Title: Exploring young women's perceptions of the vaginal microbicide ring for preventing HIV in Johannesburg

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A research project submitted to the School of Public Health in partial fulfilment of the requirement for the Degree of Master of Public Health, in the field of Social and Behaviour Change Communication.

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DECLARATION

I, **Luyanda Majija**, declare that this research work on *Exploring young women's perceptions of the vaginal microbicide ring for preventing HIV in Johannesburg* is my own original work. Any work produced by other authors quoted in this report has been adequately cited. The report is being submitted to the School of Public Health at the University of the Witwatersrand, Johannesburg. It has not been submitted for assessment at this or any other institution.

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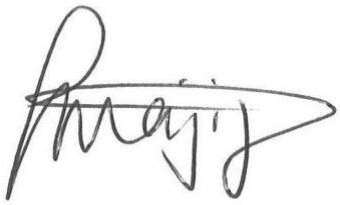

Date: 10 June 2020

DEDICATION

In loving memory of my late father Maynard Mpandulo Majija who inspired my zeal for education and fuelled my curiosity since I was a little girl. I also dedicate this report to my loving mother, sisters, the special young women who made this achievement possible and to myself for never giving up. Here's to many more research projects and many more years of doing meaningful work to make the lives of others better!

ABSTRACT

Introduction: Young women are disproportionately affected by HIV. A combination of factors such as power imbalances in sexual relationships with men and obstacles adhering to HIV prevention products, increase their risk of HIV infection. There is a global commitment to develop and test female-controlled methods, with a focus on young women in low-middle income countries. Some efficacy trials demonstrated that younger women who used the vaginal microbicide ring received the least protection from HIV. This study explores how the social lives of young women influence their potential to use of the product.

Methods: The study used a narrative approach to explore young women's experiences using prevention products and their perceptions of the vaginal ring. Respondents were recruited from two communities in Soweto, Johannesburg using purposive and snowball sampling techniques. In-depth interviews and a focus group discussion were conducted to gather data that were analysed using the thematic content analysis method.

Results: Lacking privacy as well as experiencing conflict and abuse in small, overcrowded homes affected young women's psychological well-being and drove their preference for discreet prevention methods. They feared that using the vaginal ring without their partners knowing could raise issues of mistrust and compromise relationships. Women who asserted themselves in relationships and withstood men's tendencies to control them, showed an ability to use the vaginal ring. Open and constructive communication about sexual health with sexual partners, family members and friends facilitated women's positive experiences using prevention. Most respondents visited clinics regularly to use family planning and HIV testing services despite nurses ill-treating them.

Conclusion: The nexus between young women's complex lives and their ability to use the vaginal microbicide ring challenges the notion of it being a truly female-controlled device. Policies and initiatives to rollout the vaginal ring must take into

account the profound effect that dynamics in young women's relationships and home lives have on uninterrupted use of the vaginal ring.

Keywords: Vaginal microbicides, microbicide ring, PrEP, female-controlled products, female-controlled prevention, female condom, sexual autonomy, adolescent girls and young women, The Ring Study, ASPIRE, acceptability studies, sexual and reproductive health, sexual health, HIV prevention, biomedical prevention

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ACRONYMS

AGYW	Adolescent Girls and Young Women
ASPIRE	A Study to Prevent Infection with a Ring for Extended Use
ARV	Anti-retroviral
CAPRISA-004	Centre for the Aids Programme of Research in South Africa Tenofovir gel trial
CROI	Conference on Retroviruses and Opportunistic Infections
DMPA	Depot-medroxyprogesterone acetate
DREAM	Dapivirine Ring Extended Access and Monitoring
FEM PrEP	Female PrEP clinical trial
FGD	Focus group discussion
HIV	Human Immunodeficiency Virus
HOPE	HIV Open Label Prevention Extension
IDI	In-depth interview
IPM	International Partnership for Microbicides
PrEP	Pre-exposure antiretroviral Prophylaxis
SANAC	South African National AIDS Council
SRH	Sexual and Reproductive Health
STI	Sexually Transmitted Infection
WHO	World Health Organization
VOICE	Vaginal and Oral Interventions to Control the Epidemic clinical trial

CHAPTER ONE: INTRODUCTION

1.1. Background

Women in sub-Saharan Africa are disproportionately affected by HIV and new infection rates in this population group have been consistently higher than in men (Doggett *et al*., 2015; Nel *et al*., 2016). In South Africa, new infection rates among young women in the 15-24 age group are three times higher than those among their male counterparts and make up over 25% of total new infections (Simbayi *et al.*, 2019). This translates to approximately 2000 adolescent girls and young women (AGYW) who are infected with HIV each week (Dellar *et al*., 2015; NSP Steering Committee, 2017). Young women's disproportionate susceptibility to HIV infection can be attributed to various social, structural and behavioural factors (Harrison *et al*. 2015).

In response to high levels of new HIV infections, several strategies have been implemented to curb new infections over the years with most of them focussing on behaviour change. They include condom promotion and distribution, regular HIV counselling and testing, and community education programmes – tackling different determinants of HIV (Dellar *et al*., 2015; South African National AIDS Council Trust, 2015). In addition, there has been ongoing work to develop female-controlled devices that prevent HIV and other STIs as well as unwanted pregnancy such as the female condom, oral pre-exposure prophylaxis (PrEP) and anti-retroviral (ARV)-based microbicide technology – particularly vaginal microbicides (Corneli *et al*., 2015; Cutler & Justman, 2008; Doggett *et al*., 2015; Gallo *et al*., 2012).

Broadly, various vaginal microbicides have shown some potential for success and they have features which make them more appealing than condoms such as the possibility of women using them without their partners knowing or giving consent (Koo *et al.*, 2005). Researchers have conducted biomedical research for over two decades, to determine the safety and efficacy of different vaginal ARV microbicide

delivery mechanisms – gels, foams, suppositories, sponges and silicone vaginal rings – to reduce transmission of HIV (Hankins & Dybul, 2013; Nuttall *et al*., 2007).

Vaginal microbicides are prophylactic biomedical products that can prevent HIV and other sexually transmitted infections (STIs) when inserted into the vagina before sex (Nuttall *et al*., 2007; Stein *et al*., 2005; van der Straten *et al*., 2013). These products prevent HIV infection by destroying or blocking the virus before it can enter a healthy target cell (entry inhibitors) or by inhibiting it from replicating its genetic material once inside the cell (reverse transcriptase inhibitors) (Koo *et al.*, 2005; Nuttall *et al.*, 2007).

The vaginal microbicide ring is of particular interest for researchers. The technology is currently used to deliver hormones for contraception or a replacement therapy, albeit scarcely available in African countries (Palanee-Phillips *et al.*, 2015; van Der Straten *et al.*, 2012). Intended to be worn for about a month – the ring has potential for better adherence compared to other microbicide applications (Palanee-Phillips *et al.*, 2015).

Despite the potential for success, researchers have uncovered some notable shortcomings for product uptake and efficacy of vaginal microbicide rings, particularly for young women. In 2016, the results of two sister multi-country phase III clinical trials showed that a monthly self-inserted vaginal ring infused with the ARV microbicide Dapivirine modestly protected women aged 18-45 against HIV (Baeten *et al*., 2016; Nel *et al*., 2016). However, younger women (18-21 years) from both studies received little to no protection from HIV which researchers suggested may be due to them having more frequent sex, physiological differences in the vaginal tract or lower adherence to ring use, compared to the older cohort (Baeten *et al.*, 2016, Nel *et al.*, 2016). Studies by both authors reported lower adherence levels in younger participants which was assessed by analysing the amount of Dapivirine in plasma samples obtained from participants as well as residual levels of Dapivirine in used rings (Baeten *et al.*, 2016, Nel *et al.*, 2016).

Researchers like Montgomery et al. (2012) have studied various trends in women's acceptability of the vaginal ring based on its product features and potential for use

against the backdrop of factors such as relationships with male partners, the quality of clinic services and experiences in the broader social context. However,

there is currently a paucity of qualitative data explaining the poor adherence observed in previous clinical studies to the vaginal microbicide ring and its acceptability among younger women specifically (Palanee-Phillips *et al.*, 2015). This study was conducted to explore and describe various contextual factors that may facilitate or hinder optimal use of the vaginal microbicide ring by young women (aged 18-24 years) who have never seen or heard of the device, living in Soweto, Johannesburg between 2017 and 2018. I focused on women who had never used the vaginal ring because they would not have had preconceived ideas or perceptions about it, enabling me to get a fresh perspective and more accurate insight into what women in the general population might think of the device. Women with past experiences using the vaginal ring by participating in efficacy and acceptability studies may have had a bias towards or against the product.

1.2. Problem statement

Young women bear the brunt of the HIV epidemic in South Africa. In 2017, the incidence rate in this group was 1.5% - three times higher than in men of the same age group (Simbayi *et al.*, 2019). Clinical trials have provided data indicating that the microbicide is a promising HIV prevention option but that it requires excellent adherence which seems to be a challenge, especially for young women (Nel *et al.*, 2016). The two aforementioned clinical trials showed that adherence in younger women was much lower than in older women (Baeten *et al.*, 2016, Nel *et al.*, 2016).

1.3. Justification

The fact that the vaginal ring's efficacy to protect against HIV correlates with adherence levels suggests that there needs to be optimal uptake among young women for them to benefit from it. Little is known about why younger women in these clinical trials could not optimally use the vaginal microbicide ring compared to their older counterparts. Similarly, there is a gap in the existing body of literature about

acceptability of the vaginal ring as a device for delivering microbicides in this population group.

Qualitative insights about acceptability, preference, facilitators and obstacles for potential ring use in this age group are limited. In addition, organisations like UNAIDS have called for continued investment in the research and development of female-controlled HIV prevention technology (UNAIDS, 2016). Building evidence about young women's needs, preferences and challenges is crucial for informing demand creation and rollout strategies as it will ensure that they benefit from the product if it is made available in the healthcare system. Therefore, conducting this research project will contribute to the body of knowledge within the public health sector regarding acceptability of the microbicide ring by women who face significant risk of HIV infection. This research can propose some ideas for improving engagement with young women about HIV and other sexual and reproductive health (SRH) issues and offer solutions for improving uptake of prevention products including the vaginal ring.

1.4. Literature Review

This section outlines some HIV and pregnancy prevention female-controlled products currently available for women as well as those in the pipeline, including the vaginal microbicide ring to illustrate the trends in uptake and sustained use. It unpacks the uptake of vaginal microbicides in different studies conducted mainly in sub-Saharan African countries and presents the results of a few studies conducted to determine efficacy and acceptability of the vaginal microbicide ring and gel as well as oral pre-exposure prophylaxis (PrEP). The review also discusses and presents evidence of how different factors in women's social contexts influence their experiences using various prevention devices. This information forms the backdrop against which to explore how young women could perceive and potentially use it.

1.4.1. Uptake of female-controlled technologies for sexual and reproductive health

Researchers working on SRH issues have examined the factors that affect a woman's ability and willingness to use female-controlled preventive innovations, such as hormonal contraceptives delivered through injections and the female condom to prevent HIV and pregnancy (Morrow *et al*., 2007; Stein *et al*., 2005; van der Straten *et al*., 2012; Woodsong, 2016). Research to find solutions that will enable women to take control of and protect their SRH is underscored by their disproportionate vulnerability to HIV and challenges with unplanned pregnancies (Woodsong, 2016).

The vaginal microbicide ring is not available on the market yet and if it were, it would be offered as part of the current biomedical prevention package young African women have access to for SRH. We can learn from literature about uptake of the limited range of existing female-controlled technologies available to young women namely, injectable hormonal contraceptives, the female condom and PrEP.

1.4.1.1. Hormonal contraceptive access and uptake

Hormonal contraceptives are among the female-controlled products that women can use discreetly and are available to women for free at public healthcare facilities. It is estimated that 65% of sexually active women in the country use at least one non-barrier contraceptive method (Iyun *et al.*, 2018). The most commonly used contraceptive in South Africa is the progestin depot-medroxyprogesterone acetate (DMPA) with approximately 5.8 million doses administered each year (Chersich *et al.*, 2017). Ninety two percent of contraceptive users in the survey by Chersich and colleagues (2017) knew more about injectables and about 90% knew about oral contraceptives. Fewer women knew about intrauterine devices (56.1%) and emergency contraceptives (47.3%) (Chersich *et al.*, 2017). Twenty five percent of the women surveyed used injectables with a higher uptake among younger women (Chersich *et al*., 2017). Cost effectiveness, user and provider convenience and high acceptability are among the reasons for high injectable contraceptive uptake

compared to other contraceptive methods (Chersich *et al*., 2017). Albeit the high prevalence rate of contraceptives among young women, they face some challenges with consistent use. For instance, family planning services don't provide adequate counselling and education and to improve women's knowledge of their reproductive anatomy and how contraceptives prevent pregnancy thus diminishing their confidence to use them (Harries *et al.*, 2019).

1.4.1.2. Available biomedical HIV prevention strategies

The search for female-controlled HIV prevention technology has culminated in the innovation of biomedical methods which require high uptake to fulfil women's HIV prevention needs. To date, female condoms and PrEP are the only available HIV prevention products with potential for independent use by women (Montgomery et al. 2019).

The female condom is currently the only woman-initiated method, which is available to South African women that not only prevents HIV, but also other STIs and pregnancy (Raphael, 2012). Much research has been conducted to understand female condom use to inform production and distribution strategies in the public health sector. There has generally been a low uptake of female condoms across different regions of world which some authors attribute to a combination of factors including a lack of donor funding to upscale its promotion and availability as well as comparatively high production and purchase costs (Eakle *et al*., 2017; Mantell *et al*., 2008; Raphael, 2012). Female condoms cost up to 18 times more than the male condom to produce and they require more complex distribution mechanisms (Beksinska *et al*., 2013). Some barriers for high female condom use are related to its design which can make it difficult for women to insert and remove it properly (Artz *et al.*, 2002). South African women who participated in a 13-month study to determine their ability to use three types of female condoms reportedly experienced 'usage failure events' such as invagination, slippage, misdirection as well as breakage (Beksinska *et al*., 2012).

Oral PrEP, which an ARV-based pill used to prevent HIV infection (Dunbar *et al.*, 2018), has recently become available to at-risk populations including AGYW in some sub-Saharan African countries through demonstration projects, implementation programmes and clinical trials (AVAC, 2018; Dunbar *et al.*, 2018). Monitoring of rollout programmes in Kenya, South Africa and Zimbabwe has indicated low uptake of oral PrEP among AGYW (Dunbar *et al.*, 2018). In addition, earlier studies have reported women's difficulties with adhering to PrEP (Marrazzo *et al.*, 2015) which illuminates the need to incorporate it well into an individual's daily life and ensure that it appeals to their personal preferences (van der Straten et al., 2014). Some examples of the adherence challenges PrEP users in one particular clinical trial faced include family members and close peers suspecting that they could be taking the pill as treatment for HIV and not as prevention (van der Straten *et al*., 2014). Ability to adhere to PrEP has also been associated with male partners' influence of sustained use, particularly for young women (Corneli *et al.*, 2015; Montgomery *et al.*, 2015).

1.4.1.3. Emerging microbicide technologies for HIV prevention

Different formulations of ARV-based microbicide products have demonstrated some potential to reduce women's risk of HIV infection and accommodate varied needs and preferences. Vaginal microbicide product types are a promising addition to women's HIV prevention package. Although they have generally demonstrated moderate protection against HIV in clinical trials, there have limitations for increased protection which is attributed partly to low levels of adherence, particularly among younger women (Doggett *et al*., 2015; van der Straten *et al*., 2014). This behavioural shortcoming has necessitated the need to understand the individual and contextual factors that might contribute to imperfect use of vaginal microbicides.

For instance, a vaginal microbicide gel requires insertion at least eight hours before sex and within eight hours after sex which has been difficult for most women to do mainly because of the unplanned or spontaneous nature of sex (Greene *et al.*, 2010). The gel can reportedly also be felt by the male sexual partner because it is a

viscous substance, whereas the ring is inserted and kept inside the vagina for a month during which it slowly releases Dapivirine into the vaginal tract (van der Straten *et al*., 2014).

Vaginal microbicide trials like *A Study to Prevent Infection with a Ring for Extended Use* (ASPIRE), *The Ring Study*, *Vaginal and Oral Interventions to Control the Epidemic* (VOICE) and *Centre for the Aids Programme of Research in South Africa* (CAPRISA)-004 have illustrated a relationship between adherence or consistent product use and HIV risk reduction (Doggett *et al*., 2015). Yet, even with comprehensive adherence counselling and support provided during these trials, many women, particularly those aged 18-21 seem to struggle to use the vaginal microbicide gel and ring therefore receiving very little or no protection from HIV (Montgomery *et al*., 2012).

In *The Ring Study*, which took place in Uganda and South Africa, 31 percent more new infections were averted in women who were randomised to receive the intervention (ARV-infused vaginal ring) compared to those in the placebo arm (Nel *et al*. 2016). Women in *ASPIRE*, received 27 percent more protection from HIV overall compared to the control group (Baeten et al. 2016). Stratification by age group in *The Ring Study* revealed that women aged 18-21 received no protection compared to those older than 22 years (Nel *et al*., 2016). *ASPIRE* published similar results in that no protection was observed in younger women whereas the device protected those 22 years old and above by 56% (Baeten *et al*., 2016; Nel *et al*., 2016). Investigators of both studies have provided possible reasons for these outcomes namely, physiological differences in the genital tracts of younger women, more frequent vaginal or anal sex compared to older women, and poorer adherence to ring use (Nel *et al*., 2016). When data were analysed further by sub-group, HIV risk was reduced by 75% with near-perfect use (International Partnership for Microbicides, 2016).

The vaginal ring has also been subjected to several acceptability studies to determine how well women could use it (Montgomery et al. 2012; Smith et al. 2008;

van Der Straten et al. 2012). The device was found to be highly acceptable among a cohort of women and their male partners in Tanzania and South Africa (van Der Straten *et al.*, 2012). Participants' acceptance of the ring grew with continued use during the study because they found it did not interfere with sex and believed in its potential to prevent HIV (van Der Straten *et al.*, 2012). In the Smith et al (2008) paper, it emerged that while women were eager about the prospect of using the vaginal ring, optimal use would require overcoming barriers like concerns about not being able to use it covertly as well as gendered attitudes about sexual pleasure in relationships.

An earlier phase IIB clinical trial, *VOICE* tested the efficacy of PrEP and the vaginal microbicide gel in a similar cohort of 5000 women in South Africa, Uganda and Zimbabwe (Marrazzo *et al*., 2015). Its gel arm was stopped prematurely when interim results showed that it was ineffective in preventing HIV infections among its cohort of 18-40-year old female participants (Marrazzo *et al*., 2015; Walensky *et al*., 2012). Predictably, adherence data showed that the likelihood for HIV risk reduction increased with higher adherence to the gel (Marrazzo *et al*., 2015). Overall, adherence to the gel was particularly low among women younger than 25 years and infection rates were highest in this age group (Marrazzo *et al*., 2015). A qualitative ancillary study to VOICE – VOICE-C – was undertaken to understand why majority of the women taking part in the parent trial were non-adherent (van der Straten *et al*., 2014). The outcomes suggest an interaction of factors like product characteristic preferences, the quality of healthcare services offered at research clinics, an altruism towards research, participant fatigue and the real or perceived social cost of trial participation (van der Straten et al., 2014).

