and biological factors. Alcohol disinhibits behaviour,

according to the alcohol myopia theory, due to its pharmacological effects on cognitive capacity (Steele and Josephs, 1990). As a result, proximate and simple signals that cause behaviour (e.g., sexual desire) are still processed. More distant and complicated cues, on the other hand, that might normally constrain behaviour such the risk of HIV or STIs are no longer given careful thought and attention. The expectancy model, on the other hand, proposes that, like a self-fulfilling prophecy, a person's behaviour after consuming alcohol is driven by pre-existing views and results expected about the effects of alcohol (Lang, 1985). Lower risk perceptions, hazardous intents, and different types of risky sexual behaviour may come from these individual assumptions regarding alcohol (Bryan et al., 2005). In their quest provide logical explanations for the relationship between alcohol and STIs, such as HIV and AIDS, researchers have often incorporated confounding variables such as personality factors of sensation seeking or compulsivity, in their models (Kalichman and Cain, 2004; Kalichman et al., 2002).

Chapter 8

Conclusion, Limitations and Recommendations

8.0 Introduction

This chapter summarises the study's primary findings, identifies the study's limitations, and closes with suggestions based on the findings.

8.1 Conclusion

In Sub-Saharan Africa's universities and colleges, risky sexual behaviour is still prevalent. Students at universities continue to practice risky sexual behaviours such as inconsistent condom use and having multiple sexual partners. There is a need to develop measures that target this demographic, particularly those who use alcohol and male students, because they have greater likelihood and motivation to participate in harmful sexual behaviour.

8.2 Limitations

The scope of this study was limited to articles published between 2012 and 2021 and whose full texts were available in English. This suggests that several articles with useful information may have been overlooked. Furthermore, no publications involving adolescents or young people outside of universities and colleges were included in the study. The review in this area was spearheaded by a novice, who may lack the rigour required for such a study. This has a similar implication to what has already been mentioned. However, there was strong reason for this inclusion criterion.

8.3 Recommendations

To reduce risky sexual behaviours and the consequences of these practises, educational institutions in Sub-Saharan Africa, such as colleges and universities, must provide and implement adequate health education and behaviour change programmes aimed at men and those who abuse alcohol. Furthermore, we believe that further research should be designed and implemented to assess the relationship between pornography watching and risky sexual behaviour, as well as the impact of parental sex education on risky sexual behaviour adopted by young people in higher-learning institutions.

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