Determinants of condom use among young women in South Africa

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ABSTRACT

Background: The consistent and correct use of both female and male condoms during sexual activity has been the key component and have been proven to be 80% to 90% effective to preventing HIV, sexually transmitted infections (STIs) and unwanted pregnancies. Though young women are the most vulnerable population to HIV, evidence on young South African women reveals that condom use is under-utilized in this population. Young women are the most probable to acquire HIV and are still having unintended pregnancy due to contraceptive failure when using other methods. Previous studies on contraceptive use are mostly based on general use of contraceptives, and not condom use. Therefore, this study was designed to identify factors that determine the use of condoms among young women aged 15 – 24 years in South Africa. The operational definition of condom use refers to the use of a condom with the most recent partner.

Methods: The study followed a quantitative cross-sectional design focusing on sexually active young women aged 15 – 24 years in South Africa (n =1757). Which involved using secondary data from the 2016 South Africa Demographic and Health Survey (SADHS, 2016). The following analyses were conducted using the Statistical Package of Social Science (SPSS) version 27 namely, univariate analysis (frequency distribution), Pearson Chi square to examine the association between each of the independent variables and dependent variable and binary logistic regression to investigate the influence of individual- and community- level factors on condom use among young women.

Results: The results reveal that of 1757 young women, 55.6% reported using condom during last sexual intercourse with the most recent partner. Based on the Pearson Chi square statistics, the age group, population group, marital status, level of education, parity, sex of household head, multiple sexual partners in the past 12 months, household wealth, place of residence and province were statistically associated ($P<0.05$) with condom use during last sexual intercourse with most recent partner. Condom use during last sexual intercourse with the most recent partner among young women was less prevalent among women aged 20-24 years (53.1%), who belonged to other population group (44.9%), who have ever been in union (24.8%), with primary and lower education (28.9%), with two or more children (44.5%), with no multiple sexual partners (21.6%), who came from male headed households (48.2%), poor households (48.9%), from rural areas (50.0%), and the Western Cape (48.6%) as compared to other young women.

Based on the binary logistic regression, the results show that the population group, marital status, level of education, parity, multiple sexual partners in the past 12 months, household wealth and place of residence were statistically associated (P<0.05) with condom use during last sexual intercourse with most recent partner. The odds of using condoms during sexual intercourse with the most recent partner were low and high among some women. Young women from other population group [Odds ratio's (OR): 0.493; 95% CI: 0.328 – 0.741; P=0.001], ever been in union [OR: 0.45; 95% CI: 0.254 – 0.816; P=0.008] , with one child [OR: 0.554; 95% CI: 0.440 – 0.697; P=0.000], two or more children [OR: 0.595; 95% CI: 0.425 – 0.834; P=0.003], from rural areas [OR: 0.687; 95% CI: 0.537 – 0.878; P=0.003] were less likely to use a condom during last sexual intercourse compared to other young women. Young women with secondary education [OR: 2.287; 95% CI: 1.451 – 3.603; P=0.000], higher education [OR: 1.843; 95% CI: 1.034 – 3.285; P=0.038], with one extra sexual partner [OR: 2.219; 95% CI: 1.171 – 4.205; P=0.015], two or more extra sexual partners [OR: 2.429; 95% CI: 1.158 – 5.094; P=0.019], from rich households [OR: 1.480; 95% CI: 1.106 – 1.982; P=0.008] were more likely to use a condom during last sexual intercourse compared to other young women.

Conclusion: The study identified areas where condom use was less prevalent among young women. The study has also found several individual and community level factors to be significantly associated with the use of condom during sexual intercourse. There is a need for interventions aimed at elevating educational levels integrated with sexual health information, increasing access to family planning, antenatal and health care services, empowering women economically, that are central to increase condom use among young women. Such as empowering young women economically, promoting women's reproductive health, improving sexual and reproductive health care services in rural areas, access to free quality education and provide counselling with respect to sexual health in marriages.

Keywords: Condom use, young women, HIV and AIDS, South Africa, Demographic and Health Survey

DECLARATION

I, Legotlo Onalenna (Student number: 27382060) declare that this study titled "Determinants of condom use among young women in South Africa" is my original work and that it has not been submitted to any institution of higher learning before for any examination or degree. I also declare that all sources of information in this research project have been acknowledged appropriately. This study was supervised and approved for submission by my supervisor Dr Karabo Mhele from the department of Population Studies and Demography. This mini dissertation was submitted in partial fulfilment of the requirements for the degree Master of Social Sciences in Population Studies and Sustainable Development at the North-West University, Mafikeng Campus.

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LIST OF ABBREVIATIONS

AGYW	Adolescent Girls and Young Women
AIDS	Acquired Immunodeficiency Syndrome
ASAR	Age-Specific Attendance Rate
BaSSREC	Basic and Social Science Research Ethics Committee
CI	Confidence Interval
DHC	Primary Health Care
DHS	Demographic and Health Survey
DU's	Dwelling Units
EAs	Enumeration Areas
FC	Female Condom
HBM	Health Beliefs Model
HCT	HIV Counselling and Testing
HIV	Human Immunodeficiency Virus
ICF	ICF (Originally, Inner City Fund)
IUD	Intrauterine Device
MC	Male Condom
MSP's	Multiple Sexual Partners
MTCT	Mother-to-Child Transmission
NDoH	National Department of Health
NWU	North West University
PSU's	Primary Sampling Unit
RSA	Republic of South Africa
SADHS	South African Demographic Health Survey
SAHR	South African Health Reviews
SEM	Social Ecological Model

SCT	Social Cognitive Theory
SPSS	Statistical Package of Social Science
SSuN	STD Surveillance Network
STATSSA	Statistics South Africa
STD’s	Sexually Transmitted Diseases
STI’s	Sexually Transmitted Infections
TPB	Theory of Planned Behaviour
UNAIDS	United Nations Program on HIV and AIDS
UNFPA	United Nations Population Fund
UTI	Urinary Tract Infections
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

For years, condoms have been the centre approach to preventing HIV, other sexually transmitted infections (STIs) and unwanted pregnancies as a cost-effective tool. The consistent and correct use of both female and male condoms during a sexual activity has been the key component and proven to be 80% to 90% effective in preventing HIV, sexually transmitted infections (STIs) and unwanted pregnancies by both laboratory and epidemiological research (Ali *et al.*, 2019:1; Marfatia *et al.*, 2015:137; UNAIDS, 2015). HIV is spread predominantly through sex and continues to be a global health problem, which has affected masses of people all over the world, especially in developing counties (Karim *et al.*, 2020:1; Mokgetse, 2015:1). Evidence shows that a new generation of sexually active young people has not been exposed to the intense condom promotion that was in place a decade ago. Condom use at last higher risk sex reported by young women (15-24 years) declined in five countries in western and central Africa (Mali, Ghana, Guinea, Benin, Nigeria) and three countries in eastern and southern Africa (Ethiopia, Zambia, Uganda) (UNAIDS, 2016b:8; 2020). Condom use varies from more than 80% in some European and Latin American countries to less than 30% in some African countries, which is far too low to the global 90% target (UNAIDS, 2016b:2).

Sub-Saharan Africa accounts for the world's highest HIV prevalence and other sexually transmitted infections (STIs) of almost 80%. Even with such a high prevalence, studies have shown that condom use is generally low (Kharsany & Karim, 2016:35; Maticka-Tyndale & Team, 2012:39). Such high prevalence of sexually transmitted disease including HIV especially in rural areas Kunene (2016:1) and adolescent pregnancy is attributed to inconsistent use of condoms, which has persisted despite more than two decades of research and programming. In addition, there is still low availability of condoms and lack of usage in sub-Saharan Africa. It was estimated that approximately 6 billion condoms were required in 47 countries in sub-Saharan but only 2.7 billion were distributed, which marks as part of the reasons for lack of condom use (UNAIDS, 2018:1). Studies from diverse regions of sub-Saharan Africa have suggested that the objective of correct and consistent use of condoms remains to be elusive to the majority of the population, irrespective of the knowledge on condom use and HIV and AIDS, hence consistent use of condoms among adolescents is low in sub-Saharan Africa (Aventin *et al.*, 2021:1).

The low use of condom among young women is worrisome, given the high prevalence of HIV infections, STIs and pregnancies (Ajayi *et al.*, 2019:2). Research on tertiary institutions indicates that condom use is less consistent amid tertiary students in Nigeria. An even lower rate of 15% in males and 4% in females was reported amongst students in Ibadan (Ajayi *et al.*, 2019:2). In Kenya, low condom use rates especially with unknown HIV status of sexual partners was found to be 7.1% for women and 27.1% for men (Emmanuel *et al.*, 2015:104). The national surveys in Uganda, Ghana, Burkina Faso, and Malawi, showed that condom use among adolescents during their last sexual intercourse was between 39% and 51% for males but lower for females ranging from 24% and 38% (Mash *et al.*, 2010:1). Young women in sub-Saharan Africa are continuously leading in HIV infection rate (three in four new HIV infections) (Wiyeh *et al.*, 2020:320). Evidence indicates that 44% of young women are most likely to acquire any type of STI infection, and that by the age of 19, 20% of women have their first child (Aventin *et al.*, 2021:2). HIV and AIDS continues to be the lead cause of deaths in Africa, accounting for 470 000 deaths in 2018 (Dwyer-Lindgren *et al.*, 2019:189; WHO, 2021).

South Africa responded to the HIV and AIDS pandemic through an expansion of the national-level public sector condom programs by distributing and educating people on the importance of condom use (Mkhize, 2012:11). The National Department of Health revealed that since 2013-2016 it has increased the distribution of condoms by over 1.8 billion male condoms (MCs) and over 60 million female condoms (FCs). Condoms have been made available at Primary Health Cares (PHC) clinics in South Africa. Even so, the availability has not necessarily led to an uptake of neither these services nor an effective condom use. Despite the efforts to avail condoms and their effectiveness in preventing unwanted pregnancies, STIs, and the implementation of programs promoting consistent condoms use, a reduction in condom use among the youth has been observed in South Africa (Closson *et al.*, 2018:671; Muchiri *et al.*, 2017:105).

South Africa introduced a strategy in 2000 during the 13th International AIDS Conference that represents 'abstinence, be faithful and condom use' and is still promoted by Life Orientation Programs at public schools and Government Family Planning Clinics (Mkhize, 2012:11). The vulnerability of women is a result of the historical gender inequality with South African societies. For example, the religious, cultural allocation of roles limited women to being nurtures and caretakers, which also overlapped to an unequal power dynamic regarding sexual activities within intimate relationships. The gender inequality placed women at a subordinate level to men, given that they were also culturally regarded as heads of households (Wood, 2019:8). This social

and cultural positioning of women heightened their sexual vulnerability to infection (Ajayi *et al.*, 2019:1; Mkhize, 2012:10; Phora, 2019:12).