In 2018 microbicide researchers published the results of two concurrent open-label studies called *DREAM* and *HOPE* at the Conference on Retroviruses and Opportunistic Infections (CROI). The studies used quantitative and qualitative methods (Baeten, Mgodi and Palanee-Phillips, 2014) to gather additional data about women's uptake of the vaginal microbicide ring knowing that it can reduce risk of HIV infection (Microbicide Trials Network, 2019). The research also sought to build on the outcomes of *ASPIRE* and *The Ring Study* (Microbicide Trials Network, 2019) and

explore how women incorporated the device into their lives and examine the incidence of HIV among ring users (Baeten *et al*. 2018; Nel *et al*. 2018).

Over 3500 women aged 20-50 who took part in both *ASPIRE* and *The Ring Study* clinical trials were provided with monthly Dapivirine vaginal rings. Adherence and protection levels in these studies were higher than those observed in the preceding clinical trials – which randomized participants to receive either an active ring or a placebo (Baeten *et al*. 2018; Nel *et al*. 2018). An additional outcome of the open-label studies was women's increased willingness to use the device (Baeten et al. 2018; Nel et al. 2018).

1.4.2. Contextual factors for potential use of the vaginal microbicide ring

The ease with which a woman can use vaginal microbicide rings and other similar products is underpinned not only by individual factors like her attitude and behaviour but there are other forces outside her control that interact to influence her product use (van der Straten *et al*., 2014). The rest of the literature review will posit factors related to individual behaviour, intimate relationships, and broader social context which could influence young women's adherence and acceptability of the vaginal microbicide ring. Some researchers have used the socio-ecological framework to aide in understanding women's life experiences and how they could shape use of female-controlled products (Greene *et al*., 2010; van der Straten *et al*., 2014). Others like Montgomery and colleagues (2010) present various definitions for a woman's acceptability of a microbicide product including the influence that its characteristics and her perceived risk of HIV infection have on her willingness to use it.

1.4.2.1. Individual level factors

Perceived risk for HIV infection is an example of individual level factors that can influence decision-making for use of prevention as it is often postulated to result in better adoption of healthy or risk reduction behaviour (Smith *et al*., 2008; Woodsong,

2016). A systematic review of sexual behaviour trends among adolescents aged 15-19 in sub-Saharan African countries showed that few of those at high risk for HIV infection believed they could get infected (Doyle *et al*., 2012). The extent to which an individual believes they can get HIV has also been tested within the context of clinical trials to determine the acceptability and effectiveness of existing or novel HIV prevention products (Corneli et al., 2014). These include women-controlled methods like female condoms, PrEP and vaginal microbicides. For instance, an open-label acceptability study of an 'inactive' vaginal microbicide ring used perceived risk as one of its primary measures (van der Straten *et al*., 2012). Women aged 18-35 were asked if they would be willing to use an effective ring if they believed they were at risk of getting HIV (van der Straten *et al*., 2012). A placebo-controlled clinical trial to determine the efficacy of oral PrEP in HIV risk reduction, also demonstrates a correlation between high risk perception and good product adherence (Corneli *et al*., 2014).

A common finding among several women who participated in the VOICE-C study was that they were motivated to adhere to the products because they believed they were at risk of getting HIV from their unfaithful partners (van der Straten *et al*., 2014). However, this trend between high risk perception and increased product uptake was not observed in a Kenyan vaginal microbicide ring acceptability study conducted among female sex workers and their male clients (Smith *et al*., 2008). Most of the Kenyan study participants admitted that although they were fully aware of their high level of risk, it was not motivation enough for them to use it or to insist that their male clients use condoms (Smith *et al*., 2008). This highlights a variability in different women's perception of risk and how it competes with various social circumstances like poverty which can diminish the effect of perceived risk in the adoption of the desired (sexual health) behaviour (Dunkle *et al*., 2004). While there is a wealth of information that illustrates the application of perceived risk for predicting uptake of various prevention products, there is little evidence that focuses specifically on the interest group of this research project – South African women aged 18-24 years. Even though the minimum recruitment age for the women enrolled in the above-mentioned studies was 18 years, the mean ages ranged from 26 to 33 years

resulting in the experiences of younger female groups being inadequately reported (Corneli *et al*., 2015; Smith *et al*., 2008; van der Straten *et al*., 2014).

1.4.2.2. Intimate relationships with male partners

Intimate relationships are a very influential component of women's social context (Montgomery et al., 2008). Relationships, particularly those involving young African women, are often shaped in such a way that they often assume subordinate positions in the power dynamic due to gender, cultural and social norms as well as socio-economic status and age differences which can contribute to increased risk of HIV (Clüver *et al*., 2013; Dellar *et a*l., 2015). Women's lack of power in relationships can also make it difficult for them to access and use vaginal rings and other female-controlled prevention products (Doggett *et al.*, 2015).

Practices like virginity testing, dowries and forced marriage which promote patriarchy re-enforce power dynamics and gender inequity in relationships making it difficult for women to participate equally in sexual relations and adopt safe sex practices such as consistent condom use (Madiba and Langa, 2014). Such power imbalances affect women's SRH by making it difficult for them to access health information and services as well as to take action that improves their health (Conroy *et al.*, 2016).

Other scholars have noted that young South African women have very little power to negotiate use of protective tools against unwanted pregnancy, HIV or other STIs and this has been linked to an interplay of ideologies about sexual practice which prioritise men's needs and disregard what women want (Harrison, 2008).

Although societal attitudes are changing with time, young South African women can seldom make choices about how and when they want to have sex which can increase their vulnerability to HIV infection (Pettifor *et al*., 2012). For instance, some authors discuss the notion of sexual purity as a burden for a woman to uphold whereas it is socially acceptable for men to enter sexual debut at an early age and have multiple concurrent sexual relationships which heighten risk for STI transmission (Green *et al*., 2001; Montgomery *et al*., 2008). A recently published

South African national survey indicated that males aged 15 and older were more likely than women to have multiple sexual partners (Simbayi *et al.*, 2019). The lessons women are taught in sexuality usually focus more on how they ought to satisfy their partners' sexual needs and not necessarily their own which can enable incidents of coercive sex (Clüver *et al*., 2013; Green *et al*., 2001) which manifest as pestering, forced sex, pressure through money and gifts and even flattery (Moore *et al.*, 2007).

Several studies have explored the nuances of intimate relationships to understand the effect on women's confidence to use HIV prevention devices (Green *et al*., 2001; Montgomery *et al*., 2008). Getting approval from a partner to use a prevention method is deemed important in many relationships (Woodsong, 2016), which suggests that realising optimal uptake of female-controlled products may be unachievable in some settings. Much of the discourse around different female-controlled prevention tools like microbicides and PrEP has been on how they could empower women to protect themselves without needing permission from their partners (Martin *et al*., 2012; Woodsong, 2016). The vaginal microbicide ring was designed to address such challenges and to fit better into the lives of women as it is relatively long-acting, discreet and it reportedly interferes less with sexual intercourse, unlike the gel or female condom (Baeten *et al*., 2016; van der Straten *et al*., 2012). However even with the potential for clandestine use, some women still feel compelled to inform their partners of ring use mainly due to expectations to refrain from keeping secrets from their partners and fear of the negative consequences of them finding out about clandestine use (Montgomery *et al*., 2008; van der Straten *et al*., 2012). Research conducted among Ugandan women and their partners showed that there was generally a willingness to incorporate the device into their lives if it didn't interfere with sex and was not used secretly (Green *et al*., 2001).

Women sometimes risk being accused of having other sexual partners or experiencing intimate partner violence if they raise the subject of HIV prevention in relationships (Woodsong, 2016). This attitude is sometimes reinforced by the idea that women are believed to be carriers of disease who bring HIV into the relationship because of their own risky sexual behaviour (Clüver *et al*., 2013).

Power dynamics play out differently in intimate relationships. Women who are married or in long-term relationships tend to have more difficulty initiating use of protective devices compared to women in casual and so-called uncommitted relationships (Woodsong, 2016). Likewise, others have found that the need to disclose use of microbicides depends of the type of relationship they're in. Women in committed relationships valued their partners input in decision-making about microbicide use whereas those in casual relationships found it acceptable for their partners not to be involved (Doggett *et al.*, 2015). Relationship type also affects how women perceive their risk of HIV infection. Some women are reported to view marriage as a place of safety from HIV despite suspicions that their husbands have other sexual partners (Woodsong, 2016).

Some literature recognises that young women have distinct experiences with intimate relationships and sexuality (Doggett *et al.*, 2015; Harrison *et al.*, 2015). Younger women tend to be in gender unequal relationships characterised by large age-gaps with their male partners (age difference of 5 years and above) which puts them at increased risk of contracting HIV (Dellar *et al*., 2015; Harrison *et al.*, 2015; Simbayi *et al.*, 2019). The power imbalance renders them less capable of negotiating protected sex and makes them more likely to experience intimate partner violence (Dellar *et al*., 2015; Harrison *et al.*, 2015; Simbayi *et al.*, 2019).

Another perspective presented in some acceptability studies about how use of female-controlled methods manifests within the context of intimate relationships, is that partners are either actively supportive or indifferent (Corneli *et al*., 2015; van der Straten *et al*., 2012). In some instances, women's willingness to use female controlled tools improved as the relationship progressed partly due to women gaining more confidence to educate and persuade their partners to use it (Montgomery *et al*., 2008).

1.4.2.3. Factors within the broader social context

Van der Straten and colleagues (2014) explored the socio-cultural and contextual factors that influenced participants' behaviour in relation to use of the vaginal microbicide gel and PrEP. Some of the factors identified were community beliefs, workplace and the clinic (at the organisational level) as well as family and friends – in the interpersonal sphere (van der Straten *et al*., 2014). One of the overarching conclusions from the ethnographic interviews they conducted with women to understand their challenges with adherence was that biomedical devices like the vaginal ring ought to fit well into users' lives and complement their social networks (van der Straten *et al*., 2014). In addition, experiences of domestic abuse and sexual assault are prevalent among young women (Harrison et al. 2015). South Africa has high rates of physical and sexual violence perpetrated by men against women (Kuo *et al.*, 2019). Albeit scant, some literature offers insights into how young women's relationship with their parents shape how they manage their SRH needs (Wamoyi, Wight and Remes, 2015).

Relationships based on economic security or financial stability present additional challenges for SRH as those women are often forced to make a choice between remaining HIV-free and having money, food, clothing for themselves and their families (Dunkle *et al*., 2004; MacPherson *et al.*, 2012; Smith *et al*., 2008). Heightened vulnerability or risk of HIV infection among (young) women and disease progression can be linked to several social determinants such as poverty, education levels, beliefs and socio-cultural norms and practices (Doggett *et al*., 2015). To a large extent, the combined effect of the different issues is what puts women at greater risk. Literature in this area illustrates a variability in levels of adherence across different products which often translates to a uniqueness of facilitators and barriers operating at the individual level and in the social context (Doggett *et al*., 2015).

1.4.2.4. Factors within healthcare facilities

Some studies reveal that women are generally more capable of incorporating the vaginal ring and other female-controlled HIV prevention products into their lives if – among other reasons – they receive adequate support and care from clinic staff including being taught how to use it correctly (Eakle *et al.*, 2017; van der Straten *et al*., 2012). Other authors have observed the influence of the clinical trial environment on how an individual perceives their level of risk and resultant product use and how different it would be under so-called real life circumstances (Corneli *et al*., 2015; Kacanek *et al*., 2012). Corneli and colleagues (2015) observed that participants in the *FEM-PrEP* clinical trial tended to overestimate the protective effect of products under investigation which significantly reduced perceived risk (preventive misconception). This resulted in them relying solely on the intervention and abandoning consistent use of condoms which were the proven method of prevention provided in the study as part of comprehensive risk reduction counselling (Corneli *et al*., 2015). In VOICE, analysis of plasma adherence tests and information collected in adherence interviews revealed that most women over-estimated product use (van der Straten *et al*,. 2014). This is indicative of the inability of women to openly disclose to research staff the difficulties they face in their daily lives with using the investigational drug despite how well the environment may be conditioned to support good trial participation.

In addition AGYW have unique challenges in accessing SRH services such as health practitioners' bad attitudes towards patients, lack of access to transportation and inconvenient clinic operating hours (Brittain *et al.*, 2015). Such barriers stand to compromise the delivery of microbicide products particularly in public healthcare facilities just like they have other SRH services for young women like family planning (Brittain *et al*., 2015; Doggett *et al*. 2015; Harries *et al.*, 2019). Doggett and colleagues (2015) suggest incorporating microbicides like the vaginal ring into youth friendly SRH services in public sector facilities to achieve good product uptake. Such services are said to be appropriate for young people because of how well they are tailored to cater for the unique needs of this target population (Brittain, *et al.*, 2015).

1.5. Research question

How do young women in Soweto, Johannesburg perceive the vaginal microbicide ring as an HIV prevention option and how do young women's social lives enable or impede their control over preventive technology?

1.6. Study aim and objectives

The aim of this study was to explore how the social lives of young women, aged 18-24 living in Soweto in 2017-2018, frame their potential to use the vaginal microbicide ring to prevent HIV.

The specific study objectives were:

1. To analyse young women's experiences communicating about and engaging with sexual and reproductive health issues in the context of their past and current intimate relationships
2. To describe young women's uptake of HIV and pregnancy prevention technologies
3. To unpack the state of young women's homes and communities as contextual factors for potential use of the vaginal ring
4. To describe young women's impressions of the vaginal microbicide ring as a female-controlled HIV prevention product

CHAPTER TWO: RESEARCH METHODOLOGY

Introduction

The chapter outlines and provides justification for the research methodology used for this research project. It will describe the study design, study population, and data gathering and analysis methods employed to address the research question.

2.1. Methodological approach

I adopted qualitative research methods for this study to explore young women's perceptions of the vaginal microbicide ring and the complexities of their intimate relationships and broader social contexts. The study followed a narrative approach which allowed me to do an in-depth inquiry of each participant's life using their personal stories which were documented using direct quotes and paraphrased statements to echo their voices (Creswell, 2009). With this strategy I could immerse myself in each woman's life and see the world from her perspective (Creswell, 2009). I was also able describe and gather insights about behaviour patterns like negotiating condom use, disclosing contraceptive use and keeping sexual health products at home, and how these shape their perceptions of the vaginal microbicide ring.

2.2. Study site

The study was carried out in two sections of Soweto, the largest South African township. Townships are peri-urban residential areas that were created under the apartheid government's segregation laws and designated for occupation by people racially classified as Africans, Coloureds and Indians (Lester *et al.*, 2009). Soweto belongs to the Greater Johannesburg area which is the most populous city in the country with 4.4 million residents according to recent census data (Statistics South Africa, 2016). Johannesburg has the highest number of HIV positive adults in the

country (Dwyer-lindgren *et al.*, 2017) - almost half a million of people between the ages of 15 and 49 are living with HIV (Dwyer-lindgren *et al.*, 2017). Furthermore, Johannesburg is in Gauteng Province which had the highest number of new infections in the country in 2016 (SANAC, 2016). Close to 74 000 people in the province were infected with HIV translating to about 27 percent of new infections nationally (SANAC, 2016). In the same year, HIV incidence rate among young women (aged 15-24) living in the province was the third highest in the country at 2.26 and about three times the incidence among men in the same age group (0.79) (SANAC, 2016).

2.3. Study population and sampling

The study population comprised young women aged 18-24 who lived in the two selected locations between 2017 and 2018. There was a focus on this age group because they represented the population group at greatest risk of contracting HIV in South Africa (Simbayi *et al.*, 2019) and those least likely to adhere to microbicides products (Doggett *et al.*, 2015). They also represent the age group of women who are least likely to adhere to and be protected by microbicides, as demonstrated by some studies (Nel *et al.*, 2016; Baeten *et al.*, 2016). In addition, the average age of women involved in most microbicide clinical and acceptability studies is 25 years and above (Nel *et al.*, 2016; Palanee-Phillips *et al.*, 2015; van Der Straten *et al.*, 2012). The results from this research project could potentially inform future strategies to create demand for and increase uptake of the vaginal ring and other similar products by this interest group.

I used two sampling strategies to recruit participants, namely purposive and snowballing sampling. Purposive sampling was effective in creating an information rich sample of participants' with specific characteristics that would enable me to address the research question, such as relationship types, neighbourhoods and history of giving birth (Palinkas *et al.*, 2016). There was some diversity among participants based on socio-demographic characteristics which was necessary for providing as much insight as possible about the phenomena of interest (Palinkas *et*

al., 2016). I collaborated with two community workers with access to a network of young women through community-based organisations that focused on HIV prevention and community safety issues. They assisted with identifying and doing initial contact with women who met the inclusion criteria and were available and willing to take part in the study. Then, I used the snowball sampling technique by asking some of the purposively recruited respondents to invite other women from their neighbourhoods who were suitable for the study. I did an additional screening of each woman before her interview to ensure she indeed met the inclusion criteria. Out of the 19 women recruited for the study, 16 met the requirements for participation.

The inclusion criteria followed for this study:

- 18-24 years old at time of recruitment
- Must live in one of the two Soweto locations
- Must be sexually active (defined as having had oral or vaginal sex at least once)
- Never participated in a vaginal microbicide study

2.4. Data collection

I conducted 16 in-depth interviews (IDI), then I facilitated one focus group discussion (FGD) with six of the participants. The IDIs and FGD were conducted using a combination of languages namely, English, isiZulu, and Sesotho for participants who had difficulty understanding some English terms. At the beginning of each discussion, I asked respondents to talk about themselves to build a rapport with me and other respondents (in the case of the FGD) which allowed them to feel more comfortable to answer questions more openly and truthfully. In each IDI, after an initial open discussion based on the interview guide, I played a video of demonstrating how to use the vaginal microbicide ring and took time to explain terms like “reduced HIV infection risk” to ensure participants understood how the ring prevented HIV. I collected demographic information before each IDI using a short socio-demographic questionnaire which includes the participants’ age, their relationship status, socio-economic status, occupation and contraceptive use. This

data contributed to my framing of respondents' answers and illustrated the extent of variation in my sample. After each interview, I used journaling techniques to document details I observed such as respondents' physical appearance, body language, facial expressions and demeanour, as well as how the delivered responses for instance, whether they conversed with hesitancy, nervousness or enthusiasm. Recording such thoughts and impressions during the interviews, enhanced analysis of the transcripts and identified potential biases (Chenail, 2011).

2.4.1. In-depth interviews

The IDIs solicited in-depth information about the respondents' personal experiences of their social contexts and perceptions of the vaginal microbicide ring. I conducted IDIs that were between 30 and 60 minutes long in private rooms made available by the women who assisted me with recruitment or the homes of participants who felt comfortable having these intimate discussions where they lived. This interview technique was used, instead of an FGD, for questions related to intimate experiences because it enables one to delve deeper into personal topics and offers respondents' confidentiality and privacy to discuss sensitive issues (DeJonckheere and Vaughn, 2019). I remained neutral during interviews as this gave respondents the freedom to disclose what they were comfortable telling me (Pezalla, Pettigrew and Miller-Day, 2015). These were important considerations given the sensitive nature of the content, which some young women would have battled to talk about openly i.e. intimate relationships and sexual experiences. IDIs were appropriate as they also afforded participants the freedom to give rich, diverse and nuanced accounts of their personal experiences without influence from other respondents as would have been the case with FGDs (Stein *et al*., 2005). Participants were also given the option to have a close female friend sit quietly in in the room during their interviews for emotional support. This strategy was effective for making participants more comfortable discussing difficult topics. While I made provision in my protocol to invite some participants for follow-up IDIs, analysis of my data indicated that this step would only be necessary for doing the FGD.