The use of condoms among the youth has a significant implication in respect to demography, because of the effects of teenage pregnancies on fertility and the population size of HIV infection in South Africa (Muchiri *et al.*, 2017:106). Condoms are proven to be effective in decreasing the infection of HIV in South Africa and other countries (Nasrullah *et al.*, 2017:542). However, despite the efforts to prevent HIV, increase the awareness on the importance condoms, consequences of unsafe and unprotected sexual practice, distribution of condoms, condom uptake is still a challenge in various provinces. The use of condoms by the youth is low (Guerra *et al.*, 2016; Ntshiqa *et al.*, 2018a) and this in agreement with studies in South Africa that attested to the high level of unsafe sexual activities among young females (Muchiri *et al.*, 2017:105).

Observations show that in HIV prevalent settings, the use of condom is low and infrequent amongst clinic attendees even though there is awareness and self-perceived risk (Muchiri *et al.*, 2017:106). Both the use of female and male condoms varied across provinces, female condoms being the ones less likely to be used. The national health facility survey showed that out of 3821 women only 15.4% reported having ever used a female condom in South Africa (Nel *et al.*, 2020:58). Lack of male condom use among young women who were sexually active was high in the Eastern Cape at 51.6%, Western Cape (55.8%), Limpopo (56.6%), and the Northern Cape (42.9%) (Ntshiqa *et al.*, 2018a:1141). Also, the use of female condom was low among young women who were sexually active, even though it was reported that over 80% and 40% of young women had heard and been offered female condoms, respectively. In Gauteng it was (21.7%), Free State (21.5%), Northwest (22.9%), Limpopo (23.9%) Mpumalanga (28.3%) to the lowest Northern Cape (19%), Eastern Cape (14.6%), Western Cape (14.9%), KwaZulu-Natal (10.6%) (Beksinska *et al.*, 2020:152).

The HIV prevalence among young women ranges from the lowest Limpopo (2.8%), Gauteng (4.2%), Northern Cape (5.7%), Western Cape (6.7%), North West (8.9%) to the highest Free State (13.3%), Mpumalanga (19.9%), KwaZulu-Natal (21.9%) (National Department of Health and ICF, 2019:236). Young women are two times more likely to get infected with HIV and encounter a high rate of mortality and morbidity than young men. Nevertheless, the reduction in HIV incidences have rather been ascribed to accessing HIV treatments including AIDS-related

deaths from 267 417 in 2007 (40.5%) to 126 805 (23.4%) in 2019 (Karim *et al.*, 2020:1; Statistics South Africa, 2019:6; van Loggerenberg *et al.*, 2012:1).

1.2 Statement of the problem

Studies show that there is an increase in levels of unsafe sex-related activities in South Africa among young women (Hlongwa, Peltzer, *et al.*, 2020:13; Odimegwu & Ugwu, 2022:120). For example, a study by Osuafor and Okoli (2021:70) in South Africa indicated that while multiple sexual partnerships are increasing, age of sexual debut is decreasing among young women in South Africa thus contributing to HIV infections and acquisition of sexually transmitted disease (Muchiri *et al.*, 2017:105). However, one study revealed that condom use in South Africa is under-utilized among young women who have multiple sexual partnerships and those who were HIV positive (Hlongwa, Peltzer, *et al.*, 2020:18). As a result, South Africa continues to have more new HIV infections with sexually active young women mostly being affected (Ntshiqa *et al.*, 2018a:1138; van Loggerenberg *et al.*, 2012:2; Wet-Billings & K. Billings, 2020:1). A study on 741 sexually active adolescents (14-19 years) in Soweto Township also found that 54.2% of females and 54.6% of males reported not using a condom (Closson *et al.*, 2018:674). According to Beksinska *et al.* (2017); Guerra *et al.* (2016), 90% of men and women who were interviewed in the South African Health Review (SAHR) indicated that they have heard of female condoms and only 20% had used them. Another study reported a low condom use of 16.2% among women (Osuafor *et al.*, 2018).

A low condom use was also reported to be 47% among young females in Cape Town, South Africa (Muchiri *et al.*, 2017:105). Additionally, according to Chersich *et al.* (2017:308), unintended pregnancies were higher among young women (52.2% for those ages 15-19 years and 48.5% for those 20-24 years) due to contraceptive failure. The use of contraceptives such as intrauterine device (IUD), injectable can be supplemented (mixed method) with condom use, which offers dual protection against sexually transmitted diseases (STDs) and pregnancy as means to encourage the use of condom and reduce unintended pregnancies among young women. South Africa has the largest population of HIV positive people in the world, which has escalated from an approximate 4.64 million in 2002 to 7.97 million in 2019. The country had an HIV prevalence of 12.2% (2012), 12.7% (2016) and 13.5% (2019) (Ntshiqa *et al.*, 2018a:1137; Statistics South Africa, 2016:6; 2019:6). The prevalence is 14.4% among South African women, 17.4% among those aged 20–24 years, compared to 5.1% among men of the same age,

culminating at 36.0% among those aged 30–34 years. The HIV incidence rate among females aged 15–24 years is over four times greater than that of males in this age range 2.5% versus 0.6% respectively (Mantell *et al.*, 2015:1130).

Although females are the most probable to acquire HIV and are still having unintended pregnancy due to contraceptive failure when using other methods. Previous studies on contraceptive use are mostly based on general use of contraceptives, and not condom use (Chersich *et al.*, 2017; Hlongwa, Mashamba-Thompson, *et al.*, 2020; Ndinda *et al.*, 2017) and few of these have focused on young women in South Africa. Yet, the use of condoms is still critical for preventing the spread of sexually transmitted diseases (STDs) (Mahlalela, 2014; Mantell *et al.*, 2015; Mthembu, 2017; van Loggerenberg *et al.*, 2012). The low condom use amongst young females accompanied by higher HIV rates is likely to increase the risk of dying from HIV and AIDS related diseases death, increase the rate of unwanted pregnancies, complication during pregnancy and postpartum period . The inadequate condom use not only sets back the progress made thus far against HIV and AIDS but also causes high HIV prevalence, which poses a threat to the future generation, communities, economic growth, demographic balance, and development in South Africa. The low use of condoms among young women is a significant problem in South Africa. This problem calls for intensified calls to use condoms in order for young women to protect themselves. It is therefore imperative to identify factors influencing condom use among young women (Mnqayi, 2013:9).

1.3 Main objective of the study

The main objective of this study was to identify factors that determine the use of condoms among young women aged 15 – 24 years in South Africa.

1.3.1. Specific objectives of the study

The study aimed to answer the following specific objectives:

- To examine the prevalence of condom use among young women aged 15 – 24 years in South Africa.
- To investigate the factors associated with condom use among young women aged 15 – 24 years in South Africa.

1.4 Research questions

The study aimed to answer the following research questions:

- What is the prevalence of condom use among young women aged 15 – 24 years in South Africa?
- What are the factors associated with the use of condom among young women aged 15 – 24 years in South Africa?

1.5 Research hypothesis

H_0 = There is no association between the condom use and all independent variable

1.6 Rationale of the study

Young women in South Africa continuously bear the brunt of the HIV and AIDs pandemic. They are more likely to acquire HIV than young men. Hence, HIV and AIDS is more prevalent in young women than young men (Mantell *et al.*, 2015:1130; Mthembu, 2017:3). Though the South African government has implemented strategies, protocols, policies and programs that are mandatory for preventing the transmission of HIV and AIDS such as the condom program that integrated condom-training curriculum, as means to encourage the use of condoms, condom uptake among young women is still low. Hence, young women are at a higher risk, and will continue to experience disproportionate high levels of HIV prevalence and question the possibility of achieving an HIV and AIDS free generation (NDoH, 2016:20; UNAIDS, 2016a).

1.7 Significance of the study

This study sought to identify the factors associated with the use of condom among women, specifically those in the age group 15–24 years in South Africa. The factors identified will serve as means to give direction or guidance to solutions appropriate for addressing the lack of using condoms among young women. This will further redirect the government and health planners to devise mechanisms suitable to improve the health of South African women. This study aimed at contributing to existing knowledge on enriching these programs and strategies for reducing HIV through condom use. Furthermore, as condom uptake is addressed, it will curb the prevalence of HIV in South Africa. Which will also advance the goals set by the national development plan as

well as HIV-related global Sustainable Development Goal (SDGs), hence also making progress toward achieving the global 90% target for condom use. Overall, addressing the problem will lead to significant levels of condom use among young women, reduce their vulnerability, and give them control over their sexual and reproductive health.

1.8 Definition of concepts

Young Women: In this study, a young women refers to women between the ages 15 and 24 years residing in South Africa.

Condom: It is a latex rubber, shaped barrier device used as a method or measure of protecting against HIV and STIs including pregnancy (blocking sperm from fertilizing an egg) (Beksinska *et al.*, 2011:52; Koster *et al.*, 2015; Peters *et al.*, 2010:120). In this study, a condom applies to both male and female condoms.

Condom use: For the study, it refers to condom use during last sexual intercourse with the most recent partner.

1.9 The organisation of the study

This study was organized under five chapters. Chapter one introduced and gave background information on the use of condoms by women (between the reproductive age groups) and HIV prevalence in the Sub-Saharan region and South Africa. It also provided the problem statement, significance, rationale, and objectives of the study as well as definition of concepts. Chapter two reviewed existing literature on the factors that have influenced condom uptake amongst young South African women and theory relation to the study. Chapter three explained the source of data, study variables and method of analysis. Chapter four in the study provided data analysis and interpretation of the results. Lastly, Chapter five discusses the results, give recommendations and conclusions of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter focused on the review of previous studies that were published globally and in South Africa on the use of condoms by women. Which was utilized to understand the relationship between socio-demographic factors and condom use. The chapter explained trends and levels of condom use around the world and South Africa, the consequences of not using condom as well as the theoretical and conceptual frameworks chosen for the study.

2.2 Trends and levels of condom use

2.2.1 Global trends and levels of condom use among women

Over the years condom programmes have been an integral part of HIV prevention and reproductive health. Various contraceptive options have been provided to women including condoms. Though the number of women relying on condoms increased globally, evidence shows that the progress has been slow towards higher levels of condom use; countries still fall short of global condom use targets (UNAIDS, 2020:6; United Nations, 2019:2). There is still a need for effective condom programmes not only as a protection against sexually transmitted diseases but also a contraceptive method for family planning, especially in developing countries. For instance, sub-Saharan Africa has a prevalence rate of condom non-use estimated to be 60% but has the highest fertility rate in the world and an unintended pregnancy among young women) because of unmet contraceptive needs. This requires donor funding or increased investments into new condom programs, higher levels of coverage and access to a range of health care services (Davids *et al.*, 2021:1; Ramoabi, 2022:6; UNAIDS, 2020:6).

Nonetheless, in 1994, the number of women using condoms was 64 million and increased to 189 million (21%) in 2019 (United Nations, 2019:6). Most continents experienced an increase in the use of condoms among women from 1994 to 2019. Condom use by women in Latin America and the Caribbean increased from 3.0% to 8.8%, Europe and Northern America from 8.5% to 14.6%, sub-Saharan Africa from 1.0% to 4.5%. For Northern Africa and Western Asia, it increased from 2.0% to 2.9%, Central and Southern Asia from 2.5% to 4.9% and Eastern and

South-Eastern Asia from 5.0% to 17.0%, respectively. However, Oceania was the only continent that experienced a decrease in condom use from 9.5% to 9.0% (United Nations, 2019:5).

Evidence also shows that condom use differed according to whether women were married/In union or unmarried/ not in union. It was shown that only 142 million (18%) of married or in union women used a condom and 47 million (33%) of unmarried/ not in union women used a condom. Condoms were commonly used as a contraceptive method among unmarried/ not in union women. In 2019, Developed regions were shown to have a higher (16.3%) prevalence of condom use among women than less developed countries (3.2%) (United Nations, 2019:13). Moreover, high-income countries had a high (14.8%) prevalence of condom use among women as compared to middle-income countries (9.9%) and the lowest being in low-income countries at (2.9%) (United Nations, 2019:15). Overall, the prevalence of condoms use has doubled worldwide from 4.5% in 1994 to 10.0% in 2019, with the largest increase in Eastern and South-Eastern Asia and Europe and Northern America because condoms were the most commonly used contraception method as compared to other continents (United Nations, 2019:4).

2.2.2 Trends and levels of condom use among women in South Africa

Condoms have been provided not only as an HIV prevention measure but also as a contraceptive method. Condoms are mostly well known and largely utilized methods by both men (99%) and women (98%) in South Africa (National Department of Health and ICF, 2019:94; Pallin, 2013:8). The use of male condom was shown to have declined and female condom use constantly at 0% among young women in union from 2003 to 2016. Though, women aged 20-24 showed more use of male condoms than those aged 15-19 years. In 2003, 51 (9.7%) women in union age 15-19 years and 238 (12.3%) of those 20 – 24 years used condoms. In 2016, 44 (4.7%) women in union age 15-19 years and 271 (8.2%) of those 20 – 24 years used condoms (Department of Health and Macro International, 2007:61; National Department of Health and ICF, 2019:102). Among all sexually active women, condoms were mostly used by those in KwaZulu-Natal province at 11.1% in 2003 and 22.1 % in 2016 compared to other provinces (Department of Health and Macro International, 2007:64; National Department of Health and ICF, 2019:104).

Male condom use among sexually active young women was also shown to have decreased but more prominent among women aged 15-19 years, from 2003 to 2016. In 2003, among sexually active young women, the use of male condom was 17.7% and of female condom was 0.0% for

those aged (15-19 years). For those aged 20-24 years, the use male condom was 14.5% and female condom use was 0.2%. In 2016, among sexually active young women, male condom use for those aged 15-19 years was 24.3%, and female condom use was 0.0%. For young women aged 20-24 years, male condom use was 15.0% and female condom use was 0.0 (Department of Health and Macro International, 2007:61; National Department of Health and ICF, 2019:102). About 79.9% of women in South Africa have knowledge about modern contraceptive methods, however as indicated above the use of male condoms is still low. The use of female condoms was low even though about 53.2% of women had knowledge about female condoms (Lince-Deroche *et al.*, 2016:98).

2.3 The determinants of condom use among women

2.3.1 Age group

An individual's age is linked to the use condoms during sexual intercourse according to (Chialepeh & Susuman, 2017:491). Young females aged 15-19 years where less inconsistent (32.4%) with condom use during their last sex than those 20-24 years (38.7%). The study by Copen (2017:9) in the United States shows that there is an inverse relationship between the age of an individual and condom use. The study shows that condom use among women seems to decrease as women grow older. This is whereby, 35.6% of 15-19 years old, 17,9% of 20-24 year old, 11.9% of 25-44 years old women reported having used condoms with their partners during sexual intercourse. In support of the above, Chimbindi *et al.* (2010:93) also noted that consistent use of condoms amongst women is less and decreases as the age increases. On the contrary, the study by Bunu (2019:53) showed that those who reported having ever used a male condom increased as their age increased. Women between the ages 15–20 years reported 65.1% having ever used a male condom, 21–25 years (88.1%) and those 26–30 years (91.9%). With respect to ever using a female condom, though female condom use is usually lower compared to male condom use, it was shown that female condom use also increased as age increases. Women between the ages 15–20 years reported (9.3%) of having ever used a female condom, 21–25 years (15.5%) and those 26–30 years (16.3%).

2.3.2 Population group

Bunu (2019:50) revealed that between black and coloured women in the Easter Cape, 80% of black women were aware of the female condom but only 16.9% used them. For coloured women, 40% of them were aware but 0.0% used condoms. With respect to male condom use, 86.9% and 60% of black and coloured women used the condom, respectively. Crosby *et al.* (2014) noted that a person's culture and religion at times forms as a barrier for young women including their parents to educate and be educated about sexual activities. Parents become uncomfortable educating their children about the use of condoms as protection, which leads to a decrease in the use of condoms by young women. Mokgetse (2015), went further to say different races have different cultural and religious backgrounds that associate condom use (especially female condoms) as sin or immoral, and prohibit condoms for both preventive and contraception reasons, for which negatively affects condom uptake. According to the study on sexually active heterosexual young women (n=1031) by Beksinska *et al.* (2017:4) self-reported male condom use at last sex was significantly higher (59.6%) among Black African women as compared to coloured women (43.4%).

2.3.3 Marital status

Trust has not only been seen as an important base for building a relationship but can influence the use of condoms in relationships depending on the type of relationship. According to the studies by Kanda and Mash (2018); Koster *et al.* (2015), relationships outside marriage are always characterized by condom use. Whereas in a stable relationship where trust is established, partners do not see the need to utilize condoms during sex. Osuafor and Mturi (2014:538); Thankian, Mwaba, Jere-Folotiya, *et al.* (2017:112) discovered that there is a negative association between the use of condoms and cohabiting or being married. Females who perceived the use of condom as absence of trust were less likely to be using condoms on a consistent basis. According to Ntshiqa *et al.* (2018a:4), 23% of married women were unlikely to report using condoms than 42.9% of cohabiting women. Additionally, the type of relationship a woman has with a sexual partner also takes a part in the decision-making process pertaining the use of condoms. Women who were sexually active were five times more likely to use a condom with a casual partner or quittance than with a regular partner (Ntshiqa *et al.*, 2018a:12). The findings on the study in Malawi by Chialepeh and Susuman (2017:491) showed that, 60.5% of young married adults were inconsistent with condom use and 21.3% of those who were never married.

2.3.4 Highest educational level

Education is the process of learning or acquiring knowledge through training, teaching, and discussions (Fry *et al.*, 2009). In Angola among 15–24-year olds, consistent condom use was positively associated with higher levels of education (Chimbindi *et al.*, 2010:88). According to Ntshiqa *et al.* (2018a:1140), women who had matric were more likely (62.7%) to use a condom during their last sex than those who had primary education (47.2%). According to Lagarde *et al.* (2001:1401); Thankian, Mwaba, Menon*, et al.* (2017:112), women with secondary and higher education believed that condoms do not diminish sexual pleasure were most probable to consistently use condoms as compared to those with primary education. Beksinska *et al.* (2011:54) noted that in South Africa, education plays a huge role in condom uptake, specifically among women. Studies conducted revealed that during the last sex only 16% of women with no education used a condom whereas 63% of those with higher education use it. Lagarde *et al.* (2001:1404) also revealed that based on reports from men about their partners and on from women about themselves, higher educational level of female partners is associated with higher and frequent condom use. Emerson *et al.* (2018:278) made an indication that among women in incarceration, condom use during last sex was higher for those who had higher school education or more than those with higher school education and higher school education or less. Women who had higher education or less were 3.5 times more likely to inconsistently use condoms than higher school education or more. Haile (2014:46) indicated that educated women mostly delayed the age at sex and were able to negotiate condom use.

2.3.5 Parity

A woman's ability to negotiate safer sex (condom use) with their partners has an effect on their sexual and reproductive health. Research shows that women who cannot negotiate condom use during sexual intercourse are more likely to acquire STDs and affects the number of children ever born to them (Adu *et al.*, 2022:1; Atteraya *et al.*, 2014). According to Adu *et al.* (2022:1) in sub-Saharan Africa, women who were unable to negotiate condom use had a higher prevalence of parity, meaning that they were unable to negotiate condom use. The study indicated that they had (OR: 0.78) likelihood of negotiating condom use (Adu *et al.*, 2022:5). Part of the reason why women can or cannot negotiate safer sex was due to factors such as having improved access to education because education is associated with a women's empowerment and decision making capacity, which influences their ability to negotiate condom use (Aboagye *et al.*, 2021:6; Seidu *et al.*, 2021). Atteraya *et al.* (2014) also noted that the women who were able to negotiate condom

use had higher odds of having low parity because they were able to request their partners to make use of condoms.

2.3.6 Multiple sexual partners

The number of sexual partners an individual has is not only an important indicator of contracting STIs and HIV and AIDS but also the level of condom use among women (Exavery *et al.*, 2012:491; Tarkang, 2013:32). A study on secondary school female students in Cameroon showed that among young women who were sexually active 35.3% reported having had multiple sexual partners in the past year, while 13.6% reported having multiple concurrent sexual partners. Students who had multiple sexual partners in the past year were less likely to have used condoms during first sex than those who with single partners. In addition, students who had multiple sex partners were 23.5% less likely to consistently use condoms than those with single partners (28.2%) (Tarkang, 2013:31). A study by Simelane *et al.* (2021:2) noted that having multiple sexual partners accompanied by inconsistent condom use increases the risk of HIV acquisition. A study on first year university students in Eastern Cape, South Africa by Heeren *et al.* (2014:441) also revealed students with multiple partners reported engaging in unprotected sex than those who had one partner. Additionally, in South Africa, men tend to have multiple partners because their traditional cultural belies define their manhood according to the number of children a man has. Hence, it has been argued that these cultural practices justify having multiple sexual partners, which further contributes to the spread of STDs because having multiple partners is associated with low condom use (Heeren *et al.*, 2014:441).

2.3.7 Age at first sex

Age at first sex entails the ages in which an individual engaged in sexual intercourse for the first time (Martinez & Abma, 2020:5). In South Africa, the age at first sex is related to the use of condom. Condom use is substantially lower among those who started sexual acts prior to turning 15 years and much higher amongst individuals who started sexual acts from the age of 20 to 24 years (Phora, 2019:12). Previous research has indicated that there is an association between age of early sexual initiation and low or inconsistent condom use that puts individuals at an increased risk of being infected with sexually transmitted diseases (Farrington *et al.*, 2016:2851; Yaya & Bishwajit, 2018:2). A study on women in Nigeria found premature sex is associated with multiple sex partner (MSPs) and the number of lifetime sex partner. Women who had first sex prior to being 15 years had an increased chance of having two to more than three lifetime sex

partners. Young people who were more likely to have many sex partners, were found to have come from polygamous family background than monogamous ones (Yaya & Bishwajit, 2018:4). In the United States of America, the STD Surveillance Network SSuN (2012:12) found that first sex before 15 years has associations with not only unsafe sex but also led to having many sex partners. Condom use during early sex increased as young people grew up. Condom use was more common among young people aged 18 years or older (41%) as compared to those 14-15 years (34.2%). A qualitative study on adolescent sexual debut condom use decision-making by Davids *et al.* (2021:7) found association betwixt late sexual debut and condom usage whilst early sexual debt was identified one and the same thing as low condom use.