The IDIs were facilitated using semi-structured interview guides developed in English and pre-tested with a young woman who fulfilled the inclusion criteria. Pre-testing enabled me to refine questions, making sure they were clear enough to elicit quality responses from participants. This enabled me to identify potential challenges like the inability to recall information and make necessary improvements to the guide as well as to enhance my interview techniques (Chenail, 2011). I excluded the responses given during pre-testing from data analysis.

2.4.2. Focus group discussion

While I gave a thorough description of the vaginal ring and showed explaining how it worked, in the IDIs, it occurred to me that most women had difficulty fully imagining the novel device's features and how they could use it. To address this, I conducted one FGD of six women in which I passed around a sample of the vaginal ring to allow each participant a chance to touch it. I recruited the women in the FGD by randomly contacting the respondents from the study sample and inviting them. The FGD comprised of women who were interested and available to participate in the discussion.

The FGD was useful for further unpacking their perceptions of the vaginal microbicide ring against a backdrop of their intimate relationships, family dynamics, their homes and communities. The session was held at a recreational centre in one of the Soweto locations and facilitated using a discussion guide which prompted the young women to reflect on how their use of the vaginal ring would interface with their experiences at home and in their communities. I passed around a sample of the vaginal ring and encouraged participants to touch it, imagine whether or not they would or could use it and think about what factors would hinder or enable them to use it effectively. Participants were asked to be respectful of each other and acknowledge the views and individual experiences of others even if they did not relate or agree with each other. I took notes of how the FGD unfolded, documenting such things as the manner in which respondents contributed to the discussion and engaged with each other.

2.5. Data processing methods and analysis

2.5.1. Data preparation

All the interviews were audio-recorded and I transcribed them verbatim into English. I used direct translation from isiZulu or Sesotho when required. I read each transcript thoroughly to examine participants' responses to all the questions, edited the copy for any errors and identified information gaps which may be filled by conducting follow-up interviews. Reflective memos about each participant were read with the corresponding transcript and prepared for analysis (Chenail, 2011).

2.5.2. Data analysis

I began data analysis during data collection and noted initial impressions of the data in short memos and in doing so, discovered unanticipated findings with regards to issues influencing acceptability of the vaginal ring among participants. This type of inductive and generative analysis identified the need to modify the research process by doing the FGD to collect more data on women's perceptions of the vaginal microbicide ring, for instance. I sought to understand and interpret the meaning of each participants' subjective experiences of each theme as I read each transcript. I used a thematic content analysis approach in which I applied a start-list of themes to the data within and across the different interviews (Martin et al., 2010). This was done by inductively developing and defining broad codes which acted as identifiers for pieces of content in each transcript. I later distilled the broad codes into fine codes through a process of reading and re-reading excerpts and identified codes that were related to each other and illustrated patterns across the data using mind maps. At two time points, I shared a codebook developed on Microsoft Excel with my supervisors to ensure reliability and consistency of the codes.

2.6. Ethical considerations

The final protocol for the research project was approved by the Wits Human Research Ethics Committee with appendices of the relevant documents (M170856). I adhered to principles of ethical research of human participants. Each respondent was reimbursed as compensation for the time spent participating in the study (NHREC, 2012). The standard compensation for human studies in South Africa is 150 ZAR however, due to budgetary implications and concerns about undue monetary pressure to take part in the research, I provided the participants with 50 ZAR in cash.

2.6.1. Informed consent

Prior to the scheduled IDIs, I used an information sheet to explain the vaginal ring and the studies conducted to determine its effectiveness as well as how I would conduct the interviews and compile the report. Each respondent was asked to sign informed consent forms to do the interview and have it audio recorded. By signing the interview consent form, respondents consented to being interviewed and contacted for any follow-up interviews and acknowledged that their involvement in the study did not obligate them to doing so. Each participant was reminded that she could choose to not answer some questions and she could take a break whenever she needed it.

2.6.2. Confidentiality

I created identity numbers for each participant and used them to label the IDI transcript files and identify each woman in the IDI and FGD transcripts, field notes as well as the results section, by the pseudonym she was assigned. To further conceal their identity, I did not disclose the names of the townships each woman lived in.

All original audio files, transcripts and reflective memos were kept on a password protected computer and copies stored on secure external hard drive and online back-up systems. Participants were told that all relevant files would be permanently destroyed on a date that was advised by the ethics committee – two years after publication of the findings or after six years if they are not published.

The FGD required a different approach for maintaining confidentiality. The group setting introduced the risk of some participants sharing the personal stories of others beyond the FGD. The approach I used to avoid this was having all the women agree to keeping the identities of their fellow participants as well as the content of the conversation confidential.

2.6.3. Distress protocol

The research interviews encouraged the respondents to reveal very intimate details about their relationships and other experiences which evoked distressing memories at times. This was the case for participants who experienced traumatic events like the death of loved ones, abandonment by family members and different forms of abuse. When a participant became visibly upset during the discussion, I asked if she wanted to take a break from the interview or stop the interview altogether. For all participants who exhibited signs of distress, I offered a list of onwards services targeted to adolescents and young women (e.g. counselling, legal assistance, see Appendix E). Based on the participant's preferences, I suggested an organisation that was accessible to her. In practice, this occurred twice and was received by the participants in a positive way.

I debriefed regularly with my supervisors, each of whom had experience conducting sensitive qualitative research on similar topics. The distress protocol was a useful tool in managing such situations however, in some instances participants battled to overcome their emotional state which sometimes derailed them and made it hard to keep focussed on the interview questions. While it was tempting for me to spend

time unpacking such information during interviews and data analysis due to its richness, I referred to the guide to keep the discussion on track.

2.7. Researcher reflexivity

In this section, I reflect on my own assumptions and perceptions on the issues explored by the study which may have influenced the research process thus shaping the findings, to some extent. The study methodology I used required me to be aware of and set aside any presuppositions I may have had of the research topic. My interest in this research topic was inspired by my work with organisations that developed and conducted clinical trials to investigate the effectiveness of the vaginal ring and ways to make it more acceptable for use by women who need it the most. My knowledge of the ring's potential as a prevention tool from a biomedical perspective somewhat framed my approach to discussing the device with the young women in my study all of whom knew nothing about it. As a communications professional working on the project, I was involved in crafting messages to inform and educate the public and stakeholders about the device. Therefore, it is possible that I unintentionally presented the device in a positive light when explaining how it works to prevent HIV. I also showed a video of a clinical trial investigator demonstrating how the ring works and emphasising its benefits, in a format used to educate trial participants and encourage adherence for the duration of a clinical study.

As a young woman who could somewhat relate with the participants, I was able to create a safe space that allowed the women to deeply share their experiences including events which negatively impacted on their psychological well-being. While the interview guide was constructed to gather in-depth information from the participants, I was often taken aback by the extent to which most participants opened up to me. At times, the interview sessions enabled a sense of closeness and comfort between some participants and that might have contributed to them revealing things about their experiences that they might have struggled to share with other people. Examples include women sharing the details of traumatic incidents some of which

involved different types of abuse as well as intimate details about what goes on in their relationships.

At times, my research process was steered by my preconceptions about the study topic and the women I engaged with. Some of the biases were informed by discourse in my field of work as well as literature about young women's experiences navigating sexual relationships and use of prevention methods. For instance, I expected to solicit responses which confirmed that most, if not all of the women were victims or that they lacked autonomy pertaining to various aspects of their lives. I anticipated that they would all be absolutely powerless in their intimate relationships and have poor healthcare seeking habits when it comes to accessing family planning and HIV testing services. I was surprised by findings which revealed a majority of the women's savviness and determination with regards to protecting their sexual health and well-being despite the challenges many of them encountered. Such findings challenged my preconceptions and caused me to re-adjust the lens with which I viewed the participants and my interviewing strategy, and to reconsider my method for analysing and presenting the data. Furthermore, I held the notion that all of the women's partners played a negative role in their lives. This was refuted by the healthy or positive attributes most participants conveyed about their relationships.

With each interview, I became more mindful of how I asked questions about the women's partners to ensure I was not leading them to give the responses I expected to hear. Sometimes it was challenging for me to be empathetic towards the women who shared stories about their hardships whilst maintaining a degree of separation from the subject and avoiding offering personal support. Overall, this content was useful for contextualising the women's attitudes about HIV prevention products like the vaginal microbicide ring. Although the women exhibited many similarities with regards to their life experiences, there were also several differences which challenged how I managed each interview. Despite my preconceptions, I could not assume that all the women came from broken homes or that none of them had positive male role models. It was important for me to exercise restraint in how I handled information that could make me judgemental, such as participants willingly having unprotected sex with their unfaithful partners.

CHAPTER THREE: RESULTS

3.1. Participant overview

The women in the study were aged 18 to 24 years old, with most of them falling within the younger end of the age range - an important consideration as existing data shows women who were in their early twenties tended to have different experiences compared to those who were older. They were either students in high school and college or unemployed while they transitioned from school into employment (*Table 1*: Study participants' socio-demographic characteristics

). Most women had positive outlooks for their futures despite not having immediate education or work prospects.

The young women had either lived in Soweto all their lives or they had moved from other provinces as children. They attended local schools and entertained themselves locally by going to parties in local taverns therefore they rarely ventured out of the township. Other, less popular social activities included going to parks and visiting libraries. Most of them valued their friends and intimate partners not only as people to socialise with but also as sources of support.

All of the women came from low-income households as most of their guardians were unemployed or held casual jobs and relied heavily on the social grants received by the younger children and the elderly of the family to get by. Only a minority of the respondents lived in traditional nuclear families headed by their biological father and mother. The women were quite knowledgeable about sexual health matters, aware of the risks they faced and how to protect themselves.

Respondents had neutral perceptions of their neighbourhoods, with a few citing criminal activities among the reasons they were not very fond of where they lived. Some of them had been victims of muggings or found themselves at risk of such crimes usually while walking after nightfall. Others believed their communities to be relatively safe and this was owed to having no drug addicts living there and being

surrounded by men they knew who could protect them. Other types of crimes which they were aware of included murders and home invasions. They also had a good understanding of their communities' healthcare ecosystems and how best to access them.

During interviews, the young women exhibited different personalities and demeanours through their mannerisms and body language. Some came across as confident and open, they sat upright or leaned forward in their chairs, they spoke audibly and were not shy to talk about sensitive topics with some giving vivid details about their sexual experiences. A few of the young women acted more mature than their ages suggested, something that could be attributed to the hardships they had endured. For example, 18-year-old Tumi had the ability to articulate herself with clarity and conviction, sharing as much as she could about her life in a calm and measured fashion. Others were more nervous and less confident, speaking very softly, with their hands clasped together on their laps or cracking their knuckles and hardly making eye contact. Most women had positive things to say when asked to talk about themselves using words like bubbly, talkative, humble, ambitious, kind, gentle and caring. Others also described themselves as social, sensitive, fragile, shy, supportive and short tempered.

This section will present participants' insights using direct quotes shared during in-depth interviews and the focus group discussion. Statements other than those denoted by *FGD* were gleaned from in-depth interviews.

Table 1: Study participants' socio-demographic characteristics

Pseudonym	Age	Relationship status	Highest education level	Sanitary product choice	Employment status	Living arrangements
Reneilwe	18	Currently single	Primary school	Pads	Unemployed	Lives at home with grandmother
Katlego*	18	Monogamous relationship	Primary school	Pads	Student	Lives at home with parents, sister
Cynthia	18	Monogamous relationship	Primary school	Pads	Student	Lives at home with relatives
Tumi	18	Monogamous relationship	Secondary school	Pads	Unemployed	Live at home with parents, siblings, relatives
Thato	18	Monogamous relationship	Primary school	Pads	Unemployed	Lives at home with parents, siblings, relatives
Gugu*	19	Currently single	Secondary school	Pads	Unemployed	Lives at home with parents
Matsebo	19	Monogamous relationship	Primary school	Pads	Learnership	Lives at home with mother, siblings, relatives
Thando	19	Monogamous relationship	Primary school	Pads	Student	Live at home with parents
Sbongile	19	Monogamous relationship	Secondary school	Pads	Student	Lives at home with mother, sister
Thuli*	20	Monogamous relationship	Secondary school	Pads	Unemployed	Lives at home with mother, sister
Ayanda	21	Casual intimate relationships	Secondary school	Pads	Student	Lives at home with mother, grandmother, uncles
Njabulo	21	Married	Secondary school	Pads	Student	Lives with husband, child
Lebo*	21	Monogamous relationship	Primary school	Pads	Student	Lives at home with siblings
Lesego*	22	Currently single	Primary school	Pads	Student	Lives at home with mother, sisters
Sindi*	22	Currently single	Secondary school	Pads	Unemployed	Lives at home with mother, sister, uncle
Mpumi	24	Monogamous relationship	Primary school	Pads	Unemployed	Lives at home with mother, sisters

**Focus group discussion participants*

The social lives of women in relation to contraceptives, condoms and the vaginal ring

The young women's narratives highlighted the extent of their autonomy to use the vaginal ring as a delivery method for the preventive microbicide Dapivirine. Their accounts describe personal hardships, the nature of their intimate relationships as well as the complexities of their living environments and how these may have a bearing on their willingness and capability to incorporate the device into their lives.

3.2. Women's personal hardships

Each woman's tenacity was illustrated by her life experiences and how she responded to or dealt with challenging situations. Narratives included experiences of trauma inflicted by family members such as various forms of abuse and neglect as well as the death of loved of ones. For example, 19-year-old Matsebo was physically and emotionally abused by an aunt from the age of seven when she moved from KwaZulu-Natal to live with her:

> *When we arrived in Johannesburg things just changed. She used to beat me up with a broomstick, with heels... She used to kick me out [of the house] naked, in winter, it used to be very cold. I would sleep outside and wrap myself with a dog's blanket and sleep with the dog. – Matsebo (19), in a monogamous relationship.*

Matsebo also vividly described an incident when she was left alone with her aunt's boyfriend and he tried to sexually assault her. She was rescued by a neighbour who came over to their house and insisted on looking after her until her aunt returned:

> *He actually came to me in the dining room and sat me on his lap and then he brushed me … I was a kid and did not know what he was doing, and then he tried to grab my t-shirt. I didn't like the touching but when I tried to tell him not to do that, he slapped me. So, I kept quiet and let him do what he was doing. He then grabbed me and put me on the sofa and when he was about to take off his trousers, the next-door neighbour came. She knocked [on the door]*

and said, "come and wait for your aunt come back at my house". – Matsebo (19), in a monogamous relationship.

When Lebo and her siblings were orphaned at an early age, they were sent to live with different relatives. The trauma of losing her parents was compounded by being separated from her siblings to live with different relatives. She recalled being ill-treated by her uncle's wife:

When my mother passed away our uncles came to separate us. My uncle was married to a woman who didn't like me. She would show me that she wasn't my mother. So, as I got older, I realised that she was treating me differently compared to her kids. She would beat me and not her kids. I would get punished more than her kids. – Lebo (21), in a monogamous relationship.

Lebo and Matsebo were among the minority of women who had the resilience to withstand their hardships and believed that they would have the confidence to wear the vaginal ring for their own protection and not be dissuaded by their intimate partners. This could have some implications for optimal use of the product.

3.3. Using the vaginal ring in intimate relationships

Respondents shared details about their previous and current intimate relationships, and reflected on communication, intimacy and sexual health, and how those issues might hinder or support their ability to use the vaginal microbicide ring.

3.3.1. Courtship, nature of relationships and ending relationships

The young women were either married, currently single or in serious or casual relationships. Only the married couple lived together permanently. Their relationships were either disclosed to or hidden from their families. In some cases, relationships were only hidden from the woman's family whereas the men's families knew more about their relationships and tended to be accepting or indifferent. Some

respondents' elders suspected that they had boyfriends, as was the case with 21-year-old Ayanda whose grandmother and mother assumed she was in a relationship because she did not always sleep at home.

The respondents expressed happiness, unhappiness or indifference when asked about the state of their relationships. They each had different – and sometimes contradicting – perceptions and opinions of their current or past intimate partners. They described them using negative adjectives like naïve, stupid, short-tempered, immature or they used positive words like loving, disciplined, encouraging, strong, understanding, patient and responsible. Couples spent time together by doing recreational activities like visiting parks and going to the movies. Most time was spent at the male partners' homes which was a private space where they could drink alcohol, watch videos and have sexual intercourse:

> *Most of the time we hang out at his house, watching movies, eating or maybe go out to go to a party. We spend time indoors, go to the mall … we take walks, those are the things we do. – Lebo (21), in a monogamous relationship.*

Ayanda explained that spending time with her partner did not always involve having sex:

> *We liked to bond, lying in bed naked but not have sex… he would just hold me. It's not like we had to have sex every time I visited him, no! We liked to talk and talk and talk and end up dosing off to sleep. Even if I stayed over for the whole night, we wouldn't have sex. I'd wake up in the morning and take a bath. He would make me some food and walk me home. – Ayanda (21), in casual intimate relationships.*

Participants' partners courted them at school, parties, parks and other common areas in the community. Relationships for women like Ayanda began on equal footing in that when her boyfriend made several attempts to court her, she told her suiter they should "*try this thing out and see where it takes us*" because she was unsure about being in a serious relationship at the time. She had the opportunity and

confidence to decide whether she wanted to get into a relationship with him and determine how things would work if she accepted his proposal.

However, 21-year-old Njabulo's first relationship started traumatically compared to Ayanda's. At the age of 15 years, her husband courted her once before his family abducted her for marriage in an old traditional practice called *ukuthwala.* It is practised in some villages of the Eastern Cape province. She ended up "*getting used to him*" and "*feeling like*" she "*loved him*" as time passed in the marriage:

> *He once came to court me you see, and I refused. He told me "I want to make you my bride" ... I thought he was joking. Later I realised he was serious. I didn't know him well…He abducted me when I was 15 years old. I knew nothing about relationships... he was the first person I was in a relationship with…I was young, and I left school... when my family requested that I be allowed to go to school they [his family] refused... I didn't want to get married to him. I wanted to stay in school ... The day I was taken to his home, he locked me in his room … I cried thinking "from now on I am going wear aprons [like married women] until I am old, this means my life is over, I can't continue with school, this means my future stops here". – Njabulo, 21, married.*

None of the women in the study had been in more than three intimate monogamous relationships. Each woman entered into her first relationship and experienced sexual debut as a teenager. The earliest reported age for sexual debut was 14 years. Among the women who were single, reasons for ending their relationships included cheating, abandonment, the men not meeting their standards as ideal partners and even death. Twenty-two-year-old Sindi ended her most recent relationship because her partner lacked ambition and he was too dependent on his mother, despite her effort to *"give him advice"* on how to improve his life:

> *He is not someone who has everything that I want… he doesn't work, he is irresponsible. He lives with his mother in her outside room…so it seems like he is a mommy's boy. He doesn't see himself going anywhere in life. According to him he is fine with where he is in life as long as he is well looked after at home. – Sindi (22), currently single.*

Ayanda's past monogamous relationship ended suddenly when her boyfriend, whom she loved, died tragically while 'train surfing' (riding on the outside of a moving train), something she did not know he was doing before the accident happened. The sudden loss made her afraid to start another committed relationship:

> *We had two and a half years together until he died … I buried him… My heart was broken … I can't believe that he is dead. He was the only one I loved and since then I have never been able to get into a relationship ... that's why I just look for friends that I can just call "my friend where are you?"... We'll go to his place, buy alcohol and food and have fun. Friends with benefits. He benefits and I benefit. – Ayanda (21), in casual intimate relationships.*

Most relationships ended because of unfaithfulness and lack of trust.