2.3.8 Ever been tested for HIV

Testing for HIV has a positive effect on the use of condoms. As part of the human immunodeficiency virus counselling and testing (HCT) it does not play a role in the of preventing HIV between sexual partners but also mother to transmission of HIV (MTCT), hence many nations such as South Africa and Uganda have adopted the UNAIDS 90-90-90 strategy (Zandam *et al.*, 2021:1). In South Africa, inconsistent condom use was found to be associated with HIV testing among AGYW. The odds of young women testing for HIV were higher among those who reported using condoms every time (Musekiwa *et al.*, 2022). According to the study conducted by (Menon *et al.*, 2017:136), females who report not using condoms consistently with (84.7%) were more likely to have been tested for HIV as compared to those who reported having a consistent use of condoms with their partners. However, on the contrary, a study conducted by Agha (2012:1), found that there was no association between testing for HIV and using a condom, though some studies indicated that being tested for HIV is important because it acts as a driver of sexual behaviours. For instance, testing for HIV resulted in unprotected sex, whilst some showed that being tested for HIV had higher odds of using a condom or engaging less in risky behaviours among HIV positive people.

2.3.9 Sex of household head

According to Ramoabi (2022:13), the sex of the head of the household influences the overall use of contraceptives in a home, more especially in the context of African households where the head is a male. This is because traditional or cultural beliefs have predominantly influenced communities in African countries, thus they have a considerable impact on decision- making regarding reproductive health. According to Routray *et al.* (2017:37), patriarchy is a major aspect

of many African communities. This whereby men as head of households have the decision-making power on reproduction or sexual intercourse and women are expected to submit to men. Chimbindi *et al.* (2010:93) went further to say, condoms are a male-determined method, which means that men determine whether or not to use a condom and when. Moreover, men with traditional masculine norms mostly report having inconsistent use of condoms and further believes that what validates a man's masculinity is a women's pregnancy. Also, this is because with traditional masculinity have negative attitude towards the use of condoms, unlike with less traditional masculinity (Vincent *et al.*, 2016:43). Thus, it was found that men who had a higher adherence to traditional masculine norms were associated with a women's low condom self-efficacy (Vincent *et al.*, 2016:50). According to Cassidy *et al.* (2021:6), women have less bargaining power, they still struggle with convincing their partners to use condoms or even adopt new technologies (female condoms). The study noted that of women who were currently sexually active 45% reported that they did not use any form of protection, the reason being that their partners do not like or refused to use male condoms.

2.3.10 Household wealth

Individuals with low economic status are characterized with low educational achievement, poverty, unemployment, poor health care, which makes them susceptible to being involved in risky behaviour such as unsafe sexual behaviours especially by women, which was the case for South African youth (Leonard *et al.*, 2017:125; Schuyler *et al.*, 2016:267). Existing research found that higher levels of household wealth (physical structure, assets, size, and income) are associated with consistent condom use (Davidoff-Gore *et al.*, 2011:1282). According to the study by Bunu (2019:52), the women who reported having used a male condom were more than those who had not used a male condom, 89.5% of them were employed and 90.7% were unemployed. Among women who reported ever using the female condom, 24.8% were employed and 15.1% unemployed. These results may be attributed to the cost of condoms and having limited decision-making power for females from poor backgrounds because they are often submissive and unable to negotiate condom use especially if their partners are dominant financially. This means that being financially vulnerable prohibits women from using condoms which may expose them to risk of contracting HIV and AIDs (Thankian, Mwaba, Menon*, et al.*, 2017:119).

2.3.11 Place of residence

Research shows that it is more probable for women living in an urban area to make use of a condom than residing in a rural place. The reason being that urban women have positive attitudes and demonstrate high self-efficacy in using condoms (Ajayi & Akpan, 2018:2). Besides positive attitude and self-efficacy, cultural norms are also influencers of condom use. In rural areas there is a strong adherence to cultural norms which often dictates the use of condoms among rural women. Unlike women in urban areas, they find exposure in modern ways of living and have control over their sexual health; hence condom use differs by type of residence (Ajayi & Akpan, 2018:3). The study by (Chialepeh & Susuman, 2017:491) indicated that young females in living rural areas were more (37.3%) inconsistent with condom use during their last sexual debut than those living in urban areas (32.1%). The study among Ugandan university students by (Choudhry *et al.*, 2015:136) found inconsistent condom use among female students who grew up in a rural residence. The study suggested this risky behaviour is influenced by the freedom from parental guidance and the exposure to a more liberal urban environment. Bunu (2019:53) indicated that the use of either male or female condoms was low in rural areas (64.7%, 5.9% respectively) as compared to urban areas (78.9%, 17.4% respectively).

2.3.12 Province

The use of condoms amongst sexually active young women was shown to differ from province to province in South Africa. The highest rate of male condom uptake was reported by women in the North West (67.7%), KwaZulu-Natal (66.5%), Free State and Mpumalanga both at 64.0%. The provinces that reported the lowest condom use were the Western Cape (44.2%) and Limpopo (43.3%) (Ntshiqa *et al.*, 2018a:1141). In addition, the geographic distance between partners influenced how condom were used by sexually active women. Women with partners living in a different province were 63.9% more likely to report condom use as compared to 33.1% of women who had partners living in the same place. This means that women living separately from their partners are more inclined to use condoms possibly because of the untrustworthiness between partners (Ntshiqa *et al.*, 2018a:1147). Similarly, Chimbindi *et al.* (2010:91), which also revealed that condom use between partners who lived in the same area was most probable.

2.4 Consequences of not using condoms

Women are most vulnerable to HIV and AIDS for biological reasons and more. The concentration of the virus is higher in semen than in vaginal fluids, and the exposure to the virus becomes evident because of the large mucous layer in women; which adds to their vulnerability (Malema, 2012:63). Studies have established that a condom is an effective tool in preventing sexually transmitted diseases. However, evidence has shown that the use of condom is low among young women which consequently results in acquiring sexually transmitted diseases and unintended pregnancies (Haffejee & Maharajh, 2019:1279; Nasrullah *et al.*, 2017:542; Phora, 2019:12). HIV infection, sexually transmitted infection and unintended pregnancies are also as a consequence of not correctly or consistently using a condom during sexual intercourse. According (Algur *et al.*, 2019:293), about 95% of adolescents, mostly for low- and middle-income countries, give birth every year. Hence in these countries, adolescent pregnancy remains to be the main contributor to maternal and infant mortality due to complicated pregnancies or childbirth for which is the main cause of death in young women across the world.

Moreover, the consequence does not end with just an infection or unintended pregnancy but further leads to a life cycle of socio-economic disadvantage. For instance, AGYW who are most likely to drop out of school as they become pregnant, which limits employment opportunities. This further leads to financial dependence on men and having older partners, causing women to become prone to abuse (Karim *et al.*, 2020:1). HIV infected pregnant women run the risk of infecting their young children through vertical mother-child-transmission of HIV before birth or during birth (Li *et al.*, 2020). For people living with HIV who have sexual intercourse with people of the same HIV status, not using a condom can compromise their immune system further. This is because the infection can develop into a Superinfection (the development of a different strain of the virus) which is associated with increased health problems and more difficult to treat) provided that they are not consistently or completely not taking antiretroviral therapy (ART) as it could also lead to AIDS (Redd *et al.*, 2013:622).

Additionally, according to Ananga *et al.* (2017:15); Korndoerfer (2014:18); Mahlalela (2014:3); Mokgetse (2015:15), female condoms were introduced in order to empower women to be in charge of their sexual and reproductive health and have been proven to empower women to negotiate protection. Young women often do not any choice regarding unprotected sex, this meaning that females who utilize female condoms have more choice, advantage to negotiate on

their sexual health and a better chance of any form of oppression by their sexual partners or infections. The outcomes in study by Mokgetse (2015:47) indicated that 44% (n=42) of respondents strongly agreed that a female condom empowers women. However, Beksinska *et al.* (2020:148) posits that a female condom is one of the underutilized health technologies. This suggesting that as a consequence of not or sufficiently using female condoms, women will continuously be vulnerable and at high risk of abuse, sexually related infections, seeing that having more choice equals protection (Mokgetse, 2015:54).

2.6 Theoretical framework

Social-ecological model (SEM)

Theoretical frameworks and models such as the Social Cognitive Learning Theory (SCT) (Bandura, 1986), Theory of Planned Behavior (TPB) (Azjen, 1985) and the Health Beliefs Model (HBM) (Becker, 1974) have been used to predict health-related behaviours. However, these theories focus mainly on socio-cognitive aspects of an individual and not on the influence of factors beyond an individual like the Social-ecological model (SEM) by Urie Bronfenbrenner (1970) (Kilanowski, 2017:295). The Social ecological model postulates that health behaviours are not independent but are as a result of the interaction of individuals and the environment. The model describes the four levels of influence on behaviour namely, individual, relationships, community and society (Baral *et al.*, 2013:483). The first level represents individual factors that identify biological or behavioural characteristics associated with using condoms during sex (Larios, 2007:68). The second level represents relationship factors which examines how family or social networks influence by providing social support or reinforcing the use of condoms. The third level represents the community factor that explores organisational or institutional environments in which social relationships occur that can promote condom use among young women (Larios, 2007:68). The fourth level is represented by societal factors that look into laws and policies implemented to promote condom use and related services or programmes (Khuzwayo & Taylor, 2018:6).

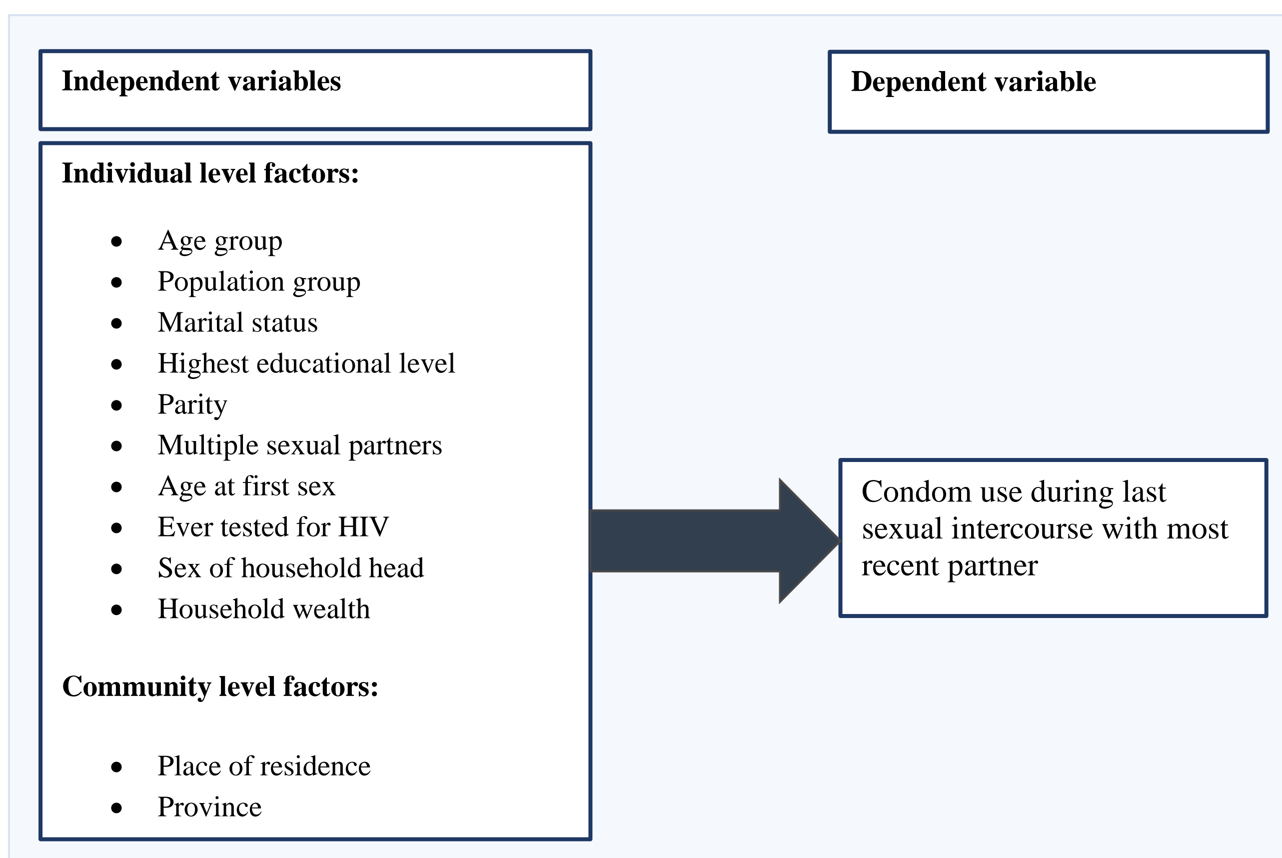
The Social ecological model has been used in studies to predict several of health behaviour including behaviours related to the use of condoms with respect to risky sexual behaviours of the youth, female sex workers. This study focused on only individual level factors such as employment status, alcohol consumption, education, multiple sexual partners and the age at first sex which are directly related to condom use and community level factors such as place of

residence and province, are indirectly related to condom use to define the models efficacy on condom use among young (15-24 years) South African women (Bundy *et al.*, 2019; Khuzwayo & Taylor, 2018; Larios, 2007).

2.7 Conceptual framework

This chosen theoretical framework (SEM) was befitting for the conceptual framework used in this study because it considered the influence of four levels on an individual's behaviour for which encompass the factors selected in this study. Both the chosen theoretical framework and conceptual framework shown below apted to express selected factors and connection to condom use among young women. The conceptual framework shows the connection between condom use and independent variables by adopting only two levels from the model namely individual- and community-level factors. The independent variables are classified as: Individual level factors, which are the age group, population group, age at first sex, highest educational level, marital status, parity, sex of household head, household wealth, multiple sexual partners in the past 12 months, and ever been tested for HIV. Community level factors include the place of residence and province. As shown by the literature review, these background characteristics are the determinants of condom use, meaning that the background characteristics are connected to condom use among women.

Figure 2. 1: Conceptual framework depicting the relationship between associated factors and condom use



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In this chapter a full description of the methodology used for the study was given, which entailed an account for the study setting, data source, study design and population, inclusion and exclusion criteria, description of variables, method of analyses, study limitations and the ethical consideration.

3.2 Study setting

The study was conducted on young women in the republic of South Africa (RSA). South Africa is a country located on the most Southern tip of Africa, stretching latitudinally from 22˚S to 35˚S and longitudinally from 17˚E to 33˚E, covering a surface area of 1 219 602 km^2. South Africa has nine provinces and some areas have been classified as urban, rural or farm areas. The provinces are namely, Western Cape, Eastern Cape, Free State, North West, Limpopo, Mpumalanga, Gauteng which has remained the most populous province accounting for 25.8% of the population, followed by second largest province KwaZulu-Natal with 19.2% and the Northern Cape which remains to be the smallest accounting for 2.2% of the population. In 2019, midyear total population was estimated to be 58.78 million people from which approximately 30 million (51.2%) are female and 33% are females in ages 15-24 years (National Department of Health and ICF, 2019:38; Statistics South Africa, 2019:8). The female population experiences the brunt of HIV and AIDS with a prevalence of 23% and around 10% to 13% among the young females. The age-specific attendance rate (ASAR) of women from primary to higher levels of education is more than 90%, however it declines from ages 17 to 24 to below 70% (National Department of Health and ICF, 2019:18). Women who are employed makeup 34%, which has remained relatively unchanged since 1998 (32%) (National Department of Health and ICF, 2019:38).

3.3 Data source

The study utilized the data from the 2016 South Africa Demographic and Health Survey (SADHS, 2016). The South Africa Demographic and Health Survey 2016 is a nationally representative household survey with the main objective of making available update estimates of basic health and demographics indicators. It collects data from men and women concerning to socio-demographic factors by making use of five questionnaires (the Household Questionnaire, both individual Women's and Man's Questionnaire, Caregivers Questionnaires and the Biomarker Questionnaires) adapted to show health and population issues pertaining to South Africa. The information pertained to fertility, breastfeeding practices, maternal mortality sexual activities, marriage, nutrition, contraceptive use, maternal health and child health, and made estimates on behaviour and health indicator, and HIV among people aged 15 and older (National Department of Health and ICF, 2019:3).

The Statistics South Africa Master Sample Frame (MSF) is used as a sample frame for the SADHS 2016, which was created using the Census 2011 enumeration areas (EAs) (National Department of Health and ICF, 2019:3). In the Master Sample Frame, the EAs of manageable size were treated as primary sampling units (PSUs), whereas small neighbouring EAs were pooled and joined together to form new primary sampling units, and large EAs were split into conceptual PSUs. The frame contains information about the geographic type (urban, traditional or farm) and the estimated number of residential dwelling units (DUs) in each PSU. The SADHS 2016 followed a stratified two-stage sample design with the probability proportional to size sampling of PSUs and f DUs. The Census 2011 dwelling units total was used as the primary sampling units measure of size, where a total of 750 primary sampling units were selected from the 26 sample strata, which yielded 468, 224, 58 selected PSUs in urban, traditional and farm areas, respectively (National Department of Health and ICF, 2019:1).

The rate of response for the SADHS 2016 shows that from the selected sample of 15 292 households of which 13 288 were occupied, 11 083 interviews were done which yielded a response rate of 83%. From the interviewed households, women aged 15-49 where 8 514 women were successfully questioned which yielded a response rate of 86%. For the subsample of households chosen for male, 4 952 men aged 15-59 were eligible and qualified for interviews but only 3 618 men were successfully questioned, thus yielding a 73% response rate (National Department of Health and ICF, 2019:9). Overall, the SADHS 2016 encompasses a variety of

variables (socio-economic, demographic and health related) central to this study, hence this study chose the SADHS 2016 and used the women's individual data file for analysis (National Department of Health and ICF, 2019:3).

3.5 Study design and study population

3.5.1 Study design

This is a quantitative cross-sectional study. A number of 8514 women aged 15 – 49 years were successfully interviewed in the women's questionnaire. However, the focus of the study was on sexually active women aged 15–24 years (National Department of Health and ICF, 2019:102).

3.5.2 Study population

This study made use of data obtained by the SADHS individual women questionnaire where information from 8514 women aged 15-49 years was collected. (National Department of Health and ICF, 2019:9). The study focused on sexually active young women aged 15 – 24 years, making a weighted total of 1903. However, an overall a total of 1757 responded to the questions.

3.5.3 Study inclusion and exclusion criteria

The focus in this study was on sexually active young women in ages 15-24 years. The study assumed that all sexually active young women should use a condom, meaning that women who never had sex or not sexually have need to use a condom since well they are not sexually active. Hence, the study only included women in reproductive age group 15-24 years who were sexually active, living in South Africa and exclude women aged 15-24 years who never had sex and all women in reproductive ages from 25 years to 49 years because they are not the focus of the study.

3.5 Description of study variables

3.5.1 Dependent variable

Condom use during last sexual intercourse with most recent partner is used as the dependent variable in the study. The variable V761 was coded as, "no" (0) and "yes" (1).

3.5.2 Independent variables

The study selected the following independent variables, age group, population group, marital status, highest educational level, parity, age at first sex, sex of household head, multiple sexual partners in the past 12 months, ever been tested for HIV, household wealth, place of residence, province.

Table 3. 1: Description of study variables

Variables	**Definitions**	**Codes**
Individual level factors		
Condom used during last sex with most recent partner	Women who reported having used or not used a condom during the last sex with most recent partner.	0 = No 1 = Yes
Age group	Women's current age (grouped)	1 = 15 – 19 years 2 = 20 – 24 years
Population group	The South African population groups, categorised into two categories	1 = Black 2 = Other
Marital status	The marital status of women	0 = Never in union 1 = Ever in union
Highest educational level	Women's education categorised into three educational levels	0 = Primary and lower 1 = Secondary 2 = Higher
Parity	The number of children ever born	0 = None 1 = 1 2 = 2+
Multiple sexual partners in last 12 months	Women who indicated not having or having had multiple sexual partners in the last 12 months categorised into three categories.	0 = 0 1 = 1 2 = 2+
Age at first sex	The age in which young women had their first sexual intercourse	1 = <16 2 = 16 and above

Variables	Definitions	Codes
Ever been tested for HIV	Women who reported tested or not tested for HIV	0 = No 1 = Yes
Sex of household head	The sex of the head of the household	1 = Male 2 = Female
Household wealth	The household wealth status of women, categorised into three wealth indexes	1 = Poor 2 = Middle 3 = Rich
Community level factors		
Place of residence	The type of residence women lives in, categorised into two residences	1 = Urban 2 = Rural
Province	The nine provinces of South Africa	1 = Western Cape 2 = Eastern Cape 3 = Northern Cape 4 = Free State 5 = KwaZulu-Natal 6 = North West 7 = Gauteng 8 = Mpumalanga 9 = Limpopo

3.7 Method of data analyses

3.7.1 Univariate analysis

The Statistical Package of Social Science (SPSS) version 26 was used to conduct univariate, bivariate and multivariate analysis. Univariate analysis provides the frequency and general percentage distribution of the population by background characteristic through descriptive analysis (Allen, 2017:2).

3.7.2 Bivariate analysis

Bivariate analysis were carried out using Pearson Chi square test to examine the relationship between the dependent variable (condom use with the most recent partner) and the independent variables. The Pearson Chi square statistics tests the association between condom use with most recent partner and independent variables, revealing significant associations (Nihan, 2020:576).