3.3.2. Monogamy, unfaithfulness and trust issues

Respondents described their intimate relationships as monogamous or exclusive, serious or casual. Women like Mpumi, Cynthia and Sindi who considered their relationships to be exclusive, qualified that definition as one-sided in that they only assumed their partners were not seeing other people:

> *From my side, it was just him that I was seeing … well a man can tell you are the only one [he is seeing] but then only he knows whether he sees other women when I am not around. So, I wouldn't say that it was just the two of us [in the relationship]. – Sindi (22), single.*

Nineteen-year-old Sbongile said she trusted her partner but had the same attitude as Sindi about his fidelity and believed his friends could put him up to no good:

> *I don't know what he gets up to when he is not with me. He could probably have sex with someone else… I mean friends can influence each other negatively … He likes going to street bashes. Maybe he might meet a girl*

there and sleep with her, I don't know. – Sbongile (19), in a monogamous relationship.

This illustrated a pattern of confirmed and suspected infidelity by some participants' partners. Some women were not keen on confirming their suspicions and among those who confronted their partners about cheating, some like Tumi did not entertain the idea of leaving their relationships. They dealt with the situation by leaning on the notion that men are bound to cheat and the behaviour is deemed socially acceptable:

As you know boys will be boys, I don't know if I should say he loves women or what … but he respects me either way because when he does these things [cheats] he tries by all means to hide it from me, but because I am a curious person I end up finding out. I like to check his phone and his friends tell me "your boyfriend is cheating you must leave him" and then when I investigate the issue, I find out that it's true. I'll be hurt and disappointed, but such is life. – Tumi (18), in a monogamous relationship.

Thando did not know the father of her child was cheating until his father drunkenly blurted out the truth over the wall, from next-door, saying: "*your boyfriend has another child, did he tell you?".*

He was seeing other people … he has two other children outside of our relationship. My boyfriend had told me that "there's a girl who says I've made her pregnant and I only had sex with her once". – Thando (19), in a monogamous relationship.

She broke up with him temporarily and they reconciled when she believed his behaviour was improving: "*He says he is more determined, that he has changed, I don't know, I hope so… I do want to trust him but eish, you know."*

Unlike Thando, Gugu ended her relationship indefinitely because she had caught her boyfriend cheating on multiple occasions and he failed to stop after the many

chances and ultimatums she gave him. She hoped that the breakup would teach him to appreciate her more.

The women's narratives about fidelity were also illustrative of the burdensome role they took on in their relationships to keep their partners faithful. Some felt they had to reassure their partners of their own faithfulness and keep them from cheating. Lebo believed not having sex with her boyfriend every time he wanted to, would drive him into the arms of other women:

> *I won't make it difficult for him, if he wants to sleep with me I go [to his house], the moment you start avoiding your boyfriend saying "no I won't sleep with him" he'll go and sleep with other people … and come back to sleep with you so I am avoiding such. – Lebo (21), in a monogamous relationship.*

From Njabulo's story it emerged that she became more assertive and had an increased sense of agency in her marriage as she experienced different challenges over time. This was illustrated by how she boldly confronted her husband about his extra-marital affairs and separated from him to move into her aunt's house, albeit temporarily:

> *I told him "it's better to let me to go back to school because you don't know what you married me for. You took me when I was young, made me stop going school so you could treat me like a fool and cheat in Joburg"... I left him and went to my aunt's house ... He kept coming to see me. He kept coming to beg me at my aunt's house. – Njabulo (21), married.*

The infidelity caused her to trust him less so when she was visited by a community healthcare worker distributing HIV self-testing kits in her neighbourhood, Njabulo demonstrated her assertiveness again by taking one kit for her husband while he was at work and making sure he used it:

> *Last month there were people handing out HIV testing kits. It was the first time I'd seen them. I took one for him too. I did the test and kept my results. When he got home, I told him we were given these kits... He said "ok". I said "here is yours" oh! I first showed him my results: you see "it says I am ok, here is yours to use". I showed him [how to use it] and said "you will use it when you*

wake up to go to work. Indeed, when he woke up in the morning, I woke up and told him what to do and he did it. – Njabulo (21), married.

Women also took on the responsibility of making sure they had protected sex and tested regularly for HIV. Successfully convincing their partners to take HIV tests was a common demonstration of most women's ability to have some control in their relationships. Women like Ayanda and Gugu usually went with their partners to test for HIV at healthcare centres. While most of the participants tested regularly because they believed it was the socially acceptable thing to do, others like Sbongile tested as a strategy to either discourage cheating or for decision-making about sexual debut and ceasing condom use.

3.3.3. HIV prevention in intimate relationships

Most women used HIV testing not only as a prevention method but also as a strategy to monitor and control their partners' behaviour and encourage condom use:

Sometimes I will ask him "what would you do if I was HIV positive and I didn't tell you, and since we sometimes don't use a condom, how would you feel? How would you react?" He'd say, "I would hate you". Then I'd say, "Ok let's go and test". We went to test earlier this year … and the results were negative. I told him "ok since this is what the results say, it doesn't mean you must be reckless. Just because you are negative today don't tell yourself that you're ok and not use a condom, you have to use it and the two of us have to use it for safety". Because I don't know about what he does and with whom – Tumi (18), in a monogamous relationship.

Other women used HIV testing to establish rules of engagement for when and how they had sex. Sbongile told her boyfriend to get tested for HIV before they could take their relationship to the next level and have sex for the first time: *Before I slept with him… there are gazebos in the neighbourhood … we went to check [test] if he was ok … not sick in terms of HIV and so on. Yes, we found out he was ok [HIV negative]. Then I decided that I now trust him. – Sbongile (19), in a monogamous relationship.*

Lesego told her boyfriend to test for HIV before they could stop using condoms:

> *I told him "ok if you don't want us to use a condom we must get tested first to see if you don't have HIV and STIs". He said I don't trust him. I said, "I trust you, but I am asking that we do it that way". He said, "it's fine if you don't trust me, let's go and test so you can see that I am clean". We went to test, and I saw that indeed he was clean. – Lesego (22), currently single.*

The women were not always successful in persuading their partners to test for HIV. Not only did 24-year-old Mpumi's unfaithful boyfriend refuse to test for HIV when she suggested it, he also used her HIV negative status as a proxy for his own. She later found out he infected her with HIV.

> *I even accompanied him to the clinic …we went to the clinic. When we got to the clinic I said "let's test" it was our first year [of dating]. He didn't want to test, I tested, I was negative. He said, "you see that means I am also negative". – Mpumi (24), in a monogamous relationship.*

Participants reported varied attitudes and experiences with the use of male condoms in their relationships. Almost all participants reported having used injectable contraceptives since sexual debut. Sindi and Sbongile did not take contraceptives and believed condom use was non-negotiable for them because they could not completely trust their partners. Sindi felt she could not rely on her ex-boyfriend to voluntarily use condoms. She took on the responsibility of making sure they had protected sex because she believed "*most guys don't want to use protection*". On this issue, she was adamant that they had do things her way.

Ayanda always insisted on using condoms with her "*friends with benefits*" saying she would "*leave immediately*" if they did not have condoms because she had no idea "*who else they sleep with*" and she did not "*trust them at all*".

> *I tell him … "I don't trust you … I wouldn't just have sex with you without a condom, I am not your girlfriend and what if your girlfriend is sick, I would*

never know so let's see each other some other time". I will tell him "next time, make sure you always have a condom because I don't have sex without it". – Ayanda (21), in casual intimate relationships.

She also avoided having unprotected sex by keeping condoms in her purse when she went out to parties:

I never know whether I will bump into a friend [with benefits] so I make sure that I at least keep two or three of my own [condoms] in my side bag with my lipstick and stuff… knowing that if I bump into a friend, obviously he won't have condoms at a party you see. When he says he has run out of condoms, I give him one and we have sex. – Ayanda (21), in casual intimate relationships.

Trust was fundamental in helping Ayanda decide whether she and her late boyfriend should stop having protected sex. They stopped using condoms after testing negative for HIV a few months into their relationship and because they had begun to trust each other:

We ended up not using a condom, sleeping with each other just like that … skin… because he was negative, and I was negative there's no way he could infect me as my man. I trusted him. – Ayanda (21), in casual intimate relationships.

There were others who used condoms only at the beginning of their relationships and stopped as it matured and had established trust:

Hai a condom is cumbersome… we used a condom a long time ago when we were still learning how things are done. But now we use it once in a while... In the beginning we used it because we didn't know anything … we knew that we had to use condoms most of the time, but now we are grown, he knows what's right and what's wrong. – Lebo (21), in a monogamous relationship.

Some like Thato reported either never having used a condom before or having attempted to use a condom once or twice but discontinuing use because their partners said it was uncomfortable:

> *We both don't like condoms, we don't have a reason. Well, I don't have a reason, he says he can't feel me [with a condom]... I've never used a condom ever since I became sexually active, so I don't know anything about it … He is the one who made me dislike it, so I don't even think to ask him to keep one. – Thato (18), in a monogamous relationship.*

In some cases, couples reached a mutual agreement to stop using condoms. Gugu and Tumi admitted they also disliked condoms and agreed to stop using them:

> *We stopped using it [condom] after a month…Yes I don't like them, that is why we always go and test…please don't judge me ok…I felt like it was taking too long [delaying pleasure]…Ya then I said "take it off and then try to withdraw, make sure that you don't make a mistake"… I thought "he is taking it off and I know the consequences at the end of the day but I can't help it" – Tumi (18), in a monogamous relationship.*

> *We tried, it was ok…No it wasn't normal I could feel there was something there… I could feel there's something fiddling inside my vagina so it wasn't comfortable … we talked about it…He said the same thing, condom is not nice, he didn't enjoy it…To be honest I don't like it (condom) but then it's something we ought to use…It doesn't feel nice at all…It's not comfortable, I couldn't feel my partner with a condom the same way I felt him skin to skin… we didn't connect with a condom like we connected skin to skin, using a condom is like eating a sweet inside a plastic. – Gugu (19), currently single.*

However, Gugu's attitude about condoms changed when she caught her boyfriend cheating on multiple occasions. She used condoms to incentivise him to be faithful and insisted on using them because she feared they would both get sick and felt she could not "*risk that because of love*". She admitted, however, that negotiating with him was often difficult. He got upset whenever she suggested they use condoms

"*saying his penis was gonna have a rash*" and constantly asked why she wanted to have protected sex when "*she was only sleeping with him*". Nevertheless, Gugu asserted herself and gave him an ultimatum to either use condoms or she would stop having sex with him altogether:

> *When he got upset I would tell him "you did this to yourself because you are not honest and not loyal to me so there is no need for you to get angry it's either we use a condom or leave it [not have sex]" … at the end he would use the condom. – Gugu (19), currently single.*

Men like Njabulo's husband blatantly refused to wear condoms during sexual intercourse despite his infidelity. She recalled one occasion when she tried to discuss it with him:

> *I said "let's use condoms" … He said, "use a condom for what reason?" I said: "just to protect ourselves" he said "haibo! Am I sick now?" I said, "I don't trust you anymore, since you started cheating on me I don't trust you, even if I am not finding any evidence". He said, "you're crazy I will not use a condom with you". That's what he would say... That doesn't make me feel good – Njabulo (21), married.*

3.3.4. Getting partner buy-in to use HIV prevention products

Among the women who demonstrated some agency to use the ring without their partners consent, many were also realistic about how the device could create tension in their relationships despite its potential for clandestine use. For example, they worried about their partners discovering the vaginal ring during sexual intercourse and believed that not disclosing to their partners would cause them to suspect that they were cheating, ending their relationships as a result:

> *And what about those boys who like fingering? What if he pulls it out? … That's why you would have to tell him, because if he discovers it, he'll think of other things [be suspicious]. – Katlego (18), in a monogamous relationship (FGD).*

The ring presented them an opportunity for better control over their sexual health. Lesego and Gugu's negative relationship experiences motivated them to take personal responsibility for their own protection. They did not care about what their intimate partners would think about them using the ring:

> *You also cannot allow for a boy to mess you around, you must also state your opinions … instead of nursing his conditions [needs], what about yours? You must think of yourself at times." Gugu (19), currently single* (FGD).

> *I would do it [use the vaginal ring], I don't care what he says…if I want to protect myself… whatever he thinks is not my problem, he's not my sibling and even if I needed a blood donor he would probably not donate. – Lesego (22), currently single* (FGD).

Lebo described how the ring could support her in taking away her partner's power in decision-making for use of prevention products in the relationship:

> *Next thing you're sick because he did not condomize [use a condom], so with this thing [vaginal ring] your partner doesn't know anything since you're the one who is preventing and protecting yourself. So people will use it because they don't have to tell the entire world they are using it, even your partner doesn't even have to know so "just put this thing in and shut your mouth…" – Lebo (21), in a monogamous relationship (FGD).*

Katlego was concerned that her use of the vaginal ring would anger her partner and make him think that she was unfaithful, even if she disclosed and explained her intention to use it beforehand:

> *He'll get angry and say you don't trust him: "if you're wearing this thing [vaginal ring] it means you are sleeping around...or you don't trust me. Why are you wearing this thing [vaginal ring]?" – Katlego (18), in a monogamous relationship (FGD).*

Women who had experienced challenges negotiating consistent condom use, and believed they were at risk of HIV infection, believed the discreet nature of ring might make it easier for them to protect themselves from HIV. The ability to wear the ring discreetly for 28-days at a time gave them one less sex-related issue to negotiate with or consult their partners about:

> *That's why I say when you're using this thing [vaginal ring] you don't have to ask your partner, nobody will know but you…With a condom you might be afraid to tell him to put it on since you love him and don't want him thinking you don't trust him. – Lebo (21), in a monogamous relationship (FGD).*

Thando believed the discreet nature of the ring was especially beneficial for women in age-disparate relationships with men who refused to use condoms:

> *Ya I think it's best …now that there are sugar daddies and blessers. You find a blesser, then he wants to sleep with you, and he says he doesn't use a condom. You'll be safe because you've inserted this thing [vaginal ring] you see, and he doesn't know. And you prevent HIV in that way. – Thando (19), in a monogamous relationship.*

One concern was that male partners might think that the women were using the ring because of a belief that they were HIV-positive. Several participants imagined that if they introduced the ring, their partners would think "*you don't trust me, you think I have HIV*." In a sense, women feared the ring was a sort of accusation, causing the man to be defensive: *It depends what type of person you have. Some men would take offense and ask "why?! Who said I am sick?!" – Lebo (21), in a monogamous relationship (FGD).*

This attitude among men towards HIV may stem from the fact that they believe women to be vessels of disease and therefore carriers of HIV, as demonstrated by Mpumi's story:

> *He got an STI and said I infected him… We went to the clinic, I even accompanied him to the clinic. When we got to the clinic I said, "let's test" it*

was our first year [of dating]. He didn't want to test, I tested, I was negative… I told myself that maybe I was unclean and so on because when I was researching, I found out that sometimes illness is caused by dirt inside a girl's body which makes the boy sick and stuff. – Mpumi (24), in a monogamous relationship.

Some women believed it was beneficial to be transparent with their partners about use of the vaginal ring. They believed the tactics which worked in their negotiations for condom and contraceptive use would work in getting their partners' permission and support to use the vaginal ring. Some imagined the discussions as opportunities to educate their partners about the importance of the ring and how it works.

Although Ayanda did not feel she needed permission from her partner, she thought it was important to be open to get his support by discussing it with him:

As long as I would have explained "here's this thing [vaginal ring], I got it from the clinic, they say it can prevent HIV, I am not saying that you could give me HIV but we must prevent it… we never know, you don't just it get from sex" then I would insert it. – Ayanda (21), in casual intimate relationships.

3.3.5. Partner communication as a catalyst for HIV prevention use

The women who had good communication with their partners about sex were also skilful negotiators for use of prevention products and potential ring use. Conversations with partners about sex were usually about sex acts i.e. sexual performance, satisfaction, comfort or to initiate sex. Tumi described a healthy, open line of communication with her boyfriend:

He will tell me "ok last time we had sex maybe I felt you more than the other time" … or "why do I feel like you didn't enjoy it, I noticed it in your mood" and stuff… he likes to ask me how it [sex] was and then we carry on with other questions. Like I ask him "you like sex but why was it that you'd had enough after that one round?". He'll tell me "I was feeling this and that" or "my penis was sore" you see things like that. – Tumi (18), in a monogamous relationship.

Lebo and her boyfriend were not always comfortable talking about sex in person so they would phone or text each other about it instead:

> *We do talk about it, maybe we talk about it on the phone but not in person you see, like maybe I am at home and we are texting: "I miss you, send photos" and that's it, but when we're together we don't talk about it. – Lebo (21), in a monogamous relationship.*

Ayanda and her intimate partner talked about sex positively in that it was not just about his enjoyment, but he also asked questions to make sure she was comfortable when they had sex:

> *He would tell me "yo today I felt you better than other days … is it not sore when you pee?" …things like that and even when we walked [home] after having sex: "are you ok?" "ya I am ok" "did I not hurt you?" "no, you didn't hurt me" "ok cool, today you gave me your all [satisfied me]" …. Things like that. We talked about it like that. – Ayanda (21), in casual intimate relationships.*

Other women reported that sometimes these types of conversations with their partners ended in arguments or disagreements. Katlego described occasions when her boyfriend got upset when she told him she did not enjoy a sexual encounter. They had healthier conversations about the need to prevent pregnancy so they could both achieve their life goals.

Some couples talked more about sexual health issues and use of protection. Lesego shared about a discussion she and her partner had about use of protection after they had sex for the first time:

> *He asked how I was feeling, if I was nervous, if I was ok. I told him I was ok, and I asked, "what about you?" he said, "I am also ok" He asked, "are you preventing?" And I said, "yes, I am preventing" …he said, "Ok it's good that you're preventing". – Lesego (22), currently single.*

Good communication in relationships seemed to be a good catalyst for women to inform their partners about the vaginal ring. Lebo said she would sit her partner down and "*educate him about it properly*", and she was one of the women who talked about HIV and pregnancy risk with her partner. She had also successfully persuaded him to accept her use of contraceptives because she knew "*how to handle him*".

Gugu, who said she and her boyfriend talked "*about it [sex] a lot*" explained why she believed open and honest communication was effective for getting his buy-in for the vaginal ring:

> *That's why in relationships there's something called communication, you must discuss it with him, in a relationship you talk to them about everything, the reasons why you must use protection… If he loves you, you'll tell him that "if you love me, you'll let me use protection" – Gugu (19), currently single (FGD).*

This was also true for Ayanda who had the confidence to tell her casual intimate partners what she wanted and could successfully negotiate for condom use:

> *I tell him "you don't have a condom, let's just leave it bro, I don't trust you to speak the truth I wouldn't just have sex with you without a condom, I am not your girlfriend and what if your girlfriend is sick, I would never know so let's see each other some other time". – Ayanda (21), in casual intimate relationships.*

3.3.6. Navigating power and control in relationships

Most of the women appreciated their relationships for the companionship and support they received. However, in some relationships, men displayed overt and covert tendencies of control over their partners' lives. A few of the women were in age disparate relationships with partners older than them by five, six, nine and 11 years. The power dynamics manifested through the financial, material and emotional support they were provided. Njabulo's husband denied her the opportunity to work and Thato reported that her unemployed boyfriend would "hustle" to buy her things

that her mother could not provide like shoes. A gesture Thato believed made him a "good boyfriend".