The equation used for the Pearson Chi-square test is as follows:

$$x^2 = \sum_{i=1}^{n} \frac{(O_i - E_i)^2}{E_i}$$

The chi square test is a statistical test for categorical data. It is based on frequency count data and makes comparison between a set of observed frequencies obtained from a random sample and a set of expected frequencies that describes the null hypothesis (H_0). The chi square statistics is denoted as, and a summation of the squared deviations between the observed and expected frequencies. Observed frequency count for the level of the categorical variable and is the expected frequency count for level of the categorical variable. The significance level of the statistic is determined using the degrees of freedom. To determine the level of significance, a confidence interval of 95% and significance level of 5% was used. The measure of significance (probability value) was set as 0.05. If the probability value (p-value) was lower than 0.05, it was concluded that there is significance between observed variables, thus rejecting the null hypothesis in favour of the alternative hypothesis (H_1) (McHugh, 2013:145; Nihan, 2020:577; Wegner, 2010:253)

3.7.3 Multivariate analysis

Multivariate analysis was conducted using the binary logistic regression model to analyse correlation between independent variables and the dependent variables (condom use during last sex with most recent partner). This type of analysis was chosen due to the dichotomous nature of the dependent variable, which is coded as “1” if women made use of condoms during sex with most recent partner and “0” if women did not use condoms with the most recent partner (Park, 2013:154). For the binary logistic regression, only variables that were significant at the bivariate level and not correlated with each other were used to compute the regression. For the binary

logistic regression, only variables that were significant at the bivariate level and not correlated with each other were used to compute the regression.

The binary logistic regression model applied in the study is as follows:

$$\left(\frac{p}{1-p}\right) = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \cdots + \beta_i x_i$$

The dependent variable in this model is condom use during sex with the most recent partner, which is denoted as $\left(\frac{p}{1-p}\right)$. The independent variables in this model are either nominal, ordinal or binary. The logistic regression predicts the likelihoods measured by probabilities, odds, and log-odds function as means to link the dependent variable to the set of independent variables (Tranmer & Elliot, 2008:7). The regression coefficient indicates the degree of change in the dependent variable for every one-unit of change in the independent variable. Meaning that the regression coefficient increases the natural logarithm (log-odds) for a one-unit increase in the independent variable when all other variables are constant (Park, 2013:154). How the selected factors related with the dependent variable were identified and interpreted through the exponential Beta coefficient (Exp β), which is the odds associated with condom use. The odds ratio is the likelihood of young women engaging in sexual intercourse without the use of condom with their most recent partner. An odd ratio less than one indicated that the likelihood of young women using a condom was less and an odd ratio greater than one indicated that the likelihood of young women using a condom during last sex was more (Agresti, 2018:29; Park, 2013:156).

3.8 Limitations of the study

This study followed a cross-sectional design, thus making it arduous to ascertain the causality between the dependent variable and independent variables. The study relied on the data that was deduced from individuals self-reporting during data collection, which could have been influenced by social desirability bias. Also given the sensitivity of some experiences particularly the age at first sex, self-reporting (i.e., having to remember a possible traumatic event) on such experiences may result in under-reporting or lead to a recall bias. However, despite the possible limitations, the DHS Program ensures that high-quality data is provided by selecting appropriate data collection methods thus, it collects and disseminates accurate nationally representative data

on health and demographic characteristics on populations in developing countries. The strength of this study is that it is a timely study, focused on a contemporary issue within the context of South Africa (low condom use among young women has been a prevailing issue and is still a problem resulting in a disproportionate high level of HIV prevalence).

3.9 Ethical considerations

The study made use of secondary sources of data from South African Demographic and Health Surveys 2016, which is produced by ICF. The researcher was authorized to download and use the data for only the registered research project on the DHS program. Apart from the registration no further ethical approval from the DHS program to acquire and utilize the data was required. The DHS program has ensured that all data is anonymous before its release so that survey respondents are unidentifiable to the public or researchers. This study has obtained ethical approval from the Basic and Social Science Research Ethics Committee (BaSSREC), at North-West University (ethics number NWU-01013-22-A7).

CHAPTER FOUR

DATA ANALYSES AND INTERPRETATION OF RESULTS

4.1 Introduction

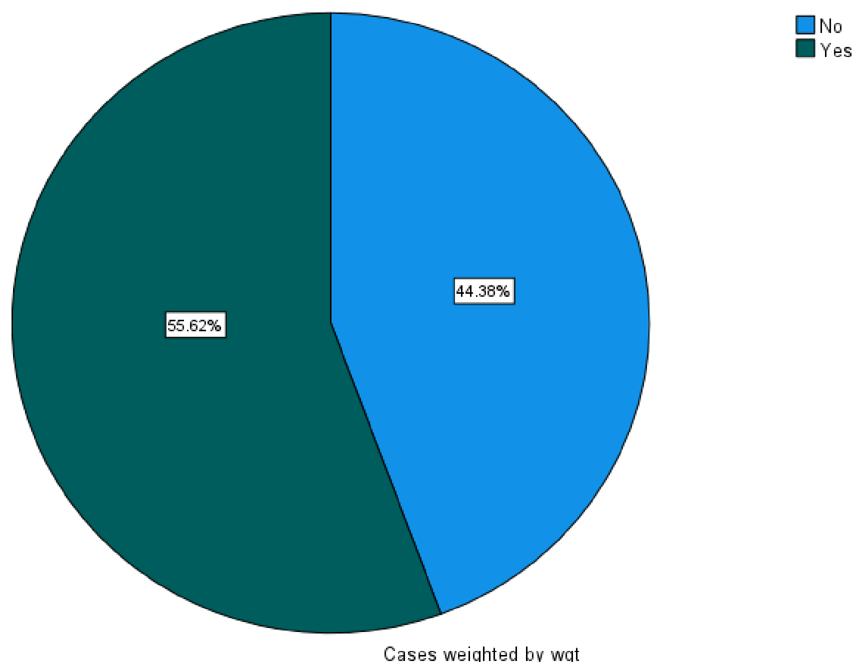
This chapter presents the findings on the use of condom during last sexual encounter with most recent partner, derived from the three analyses conducted analyses namely univariate, bivariate and multivariate analysis. Univariate analysis provides the general percentage distribution of 1757 young female respondents who indicated being sexually active by their background characteristics. Bivariate analysis provides the distribution of condom use during last sex with most recent partner (dependent variable) of respondents who indicated being sexually active by their background characteristic (independent variables). Multivariate analyses were conducted using the binary logistic regression for which delineate the correlation between independent variables and the dependent variables. The findings are interpreted to give an understanding of the interaction of the variables.

4.2 Univariate analysis

4.2.1 Characteristics of the study population

Figure 1 presents the percentage distribution of condom use during last sex with most recent. It shows that out of 1757 women who indicated being sexually active, 780 (44.4%) of the population did not use a condom and 977 (55.6%) used a condom during sexual intercourse with the most recent partner.

Figure 4. 1: Percentage distribution of condom use during last sex with most recent



Source: Own computations from the 2016 SADHS

Table 4.1 below illustrates the study population according to the respective variables by the frequencies and percentages. The results show that a majority (67.3%) of the population was between the ages 20-24 years and a minority (32.7%) was between the ages 15-19 years. With regard to the population group, the majority (92.8%) of the population was black and the other accounted for 7.2%. Most (81.4%) young women were never in union, while 18.6% ever in union. The majority (84.4%) of young women had secondary education and a minority (6.5%) while those with primary and lower education and higher education contributed only 9.1%. Concerning parity, most (48.8%) young women had no children, 37.8% had one child and 13.4% had two or more children. Regarding multiple sexual partners in the past 12 months, a majority (77.1%) of the population reported not having multiple sexual partners, and a minority (15.8% and 7.1%) reported one and two or more multiple sexual partners, respectively.

Young women who had their first sex from age 16 and above accounted for more (75.9%) when compared to those who had their first sex before the age 16. Just over (85%) of the population tested for HIV as compared to a few (14.6%) of those who did not test for HIV. Regarding the sex of the household head, about 58.6% of young women were from female headed households and a minority (41.4%) from male headed household. With reference to the household wealth, most (46.2%) young women came from a poor household, followed by 32.2% from rich households and 21.6% from the middle. In terms of the geographical area, most (64.8%) of the

population lived in urban areas than in rural areas (35.2%). The majority (27.4%) of the population was from Gauteng followed by Kwazulu-Natal (18.9%), the Eastern Cape (13.8%). A minority came from Limpopo (9.4%), Mpumalanga (9.3%), Western Cape (8.4%), North West (6.5%), Free State (4.7%) and the very least from the Northern Cape (1.6%).

Table 4. 1: Percentage distribution of respondent characteristics

Characteristics	**Frequency (N)**	**Percentage (%)**
Individual level factors		
Age group		
15 – 19 years	575	32.7
20 – 24 years	1182	67.3
Population group		
Black	1630	92.8
Other	127	7.2
Marital status		
Never in union	1431	81.4
Ever in union	326	18.6
Highest educational level		
Primary and lower	115	6.5
Secondary	1483	84.4
Higher	160	9.1
Parity		
None	857	48.8
1	664	37.8
2+	236	13.4
Multiple sexual partners in the past 12 months		
0	278	15.8
1	1355	77.1
2+	124	7.1
Age at first sex		
<16	423	24.1
16 and above	1334	75.9
Ever been tested for HIV		
No	256	14.6
Yes	1501	85.4
Sex of household head		
Male	728	41.4
Female	1029	58.6
Household wealth		

Characteristics	**Frequency (N)**	**Percentage (%)**
Poor	812	46.2
Middle	380	21.6
Rich	566	32.2
Community level factors		
Type of residence		
Urban	1139	64.8
Rural	619	35.2
Province		
Western Cape	148	8.4
Eastern Cape	242	13.8
Northern Cape	29	1.6
Free State	83	4.7
Kwazulu-Natal	332	18.9
North West	114	6.5
Gauteng	482	27.4
Mpumalanga	163	9.3
Limpopo	166	9.4
Total	**1757**	**100**

Source: SAHDS, 2016

4.3 Bivariate analysis

4.3.1 The prevalence and association between condom use during last sex with most recent partner and background characteristics

Table 4.2 below illustrates the prevalence of condom use among young during last sex with most recent partner by background characteristics. The results show that the age group, population group, marital status, level of education, parity, sex of household head, multiple sexual partners in the past 12 months, household wealth, place of residence, province were statistically associated ($P<0.05$) with condom use during last sex with most recent partner. The results show that condom use was less (53.1%) prevalent for young women aged 20-24 years. The prevalence of condom use was low (44.9%) among young women from other population groups. Regarding marital status, condom use was less prevalent (24.8%) among young women who reported ever being in union compared to 62.7% those who have never been in union. Young women with primary and lower education had a low (28.9%) prevalence of condom use. The prevalence of condom use was shown to decrease as the number ever born to a woman increased. Condom use was more (65.7%) prevalent among young women who had no children, then decreased to 46.6%

for those with one child and was less (44.5%) prevalent among young women with two or more children.

Regarding multiple sexual partners in the past 12 months, the prevalence of condom use is shown to increase as the number of multiple sexual partners increased. Condom use was less (21.6%) prevalent among young women who reported not having multiple sexual partners but increased to 61.8% and 63.7% among women who reported having one and two or more multiple sexual partners, respectively. The prevalence of young women who had their first sex before the age of 16 was slightly lower (54.6%) than 55.9% of women who had first sexual intercourse from 16 years and above. Young women who have ever been tested for HIV reported a lower (54.9%) prevalence of condom use than those who tested for HIV (59.8%). When looking at the sex of household head, condom use was more (60.8%) prevalent among young women from female headed household as compared to 48.2% those from male headed household. Condom use during last sexual intercourse was shown to increase with better household wealth. Condom use was less (48.9%) prevalent among young women from poor households but increased to 56.5% and 64.7% of young women from middle and rich households, respectively. In terms of the geographical area, condom use was more (58.6%) prevalent among young women living in urban areas as compared to 50.0% of those living in rural areas. Young women from the Free State had a high (64.6%) prevalence of condom use, followed by Gauteng (60.9%) and Northern Cape (58.6%) but low in the Western Cape at 48.6%.

Table 4. 2: Prevalence of condom use during last sex with most recent partner and background characteristics

Characteristics	**Condom used during last sex with most recent partner**				**Chi-square**	
	No	**Yes**	**Total**	**Prevalence**	**Value**	**P - value**
Individual level factors						
Age group						
15 – 19 years	225	350	575	60.9	9.388	0.002
20 – 24 years	554	628	1182	53.1		
Total	**779**	**978**	**1757**			
Population group						
Black	710	920	1630	56.4	6.378	0.012
Other	70	57	127	44.9		
Total	**780**	**977**	**1757**			
Marital status						

Characteristics	Condom used during last sex with most recent partner				Chi-square	
	No	Yes	Total	Prevalence	Value	P - value
Never in union	534	896	1430	62.7	153.772	0.000
Ever in union	245	81	326	24.8		
Total	**779**	**977**	**1756**			
Highest educational level						
Primary and lower	81	33	114	28.9	35.202	0.000
Secondary	629	854	1483	57.6		
Higher	70	90	160	56.3		
Total	**780**	**977**	**1757**			
Parity						
None	294	563	857	65.7	68.919	0.000
1	355	310	665	46.6		
2+	131	105	236	44.5		
Total	**780**	**978**	**1758**			
Multiple sexual partners in last 12 months						
0	218	60	278	21.6	155.027	0.000
1	517	838	1355	61.8		
2+	45	79	124	63.7		
Total	**780**	**977**	**1757**			
Age at first sex						
< 16	192	231	423	54.6	0.235	0.627
16 and above	588	747	1335	56.0		
Total	**780**	**978**	**1758**			
Ever been tested for HIV						
No	103	153	256	59.8	2.100	0.147
Yes	677	824	1501	54.9		
Total	**780**	**977**	**1757**			
Sex of household head						
Male	377	351	728	48.2	27.514	0.000
Female	403	626	1029	60.8		
Total	**780**	**977**	**1757**			
Household wealth						
Poor	415	397	812	48.9	33.756	0.000
Middle	165	214	379	56.5		
Rich	200	366	566	64.7		
Total	**780**	**977**	**1757**			

Characteristics	Condom used during last sex with most recent partner				Chi-square	
	No	**Yes**	**Total**	**Prevalence**	**Value**	**P - value**
Community level factors						
Type of residence						
Urban	471	668	1139	58.6	12.137	0.000
Rural	309	309	618	50.0		
Total	**780**	**977**	**1757**			
Province						
Western Cape	76	72	148	48.6	15.778	0.046
Eastern Cape	119	123	242	50.8		
Northern Cape	12	17	29	58.6		
Free State	29	53	82	64.6		
Kwazulu-Natal	161	171	332	51.5		
North West	48	66	114	57.9		
Gauteng	189	293	482	60.8		
Mpumalanga	74	89	163	54.6		
Limpopo	73	93	166	56.0		
Total	**781**	**977**	**1758**	**53.3**		

Source: SAHDS, 2016

4.4 Multivariate analysis (Binary Logistic Regression)

4.4.1 Determinants of condom use among young women

Table 4.3 presents the binary logistic regression results showing the relationship between condoms use among young women during last sexual intercourse with most recent partner by background characteristic. For the binary logistic regression, only variables that were insignificant at the bivariate level (age at first sex and ever been tested for HIV) and correlated with each other (sex of household head, province) were excluded from the regression. The results show that the population group, marital status, level of education, parity, multiple sexual partners in the past 12 months, household wealth, place of residence were statistically associated ($P<0.05$) with condom use during last sexual intercourse with most recent partner. Young women from the other population group were 0.493 [95% CI: 0.328 – 0.741] times less likely to use a condom during last sexual intercourse compared to black young women. Young women who were ever in union were 0.455 [95% CI: 0.254 – 0.816] times less likely to use a condom during last sexual intercourse compared to those who were never in union. Young women with secondary education were 2.287 [95% CI: 1.451 – 3.603] times more likely to use a condom compared to

those with primary and lower education. Also, young women with higher education were 1.843 [95% CI: 1.034 – 3.285] times more likely to use a condom during last sexual intercourse compared to those with primary and lower education.

With regard to the total number of children ever born (parity), young women who had one child were 0.554 [95% CI: 0.440 – 0.697] less likely to use a condom compared to those who did not have children. Also, those who had two or more children were 0.595 [95% CI: 0.425 – 0.834] also less likely to use a condom during last sexual intercourse compared to those who did not have children. Regarding multiple sexual partners in the past 12 months, young women with one extra sexual partner were 2.219 [95% CI: 1.171 – 4.205] times more likely to use a condom during last sexual intercourse compared to young women with no multiple sexual partners. Also, young women with two or more extra sexual partners were 2.429 [95% CI: 1.158 – 5.094] times more likely to use a condom during last sexual intercourse compared to young women with no multiple sexual partners. When looking at the household wealth, young women from rich households were 1.480 [95% CI: 1.106 – 1.982] times more likely to use a condom during last sexual intercourse compared to those from poor households. In terms of the geographical area, young women from rural areas were 0.687 [95% CI: 0.537 – 0.878] less likely to use a condom during last sexual intercourse than those from urban areas.

Table 4. 3: Binary logistic regression analysis of population characteristics and condom use

Variables	B	S.E	Wald	Sig.	Odds ratio	95% C.I.	
						Lower	Upper
Individual level factors							
Age group							
15-19®	1						
20-24	0.045	0.122	0.137	0.711	1.046	0.824	1.328
Population group							
Black®	1						
Other	-0.708	0.208	11.554	0.001***	0.493	0.328	0.741
Marital status							
Never in union®	1						
Ever in union	-0.788	0.298	6.989	0.008**	0.455	0.254	0.816
Highest level of education			13.755	0.001			
Primary or lower®	1						
Secondary	0.827	0.232	12.716	0.000***	2.287	1.451	3.603

Variables	B	S.E	Wald	Sig.	Odds ratio	95% C.I.	
						Lower	Upper
Higher	0.611	0.295	4.299	0.038*	1.843	1.034	3.285
Parity			26.706	0.000			
None®	1						
1	-0.590	0.117	25.317	0.000***	0.554	0.440	0.697
2+	-0.518	0.172	9.105	0.003**	0.595	0.425	0.834
Multiple sexual partners in the last 12 months			6.243	0.044			
0®	1						
1	0.797	0.326	5.971	0.015*	2.219	1.171	4.205
2+	0.887	0.378	5.516	0.019*	2.429	1.158	5.094
Household wealth			6.943	0.031			
Poor®	1						
Middle	0.158	0.138	1.317	0.251	1.171	0.894	1.533
Rich	0.392	0.149	6.941	0.008**	1.480	1.106	1.982
Community level factors							
Place of residence							
Urban®	1						
Rural	-0.376	0.126	8.952	0.003**	0.687	0.537	0.878
Constant	**-0.778**	**0.410**	**3.600**	**0.058**	**0.460**		

Source: SADHS, 2016 Note: P-values *** = P ≤ 0.001; **P ≤ 0.01; *P < 0.05; ® = Reference category

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The purpose of this study was to identify factors determining the use of condoms among young women aged 15 – 24 years in South Africa. This chapter discusses the results followed by conclusion and recommendations.

5.2 Discussions

With reference to bivariate analysis, the findings reveal that several factors to be related with condom use during last sex with most recent partner. The findings indicate that the age group, population group, marital status, level of education, parity, sex of household head, multiple sexual partners in the past 12 months, household wealth, place of residence and province were statistically associated (P<0.05) were significantly associated with condom use during last sex with most recent partner among young women in South Africa. This suggests that there is a relationship between condom use and the factors mentioned. The findings show that only 55.6% of women used condom during sexual intercourse with their most recent partner. The findings are consistent with previous studies which indicated that just over 55% of women reported using condoms during sexual intercourse (Beksinska *et al.*, 2017; Ntshiqa *et al.*, 2018b). These are similar to those of Fladseth *et al.* (2015), which found that 58% of women reported using condoms, indicating that there is not much improvement from the past levels. This inadequate use of condoms by young women consequently leads to pernicious outcomes such as acquiring sexually transmitted diseases and unintended pregnancies, vertical mother-child-transmission of HIV before birth or during birth, HIV developing into a Superinfection as shown by studies (Algur *et al.*, 2019; Haffejee & Maharajh, 2019; Karim *et al.*, 2020; Li *et al.*, 2020; Nasrullah *et al.*, 2017).

The findings also show that, condom use was less prevalent among young women aged 20-24 years accounting for 53.1% compared to 60.9% of women aged 15-19 years. These finding are consistent with those of Chimbindi *et al.* (2010); Copen (2017), who deduced that condom use among women decrease as women grow older. The study indicated that 35% of women aged 15-

19 years were more like to use condoms as compared to 17. 9% of 20-24 years women. The results were not statistically significant when other variables were controlled for. This suggests that the relationship between condom use and age is affected by other variables in the study. However, other studies had found that the variables were significantly related to each other (Chialepeh & Susuman, 2017; Copen, 2017). The differences could be attributed to the sample size in the study.

With reference to multivariate analysis, the findings reveal that several factors are determinants of condom use during last sexual intercourse with most recent partner. The findings indicate that the population group, marital status, level of education, parity, multiple sexual partners in the past 12 months, household wealth and place of residence were statistically associated ($P<0.05$) with condom use during last sexual intercourse with most recent partner among young women in South Africa. The population group of young women was found to be associated with the use of condom use. Young women from the other population groups were less likely to use a condom during last sexual intercourse compared to black young women. The findings are similar to those of Bunu (2019), women of other population groups are the ones less likely to use condoms than black women. Mokgetse (2015), noted that different races have different cultural and religious backgrounds that associate condom use (especially female condoms) as sin or immoral, and prohibit condoms for both preventive and contraception reasons, for which negatively affects condom uptake.