The women's partners also exercised dominance through sex. The power dynamic in Njabulo's relationship was not only defined by her non-consensual marriage to a man who was 11 years older than her but also through coerced sex at sexual debut and on several other occasions during her six year-long marriage:

> *It was painful because he was breaking my virginity. Well seeing as he abducted me... I hadn't slept with a boy before, so I was scared. He grabbed me forcibly... He did it by force, it was painful...For example, like if on that day I don't feel like having sex, he will sleep with me by force… I don't feel ok with it, it is wrong. – Njabulo (21), married.*

Cynthia's first sexual experience was similar in that her ex-boyfriend pressured her not only to have sex before she was ready to, but he also insisted on them not using a condom. When the act was over, she was sad, believed she "*had done something wrong*" and felt like "*someone who just gets used*". She was hurt by her partner dismissing her feelings and telling her they "*should just carry on*" having sex when she told him she felt that what had happened was a mistake:

> *I feel like he put me under pressure…He just told me "it's been a long time since we started dating so it's better if we do it because it's almost a year, we are now permanent anyway". Like he begged and begged, and I said ok. – Cynthia (18), in a monogamous relationship.*

Thato was a victim of non-consensual condom removal – popularly known as stealthing – on the only occasion she successfully convinced her boyfriend to try using a condom:

> *We once tried [using a condom] and he took it off… I just saw that he didn't have it on, I don't know when he took it off, but I could tell that he put it on and he took it off… I thought he was still wearing the condom…he didn't even tell me… Yo! I was heartbroken. I was scared and asked myself why he did such*

a thing. [I asked myself] What if he is now sick and he did such a thing? … He said he knew that if he asked to take it off I wouldn't have allowed him to… He said he took it off because he knew that he wasn't going to feel me, that's the reason he gave me. – Thato (18), in a monogamous relationship.

Albeit subtle, initiating sex was another thing that kept men in control in relationships. When asked about who initiated sex, women like Sbongile said "*it just happens*". Several women admitted they had never initiated sex and shied away from doing so because they believed that it was the man's role. This not only highlighted the notion that the men wanted to have sex on their own terms but also the women's passive participation during sex. They surrendered their own power to their partners because they worried about how they would be perceived if they expressed their desire to have sex. For some, these attitudes may have been shaped by how they were socialised about sex in comparison to boys.

For instance, Gugu said she could never say "*dude let's have sex today*" because she did not "*have the audacity*" to initiate sex and doing so would "*drop*" her "*dignity*". Thando believed a girl initiating sex meant she did not respect herself and Tumi felt that her boyfriend would lose respect for her if she initiated sexual encounters:

Hai no! I feel like it's just awkward when I tell him "let's have sex" I am unable to. I can't even make the first move. I can't just go to him and show him that I want him. Isn't it he now knows me as his person, so he is the one who … he knows that at this point of time I want him… eish it's not wrong but for me [to initiate] it's weird, it's awkward to just throw myself at him… I think he would say "hai this girl likes sex yo". – Tumi (18), in a monogamous relationship.

In contrast, other women like Ayanda were comfortable with initiating sex. Her experiences in both her monogamous and casual relationships demonstrated her ability to stay in control. She had the confidence to contact her intimate partners when she wanted to see them and to initiate sex instead of always waiting for them to call her: *I'll think "let me phone this one" …"dude how are you?... where are you?*

Look today I will come and sleep over... ok I am coming over". Then I will go there and return home [later]. – Ayanda (21), in casual intimate relationships.

Interestingly, some women like Thato and Ayanda who had initiated sex gave accounts of their partners' sometimes rejecting their advances, usually because they were not in the mood. This is another example of men being in control of how sex was had.

> *It would depend on the mood he was in…Because I would call him "Yo baby, I want to have sex today" [he'd say] "come over" then I'd know we're going to have sex. Sometimes he'd give me lots of excuses [like] "today I am not ok" [I'd say] "ah ok cool, why what's happening?" [he'd say] "I got into a fight with my father so I am not in the mood" [I'd say] "ok cool I will come over tomorrow then" … and that's how it would end. – Ayanda (21), in casual intimate relationships.*

Intimate partners generally deferred responsibility for prevention to the women and often regulated their use of contraceptives to demonstrate control. Partners either supported, disapproved, disliked contraceptives or they were indifferent. Several contraceptive users reported their partners' vested interest in their consistent use of contraceptives. Thato and Lebo's boyfriends showed conditional support for their contraceptive use in that they disapproved of them because they worried it would make them unable to conceive children in the long term:

> *He didn't know that I was preventing…until I told him "so I get injections" and he wasn't happy about that asking: "why are you getting injections, why are you doing that? it is harmful, don't you know that prevention is harmful?" … I said, "so that I can protect myself, prevention is not just about falling pregnant but also if we get raped"… we are protecting ourselves from such things you see" … he wasn't happy that I was preventing… they say prevention is something that blocks your womb so you stay like this [infertile] permanently. – Lebo (21), in a monogamous relationship.*

Lesego and Njabulo's partners' negative attitude towards contraceptives was due to them wanting to have babies. Lesego stopped using injections to have a baby she was not ready for because she wanted to make her boyfriend happy.

Njabulo's husband wanted to have a second child against her wishes. She was reluctant to conceive because he battled to support them financially. He only worked casual jobs and spent the little income he got recklessly. When friends advised her to "*go and get the injection, don't show him that you are injecting*" she did just that. Njabulo was secretly using injectable contraceptives and hiding her injection schedule card from her husband because he would be "*angry if he found it*". She would tell him she was sick or taking their son for his routine medical check-ups when he got suspicious about her frequent clinic visits: *I am still getting the injection; he doesn't know that I am. I hide my card. My child is still young, and we don't work so if we have another child, how will it survive? – Njabulo (21), married.*

At times, intimate partners supported use of contraceptives because they genuinely cared for their girlfriends. Gugu's boyfriend encouraged her to keep using the injection and reminded her of her scheduled clinic visits because he did not want her to get pregnant before she finished school.

> *He was the one reminding me to go to the clinic… he wanted me to finish school first, because he said to me I must go and prevent until I finish school then after school maybe we take it from there – Gugu (19), currently single.*

Tumi's partner was among those who supported contraceptive use because it was a trade-off for condoms:

> *My boyfriend suggested that I get the injection because he also doesn't like condoms, like me. I know that's bad but we don't like it you see. So, I told myself "let me go and prevent because I am also scared to fall pregnant … who would support my child?" – Tumi (18), in a monogamous relationship.*

A similar attitude was articulated regarding men potentially accepting the ring. Lebo said although her boyfriend would object to her using the ring initially, he "*would be very happy about it because he doesn't like condoms*".

3.4. Home life constraints to HIV prevention

The young women shared their experiences living at home describing the family dynamics and structural features of their homes which could create obstacles or be supportive for them comfortably adopting the vaginal microbicide ring. The women's homes ranged in size with two to eight rooms and most of them were set up as compounds with additional rooms or shacks built for family members or paying tenants.

All but one of the participants lived with guardians and siblings or cousins. Their families were set up either as nuclear families with two biological parents as the only guardians or large extended families with relatives like aunts, uncles and grandmothers as well as blended families with some homes accommodating as many as 20 members. Quite a few of participants' households were headed by single or widowed maternal figures such as mothers, aunts or grandmothers who also took on much of the financial burden. Participants gave varying descriptions of the atmospheres in their homes. Homes like Njabulo's lacked decent security which she believed put her three-year-old son's life at risk: *The place we live in is not ok because it doesn't have a gate for my son, he sometimes walks out onto the street without me seeing him. One day a woman brought him to me, she saw him (on the street) … So, it is not safe for my child. – Njabulo (21), married.*

3.4.1. Instability in the home

Lebo who was orphaned as a young child, shared that she experienced "*lack of peace*" at home. She and her siblings were regularly harassed by their uncle who put them through a legal battle for ownership of their deceased grandmother's home.

They'd been forced to move out of home and rent a house they could not afford. The situation was so unbearable that the grade 12 learner battled to focus on her studies:

> *We are harassed by my uncle … we don't even live at home, he is fighting for the house. My uncle wants to move into the house, and he wants us to move out … so we left, he takes us to court, we fight about such things. – Lebo (21), in a monogamous relationship.*

For several young women, their home situations were precarious – with family members threatening to kick them out of the household if they behaved counter to the family's wishes. For example, Ayanda lived with her mother and grandmother and was constantly reminded that she was not in her father's family home and threatened that she could be kicked out at any moment:

> *When my grandmother is shouting at me, she'll say "this is not your family home, you must move out and do these things at your family home" … When we fight, she will tell me this is not my home … and she can kick me out whenever she wants to and I will figure out where to live – Ayanda (21), in casual intimate relationships.*

One day, Ayanda realised her grandmother was making real threats when she kicked her out for two days, refusing for her to come back until her friend's mother intervened and negotiated on her behalf for her return.

For others, the relationships within the family were characterised by events of violence or anger which sometimes involved alcohol consumption. For example, Thando and her mother lived anxiously due to her ill-tempered father whom she said often caused commotion. Most of the fights were sparked by Thando's teenage pregnancy. She recalled her father saying hurtful things like "*I no longer have a child*" in one of his outbursts: *She [mother] is scared of my father … My father is an aggressive person, he likes to fight…he doesn't speak with you properly. He likes to fight – Thando (19), in a monogamous relationship.*

She believed that her father's behaviour was toxic and that he was a bully who controlled how her mother engaged her on topics like sex and relationships. She revealed that her mother was sometimes understanding, and she would help her to hide things like contraceptives from her father to shield her from his wrath. For example, when Thando disclosed her pregnancy, her mother suggested that she "*abort the child before he found out*" or else he would kick them both out:

> *With my mother it's better, she can sometimes be understanding … sometimes I think she is scared of my father because when I was pregnant she was very concerned about what my father would say and that I must abort the child before he found out or else he would kick us out. So, I realised that she doesn't care about what other people think, she's afraid of my father. She is like that, she can cover up for me because she is worried about my father finding out. If my father knew I am sexually active, he would cause drama and say, "I won't live with someone who is now grown, she is an adult". – Thando (19), in a monogamous relationship.*

The atmosphere in the women's homes and relationships with their guardians had a bearing on the kind of support they got for issues related sex and relationships. Thando articulated this dilemma by saying:

> *Even when the person you're seeing hurts you, you can't tell your mother because they will say "you are disrespectful, you can now talk about such things, you don't tell your elders about such things" – Thando (19), in a monogamous relationship.*

3.4.2. Supportive and conflictual home environments

Others like Mpumi painted different pictures of their home environments saying they lived harmoniously and supported each other:

> *Living here at home is like it is in any other home. We co-exist well together, we help each other when we are short of some things, like if one feels that they are battling with something we are able to help. And we talk as a family,*

we don't exclude each other, we don't criticize. – Mpumi (24), in a monogamous relationship.

She reflected on when she disclosed her HIV positive status to her family and needed their love and support:

I was able to tell them, I only told them this year because I wasn't ready to open up yet. You know with this thing you must take time to free yourself before you tell your family or someone from outside the family that "I am sick". So, we help each other with everything… but then we have some problems that every family has occasionally. – Mpumi (24), in a monogamous relationship.

A minority of respondents either stayed full-time or occasionally with their intimate partners. For some women, visiting their partner's house for a one night or more at a time, afforded them a sense of solace from their tumultuous home environments where their guardians fought with them or each other.

Thato blamed her domineering stepfather, with whom she didn't get along, for her discomfort at home saying it was no longer "*nice like it used to be*" since he came to live with them. She described some of his behaviour saying he controlled the family and made them "*feel small at home".* Thato said she did not "*have a room anymore*". She would sometimes come home and not have access to her own bedroom because she would "*find that he is sleeping there*", "*he has given himself that room*" she said:

I go there [boyfriend's house] at night. Sometimes I will be at home the whole day, then I'll leave at night because my stepfather sometimes comes home drunk, he fights with my mother, they make a noise so… – Thato (18), in a monogamous relationship.

For Ayanda, sexual encounters with one of her "*friends with benefits*" was an outlet for coping with the negative emotions evoked by regular verbal confrontations with her grandmother:

> *When I fight with my grandmother, I just feel like having rough [passionate] sex, ya, and then I call one of my friends [with benefits].* **–** *Ayanda (21), in casual intimate relationships.*

3.4.3. Privacy at home for use of prevention products

A few of the women's partners tended to have different living arrangements in that they often resided in the rooms or shacks outside the main house affording them a greater level of independence and privacy. Creating a young man's own personal space is drawn from a patrilineal tradition of building new homes for sons, whereas daughters are expected to stay inside the main household until they marry. Couples often had sex at the man's home which put them in positions of control in their relationships. They could tailor conditions for their benefit, creating a so-called home-ground advantage.

Thando's parents denied her occupation of the outside room (backroom) because they felt it would lead to sexual promiscuity – by keeping her inside the main house they had greater control over her body, sexuality and movement:

> *They don't trust me, saying if they let me stay in the room "ah you will have another child" … They think I will let a boy in [into the room] and fall pregnant again. They think I am still too young.* **–** *Thando (19), in a monogamous relationship.*

Most of the women shared their bedrooms with up to six people of varying ages, relation and genders sleeping on one bed and the floor. For example, Tumi slept in a bedroom with her five younger siblings including her 17-year-old brother. She said was uncomfortable as a "*grown*" person having to share an intimate space with "*younger kids*".

These arrangements often deprived them of the privacy they needed for doing basic things like bathing and maintaining their general well-being. The lack of personal space and overcrowded conditions often affected them psychologically and made it hard for them to take care of their sexual health. Cynthia said although her situation at home made her unhappy, she was used to family members being intrusive by *"just walking into the room"* when she was *"taking a bath to look for something".*

For those living with large families, they appreciated the circumstances for the support system they had but on the other hand, they were desperate to temporarily or permanently escape the crammed living conditions. They felt frustrated by the lack of personal space at home. Sbongile who slept in a room with five people including her mother, said she was saddened by her living arrangements however, she felt she did not really have a choice but to accept it: "*it's everyone's home and there's many of us… that's my home and there's nothing I can do".* She had managed to find a coping mechanism: "*I get time alone when I go to the library just by myself, that's where I sit and think."*

Tumi's difficulties coping with her living conditions fuelled her desire to earn an income and become independent in the near future:

> *I don't like a place that is crowded. So, I find it hard to be…you see… to find peace or settle wholeheartedly you understand. So, my wish was to get a job and then get a room because I like my own space. – Tumi (18), in a monogamous relationship.*

For Thato and others, their living conditions made it difficult to keep prevention products. Thato worried that her younger siblings would rip apart or tamper with her condoms or contraceptives and her mother would not reprimand them. It was such circumstances that persuaded someone like Tumi to use injectable contraception:

> *That is why I decided to use the injection because I wouldn't be able to (keep prevention products) … I don't keep condoms on me, the person I have sex*

with keeps them … there is no space, there is just no privacy – Tumi (18), in a monogamous relationship.

Although Sindi slept in her own shack outside the family home, she still didn't have enough privacy to keep her own prevention products. This somewhat illustrates a disregard of young women's personal boundaries regardless of her physically having her own space:

I don't have that much privacy… because she [my mother] comes in anytime. Even now, I left the door unlocked so if she is looking for anything, she just goes in. If she is looking for me, she just barges in without knocking so it's not that comfortable. – Sindi (22), currently single.

For others, keeping contraceptives and condoms at home had less to do with their lack of privacy but more to do with what the use of contraceptives symbolised. They believed keeping condoms or contraceptives would confirm to their parents that they were indeed sexually active. In addition, having condoms or contraceptives in the home or in places where they could easily be discovered meant they were disrespecting their parents. Often, this was despite their guardians demonstrating support for use of prevention:

They know that I am sexually active, but I think they would say that I'm disrespectful for bringing such things at home, and they would tell me that they are aware that I'm an adolescent but I must show them respect – Sbongile (19), in a monogamous relationship.

Responses about being able to keep the vaginal ring at home were mixed and not only reflected their experiences trying to use prevention while living at home but also their guardians' attitudes towards sex:

My mother is a strict person, if she discovers it she'll want to know what it does, she'll have that idea that I sleep around, it won't be as innocent as me having one partner and wanting to protect myself. She'll take it to another level [blow it out of proportion]. – Sindi (22), currently single.

3.4.4. Conversations at home about relationships, sex and prevention

Some women also acknowledged that being able to use the vaginal ring discreetly would spare them the burden of disclosing use to their families. However, some participants felt no need to keep the vaginal ring and other prevention products clandestinely at home. This was mainly was due to the open relationships they had with the people they lived with and how they supported uninterrupted use of prevention products.

Some respondents like Matsebo reported being encouraged to start using prevention methods immediately after they disclosed sexual debut or when their guardians suspected they were sexually active and initiated discussions about sex:

> *I only broke my virginity this year. I told my mom, I thought she was going to shout at me, or tell me that I've disappointed her, but no. She just remained calm and gave me advice. She asked me how it was, told me that boys are up to no good, and that I must always protect myself, and that I must go to the clinic and get information, and also get contraceptives. Iyo! (giggles), I recently came home with condoms when I had gone to collect my pills. They gave me condoms at the clinic, and they gave me pills to clean me, so I brought them home. My mom just looked at them and kept quiet, and then looked at the pills. That's it. – Matsebo (19), in a monogamous relationship.*

Reneilwe who had a good relationship with her grandmother reported having regular conversations with her about intimate relationships. Her grandmother shared advice based on her own experiences and encouraged her to make her own decisions:

> *I talk to her about everything …I ask about her about boys, she then tells me that she knows the kind of life young people live and that she has lived it too…She tells me to be mindful of how well built [attractive] my body is, and that I must not let boys mess me around, and that I must take care of myself because there are a lot of illnesses out there. – Reneilwe (18), currently single.*

Unfortunately, not all the women had such healthy discussions with their caregivers about having sex and use of prevention. Thando's mother would instruct her to keep her injection appointments and she obeyed for fear of being accused of wanting to have another child. She could not share her struggles with side effects in those conversations or enquire about other contraceptive options:

> *I had no choice because my mom was going to think "you want another child"… she'll say, "exactly when are you going to the clinic" then I will go so that she doesn't shout at me saying "you want another child". They [parents] will think I am planning to have another child so I will just go. – Thando (19), in a monogamous relationship.*

In Cynthia's home, conversations about sex often took place in a group setting with male and female cousins present. She disliked these sessions mostly because the kind of advice that her eldest cousin gave was gendered in that the girls were told not to date boys because they could get pregnant. The teenage boy in the group was given permission to have a girlfriend because as a male, he would not be the one burdened by an unplanned pregnancy. Cynthia preferred more pragmatic advice:

> *They should say you can date but don't be sexually active. They must say "if you want to have sex use condoms" something like that. They annoy me because they should be telling me to use condoms. – Cynthia (18), in a monogamous relationship.*

3.5. Navigating obstacles in the clinic environment

Overall, participants interfaced with the clinic environment to access family planning and HIV testing services. Injectable contraceptives were the most preferred method among contraceptive users which is accessible for free at community clinics. The women who visited clinics in their communities usually went immediately after school or during school holidays.

Most respondents like Tumi, Gugu and Thato went to the clinic for the first time with their friends and later became more confident to visit the clinic alone. Friends held each other accountable by making sure they never missed clinic appointments. Gugu sought the support of her best friend when she decided to start using the injection. It was this companionship and her concern about becoming pregnant that made her "*brave enough*" to endure a daunting clinic experience. She believed that the nurses would be rude and judgemental but did not allow that to be a barrier to accessing the service she needed:

> *I knew that the nurses are rude so I was prepared for them to shout at us but then at the same time I was brave enough and I was happy that I was taking a huge step which not many of us take, so I was ok with it. – Gugu (19), in a monogamous relationship.*

Like Gugu, Tumi who was also encouraged by her friend, regularly went to the clinic for her two-month injection despite concerns of being judged by the nurses for being sexually active at her age and the painfulness of the injection:

> *I was scared, I was ashamed that they would say "such a young child is preventing, which means this child is having sex" ya such things. I was also scared of the injection but I had to go. – Tumi (18), in a monogamous relationship.*

Thato's attitude that clinic nurses would "*never be nice*" was affirmed during her first clinic visit when she was shouted at in the queue with other patients looking on. However, with support from her friend, she courageously continued to get her two-month injection even though she wanted "*to leave the queue and turn back*" after that humiliating incident.

Ayanda, who also collected condoms from the clinic, was on the receiving end of a healthcare worker's hostility when she failed to keep up with her injection schedule:

> *They just shouted at me for defaulting … Yo! They were shouting at me in front of everyone…[they said] when I do that I am putting myself at risk of*

falling pregnant so when I got my new card I was told not to default again, or stop altogether. I said, "doctor I am sorry but now you should've shouted at me inside your rooms, see how they [other people] are now looking at me" she just laughed. – Ayanda (21), in casual intimate relationships.

Thando who started using the injectable contraceptive after she gave birth at the age of 14, had soldiered on and continued getting the injection at the clinic despite her unpleasant experiences. She reported nurses at the clinic forcing her to use the injection, not giving her chance to express her worries and fears and not sharing basic information about different birth control options:

You get injected … when you are underage, you're forced, they make you prevent... They didn't even talk to me, they just gave me the card when I took the child for a checkup three days after she was born … I got the injection and they gave me the card. I didn't understand what the card was for... The nurse told me I was going to start getting injections to prevent having another child. – Thando (19), in a monogamous relationship.

A few women like Matsebo, Mpumi, and Lebo went to the clinic for the first time alone, overcoming fears of being mistreated by nurses or being recognised and judged by older women from their communities. Notwithstanding their low expectations for the kind of services they would receive, they reported their experiences were tolerable:

I went alone and joined the queue alone and I didn't know [what to do] because it was my first time. So I queued with people who were there to test for pregnancy and HIV. So, someone asked "sisi can we help you?" I said "I am here to start prevention" they were like "are you on your periods?" I said "yes" and they said "Ok come this way" and they showed me where I should go… I mean I bumped into older people … but I told myself "it doesn't matter, they will understand that I am here to get the injection. – Lebo (21), in a monogamous relationship.

Lebo's positive experiences going to the clinic informed her belief that it was a suitable service point for distributing the vaginal ring to young women and teach them how to use it – with a few modifications to the environment:

> *Even if you go to the clinic and show them [patients] the ring they'll show interest and ask for more information, how does it work, how they'll be affected, and so on. – Lebo (21), in a monogamous relationship.*

3.6. Overcoming repressive community and cultural norms

The respondents' narratives illustrated their ability to act with confidence when interacting with people who were in positions of power not only in their intimate relationships, families and at clinics but also in the community. Several women who participated in the FGD painted a vivid picture of how they were treated in their communities. They gave anecdotes of being witnesses or victims of crime and how they were usually at risk of being harassed and even sexually assaulted by men in their communities:

> *It's just some drunkard older men, there are naughty fathers who hang out on the sidewalk waiting for us to pass by… They would be drunk, wanting to do something wrong and they cat-call you and try touching your thighs in their drunkenness, you see, they try grabbing your skirt or your thighs, so you find yourself running and thinking that if he touches you it's a case of assault...I'd say it's assault. – Lebo (21), in a monogamous relationship (FGD).*

However, they demonstrated tenacity in how they refused for these conditions to regulate them and limit their ability to move freely in the community. They continued to walk the streets of their neighbourhoods, even at night, and wore short skirts and other clothing items that could potentially put them at risk of harassment:

> *It's your clothes you won't take them off because so and so doesn't like them, and you bought them from the shop with the intention of wearing them, so you must wear them. How others feel about it has nothing to do with me. – Lesego (22), currently single.*

Other than *ukuthwala*, some women were subjected to other cultural practices which subdue women by controlling their bodies and sexuality. Njabulo, Matsebo and Sbongile reported having undergone virginity testing in a programme called *amatshitshi* where they "*got checked so they don't have sex with boys*" and remained virgins. This attempt to monitor these young women's sex lives was unsuccessful. Sbongile dropped out of the programme when she sexually debuted on her eighteenth birthday and her group was dissolved within a year of her joining when other girls also dropped out for the same reason.

3.7. Women's perceptions of the vaginal ring

In addition to reflecting on how the ring could fit into their social lives, respondents expressed mixed reactions and initial impressions when asked to think of the device's features and imagine potentially using it. The young women were either enthusiastic, curiously hesitant about the ring, or they were completely averse to using it regardless of its potential benefits. Some of the women who were hesitant about the device at first, eventually agreed to at least trying it if it were available and while a minority were adamant, they would never use it, they said they would recommend it to others.

They described their favourite features and what they disliked about the ring. Discussions about vaginal ring as a potential prevention option included in the range of available female controlled prevention products, shed light on participants' preferred features as well as what discomforts or challenges they might experience using it.

Lebo made note of the comparative attributes of existing female-controlled prevention products and the vaginal ring to justify why she was willing to use it:

> *There are two types of prevention which are different, the ones where you get injected on the bum and take pills might affect your body in a certain way, you*

either gain weight or you lose it, others have an increased appetite. But this one [vaginal ring] doesn't have side effects on the body, it just goes in and you take it out. This thing is small, it just goes in… It's just rubber, it would easily fit inside, and it's not that big… I don't know if you'll feel it or not. I would use it…because there's nobody who doesn't want to be protected. – Lebo (21), in a monogamous relationship (FGD).

Some like Lesego and Sindi were less enthusiastic about the ring and shared their concerns about its size and how uncomfortable it looked.

When I hold it, it feels uncomfortable… and at the same time the thought of having something inside you … becomes a bit awkward… Imagine walking around with something inside you. You don't know how it feels, whether it will be ticklish or not. It would be easier if it dissolved because then I'd put it in and know that after some time it'll be gone…if only there was some lubricant to use before putting it in, like a gel – Sindi (22), currently single (FGD)

Lesego was open to the idea of using the ring when she first learned about it during her IDI, but she changed her mind once she had a chance to touch it in the FGD.

"I am sorry, I would never [use it]. I wouldn't feel comfortable...Now that I can see how thick it is… the fact that I can't feel it when it's inside, it frightens me. How will something this size get inside of me and will it stay inside me?" – Lesego (22), currently single (FGD)

Lebo believed that possible side effects might hinder other women from using it and that proper education about how it worked would be helpful in helping women overcome their fears: "*most people are just hesitant due to lack of information and they're concerned about possible side effects… kids nowadays will ask about the side effects first, how they will be affected by it after some time" (FGD).*

The discussions revealed that some women lacked the skill to insert and remove the ring. This can be attributed in part, to them being unfamiliar with their vaginal

anatomy and lack of experience using intravaginal products like tampons (*Table 1*: Study participants' socio-demographic characteristics
).

Some women like Sindi were very uncomfortable touching their vaginas and shyly admitted to doing so only while washing. The idea of inserting the ring was made her anxious because she did not like how her vagina felt when she touched it: "*eish even the way it goes in, now I have to fiddle with myself…I know how it is inside, it feels a little bumpy, with soft skin, it's mushy and slippery". (FGD)*

Unlike Sindi, Lebo seemed keen to explore and understand her body more: "*I do touch myself because I am curious to know what my boyfriend feels when he fingers me. I want to know my size... to feel the structure of my vagina*." Katlego agreed with her: "*I think you should be able to touch yourself just to see what happens, to know yourself and have an idea of what the other person feels when they touch you*." *(FGD)*

Lebo encouraged others in the group to consider using the ring however, some women battled to see things for her perspective. The concept of the vaginal ring as a preventive product was difficult for them to fathom. They had difficulty understanding that a simple silicone ring that didn't create a physical barrier could protect them from HIV. Not relying on condoms seemed far too risky for them. Sindi's attitude towards the ring remained unchanged despite Lebo and other group members' efforts to convince her otherwise.

In addition, to the ring potentially being uncomfortable, Sindi doubted that it could protect her from HIV, despite what research showed:

> *At the same time to think of having unprotected sex because you're wearing this thing, I don't trust it, ok even if research says that it is safe. Ja, like when I look at it I don't understand how it prevents HIV, just from looking at it I don't understand. – Sindi (22), currently single (FGD).*

Tumi was among those who could not look past the device's peculiar features and imagine using it. She was also sceptical about the ring's ability to prevent HIV:

> *No, hai I don't like taking chances. I'm the kind of person who… what can I say… I find it hard to believe some things, ya so for me it wouldn't work… I believe that it works it's just that, some things are too good to be true. Tumi (18), in a monogamous relationship.*

CHAPTER 4: DISCUSSION

4.1. Introduction

This study explored how young women's social lives framed their potential use of the microbicide vaginal ring to prevent HIV. Exploring young women's use of HIV prevention products with the backdrop of their personal life experiences, intimate relationships and living environments, was a way to describe their perceptions of the vaginal microbicide ring and their potential to use it. The young women in this study were often able to access contraceptives from the clinic and had the agency to participate in sexual reproductive health services. Many of them were able to insist on the use of male condoms, demonstrating a sense of autonomy around some important health decisions. Key social factors influenced potential uptake of the vaginal ring, including: the nature of intimate relationships, family dynamics and living circumstances and traumatic life events. The young women generally had a high knowledge of risk and prevention of unwanted pregnancy and HIV transmission. Patterns of contraceptive and condom use indicate that despite their knowledge, women were more concerned about unplanned pregnancies than they were about contracting HIV.

4.2. Is the vaginal microbicide ring truly a female-controlled product?

Public health agencies, nongovernmental organisations and researchers working in sexual and reproductive health and rights and departments of health globally have been concerned with finding safe and effective female-controlled technologies to prevent HIV, other STIs and unwanted pregnancies (Nel *et al.*, 2016). For decades, much work has been done to investigate the efficacy of methods like female condoms, vaginal contraceptives and microbicides to address women's disproportionate risk of HIV and to advocate for female-controlled methods because they could potentially empower women and enhance their sexual autonomy (Kaler, 2001; Woodsong, 2016).

In my study, some young women displayed some level of control over their contraceptive use and sexual decision-making. This agency was expressed through initiating sex and declining sexual advances, openly discussing sex with their partners, keeping their own condoms, insisting their partners wear condoms during sex and influencing them to test for HIV at the beginning of relationships or when they found about partners' infidelity. Clinical and acceptability studies have provided some evidence to inform investment decisions by governments and funding organisations for the rollout of products like microbicides through the public health system as well as to inform the approach for education and promotion programmes (Stein *et al.*, 2005). The reasons which necessitate women-initiated and clandestine prevention products is that women, particularly those in developing countries, often have unequal gender power relations with their male sexual partners which limits their ability to make decisions related to their sexual health and rights (Stein *et al.*, 2005). Women, particularly those in developing nations, have limited control over contraceptive use and the use of male condoms to prevent HIV (Stein *et al.*, 2005).

The young women revealed different levels of agency with regards to how they managed their sexual and reproductive health. Contrary to initial assumptions made by myself and researchers like Harrison (2008), most young women in my study demonstrated some assertiveness in negotiating for use of condoms – a finding that is upheld in a paper by Mchunu, *et al* (2012). In addition, one study found that when rural Tanzanian women were confident condom use negotiators they had a higher likelihood of using condoms compared to less skilful negotiators (Exavery *et al.*, 2012).

In my research, irregular condom use was more common in monogamous relationships compared to casual relationships which some authors have elucidated further by saying stable relationships make women feel less at risk of HIV infection (Woodsong, 2016). Similar to what other authors like Woodsong (2016) have argued, the young women in more stable relationships were concerned that asking their partners to use condoms may be an admission of their own infidelity (Exavery *et al.*, 2012). This overrides the benefit of using the ring independently because it implies that the ability of woman in monogamous relationships to use it depends on

whether her partner would permit her to, even though she suspected he might be unfaithful. Other arguments about this issue further posit that marriage or monogamy puts some women at higher risk of contracting HIV from unfaithful partners (Nuttall *et al.*, 2007).

Most women I interviewed were accessing contraceptive services and many did so independently without first getting permission or negotiating first with their sexual partners. As was discovered by other researchers, for some of these women, the fact that it was not mandatory for their partners to know about it sometimes encouraged them to not only accept the vaginal ring (van Der Straten *et al.*, 2012) but it also gave them a sense of ownership and agency over their own bodies and sexual health (Eakle *et al.*, 2017). This is a phenomenon reported more commonly among women in casual sexual relationships or sex workers who tend to be more empowered about their sexual health needs, compared to women in monogamous relationships (Woodsong, 2016).

On the other hand, some of my participants struggled to negotiate for condom use even though they used injectable contraceptives with very little effort. Most women expressed the need to disclose intention to use the vaginal ring because their partners' approval was important to them, similar to what other researchers have reported previously (van Der Straten *et al.*, 2012). Disclosing ring use in advance was a way for women to avoid angering their male partners and being accused of infidelity or implying that their partners were HIV positive which has implications for women benefitting from the device's discreet attributes (Stein *et al.*, 2005; van Der Straten *et al.*, 2012). In addition, disclosing product was considered a way to protect themselves from acts of violence. Women's autonomous use of prevention products like the vaginal ring can make them more susceptible to being physically harmed by their partners (Hartmann *et al.*, 2019).

Eakle and colleagues (2017) have outlined and illustrated the inter-relatedness of concepts that can influence women's use of different female-controlled products which include sexual satisfaction, trust, empowerment and control, personal well-

being, efficacy and risk reduction and product use in the socio-cultural environment. This paper echoes the notion that decision-making for product uptake and use is multifaceted and must be addressed as such (Eakle *et al.*, 2017).

I found that most young women's intentions to prevent HIV was motivated by how much they trusted their partners to remain faithful and that for others, suggesting condom use at an advanced stage of the relationship could make male partners suspicious. Authors like Eakle *et al*. (2017) articulated that trust is influential in women's decision-making around use of female-controlled products in that while this was a way to ease their fears of possibly getting infected with HIV, interactions about product use could breakdown trust and destabilise relationships. This illustrates that while both the vaginal ring and injectable contraceptives were designed to foster women's independent use, women in my study were quite cautious about concealing use because they worried about the negative consequences for their relationships. A few of the young women in relationships were also somewhat protective of their relationships and felt that educating their partners about the vaginal ring would be a good way to go about discussing ring use. It was as though they believed that pursuing sexual autonomy would be undermining to their partners and they needed to gain their partners' buy-in for the device. While empowerment is generally described as way to encourage autonomy, authors like Kaler (2001) and Eakle *et al*. (2017) have suggested how some men and women perceive it as a threat to men's masculinity and authority.

Most participants felt that they could not use it without disclosing to their sexual partners that they were using it or negotiating the use of the ring before considering using it. This begs the question of whether vaginal rings are truly more "female-controlled" than existing technologies, like condoms and birth control. Kaler (2001) suggests that use of any female dependent device can evoke feelings of suspicion and cause disagreements in relationships with men feeling uneasy about women not needing their consent. Certainly, the young women I spoke to would need the same skills for negotiating condom use in order to get partner support for using the vaginal ring.

While some women in my study had better control over their sexual and reproductive health and demonstrated the skills required to overcome negative social influences, others did not. Limited control or less agency was influenced by contextual factors in the young women's lives. In particular, their narratives illustrate how challenging contextual factors, such as living with parents and other family members and secret relationships, could influence optimal uptake of the vaginal microbicide ring. A similar assessment was documented in a study by van der Straten and colleagues (2014) which showed how a woman's use of biomedical HIV prevention products was influenced by her social context and that adherence was dependent on how well the devices fitted into their lives. The participants in my study reported challenges they encountered in their family and relationship settings and how those have a bearing on their use of female-controlled prevention products like hormonal contraceptives and the vaginal microbicide ring.

4.3. How young women's social lives influence optimal ring use

4.3.1. Intimate relationships frame HIV prevention options

Young women in this study had varied experiences in intimate relationships with regards to communication, emotional and power dynamics related to financial support and negotiating for use of prevention. While some women seemed to possess very little power in their relationships, others played an active role in shaping how sexual health matters were handled by encouraging men to test regularly for HIV, for instance. Several authors have identified strong power imbalances whereby young women have less control in sexual relationships which compromises their SRH (Clüver, Elkonin and Young, 2013; Harrison *et al.*, 2015) and interestingly, Pulerwitz and colleagues (2018) identified that young women's ability to maintain control in relationships declined as they got older. There appears to be a dearth in literature illustrating women's control in intimate relationships.

Most of my participants relied on their families for financial and material support while some depended on their partners completely or needed them to supplement whatever they were given at home. Furthermore, the young women in my cohort who depended on their partners to survive or received money and other items as gifts may have experienced more difficulty negotiating condom use and establishing terms for sexual engagement – a control strategy commonly identified in literature (Clüver, *et al*., 2013; Dunkle *et al*., 2004; Pettifor *et al*., 2012).

Gendered power dynamics have been noted as obstacles for effective condom use and reducing women's risk of getting HIV (Exavery *et al.*, 2012). Similarly to what other researchers found in places like Soweto and Grahamstown, Eastern Cape, some men demonstrated power through coerced or unwanted sex as well as manipulating women and exploiting their sexual naivety to have sex on their terms (Clüver *et al*., 2013; Dunkle *et al*., 2004). While my findings echo patterns of dominance by men commonly cited in literature, others like Mchunu and colleagues (2012) have reported conflicting results showing that majority of 18-24 year-old women from urban and rural settings in four South African provinces did not feel pressurised to have sex or get pregnant.

Some of the men in intimate relationships with participants occasionally used decision making around condom use to dominate. Some young women in my study were involved with non-monogamous partners and as a result lived in fear of contracting HIV. This was usually what drove them to insist that their spouses wear condoms during sex; however, some men would refuse and pressure or manipulate them into having unprotected sex. My findings also showed that even though they did not succeed, most women were assertive enough to least try and convince their partners to use condoms. On the other hand, despite knowledge of their partners' infidelity, some women admitted disliking condoms asserting that they caused discomfort and made sex unenjoyable. They reached mutual agreements with their partners to stop using condoms, a trend also reported by other authors (Exavery *et al*., 2012; Kacanek *et al*., 2012, Smith *et al*., 2008).