Women's marital status was associated with condom use. Young women who reported ever been in union were less likely to use a condom during last sexual intercourse compared to those who were never in union. This shows that condom use is lower for women ever in union than those never in union. For young women never in union, the findings suggest that there is no reason to use a condom since well they are not in any union. These findings are consistent with that of Chialepeh and Susuman (2017), who showed that, young married adults were inconsistent with condom use during their last sexual debut as compared to those never married. In addition, some studies (Kanda & Mash, 2018; Koster *et al.*, 2015; Ntshiqa *et al.*, 2018a; Thankian, Mwaba, Menon*, et al.*, 2017) have noted that for women ever in union, condoms are less used by women who report being married compared to those cohabiting or with a casual partner. The reason for this being that in marriages, when trust is established, oftentimes there is no need to use a condom and the use of condoms can be perceived as lack of trust or infidelity, hence the inconsistent use of condoms.

The level of a woman's education is associated with condom use. The findings reveal that young women who had secondary and higher education were more likely to use a condom during sexual intercourse than those with primary and lower education. Similarly, Chimbindi *et al.* (2010), noted that in Angola, the consistent use of condoms was positively associated with having high levels of education. This means that when the level of education increases so does the use of condom increase among women. Emerson *et al.* (2018) noted that among women who were in incarceration, condom use during last sex was higher for those who had higher school education or more than those with higher school education and higher school education or less. Thankian, Mwaba, Menon, *et al.* (2017) went further to say that women with secondary and higher education believed that condoms do not diminish sexual pleasure hence they were most likely to use condoms consistently as compared to those with lower education. Therefore, as women attain education, the better chances of them adopting the practice of using condoms.

Regarding the total number of children ever born (parity), it was found to be statistically associated with condom use. Young women who had one child were less likely to use a condom compared to those who did not have children. Also, those who had two or more children also had less likelihood of using condoms compared to women who did not have children. This not only indicates that young women with children are unlikely to use a condom but also suggests that as the number of children increases, the likelihood of using a condom decreases. It may be that women intend to have more children, but they run the risk of contracting HIV which further can result in mother-to-child HIV when they are pregnant. Nevertheless, studies by Aboagye *et al.* (2021); Seidu *et al.* (2021) who showed that women who were able to negotiate condom use had higher odds of having low parity because they were able to request their partners to make use of condoms. Adu *et al.* (2022); Atteraya *et al.* (2014)also showed that women who had a higher prevalence of parity were the ones who could not negotiate condom use. It follows that the likelihood of young women utilizing condoms during sexual intercourse was low. The study noted that this is because a woman did not have improved access to education for which is with a women's empowerment and decision-making capacity, which influences their ability to negotiate condom use.

Regarding multiple sexual partners in the past 12 months, the findings reveal that the number of sexual partners was statistically associated with the use of condoms. Young women with one, two or more extra sexual partners are more likely to use a condom compared to young women with no multiple sexual partners. These findings are like those of Simelane *et al.* (2021) who

expressed that having multiple partners is associated with inconsistent condom use and the risk of HIV acquisition. A study Heeren *et al.* (2014)on first year university students in Eastern Cape, South Africa, noted that low condom use was prominent among women with multiple partners than those with one partner. Therefore, when women have multiple sexual partners, they are less likely to use a condom.

The findings revealed that the household wealth was statistically associated with condom use young women rich households were more likely to use a condom during last sexual intercourse compared to young women from poor households. This means that the chances of a woman coming from a poor household using a condom during sexual intercourse are less as compared to those from rich households. Similarly, to the findings of Davidoff-Gore *et al.* (2011); Leonard *et al.* (2017); Schuyler *et al.* (2016) higher levels of household wealth (physical structure, assets, size, and income) are associated with consistent condom use. Women who were not employed or had no source of income were less likely to use condoms during sexual intercourse. Other studies have found that employment is associated with consistent use of condoms during sexual relations, and this is because not only do women have the ability to afford condoms for themselves but also, they attain the decision-making power. The obverse of this is that women with low economic status do not use condoms because they may not afford condoms and are often submissive and unable to negotiate condom use especially if their partners are dominant financially. Which further makes them prone to contracting STDs (Thankian, Mwaba, Menon, *et al.*, 2017). Though on the contrary, Ntshiqa *et al.* (2018a) found women who had a source of income to be less likely to use condoms during sexual intercourse.

With regard to the geographical area, the findings reveal that the place of residence was statistically associated with condom use. Young women from rural areas were shown to be less likely to use condoms during sexual intercourse than women from urban areas. Similarly, to the study on Ugandan university students by Choudhry *et al.* (2015) which also found inconsistent condom use among female students who grew up in a rural residence. This is because there is strong adherence to cultural norms which often dictates the use of condoms among rural women. Unlike women in urban areas, they have positive attitudes and demonstrate high self-efficacy toward using condoms. They have exposure in modern ways of living and have control over their sexual health; hence condom use differs by type of residence. Overall, the chosen theoretical and conceptual framework compliments the findings of the study. The factors that where highlighted as influencers of condom use in the model and conceptual framework are also identified as

factors influencing condom use young South African women during last sex with their most recent partner based on the findings of the study. Individual level factors particularly the household wealth and educational level, multiple sexual partners were shown to be statistically significant and directly related to condom use as explained and shown in the model and the conceptual framework. Community level factor particularly, the place of residence was also significant and indirectly related to condom use as explained and shown in the model and the conceptual framework

5.3 Conclusion

The study identified areas where condom use was less prevalent among young women. The study has also found that several individual and community level factors were significantly associated with the use of condom during the last sexual intercourse with most recent partner. Thus, it has been deduced that these factors determine the use of condom among young South African women, namely the population group, marital status, educational level, parity, multiple sexual partners, household wealth and place of residence. There is a need for interventions aimed at elevating educational levels integrated with sexual health information, increasing access to family planning, antenatal and health care services, empowering women economically, that are central to increase condom use among young women.

5.4 Recommendations

Taking into consideration the study findings, the following recommendations have been made to address condom use among young South African women:

- **Women's economic empowerment**: Young women from poor households are often characterised by low condom use. Empowering women economically to can have sustainable livelihoods and encourage independence, overall improving their overall quality of life will allow young women to be economically stable, afford condoms, have the courage to negotiate condom use. Government policies can be formulated to advance the economic participation of women. Whereby young women are given access to economic resources and opportunities.

- **Promote women's reproductive health**: Young women with high parity turn to use condoms less suggesting that they want more children or that they are unable to negotiate condom use with their partners. For women who intend to have more children, promoting women's reproductive health by availing and encouraging antenatal and postnatal care services can assist young women to plan pregnancy safely and avoid mother to child transmission of HIV. The reproductive rights of women can be strengthened and be promoted by making women of their contraceptive rights (either married or unmarried). Family planning and antenatal care services should be introduced to women at an early stage by the Department of health to young women.

- **Improve sexual and reproductive health care services in rural areas**: make available and improve access to sexual and health reproductive health care services through mobile health care for young women in rural areas to have access to sexual health information. The department of health can upscale both male and female condoms, distribute them free of charge and increase awareness of condom benefits in order to normalize condom use among young women within rural communities.

- **Access to free quality education**: Young women with primary to no education are more likely to not use condoms during sexual intercourse. Therefore, in order to remedy this, the Department of Education can offer free school and tertiary education and necessary school related tools to every girl especially those from disadvantaged backgrounds. Education will enable young women to make decision and have control over their sexual and reproductive health. It is also imperative to integrate educational forums and workshops for young adults to discuss, teach and encourage young women to subscribe to healthy sexual behaviour lifestyle as they grow.

- **Provide counselling with respect to sexual health in marriages**: Young women ever in union turn to use condoms less because trust is established, or using a condom can be perceived as lack of trust of infidelity. Counselling can be integral part of sexual health services offered within the health care. For which will serve as means to teach couples about sexual health that sexual rights within marriage. This will be opportune for both partners, especially women, since it will allow them to negotiate condom use and overall have equal decision-making power regarding their sexual health.

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APPENDIX

Figure A1: Ethics letter of approval

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24 August 2022

ETHICS APPROVAL LETTER OF STUDY

Based on approval by the **Basic and Social Sciences Research Ethics Committee (BaSSREC)** on **24/08/2022**, the Basic and Social Sciences Research Ethics Committee hereby **approves** your study as indicated below. This implies that the North-West University Senate Committee for Research Ethics (NWU-SERC) grants its permission that, provided the special conditions specified below are met and pending any other authorisation that may be necessary, the study may be initiated, using the ethics number below.

Study title: Determinants of condom use among young women in South Africa

Study Leader/Supervisor (Principal Investigator)/Researcher: Dr Karabo Mhele

Student/Research Team: O Legotlo-27382060

Ethics number:

N	W	U	-	0	1	0	1	3	-	2	2	-	A	7

Institution | Study Number | Year | Status

Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation

Application Type: Single study

Commencement date:29/08/2022 **Risk:** **No risk**

Expiry date: 29/08/2023

Approval of the study is initially provided for a year, after which continuation of the study is dependent on receipt and review of the annual (or as otherwise stipulated) monitoring report and the concomitant issuing of a letter of continuation.

Special in process conditions of the research for approval (if applicable):

General conditions:

While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, the following general terms and conditions will apply:

- *The study leader/supervisor (principal investigator)/researcher must report in the prescribed format to the BaSSREC:*
  - *annually (or as otherwise requested) on the monitoring of the study, whereby a letter of continuation will be provided, and upon completion of the study; and*
  - *without any delay in case of any adverse event or incident (or any matter that interrupts sound ethical principles) during the course of the study.*
- *The approval applies strictly to the proposal as stipulated in the application form. Should any amendments to the proposal be deemed necessary during the course of the study, the study leader/researcher must apply for approval of these amendments at the BaSSREC, prior to implementation. Should there be any deviations from the study proposal without the necessary approval of such amendments, the ethics approval is immediately and automatically forfeited.*
- *Annually a number of studies may be randomly selected for an external audit.*
- *The date of approval indicates the first date that the study may be started.*
- *In the interest of ethical responsibility, the NWU-SCRE and BaSSREC reserves the right to:*

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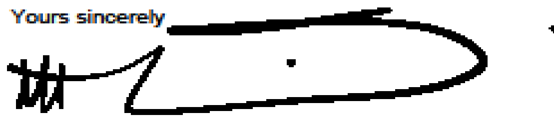
- *request access to any information or data at any time during the course or after completion of the study;*
- *to ask further questions, seek additional information, require further modification or monitor the conduct of your research or the informed consent process;*
- *withdraw or postpone approval if:*
  - *any unethical principles or practices of the study are revealed or suspected;*
  - *it becomes apparent that any relevant information was withheld from the BaSSREC or that information has been false or misrepresented;*
  - *submission of the annual (or otherwise stipulated) monitoring report, the required amendments, or reporting of adverse events or incidents was not done in a timely manner and accurately; and / or*
  - *new institutional rules, national legislation or international conventions deem it necessary.*

- *BaSSREC can be contacted for further information or any report templates via BaSSREC-Admin@nwu.ac.za.*

The BaSSREC would like to remain at your service as scientist and researcher, and wishes you well with your study. Please do not hesitate to contact the BaSSREC or the NWU-SCRE for any further enquiries or requests for assistance.

Yours sincerely



Prof E. Idemudia

Chairperson NWU Basic and Social Sciences Research Ethics Committee

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8 November 2018

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