The sexual partners of some young women in my study controlled them either by manipulating them to use hormonal contraceptives to avoid using condoms or by putting them under pressure to stop using any contraceptive because of a desire to have babies, something which other authors have also pointed out (Williamson *et al*., 2009; Woodsong, 2016). Other participants' believed that prolonged use of injectable contraceptives would cause infertility which is similar to the finding of a Ugandan study (Kabagenyi *et al.*, 2014). In some cases, cultural norms which reinforce practices embedded in patriarchy like forced marriage and involuntary virginity testing, were facilitators for men's oppressive behaviour and women feeling their needs came second to those of their partners (Clüver *et al*., 2013).

Like others, I found that women believed they were responsible for protecting their own sexual health and teaching their partners about protective devices as a strategy to convince them of consistent use (D Kacanek *et al.*, 2012) and for some the vaginal ring presented the potential to realise full control over their own sexual health (Eakle *et al.*, 2017). The young women in positive relationships wherein sex, HIV and unplanned pregnancy were regularly discussed tended to successfully negotiate use of prevention (Seutlwadi *et al*. 2012). In addition, communication has been associated with improved product use which in turn results in couples communicating better about sex and other relationship issues (Eakle *et al.*, 2017). It is possible that promoting clandestine use of the vaginal ring could have the unintended consequence of creating mistrust. Therefore, messaging about ring use should emphasise the importance of open dialogue. However, I also discovered that not all women could to talk freely about SRH issues or express dissatisfaction about intimacy in their relationships. This pattern has also been reported elsewhere and found to create a barrier for addressing HIV and unplanned pregnancy risk and the need to use prevention (Kabagenyi *et al*., 2014; Lince-Deroche *et al*., 2015; Seutlwadi et al., 2012).

4.3.2. Family dynamics and home settings

Home settings and living arrangements shaped the young women's use of sexual and reproductive health (SRH) products. Over-crowding, lack of personal space and privacy in some homes made them feel uncomfortable keeping condoms and contraceptives. Some literature suggests that living at home deprives young women the privacy to use microbicides properly (Doggett *et al.*, 2015). Similar to my findings, a majority of the young women from Khayelitsha township that Rivera-Sánchez and Walton (2013) interviewed did not have their own bedrooms and yearned for spaces where they could spend time alone. My participants had to manage their sexual health needs amidst instability in the home caused by constant fighting, tension and displacement. This not only had an impact on how easily they kept and used prevention products – consistent with findings by van der Straten and colleagues (2014) – but it also caused a few of them to experience psychological distress. Some participants expressed how they lacked peacefulness and felt unhappy, frustrated, helpless and smothered to the extent that they regularly escaped to their partners' homes or other places like libraries for some relief. Rivera-Sánchez and Walton (2013) explain this kind of escapism by saying youth, particularly women who lack personal space at home, tend to use real and imagined spaces to "gain respite from the challenges brought about by their liminal state and social environment".

Unlike their male counterparts, the young women I spoke to did not enjoy the privilege of living independently in backrooms or shacks built in their family's homestead with some women's guardians believing that this kind of freedom would make them promiscuous. Teenage girls' movement is often restricted to the main household where they can be closely monitored and kept occupied with many household chores to keep them from getting involved with boys and having sex (Jewkes, Morrell and Christofides, 2009). Their male counterparts generally have the freedom to spend less time at home and move into a backroom and with a separate entrance which not only gives them reprieve from the stressors at home, but they can also explore their sexuality without their parents' knowledge or permission (Jewkes, Morrell and Christofides, 2009; Rivera-Sánchez and Walton, 2013). In my

study, all but one woman had sex in backrooms or shacks belonging to their partners which in some way, gave men more control over how and when sex occurred.

The family environments I explored influenced how the young women's sexual behaviour and their approach to SRH issues. Some literature posits the effect of different parental structures on sexual experiences and SRH product use practices. Adolescent girls (15-19 years old) from low-income communities in Johannesburg who lived with relatives, (including step parents) were less likely to be sexually active than those who lived with two biological parents (Mmari *et al.*, 2016). However, my findings show mixed patterns of risky sexual activity and use of prevention across different family compositions, and that healthy relationships, open communication and support from caregivers were more prominent driver for less risky sexual behaviour.

The young women had different experiences talking to their parents about intimate relationships, sex and sexual health. Participants with parents, grandparents and older siblings or cousins with whom they had open and meaningful discussions about intimate relationships and sex, felt more supported to use prevention products. They seemed to have more confidence to keep condoms or injectable contraceptive schedule cards in their bedrooms.

Others related with their parents only as figures of authority. In conversations with parents they were often instructed to abstain from sex and avoiding getting pregnant. They did not get advice about how to practice safe sex, for instance which made them feel unsupported. This is reflective of a study exploring how norms cultivated within family structures inform how rural Tanzanian AGYW view sex and manage SRH issues (Wamoyi, Wight and Remes, 2015). Similarly, two studies conducted in Soweto, Johannesburg and Baltimore (U.S) identified lack of communication with parents as one of the obstacles for young women understanding how healthy relationships ought to be, as well as how to avoid risky sexual behaviour and use SRH services (Lince-Deroche *et al*., 2015; Mmari *et al*., 2016).

Lack of constructive communication with families and intimate partners about SRH-related issues led most young women to rely more on their friends for psychological and practical support, a phenomenon that was also identified by Lince-Deroche *et al*. (2015). They accompanied each other to clinics, reminded each other about upcoming clinic appointments and encouraged one another to continue getting injections especially when partners were pressurizing them not to.

The ability to keep contraceptives and condoms at home was related to the kinds of parental figures they lived with, how close young women were to them and how much they trusted each other. Parents' attitudes about their daughters being in sexual relationships affected how young women navigated such issues while living at home. Parents' negative attitudes about sex and relationships made my respondents feel like keeping anything that might prove that they are sexually active was disrespectful and they were afraid of getting into trouble. Like Williamson *et al*. (2009), I observed that caregivers who acknowledged that their daughters were sexually active, either encouraged or forced them to use protection even though they gave very little guidance on use and side-effects. Previous microbicide study participants whose families supported use of the vaginal ring and PrEP, had fewer challenges keeping and using them while living at home (van Der Straten *et al*., 2014).

4.3.3. Accessing sexual and reproductive health services

Most of the young women in my study were regular or intermittent injectable contraceptive users and they possessed the agency to engage with sexual and reproductive services despite the hindrances they encountered like inconvenient operating times and fear of being judged by older people from the community. Some participants kept their regular clinic appointments despite occasionally being treated unfairly and humiliated by nurses during clinic visits. There is some evidence of nurses' lack of confidentiality and negative attitudes when consulting young female patients hindering effective delivery of SRH services and preventing positive health outcomes (Brittain *et al.*, 2015). Some participants in my study developed negative

attitudes about the healthcare setting because nurses humiliated them by asking personal questions and scolded them for missing appointments in front of other patients. An evaluation of a youth friendly services (YFS) programme implemented in a rural South African district reported that nurses told patients' parents what their daughters confidentially disclosed to them during consultations (Geary *et al.*, 2014). Young women told me they got inadequate counselling about SRH issues including information about contraceptive side effects and available alternative options, which was similar to what other young women in Soweto experienced (Lince-Deroche *et al.*, 2015). The same study also reported that other nurses projected their own moral judgement towards their patients for being sexually active because they believed sex should only be had by married people (Lince-Deroche *et al.*, 2015).

Access points for the vaginal ring that are not tailored specifically for young women, may interfere with their uptake of the device. A systematic review of facilities with YFS targeted to 10-24 year-old patients indicated a higher satisfaction with the services as well as an improvement in knowledge and use of contraceptives use and more distal outcomes like unplanned pregnancy (Brittain *et al.*, 2015). However the aforementioned review provided limited information in that it excluded publications that discussed healthcare services provided exclusively for HIV and STI care as well as studies conducted in low-middle income countries (Brittain *et al.*, 2015). Other authors have also noted the importance of friendly and supportive provider-patient communication in family planning centres to reduce unplanned pregnancy rates (Mayondi *et al*., 2016). Some studies have demonstrated increased uptake of SRH services by AGYW in sub-Saharan African countries when they were tailored to suit their unique needs (Dellar, Dlamini and Abdool Karim, 2015). Some of the common strategies noted by Dellar, Dlamini and Abdool Karim (2015) for creating youth friendly interventions include training staff to manage the health needs of AGYW as well as outreach programmes and mobile services for reaching at-risk clients. Other skills gaps among nurses that could be addressed by training, include learning the importance of not breaching their clients' confidentiality to parents and how to create spaces dedicated for AGYW that can be used without needed consent from a guardian (Geary *et al.*, 2014). The clinic environment must be tailored to suit young women's specific needs if they are to benefit from uninterrupted use of the vaginal

ring because access to the device and other female controlled prevention products still requires interaction with healthcare workers.

The young women in my study were quite knowledgeable about the risks of HIV and unplanned pregnancy and how they could protect themselves using available prevention methods. This is inconsistent with a finding that 71.2% of young South African women between age 18-24 years lack understanding of how pregnancy occurs or are unaware of the risk of unprotected sex (Mchunu *et al.*, 2012). Unexpectedly, in my study high knowledge levels did not necessarily lead to consistent condom use. This is similar to a finding by Lince-Deroche et al (2015) that while young women in Soweto had a good understanding and knowledge of HIV and unplanned pregnancy risk and use of prevention, that did not translate to high use of condoms or contraceptives.

4.4. Perceived challenges of introducing the vaginal ring as a delivery mechanism for microbicides

Despite them not knowing about the ring prior to the interview, the young women shared their initial impressions and asked several questions about the novel technology. Some doubted the ring's efficacy to protect them from HIV and quite a few of them had difficulty comprehending how it worked to prevent HIV, considering it doesn't create a physical protective barrier like a condom does, which is a common finding in literature (van Der Straten *et al.*, 2012).

The interviews gave some indication of how familiar these women were with the anatomy of their vaginas with some expressing discomfort about touching themselves. Others attempted to understand how the ring would fit inside their vaginas by remembering and describing what they felt while washing themselves. Women's use of the vaginal ring will require them understanding how their vaginas are structured as well as being comfortable with touching themselves and inserting vaginal products. Yet this would be challenging in a setting where very few young

women use tampons during menstruation, preferring the less-invasive pad as a sanitary product (*Table 1*: Study participants' socio-demographic characteristics).

It also emerged that some young women believed device would be uncomfortable to wear and that they would have difficulties inserting and removing it because of its size and texture, as was reported by others (Smith *et al.*, 2008). This may also be related to the fact that none of my participants had experience with inserting products like intravaginal contraceptives and STI prevention products like the female condom or tampons, an occurrence also observed in a study conducted in the U.S. (Artz *et al.*, 2002). An aversion to self-insertion of devices which has been associated with refusal to self-insert the female condom (Artz *et al.*, 2002).

Among those who were interested in using the ring, some asked me questions to try and understand how it worked and said they might need healthcare workers to assist them to insert and remove it as they did not believe they had the self-efficacy to do it themselves. Researchers like van de Straten *et al* (2012) also found that while ring acceptability was high among women who used placebo silicone rings and their partners, one of the barriers for consistent use of the device was inability to remove the ring without help. Some women's apprehension about the ring aligns to some extent with behavioural practices around condom use, documented by others.

Of the women in the Artz *et al* (2002) paper who were willing to use the female condom, a quarter of them failed their first attempt but their technique improved with practice as they continued with the trial, a pattern also reported for vaginal ring use (van Der Straten *et al.*, 2012). This corroborates a conclusion by the van der Straten *et al* (2012) acceptability study that young women who are willing to use the ring would benefit from comprehensive counselling on how to safely insert and remove the ring if it was introduced. Insights into young women's perceived challenges with vaginal ring use are valuable for informing social marketing strategies that will facilitate good uptake of the device.

For many years, the female condom has been the only available intravaginal HIV prevention method that women can initiate and control use of, but uptake has generally been low due to factors like unavailability and high production costs (Beksinska, Smit, and Mantell 2013). A study conducted to determine comparative preference and acceptability of three types of female condoms showed that they were all reasonably acceptable among a cohort of 160 South African women (Joanis *et al.*, 2011). Reports published earlier discuss how women and their partners disliked female condoms for reasons related to general fit and feel during sex as well as it not being completely invisible when inserted into the vagina (Kaler, 2001; Kulczycki *et al*., 2004). It can be said that the design of the ring gives it a relative advantage over the female condom as it is discreet and can hardly be felt by the user and her sexual partner when inserted (van Der Straten *et al.*, 2012). However, some issues with ring use have been documented such as it coming out of the vagina accidentally during sex and menstruation and women removing it because it was uncomfortable or their partners told them to (Montgomery *et al*. 2012). Some young women who took part in my FGD discussed other sexual acts like fondling and were worried about the possibility of their partners feeling and pulling out the ring in those instances. Incidents of men and women feeling the ring during sex have also been reported elsewhere (van Der Straten *et al.*, 2012).

4.5. Study limitations

There were limitations that occurred during data collection. Despite my ability to connect with the interviewees, my age, socio-economic status, life experiences and education level may have created power differentials between me and the participants. In an interview setting, power differentials can inhibit participants from completely opening up and fully expressing themselves. I attempted to minimise the effect of these factors by being empathetic, reconnecting with the similarities of being young women despite socio-economic differences. My own reflection from interview notes and debriefing with supervisors gave me a preliminary sense that these strategies worked.

Some participants had difficulty remembering the details of things that occurred in their past intimate relationships. I used probes to help respondents reconstruct their memories and give detailed answers. A difference between each participants' age at the time of the interview and when they lived through certain experiences may have framed the perspective from which they reflected on relationship dynamics. To address this, I encouraged them to take as much time as they needed to vividly remember those past experiences without putting them under pressure. My data might have some inadequacies because of social acceptability around sexual activity which is common among adolescents (Harrison, 2008).

Some women were apprehensive when sharing stories about issues like condom use which may be because they felt pressured to say what would be deemed acceptable rather than being honest. I addressed this by taking a non-judgmental stance in the interviews, reassuring participants that there were no right or wrong answers and ensuring privacy and comfort at all times (Greene et al., 2010). In addition to this, I reiterated that I would report on the cohort of n=15 participants as opposed to each individual and that their names and other information that could be used to identify them would not be included in the report. I told participants that I was interviewing them to get a true account of how they experienced sexual and reproductive health issues that could potentially guide health professionals in designing programmes to cater for their needs. Sexual practices and relationships are sensitive topics for most young women depending on their beliefs, and socio-cultural contexts (Doyle et al., 2012; Greene et al., 2010). It is possible that women who were raised never to talk openly about sex at home, had more difficulty explaining their sexual experiences and concealed their true feelings about the topic.

Many of the participants belonged to a community-based organisation that teaches about HIV prevention therefore their responses to my questions about HIV infection risk could have been informed more by what they were taught and less by their personal attitudes and perceptions. The participants engaging with each other outside of the study and being exposed to the same information may have resulted in them expressing the same attitudes around certain issues like managing unfaithfulness.

Finally, the study's aim was to explore young women's perspectives of the vaginal ring and to do this they had to imagine using a technology they had never seen before. This task was challenging for some, making it challenging to get a true indication of how the ring could fit into their real lives. They had to make decisions about potential use of the device without having used it whereas, participants in a typical acceptability study would wear it for a defined period of time and give accounts based on real experiences. I tried to minimise the effect of this bias by drawing parallels between the ring and their current or previous use of other prevention methods. I also showed them a video demonstrating how to use the vaginal ring and gave them a sample of the device to hold in their hands, look at, and feel during the interviews.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

In my study I explored the perceptions of young women in Soweto of the vaginal microbicide ring for preventing HIV. The women in my study generally had high HIV knowledge and were mostly using contraceptives yet, their social lives were quite complicated in ways that could affect their ability to use the vaginal microbicide ring. How well women use contraceptives and condoms, the nature of their intimate relationships and home environments and experiences engaging health services could impact how young women use the vaginal ring if it were made available.

There are shortcomings of the vaginal ring as a truly female controlled product in that its potential for good uptake relies significantly on women's ability to have full control over their sexual health. Product use negotiation skills varied based on individual traits and the nature of relationships. The women who were using condoms felt quite confident about potentially using the ring but women who battled using condoms consistently tended to be apprehensive about using the ring. Young women need confidence to convince their partners to use condoms and contraceptives and the same would be true for using the vaginal ring. Furthermore, they prioritised disclosing product use to their partners to safeguard relationships. Families can either support or frown upon women's decisions to use such products and young women's peers generally form part of a positive support network. Constructive communication about relationships, sexual health and intimacy is observed as a facilitator for getting intimate partners and families involved in young women's SRH issues, including prevention product use in a supportive way.

The conventional healthcare setting may not be the best place for young women to access the ring should it become available. Accounts of women's patterns using healthcare services illustrate that clinics can be inconvenient, hostile and unsupportive with very little information being shared about contraception options, for instance.

In addition, women were receptive to mobile health services because they afforded them more flexibility and convenience and their use of prevention was not limited or prescribed by their knowledge about risk.

Although the women in my study were in the same age group, grew up in the same communities and shared some common socio-demographic characteristics, there were marked differences in their family compositions, nature of intimate relationships, the extent of their agency to deal with SRH issues as well as their experiences with the various themes I explored. For instance, some were in long-term relationships including marriage, some had given birth at least once, a few were permanently or intermittently co-habiting with intimate partners and others lived with their families at home, and prevention use patterns varied. Therefore, they have different life experiences and perspectives from one another which can shape how they think about and manage their SRH needs. Such insights illustrate that South African young women are a complex, non-homogenous group with unique challenges that require carefully tailored strategies. The complexities of young women's lives need to be fully understood and taken into account when developing policies and designing sexual and reproductive health programmes.

5.2. Recommendations

This section will suggest some recommendations for topics for further research and suggestions for how this study's finding might inform policies and programmes.

5.2.1. Research

5.2.1.1. Unpacking young women's living conditions and family life

The young women's difficult living conditions and family circumstances were major features of their lives and not only had an impact on how they used condoms and contraceptives but also their psychological well-being. Overcrowding, lack of space,

experiences of displacement and conflict at home made women unhappy causing others to retreat to spaces where they could get some peace. There is a need for locally relevant research that unpacks the impact of young women's living conditions and family dynamics on their sexual, reproductive and psychological welfare. There was a pattern of traumatic life events among the young women in my study including different forms or abuse, neglect, forced marriage and the deaths of loved ones. It would be worthwhile to further explore the effect of trauma in young women's lives on how they confidently deal with their sexual health in the context of intimate relationships and family life.

5.2.1.2. Male involvement

Male intimate partners are involved in how women manage their SRH by default because intimacy and sexual health is not an individual act. This means that to achieve good uptake of the vaginal ring, men must accept it, at the very least. Involvement can either be positive or supportive wherein, men encourage women to adhere to contraceptives and enquire about their partners' sexual health. In other cases, it can be negative in that men can involve themselves in order to control how their spouses use contraceptives which begs the question, could male involvement be yet another way for men to control how women manage their SRH needs? Research that explores the need for male involvement in women's use of female-controlled products is important given that the devices are designed to require no participation from male spouses. Some research gives accounts of men expressing their opinions of the vaginal ring and other female controlled products and some authors have recommended importance of involving men when rolling out SRH services in communities. However, more work might be required to understand the nuances of male involvement and to define what it would mean practically. How could women in monogamous relationships invite their spouses into spaces where use of HIV prevention technology is discussed? How could male involvement strategies be tailored to support young couples and encourage men to be a positive influence on their spouses? Should men be involved in work to successfully roll out female-controlled HIV prevention?

5.2.2. Policy

The vaginal microbicide ring is currently undergoing regulatory review by the European Medicines Agency (EMA). If regulators approve the device for use policymakers in countries like South Africa will make decisions about whether to include it as part of the HIV prevention package. The South African government supports the research of biomedical HIV prevention products including vaccines and microbicides (NSP Steering Committee, 2017). In 2017, the National Department of Health published a National Adolescent and Youth Policy. It aims to guide various government structures and other stakeholders on designing health programming for youth and adolescents to address SRH and other issues affecting them like substance abuse, mental health and nutrition (Department of Health, 2017). Two of its objectives are to: “use innovative, youth-oriented programmes and technologies to promote the health and well-being of adolescents and youth” and to “provide comprehensive, integrated sexual and reproductive health & rights services integrated with HIV & AIDS & TB”. The policy recommends some good approaches for reaching youth, however it doesn’t adequately segment youth by gender, age and other socio-demographic factors which would ensure that programmes account for women’s diverse experiences and thus caters for their needs.

Future youth-focused policies must reference data about young women’s patterns of prevention product use and account for how vaginal microbicide rings could be included in existing prevention services. In South Africa, HIV prevention programmes adopt a combination approach wherein users are offered multiple strategies to protect themselves which now includes biomedical products. The vaginal ring would ideally be offered as part of this package. Policies cite PrEP as a part of the prevention package that at-risk population groups including adolescents should receive.

In 2016, South Africa became the first African country to register an ARV drug for use as oral PrEP which was prioritised for rollout – through the public sector – to AGYW, sex workers and men who have sex with men, however uptake has been low

(Delany-Moretlwe and Mullick, 2017). It would be prudent for policymakers to consider investing not only in doing interventions to improve uptake of oral PrEP but also exploring the feasibility of making injectable PrEP available for young women already using injectable contraceptives. Women in my study who adhered to injectable contraceptives regardless of the discomfort caused by side effects like persistent headaches, weight loss and irregular menstruation.

5.2.3. Programmes

The inclusion of the vaginal ring as an HIV prevention option alongside other biomedical products in policymaking should translate into programming. My study echoes other literature by showing that young women are not all the same and therefore need alternatives that suit their different needs and preferences. Rollout of the vaginal ring as part of the existing combination prevention package would need to be informed by how contextual factors shape women's use of prevention. Interventions must take advantage of existing structures that provide family planning and other SRH services as well as support networks that young women have access to within communities. Patterns of contraceptive and condom use among the women in my study indicate that most of them were more concerned about getting pregnant than contracting HIV. Contraceptive users endured side effects like persistent headaches, weight loss, fear of infertility due to prolonged use to adhere to injections. This suggests that a vaginal ring, which has reported no side effects in safety studies, that delivers both Dapivirine and a hormonal contraceptive may have an added advantage for intended users. In 2018 researchers concluded a phase I of a clinical trial to establish the safety of a three-month vaginal ring infused with Dapivirine and the hormonal contraceptive levonorgestrel (Microbicide Trials Network, 2018).

This illustrates we need programmes with less emphasis on knowledge as a barrier as it seems to be a minor factor influencing health sexual behaviour compared to other factors. Furthermore, risk reduction counselling sessions ought to focus more on equipping young women with practical skills to negotiate use of prevention and

initiating healthy, constructive conversations with intimate partners and parents about sexual intimacy and health. Young women need to have their confidence and self-esteem developed so they can use the vaginal ring and other intra-vaginal devices like the female condom. It is important to use a youth-centred approach when designing effective SRH programmes for young women that will be tailored to suit their specific needs. Improving the quality of care, creating a youth friendly atmosphere and making visiting hours more convenient or using mobile health services that conduct HIV testing within the community are some ways in which this could be achieved (Brittain *et al.*, 2015; Department of Health, 2017).

If the vaginal ring became available, there would have to be careful thought applied to marketing it effectively. Market research would be crucial for identifying ways to make the product more appealing for the target audience by making the packaging more attractive, for instance. Social marketing strategies could be a way to raise awareness about how the vaginal ring works and to promote it among the target audience. Marketing messages should ideally frame the vaginal ring as an intervention that can help AGYW have better control over their own sexual health, rather than focusing heavily on risk of HIV infection. This target market responds better to messages that appeal to their desires and aspirations to be healthy and lead prosperous lives (AVAC, 2019). This could motivate them to use the ring to prevent HIV. Communication campaigns could encourage women to take charge of their sexual health in a manner that will not compromise their relationships or cause them social harm.

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APPENDICES

Appendix A: Plagiarism form

PLAGIARISM DECLARATION TO BE SIGNED BY ALL HIGHER DEGREE STUDENTS

SENATE PLAGIARISM POLICY: APPENDIX ONE

I Luyanda Majija (Student number: 0604105m) am a student registered for the degree of Master of Public Health in the academic year 2016.

I hereby declare the following:

- I am aware that plagiarism (the use of someone else's work without their permission and/or without acknowledging the original source) is wrong.
- I confirm that the work submitted for assessment for the above degree is my own unaided work except where I have explicitly indicated otherwise.
- I have followed the required conventions in referencing the thoughts and ideas of others.
- I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief that this is not my own unaided work or that I have failed to acknowledge the source of the ideas or words in my writing.

Signature:  Date: 3 December 2019

Appendix B: Information sheets

In-depth interview information sheet

Good day, my name is Luyanda Majija, a Master of Public Health student from the University of the Witwatersrand, Johannesburg. This is an invitation to participate in my study to explore the barriers and facilitators influencing acceptability of the vaginal microbicide ring among young aged 18-24 from Johannesburg, South Africa in 2017.

About the vaginal ring

Vaginal microbicide rings are products that can prevent HIV when inserted into the vagina before sex. Last year, the results of two clinical research studies showed that a monthly vaginal ring containing an ARV protected woman aged 18-45 against HIV by 31 percent. Younger women in the study received much lower levels of protection. Should there be additional evidence proving that the microbicide ring is effective among a larger group of women, we would want to make it available to all women. Therefore, understanding how acceptable the ring would be in the context of young women's lives and relationships is very important.

Joining the study

If you volunteer to become a participant you will join 14 other women of a similar age group in answering some questions in relation to the study aim. The interview will be 90 minutes long and be more of a discussion. The questions will be around your perceived risk for HIV infection, your intimate relationships and your social environment. I will record interview and if you agree, type out everything you have said so that I can analyse your answers for the final research report.

Please remember you can choose not to answer any questions or stop the interview at any time or take a break or discontinue participation at any time if you feel uncomfortable or upset.

I may contact you after the meeting to set up a follow-up interview you if necessary. You will be asked to fill out a form that will give me more information about you like how old you are, what your living arrangements are and if you have ever given birth. No names or other ways of identifying you will be captured and I will put all the information that we collect from all the participants together during analysis without revealing any of their names.

Confidentiality

We will conduct the interviews in a private venue like your, your home or another quiet and private place where you will be comfortable. I will be doing the interview and you are welcome to invite one another person to join you if you need support. Your interview transcripts may be seen by some people other than me however they will be labelled with a participant number to protect your identity. I will use a fake name instead of your real name in the field notes that I will write after your interview. I will conduct the study responsibly and protect your rights to privacy as a participant and treat with respect. Audio files and transcripts will be kept in a password protected computer for two years after the study findings are published and for six years if they are not published.

There are no right or wrong answers in this kind of interview because I am just interested in understanding your experiences, perceptions and thoughts. Should I contact you for a follow up interview, you are also welcome to decline the invitation. You will get a R50 airtime voucher for your time and effort.

Study results

The final research report will be submitted to the University of the Witwatersrand School of Public health for assessment and possibly be summarised in presentations and abstracts and shared at conferences or published in academic journals. You will be offered the opportunity to see the results along with the research network that developed the vaginal microbicide ring and conducted one of the clinical studies.

Contact information

You are welcome to contact me if there is anything you would like me to clarify regarding the study, the microbicide vaginal ring and the interview process. I will also provide you with a copy of the information sheet just before the interview begins and give you enough time to read it carefully and ask questions.

Please see my contact details below:

Luyanda Majija

luyandamajija@gmail.com

0786262296

Ethics questions

If you have any questions about your rights as a participant during this process you may contact:

Professor Clement Penny

Email: clement.penny@wits.ac.za

Contact number: (011) 717 2301

OR

Ms Zanele Ndlovu

Email: (011) 717 1252

Contact number: zanele.ndlovu@wits.ac.za

Counselling services

If you would like to receive counselling you may contact the organisation(s) below for assistance:

LoveLife

0800 121 900

Family Life Center

Johannesburg CBD: (011) 833 2057

Soweto: (011) 984 0266

Centre for Psychological Services and Career Development

Doornfontein: (011) 559 6042

Soweto: (011) 559 5752

Focus group discussion information sheet

Hi everyone, as you know my name is Luyanda Majija, a Master of Public Health student from the University of the Witwatersrand, Johannesburg. This is an invitation to participate in a focus group discussion which is part of my study to explore young women's perceptions of the vaginal microbicide ring for preventing HIV in Johannesburg.

What we are going to do today is talk about the vaginal ring that I showed you when we spoke one-on-one. The reason I have come back to speak with you in a group is because I would like us to spend more time discussing the vaginal ring and how it could fit into your lives.

About the vaginal ring

As a reminder, vaginal microbicide rings are products that can prevent HIV when inserted into the vagina before sex. Last year, the results of two clinical research studies showed that a monthly vaginal ring containing an ARV protected woman aged 18-45 against HIV by 31 percent. Younger women in the study received much lower levels of protection. Additional evidence proving that the microbicide ring is effective among a larger group of women, would be motivation to make it available to all women. Therefore, understanding how acceptable the ring would be in the context of young women's lives and relationships is very important.

Joining the study

If you agree to participate in the focus group discussion, you will join five other young women in the age group 18-24 from Soweto whose lives are similar to yours in some ways.

The discussion will be between 60 and 90 minutes long. I am not going to ask you anything too personal and I'll do my best to make you as comfortable as possible. This session is all about what you think. There are no right or wrong answers to anything that we discuss.

Unlike my individual interviews with you, in this session I would like you to talk more amongst yourselves and I will just guide the discussion.

I would like to encourage you to be open about your opinions of this ring and to do your best to think about and communicate how it could fit into your life. All your opinions matter. With that said I would like to ask that you treat others with respect and accept their views even if you don't agree. Please try not to be judgemental towards each other.

The discussion will cover different topics to help me understand your life and how the vaginal ring could potentially fit into your life. I will record interview and if you agree, type out everything you have said so that I can analyse your responses for the final research report.

Confidentiality

While I will keep your identity confidential, unfortunately I cannot guarantee that other group members will.

I will capture all the information that I collect from this discussion without revealing any of your real names. You are welcome to use a fake name if you like.

Study results

The final research report will be submitted to the University of the Witwatersrand School of Public health for assessment and possibly be summarised in presentations and abstracts and shared at conferences or published in academic journals. You will be offered the opportunity to see the results along with the research network that developed the vaginal microbicide ring and conducted one of the clinical studies.

Contact information

You are welcome to contact me if there is anything you would like me to clarify regarding the study, the microbicide vaginal ring and the interview process. I will also provide you with a copy of the information sheet just before the interview begins and give you enough time to read it carefully and ask questions.

Please see my contact details below:

Luyanda Majija

luyandamajija@gmail.com

0786262296

Ethics questions

If you have any questions about your rights as a participant during this process you may contact:

Professor Clement Penny

Email: clement.penny@wits.ac.za

Contact number: (011) 717 2301

OR

Ms Zanele Ndlovu

Email: (011) 717 1252

Contact number: zanele.ndlovu@wits.ac.za

Appendix C: Demographic questionnaire

Unique ID number:___

Participant's name_____

Please make a cross "**X**" next to the answer that best describes you.

Question	Option	Selection
What was your age at your last birthday?		
What is your ethnicity?	Black	
	White	
	Indian	
	Coloured	
	Other	
What is the highest level of education that you have completed?	None	
	Primary	
	Secondary	
	Tertiary	
Are you currently in an intimate relationship?	Yes	
	No	
What is your relationship status?	Single	
	Married	
	In a relationship	
Are you currently using any contraception?	Yes	
	No	

If yes, which kind?	Pill	
	Injectable	
	IUD	
	Implant	
Which menstrual product do you prefer?	Pads	
	Tampons	
Have you ever given birth?	Yes	
	No	
What is your employment status?	Employed	
	Self-employed	
	Unemployed	
	Student (full-time)	
What is your living situation?	Living alone	
	Living with partner	
	Living at home with parent(s) or guardians	
	Living with friends or roommates	
	Other	

Appendix D: Discussion guides

In-depth interview guide

1. Tell me a bit about yourself?
2. Can you please describe your living arrangements for me.
    - Who do you live with?
    - Can you describe the kinds of conversations you have with the people you live with about sex and use of protective methods?
    - How comfortable are you with keeping STI protection methods and contraceptives at home?
    - How do you feel about them discovering them? Can you tell me about what happened when your loved ones discovered that you were using this protection?
3. Tell me about your current or most recent intimate relationship.
    - Tell me about how you met.
    - How would you describe the nature of your relationship (monogamous, serious)?
    - (How) Do/did you discuss sexual health issues with your partner? How did any of these conversations go?
4. Tell me about your experiences initiating sexual activity in your intimate relationships (if at all)?
    - Under which circumstances do/did you initiate sexual activity?
    - Tell me about your partner's reaction when you initiate(d) sexual activity?
5. What kind of contraceptive methods are you using, if any?
    - Can you describe the first time you received or got contraception?
    - How were you convinced you to start using them?
    - Tell me about how you started using them.
    - How would you say your partner feels about you using contraceptives?
6. In the context of your relationships, how do you think about HIV?
    - To what extent would you consider yourself at risk of getting HIV?
    - Please describe the kinds of HIV/STI protection methods are you using, if any?
    - Tell me about your experiences of these methods.
    - Can you tell me about how you decide on/negotiate use of these methods?
    - If you initiate/suggest use, what is your partner's reaction?

7. I am going to show you a vaginal ring. It is currently used to deliver a contraceptive (although not easily available in South Africa). It can be inserted in the vagina for a period up to a month. In South Africa there have been studies exploring the ring for the delivery of HIV prevention ….
    - What do you think about the device?
    - How can you imagine using a device like this? Tell me your thoughts …
    - If you think about your relationship with X that you told me about before how would it work if you were to want to use the ring?
    - How would it be if you think about other relationships that you've had (same/ different - why?)
8. Is there anything else that you would like to share?

Focus group discussion guide

Hello everyone, it is good to see you all again. Welcome and thank you for participating in today's session.

Have you all read and understood the information sheet? Are there any questions before we begin?

Let's start with introductions. Please share your name (or a fake name that you want to use today) and say an animal that you most like. You can tell us why you like the animal or feel similar to that animal.

- How long have you lived in this neighbourhood/community?
    - Tell me one thing you like and one thing you don't like about your neighbourhood/community.
- How do you think young women your age are treated in this area?

It's been a while since I talked to you, what have you thought about the vaginal ring that I showed you in the video?

[Researcher will pass the ring around and ask a few questions]

- Tell me what you think of this ring?
    - What do you understand about how the ring works? What do you understand about how much the ring can protect you?

- How would young women your age respond to the ring?
    - What if it were a contraceptive as well as for HIV prevention?
    - What would make it easier or more difficult to use? (availability, access cost)
    - What concerns might young women have about using the ring?

- How do you see young women your age using the ring while living at home?
    - What would family members think about the ring?
    - What would your older sisters, cousins and other relatives think about a young woman using this ring?

- Some of you are quite close with your friends, what would they think about you using this ring?
    - How would you talk about the ring with your friends, if at all?

- Think for a few seconds about a current or most recent relationship. How do you think the ring could fit into a relationship?
    - What would a boyfriend think/feel about you using the ring?
    - How might boyfriend's like the ring compared with condoms? Compared with injection?
    - How would a new boyfriend or one-night-stand react to learning that a girl uses the ring?

- Now I want you to imagine that you decided to use the ring.
    - Who would you tell that you were using the ring, if anyone?
    - ?
    - Where would you like to access the ring? (clinic, shop, elsewhere)

    - If you had to go to the clinic to get the ring, how would you feel?
    - How would you feel about removing it and inserting it each month? What if you could ask a clinic sister to help with this?
    - What could your other worries be about the ring, if anything?

- Who would you recommend the ring to? Who do you think should be using the ring?
- Is there anything else you would like to share with me?

Thank you for participating in today's session, I appreciate it.

Appendix E: Informed consent forms

In-depth interview informed consent form

I (name and surname)_____hereby confirm that I have been satisfactory briefed by the researcher (interviewer) on the study and interview process. I understand how my responses will be captured, stored and analysed for the purpose of the study. The researcher has explained the study objectives in detail and answered all my questions and concerns about participating in the study. I understand that I can choose to not answer some questions and to request a break at any time. I know that the researcher may contact me to do a follow-up interview. I fully understand that I can stop my involvement in the study at any time and to also decline any additional interviews with no repercussions.

I agree to participate in the study and grant permission for use of my personal information and interview responses.

Participant's signature:_____Place:_____Date:_____

Researcher's name_____

Researcher's signature_____Place:_____Date:_____

In-depth interview audio-recording informed consent form

The researcher has asked my permission to record the audio of my interview and clearly explained the reasons for the process. I have been assured that I can stop the interview process at any time and ask that the recorded file be deleted at my request.

I understand that the recording and its transcription will be kept confidential at all times and stored on a password protected computer for two years after the study findings are published and for six years if they are not published.

I consent to having the interview audio-recorded.

Participant's name_____

Participant's signature:_____Place:_____Date:_____

Researcher's name_____

Researcher's signature_____Place:_____Date:_____

Focus group discussion audio recording consent form

I have given the researcher approval to audio record everything I say in the focus group discussion. I have understood her explanation that the reasons for doing an audio recording is to ensure she has a captured every detail of the conversation and can refer back to exactly what was said when she analyses the information. She has clearly explained that the audio recording will be typed out for a research report. I understand that the recording and its transcription will be kept confidential at all times and stored on a password protected computer for two years after the study findings are published and for six years if they are not published.

Participant's name_____

Participant's signature:_____Place:_____Date:_____

Researcher's name_____

Researcher's signature_____Place:_____Date:_____

Appendix F: Contact information for counselling services

Appendix G: Ethics clearance certificate

R14/49 Ms L Majija

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
CLEARANCE CERTIFICATE NO. M170856

NAME: (Principal Investigator)	Ms L Majija
DEPARTMENT:	School of Public Health Medical School
PROJECT TITLE:	Exploring young women's perceptions of the vaginal microbicide ring for preventing HIV in Johannesburg
DATE CONSIDERED:	25/08/2017
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Professor N Christofides and Dr A Hatcher
APPROVED BY:	Professor PE Cleaton-Jones, Chairperson, HREC (Medical)
DATE OF APPROVAL:	15/12/2017

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

DECLARATION OF INVESTIGATORS

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

Principal Investigator Signature

19 December 2017
Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES