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**Exploring adolescent girls and young women’s oral PrEP
readiness from a school based’ perspective in Vulindlela,
KZN**

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Dissertation presented in fulfilment of the Degree of Master of Science,
In the Centre for Communication, Media and Society,
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Ethical Approval Number BE500/17

July 2019

DECLARATION

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I dedicate this work to

*My niece, Sithandiwe “Fofò” Bokolo, as a motivation for her to seek greater things in life
through education.*

*As you complete your high school education may you push hard in enough to realise your
goals.*

Acknowledgements

I would firstly like to extend my sincere gratitude to my supervisor, Dr Eliza Govender for her support and guidance from conceptualising this study till the end. Many thanks for the invaluable guidance and pushing me hard to complete on time. Your encouragement and words of wisdom kept me going.

My thanks also go to the NRF Thuthuka fund for the financial support during the data collection period. It made a huge difference and was highly appreciated.

I would further like to thank my forever supportive family, my parents Nomzi and Mendo Bokolo have always been my pillar of strength. To my friends who spent time listening to my ideas and stresses and helped to keep my sanity, thank you so much. Nyiko Tricia Maluleke, at the end of each call, I was motivated to do better. Sisipho Tshaka and Moreblessings Siziba your support was invaluable, the free campus tours were appreciated.

My heartfelt gratitude is reserved for the Almighty God for His undying love and mercies throughout this study. Indeed the Lord's favour is upon me.

Abstract

Over the past decades, great strides have been made globally in reducing the incidence of new HIV infections. Despite significant breakthroughs in HIV prevention, certain segments of the population continue to experience a rise in new infections. In particular, adolescent girls and young women continue to bear a disproportionate burden of new HIV infections across the world, including South Africa. It is in this context that Oral Pre-Exposure Prophylaxis (Oral PrEP) was introduced as an alternative intervention for the prevention of new infections among individuals at high risk of HIV acquisition. A range of studies have attested to the effectiveness of oral PrEP when used properly alongside other HIV prevention strategies. While its effectiveness has been confirmed scientifically, there is limited academic knowledge of the perceptions of the individuals and structures in the community that would support and facilitate the adoption of Oral PrEP amongst adolescent girls and young women (AGYW).

This study sought to understand the role of schools as a community structure in preparing AGYW for Oral PrEP uptake in Vulindlela, a community bearing the greatest burden of HIV infections in rural KZN. Twelve semi-structured interviews were conducted with teachers and school heads in six schools in Vulindlela. A purposive sampling method was used to identify the Life Orientation teachers and senior staff members that were interviewed in the study. The Health Belief Model and the Culture-Centred Approach were used to obtain a detailed understanding of the topic under study. The results showed that teachers were aware of the HIV risks facing young women in their schools, but had limited knowledge about Oral PrEP and how it works. Generally there were reservations about the distribution and use of Oral PrEP among learners, owing to concerns around increased sexual risk behaviour and promiscuity. The Department of Education's stance on HIV prevention in schools was also found to be a barrier to positioning schools as an environment that is conducive for the introduction of Oral PrEP. In order to realise the full potential of Oral PrEP, the cultural barriers in the community should be addressed as these have the potential to hinder or facilitate the uptake of this critical intervention. Community structures such as schools and health centres should be engaged with a view to creating an enabling environment for the uptake of Oral PrEP by school-going girls.

Key words: oral PrEP, adolescent girls and young women, HIV, prevention

Acronyms and Abbreviations

AGYW	Adolescent girls and young women
AIDS	Acquired Immunodeficiency Syndrome
ART	Antiretroviral Therapy
CAPRISA	Centre for the AIDS Programme of Research in South Africa
CCA	Culture-Centred Approach
DOE	Department of Education
DOH	Department of Health
HBM	Health Belief Model
HIV	Human Immunodeficiency Virus
KZN	KwaZulu Natal
MMC	Medical Male Circumcision
NGO	Non-Governmental Organisation
PrEP	Pre-Exposure Prophylaxis
SA	South Africa
SEMCHB	Social Ecology Model of Communication and Health Behaviour
SRH	Sexual and Reproductive Health
STI	Sexually transmitted Infection
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV and AIDS
WHO	World Health Organisation

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Chapter 1

Introductory Chapter

Introduction

The topic of HIV prevention has been at the centre of many health debates globally with the aim of setting a clear mandate towards the reduction of new HIV infections. The World Health Organisation (WHO) have set the 90-90-90 targets that aim to increase the identification of new HIV cases, to improve their linkage to care and retention in care (UNAIDS, 2014). The 90-90-90 targets stipulate that 90% of people living with HIV must be identified or diagnosed, 90% of the diagnosed should be initiated on ART and 90% of these should be virally suppressed (UNAIDS, 2014). These targets have been driving HIV efforts in many countries, however, in the midst of identifying new infections and ensuring their engagement in care, there has also been growing focus on HIV prevention for the uninfected populations. This in the main was to ensure that HIV negative populations are reached with prevention messages and interventions to ensure that they remain uninfected even in the context of growing new infections in some parts of the globe, particularly in Southern Africa. Over the years there have been increasing efforts to introduce and implement HIV prevention programmes and interventions. Some of these prevention interventions have achieved great strides in the reduction of new infections. However, there is still a gap in prevention efforts and this is seen through the stubborn high infection rates in South Africa and other countries in Southern Africa.

The latest addition to the HIV prevention package is the oral pre-exposure prophylaxis (PrEP) which was recommended by the WHO in 2015 for populations at substantial risk of HIV infection (WHO, 2015) and adopted by the South African government in 2016 (SA NDOH, 2016). The implementation of oral PrEP, like any other prevention programme in communities, requires collective understanding and acceptance of the prevention. In other words, the intended users are not solely charged with the responsibility to adopt the intervention but their decisions about an intervention are formulated within their specific contexts and these determine whether they accept or reject an intervention. It is in this context that this study sought to understand the readiness of adolescent girls and young women for oral PrEP uptake from a school based perspective. The study aimed to understand the perceptions of school teachers in matters of HIV prevention for adolescent girls and the extent to which they would

be willing to support the implementation of oral PrEP for school girls. The study was premised from an understanding that schools are influential structures in the community and that school teachers can serve as change agents to motivate school girls to adopt a particular health intervention. This chapter seeks to introduce the study and build a clear setting for the chapters that follow. This specific chapter begins with a brief background to the study.

Background to the study

The HIV burden remains at its highest in South Africa, though considerable progress has been made in reducing new HIV infections and HIV related deaths (Nweze *et al.*, 2017; Gutreuter *et al.*, 2019). In 2016, there were 7.1 million people estimated to be living with HIV and about 270 000 new HIV infections as well as an estimated 110 000 HIV related deaths (UNAIDS, 2017). The new HIV infection rates dropped from 1.9% in 2002 to 0.9% in 2017 with a national prevalence of 12.6% (Stats SA, 2017). Among the factors that have contributed to these reductions is the implementation of a more inclusive treatment programme which was meant for all individuals diagnosed with HIV, regardless of their CD4 (Cluster of Differentiation 4) count. This intervention led to increased numbers of people enrolled into the treatment programme, thereby reducing HIV related deaths. This expanded treatment programme was realised in South Africa in 2016, following the implementation of the Universal Test and Treat (UTT) strategy recommended by the WHO. The UTT strategy requires that all individuals identified with HIV be initiated on life-long ART without considerations of their CD4 count, which was previously a pre-requisite for ART initiation (SA NDOH, 2016). South Africa has been argued to have the largest treatment programme worldwide (Venter *et al.*, 2017).

These declines in HIV mortality in South Africa, and notably the most HIV affected regions of Eastern and Southern Africa, have also translated to considerable HIV mortality declines globally (UNAIDS, 2018). These two regions, which account for 53% of people living with HIV globally, saw a mortality decline of 42% in the period 2010 to 2017 and this is attributed to the roll-out of the UTT strategy in these regions. Also notable are the declines in new HIV infections in these regions and in South Africa, both Eastern and Southern Africa recorded a significant decline of 30% between 2010 and 2017 (UNAIDS, 2018). When compared to countries in these two regions, South Africa disproportionately carries the greatest burden of new HIV infections and HIV related deaths. These remain high in SA, even in the context of improved treatment programmes, and this signals a need to focus efforts in SA in order to understand the reasons for these significantly high incidences. The UNAIDS data shows the

disproportionate distribution of new HIV infections and HIV mortalities in these regions. Fig.1.1 shows the depth of the HIV challenge in South Africa as it has the largest proportion of new HIV infections even when compared to countries in Southern Africa.

The picture does not only look skewed for new HIV infections in South Africa when compared to countries in eastern and southern region, the HIV related mortalities are also concentrated in South Africa. A significant 29% of all deaths related to HIV in both regions were registered in South Africa and this points to a dire picture of HIV in the country. Thus, placing SA at the centre of HIV prevention and treatment scale-ups is key to address this unequal view of infections and deaths in the two regions. Fig. 1.2 shows the distribution of HIV related deaths in eastern and southern Africa, 2017.

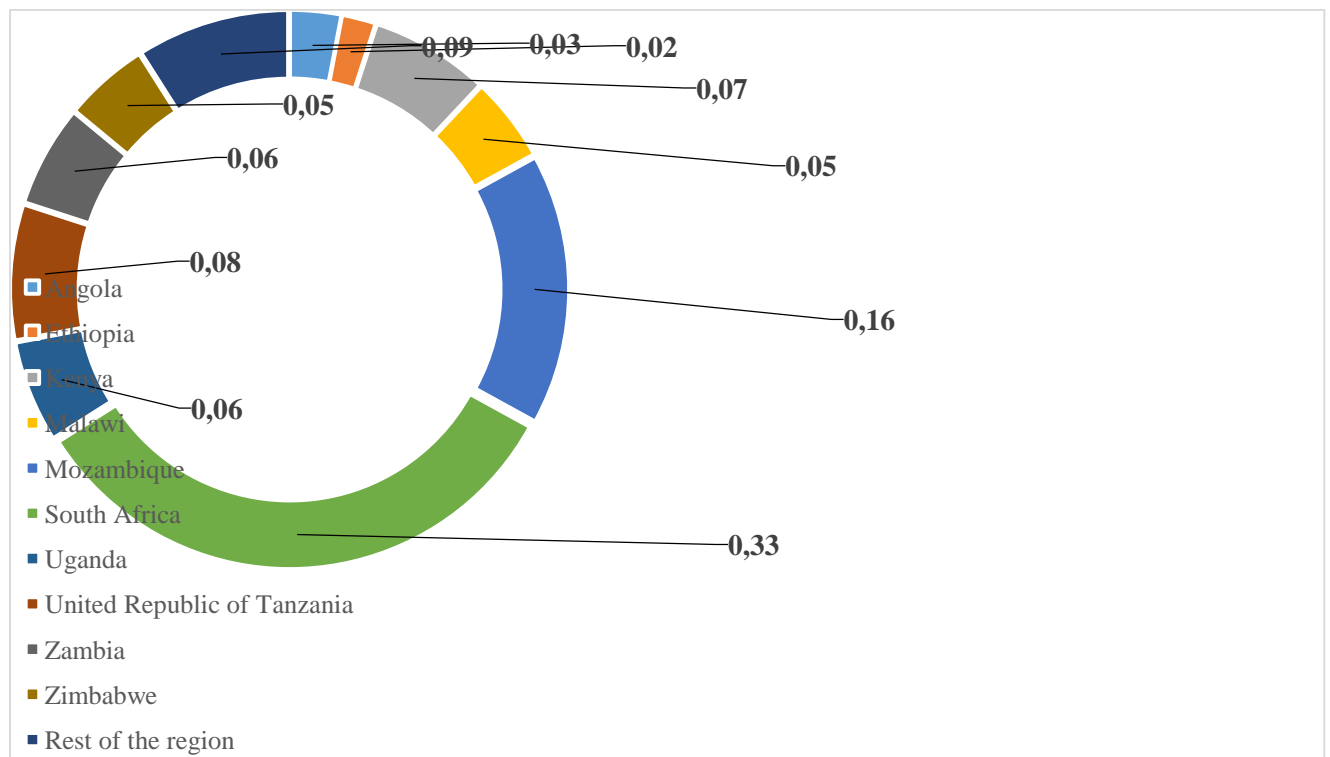


Fig 1.1: Distribution of new HIV infections by country eastern and southern Africa, 2017 (Adapted from UNAIDS 2018 estimates, UNAIDS, 2018).

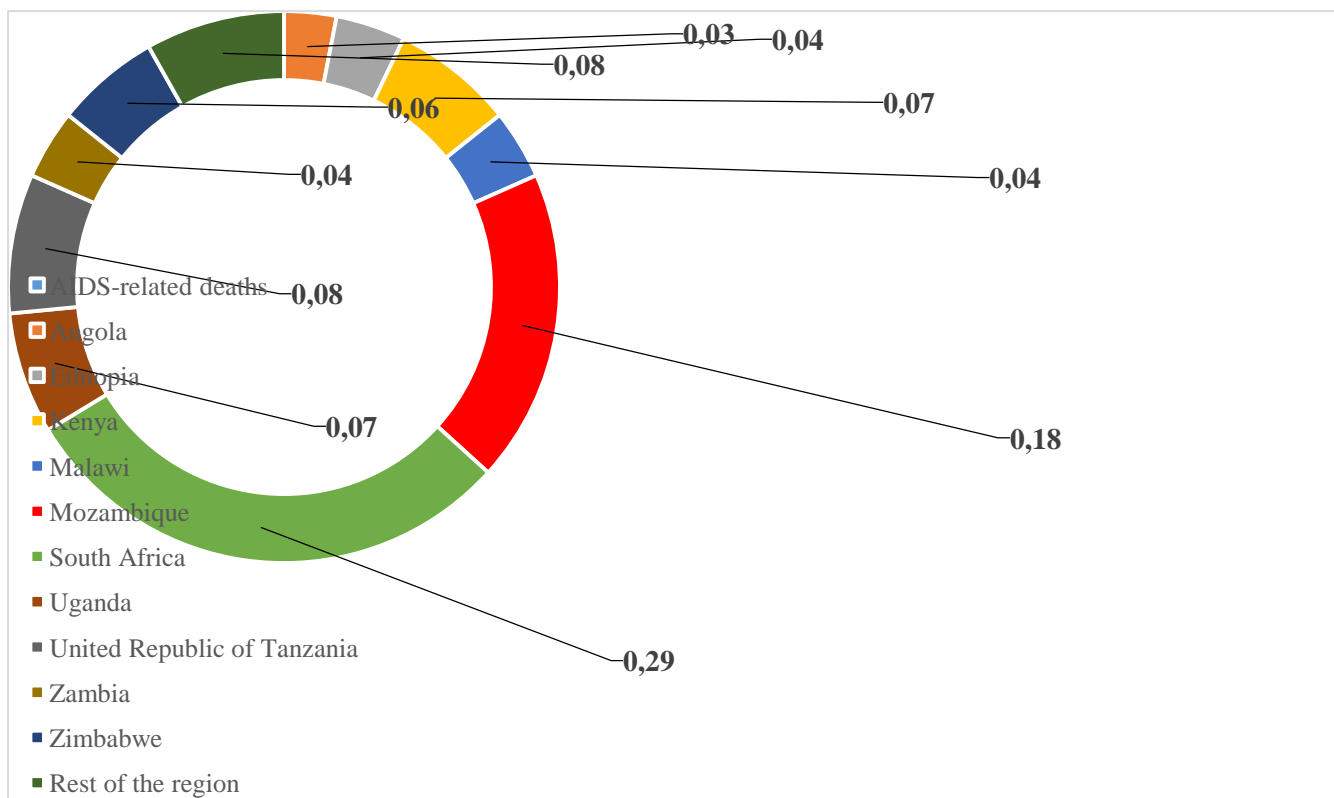


Fig 1.2: Distribution of AIDS-related deaths by country, eastern and southern Africa, 2017 (Adapted from UNAIDS 2018 estimates, UNAIDS, 2018).

While efforts should be made to channel resources to curb the spread of infections in SA and to ensure a vigorous implementation of prevention and treatment programmes that will assist in the fight against HIV, there is also need to focus on the disproportionate spread of HIV across populations in SA. A gender and age disaggregation of people infected with HIV shows a further disproportionate distribution of the HIV incidence within South Africa (Dellar *et al.*, 2015). Women remain at the centre of HIV infections, with young women between the ages of 15 and 24 being the most vulnerable to HIV infections (UNAIDS, 2018; Dellar *et al.*, 2015; PEPFAR, 2015). Addressing the high incidence among young women remains pivotal, as it is estimated that almost a quarter of the overall new infections occur amongst this population group (Shisana *et al.*, 2014). Global programmes and efforts to reduce HIV infections, such as the “AIDS-free generation”, will be undermined by these growing incidences of HIV infections, thereby requiring a focussed effort to reduce new infections among young women in high burden communities.

It is important to note that the stubbornness of HIV infections in SA communities has been occurring in the presence of a wide range of HIV prevention programmes. These include the

distribution of both male and female condoms, increased uptake of medical male circumcision (MMC), increased HIV counselling and testing, and the growing treatment programme. Some progress has been achieved in HIV reduction through these programmes but there is still a gap in user-centred prevention methods. Oral PrEP offers hope to fill this gap, it was introduced in 2015 by the WHO for adoption by populations at substantial risk of HIV acquisition (WHO, 2015). Oral PrEP is an antiretroviral drug for HIV negative people to prevent HIV infection (Koechlin et al., 2016) and is recommended to be used with other HIV prevention tools and not in isolation (SA Department of Health, 2016). In realising the benefits of oral PrEP, the decision for uptake should not be limited to the individual but also consider community structures, such as schools, as these are social influencers to decision making that can be gatekeepers to oral PrEP uptake. Social models of health behaviour reflect the role of schools, primary health facilities, churches and other community bodies in influencing adolescents' participation in health programmes (Tenkorang and Maticka-Tyndale, 2013). Schools are noted as the most influential in efforts to reach adolescent girls, conveying health messages and redirecting health behaviour. A study in Uganda showed that the inclusion of HIV related topics in school programmes and curricular yields results and informs behaviour change (Jacob *et al*, 2007).

Given that oral PrEP is a fairly new prevention intervention in South Africa and most people might not have much knowledge about its use and benefits, this study sought to understand the readiness of potential users for uptake. It achieved this by examining AGYW readiness from the perspective of the schools. This study built on data collected from a previous study, conducted in 2017, on the perceptions of AGYW on oral PrEP in Vulindlela. Unlike this current study that sought to understand AGYW readiness for oral PrEP from a school based perspective, the previous study sought to explore the perceptions of AGYW themselves, and adopted an individualistic approach to understanding the acceptance of oral PrEP among AGYW. However, acknowledging that health decisions are not solely reliant on the individuals but also on community structures, including schools; this study was an extension of this previous study and sought to incorporate the role of schools in preparing AGYW for oral PrEP uptake. In the previous study, focus group discussions were conducted with AGYW to understand their views and perceptions of oral PrEP. Layering on the previous study, this study moved from the individual level of understanding oral PrEP to incorporate other influencers to the uptake, or lack thereof, of oral PrEP by AGYW in the Vulindlela community and these included schools.

Problem statement

The disproportionate distribution of the HIV burden in South African communities remains a challenge to curbing the HIV spread. AGYW continue to bear the greatest brunt of HIV as opposed to their male counterparts and to the general population (Zuma *et al.*, 2016). Young women arguably carry a double burden of HIV, firstly the HIV prevalence is high among women as opposed to men and even higher among young women (Shisana *et al.*, 2014), which signals a vastly skewed picture in terms of the HIV spread across populations. Efforts have been made to curb the spread of HIV infections through the adoption and implementation of a range of HIV prevention programmes, however, minimal outcomes have been achieved particularly among young women who continue to be at the centre of new HIV infections. The stubborn infection rates among AGYW point to the need to consider other prevention methods that will be more targeted at AGYW and under their control, given that a number of the initial prevention methods require negotiation and co-use with partners, thus, in contexts where women voices are suppressed these have proved ineffective.

In addressing some of the shortfalls and adding to the HIV prevention package, oral PrEP was introduced to offer a user-centred prevention option compared to many existing methods. However, a contextual understanding of communities where the AGYW are located, raises concerns about the extent to which young women will be willing and able to adopt oral PrEP. This study acknowledged that health decisions are not made in isolation and that social and cultural contexts play a significant role. Thus, in order to realise the full potential of oral PrEP as a prevention method, contextual factors that are likely to contribute towards the adoption or rejection of oral PrEP should be investigated so that a better understanding of the readiness and willingness of AGYW to adopt PrEP is achieved. In the context of this study, schools were seen as a base for many adolescent girls and the role of schools in preparing them for oral PrEP uptake was key. Schools are important community structures that can influence health behaviours of girls in different ways, they could act as enablers or barriers to AGYW's oral PrEP readiness. Hence, it was important to consider their specific role in preparing and supporting girls for oral PrEP uptake, as this offers an important contextual understanding of the acceptance of oral PrEP in communities.

Rationale of the study

Oral PrEP offers an alternative prevention intervention for populations at substantial risk of HIV acquisition which includes AGYW. A number of clinical trials have been done in different

settings to assess the effectiveness of oral PrEP in reducing new HIV infections amongst users (Grant *et al.*, 2010; Grant *et al.*, 2014). In a study conducted in San Francisco on the general populations' use of oral PrEP, it was found that oral PrEP use was higher among men who have sex with men (Volk *et al.*, 2015). This study made significant findings on the reduced risk of HIV acquisition during oral PrEP use, there were no new cases of HIV identified amongst users even when users reported poor use of condoms and there were increased cases of STIs (Volk *et al.*, 2015). Overall, oral PrEP is a safe and effective prevention method, as shown in a number of studies, particularly among individuals who are sexually active (Grant *et al.*, 2010; Baeten *et al.*, 2012; Thigpen *et al.*, 2012). While oral PrEP has been proven to be effective, a challenge with its use is adherence. Inconsistent and incorrect use of oral PrEP may prove the drug ineffective, thereby limiting its prevention benefits (Van Damme *et al.*, 2012; Marrazzo *et al.*, 2015).

Considering the potential of oral PrEP in reducing new HIV infections, AGYW would benefit greatly from it as they are highly affected by the scourge of HIV in many communities. This prevention intervention offers hope in curbing the growing cases of new HIV infections among AGYW. Thus, understanding their readiness for oral PrEP adoption was key, given its benefits, but equally important was the support that community structures can provide to ensure that AGYW are ready for uptake. Studies have shown the importance of community structures, such as schools, in HIV prevention, pointing to the extent to which schools can create conducive environments for health education, thereby promoting the adoption of health interventions and improved health behaviours (Lloyd *et al.*, 2012; Schenker and Nyirenda, 2002).

Drawing from the above, this study was premised on the understanding that contexts are important in health decision-making. Thus, schools could act as agents of health change for girls of school going age. There are a range of studies highlighting the effectiveness of oral PrEP in HIV prevention, these were done through clinical trials. Added to this, are available studies focusing on the willingness of AGYW to take oral PrEP in order to reduce their risks of HIV acquisition (Ndzinisa, 2017; Volk *et al.*, 2015). While this is all important in understanding the effectiveness and acceptance of oral PrEP by potential users, there is limited knowledge on examining the role of community structures, particularly schools in supporting and influencing the adoption of oral PrEP. Schools are an influential structure in the community that can influence health behaviour decisions of school girls to a great extent. Thus, a clear understanding of their role in preparing AGYW for oral PrEP uptake remains important if the

full potential of PrEP is to be achieved, as schools could act as both enablers and barriers to PrEP adoption among school girls. In the main, this study sought to explore AGYW oral PrEP readiness from a school based perspective. It achieved this main aim by answering the following specific research questions:

- i. What is the knowledge and attitude of oral PrEP among teachers for HIV prevention among AGYW attending high schools in Vulindlela?
- ii. What are the perceived benefits or barriers from high schools in Vulindlela that could hinder or promote user readiness for oral PrEP?
- iii. What are the proposed cues to action to facilitate user readiness of oral PrEP from a school based perspective in Vulindlela?

Recognising the potential of oral PrEP in reducing HIV infections among AGYW, it was important to understand how schools were willing to participate in the preparation of AGYW for oral PrEP uptake. This study was driven by two imperatives, firstly, it sought to contribute to the academic literature on the role of community structures in supporting the adoption of oral PrEP as a prevention intervention among AGYW. Secondly, it sought to highlight best practices in the contextual understanding of communities and how they affect health decision-making for young women. This clear contextual understanding of communities can offer opportunities for health adoption even for future prevention interventions.

Structure of the dissertation

The following chapter, Chapter 2, provides a detailed review of literature on HIV prevention and AGYW. It firstly reviews literature on HIV to establish patterns and progress made in reducing new infections from a global to a national level. It further reviews the patterns of HIV infection in many communities, focussing particularly on the South African context. Secondly, it reviews literature on existing HIV prevention interventions and their effectiveness on curbing the spread of HIV in SA communities. As part of HIV prevention review, it also focuses on oral PrEP, highlighting debates around it. Lastly, it reviews literature on the role of schools in HIV prevention for AGYW.

Chapter 3, presents the methodology employed in this study to explore the role of schools in preparing AGYW for oral PrEP uptake in Vulindlela. The chapter begins with a description of the study site which is Vulindlela. It further unpacks the research design, sampling method and

details the data collection process. Lastly, it discusses the data analysis method employed to unpack the data collected from school teachers in Vulindlela.

Chapter 4, presents the theoretical framework used in the study in understanding the role of schools in preparing AGYW for oral PrEP uptake in Vulindlela. It begins with placing the study within the broader Social Ecology Model for Communication and Health Behaviour (SEMCHB). It further unpacks the Health Belief Model, as well as the Culture-Centred Approach in relation to the SEMCHB and how these theories are relevant to the study of AGYW readiness for oral PrEP uptake from a school based perspective.

The next chapter, Chapter 5, provides a detailed presentation of the research findings and analysis of the findings. The findings are grouped into three main themes that emanated from the research. The first theme covers the perceptions of teachers towards the HIV risk among AGYW in the school context. The following theme presents the perceptions of school teachers towards oral PrEP adoption among AGYW. The last theme discusses the perceived role of schools in preparing school girls for oral PrEP uptake.

The final chapter, chapter 6, provides a discussion of the research findings. It establishes the links between the research findings and existing literature and explains what this means for oral PrEP adoption and implementation for girls of school going age. Finally, this chapter provides an overall conclusion for the study.

Chapter 2

Literature Review

Introduction

The HIV epidemic continues to be at the centre of many development and health debates signalling the need for focussed efforts in addressing this issue (Chamba, 2011). The global commitment to end the AIDS epidemic by 2030 has been the main objective for many countries' governments when determining their national agendas on HIV/AIDS. While great strides have been made globally to reduce new HIV infections, challenges in decreasing infections among particular groups within populations still remain. Indeed, adolescent girls and young women (AGYW) between the ages of 15 and 24 years remain at substantial risk of contracting HIV. Data shows that the majority of these infections are happening in sub-Saharan Africa and are stubbornly increasing despite the introduction of a number of HIV prevention interventions (Kharsany and Karim, 2016).

In response to the rising HIV infection rates and in addition to the existing HIV prevention methods, the World Health Organisation (WHO) introduced the use of oral pre-exposure prophylaxis (PrEP) as part of the HIV prevention combination package (WHO, 2015). Oral PrEP is targeted at populations at substantial risk of HIV acquisition which includes AGYW in the context of sub-Saharan Africa (Chamba, 2011). However, like any other prevention intervention, oral PrEP has its successes and shortcomings. Beyond the medical achievements and limitations of oral PrEP, there is a need to understand the perceptions and readiness of the potential oral PrEP users as well as structures, such as schools, that are likely to have an influence in the preparation of AGYW for oral PrEP uptake in communities. This study recognised the schools' influence in the community as having an integral role to play in ensuring that AGYW are ready for oral PrEP uptake.

This chapter aims to review the literature on HIV trends over the years with specific focus on infections amongst AGYW; the effectiveness and lack thereof of oral PrEP; and the function of schools in the roll out of prevention interventions to AGYW. The chapter explores some of the factors that have influenced the high infection rates among AGYW in order to establish the relevance and significance of oral PrEP in responding to the HIV prevention needs of young people. It further acknowledges the role of community structures, particularly schools, in

providing HIV education and promoting HIV prevention among adolescents and youths in schools.

A global look on HIV trends

Over the years, there have been notable differences in the global spread of the HIV epidemic and these differences have been consistently defined by gender and age disaggregation. New HIV infections have decelerated amongst the general population, particularly adults with a substantial decline of 8% between 2010 and 2015 and further declined by 11% in the period 2010 to 2016 (UNAIDS, 2016). However, in recent years the number of new infections among adult populations has remained stable and reported to be about 1.9 million in 2015. Therefore, despite the considerable progress that has been made in the fight to curb the rise of new HIV infections, there still remains great disparities in HIV infection rates across regions, populations and gender (UNAIDS, 2016a and UNAIDS, 2016b). To ensure that HIV infection reductions are achieved in all parts of the globe and across the spectrum (including all population groups of all ages) and indeed in the pursuit to end AIDS globally by 2030, these disparities need to be addressed.

Despite the decline in new HIV infections, sub-Saharan Africa remains the hub of HIV, carrying a significant proportion of the world's HIV burden (Nweze *et al.*, 2017). It is estimated that of the 36.7 million people living with HIV globally, almost 26 million were living in sub-Saharan Africa in 2015, which accounts for about two-thirds of HIV infections worldwide (UNAIDS, 2016b). This data points to the significant challenge of HIV in sub-Saharan Africa and places the region as *the* critical focal point in addressing the HIV burden. Even more concerning is that close to 70% of the world's HIV/AIDS related deaths are happening in sub-Saharan Africa (Kharsany and Karim, 2016).

Similar to the global community, HIV infections declined in sub-Saharan Africa from 3.4 million to 1.37 million in 2015 when compared to the global declines from 5 million to 2.1 million (Nweze *et al.*, 2017). These declines in sub-Saharan Africa also vary across different countries in the region. It is indisputable that there have been declines in HIV infections globally including sub-Saharan Africa and the individual countries in this region. The global prevalence has remained steady at 0.8% since 2001, while sub-Saharan Africa has been recording gradual decreases of the HIV prevalence since 2001 (Nweze *et al.*, 2017). HIV related deaths also dropped in the region by 45% between 2005 and 2015 (Viiv Healthcare,

2016). Even with the high HIV incidence rates, when compared to the global community, sub-Saharan Africa has still seen a steady decline of new HIV infections, but these have not been significant enough to substantially lower the HIV burden in the region. With regards to the HIV epidemic, there remains a significant gap between the world and sub-Saharan Africa leaving this region at a susceptible position.

HIV trends in Southern Africa

Even within the region, the HIV incidence differs across countries, with some parts of the region having disproportionately higher HIV infection rates and prevalence. Eastern and Southern Africa have the highest adult HIV prevalence rates compared to Western and Central Africa with 7.1% and 2.2% HIV prevalence respectively (Nweze *et al.*, 2017). The burden of HIV is significantly higher in the Eastern and Southern sub-regions of sub-Saharan Africa. In 2015, there were about 19 million people living with HIV which was 78% higher compared to the Western and Central sub-regions (Nweze *et al.*, 2017). The Southern African sub-region carries the bulk of all HIV infections in sub-Saharan Africa and the world, it also has the highest rates of HIV related deaths compared to other sub-regions (Doherty *et al.*, n.d; Delva and Karim, 2014). These differences across the region sheds light on the need to better understand and unpack the interventions targeted in Southern Africa in order to address the high HIV incidences.

The ten countries falling under the Southern African region constitute less than 1% of the global population but collectively have the highest HIV burden globally (Delva and Karim, 2014). This region continues to see increasing rates of new HIV infections in spite of improved treatment uptake and prevention interventions. While the different countries in this region have noted consistent reductions in HIV infections, it remains the highest HIV burdened sub-region in the world, with over half a million HIV infections in 2012 having occurred in this region alone (Delva and Karim, 2014). To further illustrate the HIV burden in this sub-region, in the world's HIV prevalence rankings in 2012, the first nine places were taken by countries in Southern Africa. While it can be argued that treatment scale-up and rigorous HIV prevention interventions have played a crucial role in reducing the spread of new infections, this region still sees large numbers of new HIV infections (Delva and Karim, 2014). The HIV burden in Southern Africa places it as a region of concern and central to the discussion and implementation of HIV prevention programmes that intends to curb this spread.

South Africa and KZN particularly at the centre of global HIV infections

Collectively, the different countries in the region bear the highest HIV burden but it is South Africa alone which has the greatest proportion of people living with HIV in the world (Nweze *et al.*, 2017). It is estimated that about 20% of people living with HIV globally are in South Africa (Simelela and Venter, 2014). The 2012, Human Sciences Research Council's (HSRC) South African National Household survey showed that close to 20% of all adults and about 12% of the general population were living with HIV (Simelela and Venter, 2014). In 2017, the HIV prevalence was estimated at 12.6% for the general population with the number of people living with HIV estimated at about 7.06 million in the same year. The adult population in South Africa (15 to 49 years) had an HIV prevalence of 18% by the end of 2017 (Stats SA, 2017). However, the infection rates for the general population has declined from 1.9% in 2002 to 0.9% in 2017. Amongst these declines are the infection rates amongst young people between the ages of 15 and 24, these rates dropped from 7.3% in 2002 to 4.6% in 2017 (Stats SA, 2017). Despite these reductions, youths still record the highest infection rates when compared to the general population and this alludes to the need to differentiate between groups within the population in order to ensure that the HIV infection declines recorded are able to draw on comparisons between groups, particularly with regard to young people.

Furthermore, HIV prevalence differs among the country's provinces ranging from 5% in the Western Cape Province to 26% in KZN (Johnson *et al.*, 2017 and KZN PAC, 2017). It is estimated that there are about 1.7 million people living with HIV in KZN, which represents 26% of the national population living with HIV (KZN PAC, 2017). Again, the prevalence in KZN is not equally distributed across districts. This study focuses on one of the HIV burdened districts in KZN- the UMgungundlovu district.

South Africa and the KZN province in particular bear the greatest scourge of HIV infections. However, geographical disparities are not the sole determinants of the HIV burden; gender observations also show significant variations of the HIV prevalence across populations. In other words, the HIV infection rates are not equally high across all population groups in a given geographical location but rather age and gender also shows differences in the HIV infection trends. Young women tend to bear the greatest brunt of HIV infection in many communities. HIV infections among young women, specifically, are almost 4 times higher than their male counterparts of the same age (Dellar *et al.*, 2015). In 2016, it was estimated that about 37% of

new infections were recorded among adolescent girls and young women aged 15 to 24 years (SA NSP for HIV, TB and STIs 2017-2022).

HIV burden among AGYW

The HIV prevalence is higher among women between the ages of 15 and 49 and even highest among AGYW. Globally, it is estimated that about 15% of all women living with HIV are between the ages of 15 and 24 years and 80% of these AGYW live in sub-Saharan Africa (Kharsany and Karim, 2016). AGYW between the ages of 15 and 24 years are at a substantially higher risk of HIV infection despite the fact that they account for only 11% of the total adult population internationally. The HIV infection rates for this population represented 20% of all new HIV infections globally in 2015 (UNAIDS, 2016b; Inwani *et al.*, 2017). Furthermore, AGYW have the highest HIV infection rates compared to their male counterparts of the same age group and are said to contract HIV 5 to 7 times earlier than their males (Kharsany and Karim, 2016; Mavhu *et al.*, 2018). The picture is even direr for AGYW who arguably bear a double burden of HIV infections because they fall into both the category of women who already have high infection rates and the category of young women who are statistically at the greatest risk of HIV infections.

These gender imbalances are clear in regions with high HIV prevalence, such as sub-Saharan Africa. In this region, 25% of all new HIV infections were made up of AGYW, while women in general accounted for 56% of the total HIV statistics among adults (UNAIDS, 2018). The picture looks even dire from the global viewpoint, as almost 80% of all AGYW living with HIV are in sub-Saharan Africa (Mabaso *et al.*, 2018). Likewise, Eastern and Southern Africa has the greatest burden of HIV among AGYW, with about 236 000 new infections annually. South Africa is leading these AGYW infection rates, accounting for 43% (102 000) of new infections in 2015 (Mabaso *et al.*, 2018). In order to make progress in reducing new HIV infections, AGYW should be included in the agenda and have HIV interventions tailored towards them.

The vulnerability of AGYW to HIV infections requires a clear understanding of the factors contributing to the high infection rates. Knowing these vulnerabilities to HIV infection is critical as it can inform the extent to which implemented HIV prevention interventions can be more efficient amongst AGYW. A number of HIV programmes which aim to curb the spread of HIV infections have been implemented in different parts of the globe, including South

Africa. These programmes involve a highly inclusive HIV antiretroviral (ARV) treatment programme and intense HIV prevention interventions. Following the adoption of the WHO Universal Test and Treat strategy in 2015 requiring immediate treatment initiation for all people diagnosed with HIV regardless of their CD4 count (SA Department of Health), the number of people on ARV treatment increased by nearly a third, reaching 17 million between 2014 and 2016 (UNAIDS, 2016b). As a result of treatment availability, HIV related deaths have decreased annually by 43% globally. In the HIV burdened Eastern and Southern African regions, the number of people living with HIV receiving treatment has doubled since 2010 and HIV related deaths decreased by 36% since 2010 (UNAIDS, 2016b). South Africa recorded 51% decline of HIV related deaths (Kharsany and Karim, 2016).

In addition to the treatment scale-up are the HIV prevention interventions that have also led to some declines in new HIV infections. However, HIV infection rates have been stubborn among AGYW and have continued to occur even in the presence of a number of HIV prevention methods, such as HIV counselling and testing, condoms, family planning, and screening of TB and STIs among others (SA NSP for HIV, TB and STIs 2017-2022). In addition to these methods and in responding to the HIV burden, oral PrEP was introduced in 2015 by WHO. Oral PrEP was meant to reduce infections among populations at substantial risk of acquiring HIV. Given the high HIV infection rates among AGYW, it is important to understand their perceptions and their support structures in administering oral PrEP. Notwithstanding the benefits of oral PrEP in reducing new HIV infections, this study considers the role of culture and societal structures in the decisions that AGYW make about their health and explores the role of high schools, particularly in promoting acceptability and preparing AGYW for oral PrEP.

A range of factors contribute to the vulnerability of AGYW to HIV infections. These include biological, behavioural, socio-economic and cultural factors among others (Ramjee and Daniels, 2013). In many parts of Southern Africa, a combination of these factors has led to increased HIV infection risks of women and AGYW in particular (Ramjee and Daniels, 2013 and Celum *et al.*, 2015). These factors also differ across different regions and countries and are context specific (Mabaso *et al.*, 2018). A critical understanding of the contributing factors towards AGYW HIV infection rates is crucial in making informed decisions on the HIV prevention packages that will benefit them and curb the infections rates amongst these age groups. These HIV determinants are discussed in detail below.

Biological factors contributing to AGYW HIV vulnerability

The physiological make-up of women makes them more prone to HIV infection than men and increases their susceptibility (Ramjee and Daniels, 2013 and Celum *et al.*, 2015). Part of the reasons for this biological vulnerability is that women have a “greater mucosal surface area” that is easily exposed to bacteria and infections during sexual intercourse (Ramjee and Daniels, 2013:2). Young women have an even more increased risk of infection due to “cervical ectopy which facilitates greater exposure of target cells to trauma and pathogens in the vagina” (Ramjee and Daniels, 2013:2). Furthermore, sexually transmitted infections are argued to increase the risk of HIV infection and women suffer even more from poor diagnosis of STIs, making treatment difficult (Hayes *et al.*, 2010 and Ramjee and Daniels, 2013). The circumcision status of their male sexual partners also contributes to their risk of infection (Baeten *et al.*, 2010), as the risk of HIV infection decreases among men through circumcision, the opposite is observed when men are not circumcised thereby increasing the risk of HIV infection to their female sexual partners. A number of studies have shown over time that hormonal factors, including pregnancy and injectable contraceptives, also contribute to the HIV susceptibility (Gray *et al.*, 2005 and Polis and Curtis, 2013).

Behavioural factors contributing to AGYW HIV vulnerability

In addition to the biological factors, AGYW also adopt behaviours at an individual level that increases their risk of HIV infection. Engaging in sexual intercourse at a younger age and being sexually involved with older partners have been identified as risky behavioural patterns that can increase chances of HIV acquisition (Celum *et al.*, 2015; Kharsany and Karim, 2016). This risk pattern is associated with decision-making power in a relationship and the power to negotiate sex with an older partner. Studies have shown that when the voice of the woman is suppressed in such relationships, the result is increased risk to sexual illnesses (Celum *et al.*, 2015).

Furthermore, having numerous sexual partners, inconsistent use of condoms and substance abuse are also behavioural attributes that put AGYW at an increased risk of HIV acquisition (Jewkes *et al.*, 2010). Studies conducted across the African region have shown that delayed sexual debut and reduced age differences among sexual partners, consistent condom use and one or fewer sexual partners can reduce the number of new HIV cases (Boileau *et al.*, 2009;

Pettifor *et al.*, 2004; Ramjee and Daniels, 2013). However, these are not always realistic for some young women. A study conducted in South Africa revealed that 7.8% of young girls and women were engaging in sexual intercourses at the tender age of 14 years (Pettifor *et al.*, 2004). There are cultural factors linked to these behaviours, especially in patriarchal societies where men have deciding authority over women and their relationships.

Socio-economic factors contributing to AGYW HIV vulnerability

Socio-economic challenges including poverty, unemployment and inequalities remain a reality for many African countries, including South Africa. These socio-economic challenges pose health difficulties to AGYW as they strive to respond to the social and economic exclusions in society. Young women engage in risky sexual behaviours at an early age in order to bridge the socio-economic gaps. Poverty in sub-Saharan Africa has been identified as the main driver of HIV infections among AGYW (Ramjee and Daniels, 2013). The lack of income often leads to transactional sex and younger women coerced into early sexual debut by older men. Significant age disparities have been identified as perpetuating unsafe sex encounters where men have more power in the relationship (Ramjee and Daniels, 2013). These socio-economic exclusions pose challenges on the value and extent to which healthy and safe sexual behaviours are considered important as opposed to the need to make ends meet, which at times involves limited consideration for health implications. Again, poor education about healthy sexual behaviours may lead to increased risks and this is evident amongst young women of school going age who do not attend school (Pettifor *et al.*, 2018). The low levels of health education as well as the need for socio-economic opportunities, encourages sexual engagements amongst young women as a form of entertainment in the absence of constructive activities in society (Pettifor *et al.*, 2018).

Cultural factors contributing to AGYW HIV vulnerability

The dominant patriarchal system in Africa perpetuates the vulnerability of young women particularly to HIV infections (Mabaso *et al.*, 2018). The notion that women should not challenge their male partners as a form of respect and obedience strips away the sexual decision-making power of women in these relationships. This in turn leaves men making sexual decisions on behalf of their female partners which can at times be unfavourable for the woman's health (Ranganathan *et al.*, 2017).

The bride payment, commonly known as “lobola,” arguably also contributes to the culture of male entitlement over women. While this idea might be culturally controversial for others, Duffy (2005) argues that the payment of “lobola” encourages a culture of objectifying women, compromising women’s health rights as they depend to a greater extent on their partners to make such decisions. There are also other cultural practices that put women at risk of HIV contraction, including the marrying of widows to their late husband’s brother without considering the health risk to the woman (Ramjee and Daniels, 2013). The cultural practices noted here are but a few that place women’s health at risk, increasing their vulnerability to HIV infections. Thus, it remains crucial that when discussing HIV prevention methods for AGYW, these cultural factors are considered to ensure the comprehensiveness and context specificity of these interventions.

HIV Prevention interventions for AGYW

The brunt of HIV infections among AGYW continues even with existing HIV prevention methods. Since the advent of HIV, experts in the health sector have been working tirelessly to come up with HIV prevention innovations and these have developed and evolved over the years. However, there has been notable challenges with the implementation of existing prevention interventions especially among young women. The effectiveness of the prevention interventions have relied heavily on the users themselves underestimating the power of social and cultural contexts where these interventions are adopted. Michielsen (2012) argues that health-related decisions are interlinked and depends on the individual preferences, the character of the sexual partner, the nature of the relationship as well as the social and cultural contexts. For many young women, the societal norms and nature of their relationships makes it difficult for them to adopt prevention interventions because the contextual settings are an important consideration in health decision making. Thus, in the context of contextual limitations to health decisions, the effectiveness of these interventions is compromised.

These HIV prevention interventions range from biomedical prevention innovations, behavioural changes and structural interventions (Michielsen, 2012). The UNAIDS recommends an HIV combination prevention approach that addresses all three layers of HIV prevention, that is, biomedical, behavioural and structural interventions (Chattu, 2014). The combination of all three is believed to have a sustainable impact on curbing the rise of new

HIV infections in communities. This section will briefly discuss what each of these prevention themes entail and how these are relevant in addressing the prevalence of HIV among AGYW.

Behavioural interventions

The behavioural approach to HIV prevention aims at changing the individual's and societies' behaviour and attitudes towards HIV acquisition and prevention through the use of educational programmes, capacity building and peer-led groups (Coates *et al.*, 2008). The behavioural interventions focus on influencing people's attitudes and knowledge of HIV and how their behaviours can lead to HIV reductions in society. This intervention promotes the use of behavioural changes that include but are not limited to the following: abstinence or delayed sexual debut, the reduction of the number of sexual partners, the reduction of huge age differences between sexual partners and the consistent use of condoms (Chattu, 2014 and Michielsen, 2012). Programmes such as HIV counselling and testing are not solely important for the identification of people's statuses and their specific risk reduction counselling, it also provides communities with invaluable knowledge that helps in the reduction of HIV stigma and discrimination in society (Ramjee and Daniels, 2013).

These behavioural interventions have had different successes in different countries and regions. The mass media campaigns providing education on HIV prevention, including condom use and avoiding risky sexual behaviours, led to the reduction of new HIV infections (Ramjee and Daniels, 2013). Peer education programmes have had some success in improving behavioural outcomes associated with HIV, but the extent to which behavioural changes improved biological outcomes of HIV infection have not been proved through research (Medley *et al.*, 2009; Jewkes *et al.*, 2008; Tolli, 2012). In some instances, peer education programmes have not necessarily translated to observable behavioural change and reduced HIV infections (Tolli, 2012). In the case of South Africa, the Centre for Disease Control (CDC)-funded Stepping Stones programme, which used participatory methods to increase communication and knowledge, saw decreases in both STI transmission (33% reduction of Herpes) and risky behaviours amongst men (Jewkes *et al.*, 2008). However, there were no direct reductions in HIV prevalence that were noted as a result of this programme (Jewkes *et al.*, 2008).

The behavioural interventions are reported to be less effective in many parts of sub-Saharan Africa when evaluating the expected outcome measures (Mwale and Muula, 2017). This is due to a number of reasons, including that some of the interventions are not well targeted and adopt

an umbrella approach that does not differentiate between HIV prevention needs of adults and youths (Mwale and Muula, 2017). Again, it has been argued that for the behavioural interventions to be effective they should be context specific. The structural interventions are also important in providing a supportive role for the implementation and effectiveness of both the behavioural and biological interventions.

Biomedical interventions

Biomedical prevention methods refer to the specific interventions that target the biological system of people to control or prevent the virus in the body (Chattu, 2014). These include condoms, Medical Male Circumcision (MMC), HIV Testing Services, the use of ART as prevention and recently the introduction of oral PrEP. Condom usage is one intervention that has over the years proved to be effective in HIV reduction (Michielsen, 2012, Chattu, 2014 and Padian *et al.*, 2008). The initial evidence on the efficacy of condom use was observed in studies of HIV-discordant couples. These studies showed that the HIV negative partner was prevented from acquiring the virus through correct and consistent use of condoms (Padian *et al.*, 2008) and about 80% of the HIV negative partners were protected from HIV acquisition (Chattu, 2014). Some of the successes of condom use were recorded in high risk settings that included bath houses in the United States and brothels in Thailand. The use of condoms in these settings showed reduced rates of HIV infection that would not have been expected in the absence of condoms (Padian, 2008).

Medical male circumcision (MMC) is also another effective biomedical prevention method. This refers to the surgical removal of the foreskin from the penis and is reported to reduce the risk of HIV acquisition by up to 60% for males (Chattu, 2014). Findings from a study conducted by Baeten *et al.*, (2010) that enrolled HIV sero-discordant couples, found that a medically circumcised partner can reduce the risk of HIV acquisition for the female partner by up to 40%. Though not statistically significant, MMC indirectly reduces the risk of HIV infection for females through the reduced prevalence in male sexual partners (Padian *et al.*, 2008). As such, the WHO recommends MMC as part of the combination prevention programme, particularly for communities with low circumcision rates and a significant HIV prevalence rate. Given its effectiveness in reducing HIV infections and the cost effectiveness of this practice (since it is a procedure conducted only once), MMC has great potential in HIV prevention efforts (Chattu, 2014).

Furthermore, HIV Counselling and testing is one of the biomedical prevention strategies. The effectiveness of HIV counselling and testing is two-fold. On the one hand, the promotion of HCT is important in ensuring early detection of HIV in people who are already infected. This then informs early treatment initiation which reduces the risk of new transmissions significantly (Cohen *et al.*, 2011). In studies of sero-discordant couples, results showed that early treatment initiation reduced chances of HIV infection for the negative partner significantly. On the other hand, the HCT for HIV negative people allows for early linkages to other services that promote HIV prevention (Chattu, 2014). Intensive risk reduction counselling can also motivate HIV negative people to maintain such statuses and adopt relevant prevention strategies.

In recent years, the use of antiretroviral therapy (ART) as a prevention method has gained momentum and showed significant reductions in new infections. The initial success of ART as prevention was observed since the 1990s with the introduction of ART for HIV infected pregnant women as part of the prevention of mother-to-child transmission (PMTCT) programme (Padian, 2008; Burton *et al.*, 2015). Through the PMTCT programme, HIV positive pregnant women were provided with ART to be used as a pre-exposure prophylaxis for their unborn children, preventing new HIV transmissions as it reduced maternal viral load (Padian, 2008).

In other settings, ART initiations for people living with HIV led to viral suppression, which in turn meant the reduced chances of HIV infection to uninfected sexual partners. The implementation of the Universal Test and Treat (UTT) strategy, following the WHO 2015 recommendations that suggested that all people receiving an HIV positive diagnosis are given ART (Department of Health, 2016), increased the number of people on lifelong ART treatment. The UTT strategy, as opposed to the previous ART guidelines, meant that the CD4 count of people living with HIV was not a determinant for receiving treatment. Since the adoption of UTT, the number of people on ART has increased significantly, with South Africa having the largest number of people on ART globally. Likewise, the viral suppression of people living with HIV translated to reduced chances of HIV infection of the negative partner. This then also serves as a method to prevent HIV transmission.

In recent years, ART in the form of oral PrEP has been introduced to prevent HIV acquisition amongst populations at substantial risk of HIV infection (WHO, 2015). A number of clinical trials have pointed to the effectiveness of this approach in reducing new HIV cases through the

use of oral PrEP as a prevention method for HIV negative people. The successes of oral PrEP in reducing HIV acquisition has motivated this study, with a specific emphasis on the acceptance and readiness of AGYW for oral PrEP uptake from the perspective of schools. The study focuses beyond the biomedical benefits of oral PrEP to include the behavioural and structural factors that affect the use/acceptance and effectiveness of an HIV prevention to its intended users. In other words, this study acknowledges the efficacy of oral PrEP but considers the fact that without the incorporation of behavioural and structural changes, this promising intervention may be unsuccessful in reducing new HIV infections.

The success of oral PrEP and other biomedical interventions requires that they be implemented as part of a combination prevention package (Department of Health, 2016). None of these interventions is meant to work in isolation of other methods if significant results are to be achieved. While this study focuses on one of the biomedical prevention interventions, it also recognises the importance of the behavioural and structural interventions to HIV prevention. Nweze *et al* (2017) argue that in order to reap the full benefits of the biomedical interventions, it is not advisable to use them in isolation of the behavioural interventions for HIV prevention. Rather, it is a combination of these that leads to comprehensive HIV prevention.

Structural interventions

The structural interventions to HIV prevention focuses on making changes to the social, economic, political and environmental factors that contribute to the risk of HIV infection and susceptibility of people to infections (Michielsen, 2012). Implementation of the structural interventions include, addressing of gender inequalities, economic exclusion of key populations such as women and young people as well as addressing poverty issues (Harrison *et al.*, 2010 and Michielsen, 2012). Added to these interventions is the sensitisation of people of school going ages to stay in schools. The HIV risk behaviour can be addressed through some of these structural interventions. A study in South Africa that targeted boys and girls of school going age with financial training, life skills and sexual and reproductive health education, showed positive results. The boys in the programme were reported to have reduced sexual interactions and they had fewer sexual partners (Harrison *et al.*, 2010). This study points to the efficacy of implementing HIV prevention interventions that deal with the social issues underlying the risk of HIV acquisition (Harrison *et al.*, 2010).

Most interventions designed for young people seek to educate the youth about safe sex behaviours and condom negotiation. However, there is minimal, if any, attempt to radically deal with the structural determinants that lead to unsafe sex behaviour and lack of negotiations in youth relationships in the first place (Celum *et al.*, 2015). These structural factors remain a big challenge, resulting in the high prevalence of HIV among young women and are difficult to address, given the socio-economic status of many African countries including South Africa.

When structural factors to HIV acquisition are targeted and comprehensively tackled, both the effectiveness of behavioural and biomedical interventions are most likely to be realised. It is for these reasons that this study seeks to move beyond the biomedical and behavioural interventions to understand the structural influences on HIV risk behaviour and inconsistent use of biomedical interventions. The section on HIV vulnerabilities and prevention interventions has pointed clearly to the intertwined nature of all three levels of interventions, therefore, trying to tackle the 2 without the structural component is likely to undermine the desired result. Therefore, the role of schools as a community structure is also important in understanding the readiness of AGYW and how schools feature in the promotion of biomedical interventions among AGYW.

Gaps in the HIV prevention interventions for AGYW

Some of the interventions mentioned above are not effective in curbing HIV infection and impede on the health needs of certain population groups, particularly AGYW who continue to bear the brunt of HIV infections in South Africa (Dellar *et al.*, 2015; Kharsany and Karim, 2016)). Women remain vulnerable to gender-based violence and other discriminatory attitudes in society, which makes the effectiveness of some of these interventions less appropriate for them as they are unable to negotiate safer health and sexual behaviours in their relationships (Kharsany and Karim, 2016). Therefore, there remains a gap in implementing HIV prevention interventions that are women centred to address some of the structural challenges that women find themselves in.

While it is indisputable that HIV interventions such as the up-scaling of HIV testing and ART use by both people living with and without HIV as a prevention has made had great strides in the reduction of new HIV cases, young people have not equally reaped the benefits of these interventions (Celum *et al.*, 2015 and Padian *et al.*, 2008). The main reason for this is the fact that all these interventions are not under the direct control of young women who remain

vulnerable in society. This has an impact on the extent to which women are able to adopt these products for use without the partner's knowledge. A study conducted in KZN on the women and men's acceptability of new HIV prevention technologies including oral pill, vaginal ring and intravenous methods, found that women were more willing to adopt these inventions for their own benefit, however, male participants were opposed to women using these products (Govender and Karim, 2018). This shows the extent to which, in sexual and health discussions, women's voices are suppressed by dominant male voices. Thus, addressing the HIV risk challenge amongst AGYW requires alternative interventions that put women at the centre of the prevention interventions with no or minimal requirements for male consent in taking these health decisions.

Empowering women to independently adopt prevention product use is also critical in the context of poor HIV status knowledge among some men. The HIV cascades have over time shown that men are not reaching the testing services in great numbers as compared to women. Subsequently, women can be affected by their sexual partners' unknown status, particularly in relationships where there is no space for condom and/or sexual negotiations. In addition to low HIV testing rates, the HIV cascade further shows significant drop outs of men in the treatment cascade (Celum, 2015). This means that the men who drop-out from treatment will remain virally unsuppressed, increasing the risk of infection to their partners and further increasing the vulnerability of women to HIV acquisition.

HIV prevention interventions have, for many years, focused on the behavioural interventions that included the promotion of delayed sexual debut, reduction of sexual partners and increased condom use (Mavedzenge *et al.*, 2014). A significant number of HIV prevention programmes also had a school-based component for young people but implementation of these interventions was hindered by educators who were not comfortable with teaching sexual health topics (Celum *et al.*, 2015). The limitedness of youth-initiated HIV prevention interventions remains a problem, especially in contexts where the youths, particularly AGYW, remain vulnerable to contextual factors of HIV prevention. The accessibility and benefits of these interventions are hindered by the need for negotiating it with a third party, especially given the limited power that AGYW have in some of their relationships. There is therefore a need for HIV prevention methods that are centred on the user to address the accessibility and easy use of the prevention strategies. Community structures, such as schools, remain important in the preparation of AGYW for using prevention interventions in the context of power challenges within relationships.

The advent of Oral PrEP

The use of ART has evolved over the years in an attempt to meet the growing HIV needs of populations. In 2012, the World Health Organisation (WHO) recommended the use of ART as oral PrEP among men who have sex with men, transgender people and sero-discordant couples following demonstration projects that ascertained the optimal delivery approaches (WHO, 2015). Following this, in 2014 WHO developed HIV guidelines strongly recommending oral PrEP to key populations that they defined to include, men who have sex with men, transgender people, sex workers, prisoners and intravenous drug users.

The September 2015 WHO recommendations on the use of oral PrEP replaces the initial guidelines that limited oral PrEP to certain populations (WHO, 2015) without considering the risk of HIV acquisition in other populations that are not covered in the initial eligibility criteria for PrEP access. Thus, in a further effort to curb the spread of HIV infections, WHO recommended the addition of oral PrEP as part of the combination HIV prevention interventions for populations at substantial risk of HIV acquisition (WHO, 2015). The main aim of PrEP was to reduce HIV infections amongst populations considered as being at 'substantial risk' of HIV infections. The term 'substantial risk' in this context has no strict definition as it highly depends on the needs and priorities of the different countries (UNAIDS, 2015b). As such, the list of people at substantial risk includes, but is not limited to, sex workers, men who have sex with men, sero-discordant couples, adolescent girls and young women. Indications for substantial risk also includes populations with an HIV incidence of 3 per 100 person-years without oral PrEP (WHO, 2015).

Oral PrEP is an antiretroviral drug used by HIV negative people to prevent HIV infection (Koechlin *et al.*, 2016). The effectiveness of oral PrEP is documented in a number of clinical trials that show that the consistent use of oral PrEP, in the form of daily Truvada, reduces HIV acquisition for HIV negative populations in men and women (Idoko *et al.*, 2015, McCormack *et al.*, 2016). It is important to note that oral PrEP use is recommended as part of the combination prevention package, which includes HIV counselling and testing, consistent condom use, and MMC for men (ATHENA initiative, 2017). The effectiveness of oral PrEP has been proved in the context of other HIV prevention methods. As such, solely using oral PrEP as a prevention method may not realise its full potential as it is part of a comprehensive prevention package (Department of Health, 2016). Consistent use of oral PrEP with other

prevention methods can reduce the chances of HIV acquisition by up to 92% for people at substantial risk (CDC, 2017; ATHENA initiative, 2017).

Women-centred HIV prevention

In the presence of all the contextual vulnerabilities affecting AGYW, oral PrEP is one of the few interventions that has the potential to meet the needs of AGYW. The unconstrained use of oral PrEP offers AGYW a better space in which to make their own decisions about oral PrEP, independent of their male partners. This intervention is useful and beneficial to young women who remain victims of intimate partner violence and are unable to negotiate safe sex practices with their partners because of the fear of continued violence (Celum, 2015). Proposing oral PrEP to populations at higher risk of HIV acquisition provides greater options of HIV prevention in cases where other prevention methods are deemed ineffective or less convenient to use (UNAIDS, 2015b). Affording people a diverse option of HIV prevention strategies has proved to have benefits on HIV reduction as it responds to the historically unmet needs of HIV risk amongst people who are not benefitting from consistent condom use or who are contextually and structurally disadvantaged from making safer sex decisions independently. Oral PrEP is a significant addition to the biomedical HIV prevention interventions (Young et al., 2014) but adherence is key to the effectiveness of oral PrEP.

Adherence to oral PrEP

Daily administering of oral PrEP has shown great efficacy in reducing the risk of HIV acquisition among the determined high-risk populations (Montgomery et al., 2016). Studies on the use of oral PrEP for HIV prevention among men who have sex with men, showed a reduction rate of up to 90% for men who were adherent to treatment in the United States (Grant et al., 2010). Similarly, Abaasa et al. (2017) state that a number of clinical trials conducted to measure the efficiency of oral PrEP with (TDF/FTC) as an HIV prevention method have shown positive results when users are fully adherent to the medication. Another clinical trial with MSM, further pointed to the efficacy of daily Truvada in HIV reduction, recording an average of 43.8% HIV infection reductions compared to the study participants that received a placebo (Hosek et al., 2013). A further analysis of this clinical trial showed an HIV reduction rate of up to 92% for those patients that had detectable study-drug levels (Hosek et al., 2013). The majority of clinical trials conducted on the efficacy of PrEP in reducing new HIV infections

have a common finding that relates to the effectiveness of Truvada as oral PrEP, if adherence levels are high. As such, Hosek *et al.* (2013) argue that the preventative efficacy of oral PrEP is directly correlated to the high levels of adherence. Put differently, the effectiveness of PrEP in HIV reductions is highly reliant on high adherence levels. With poor adherence, the full potential of oral PrEP cannot be realised.

As such, poor adherence to oral PrEP is reported as the main barrier to oral PrEP efficacy and implementation (Montgomery *et al.*, 2016). Adherence challenges were demonstrated as the primary reason for the failure of oral PrEP from two major studies conducted with African women (Montgomery *et al.*, 2016). These studies made two major findings, firstly low adherence to PrEP posed potential risks of drug resistance for non-adherent users and this had a negative effect on subsequent treatment outcomes. Secondly, there were huge discrepancies and inconsistencies between self-reported adherence to the drugs and the actual drug levels in the user's body (Montgomery *et al.*, 2016). These trends were observed in the Pre-Exposure Prophylaxis trial for HIV Prevention among African Women (FEM-PrEP) and Vaginal and Oral Interventions to Control the Epidemic (VOICE) among African women. The self-reported adherence rates were significantly high, reaching 95%. Whereas, only about 40% of the participants had plasma drug concentrations that were indicative of adherence to PrEP. Similarly, the iPrEx (Pre-Exposure prophylaxis initiative) trial among MSM showed high levels of self-reported adherence as opposed to drug concentrations recorded (Grant *et al.*, 2010). While there may be a number of reasons for these inconsistencies and the low adherence, it can be argued that high self-reported adherence levels are influenced by the incentives offered during clinical trials, making these unreliable. It is partly for these reasons that drug concentration has become a measure of drug adherence (Montgomery *et al.*, 2016). Thus, in the context of this study, it is crucial to understand factors from the ground that may affect adherence of AGYW to oral PrEP. Since schools interact closely with AGYW, they are more likely to understand the challenges that AGYW might have to adherence. Unpacking these challenges will offer better alternatives to oral PrEP distribution in communities in a manner that responds to structural and societal needs of AGYW in their own contexts

Barriers to PrEP uptake and adherence

There are a number of reasons that can be attributed to the challenges of oral PrEP uptake and adherence by users. Among these reasons, as mentioned above, is the effect that research studies and clinical trials have on the adherence of users. Financial and other incentives provided during clinical trials are noted as the main motivation for users to take oral PrEP, making adherence unsustainable. In instances where users were attracted to the incentives more than the benefits of the drug, they were more likely to stop oral PrEP use when the trials ended (Montgomery *et al.*, 2016). Thus, education and sustained motivation to take oral PrEP is needed to ensure adherence and unlocking the preventative potential of the drug. Furthermore, clinical trials tend to fall short in recreating real world settings in order to fully understand the different real world contexts in which the product could work (Heneghan *et al.*, 2017), hence the product is more likely to work during a trial but that does not necessarily translate to it functioning in the real world.

Again, the cultural barriers, that included mistrust of a new product, contributed to the lack of adherence. A study by Young *et al.* (2014), showed that oral PrEP was not fully welcomed at first as a HIV prevention method, as potential users evaluated its effectiveness against already existing prevention methods. In instances of limited product knowledge, the willingness to use the product is suffocated by misconceptions about the effectiveness of oral PrEP, as opposed to existing prevention products. Thus, ensuring education amongst AGYW will prepare them for product use with full knowledge of the benefits and risks of PrEP. Amongst the objectives of this study is to locate the role of schools in providing PrEP education to AGYW in preparing them for product uptake. Understanding where schools stand in ensuring that product knowledge is increased amongst potential users is key, as poor knowledge can undermine the efforts of promoting uptake.

Since the initial approval of Truvada as oral PrEP by the Food and Drug Administration (FDA) in 2012 in the United States, studies around oral PrEP have focused mainly on the drug's inefficiency, which resulted from non-adherence or inconsistent use (Young *et al.*, 2014). Notwithstanding the above discussions that adherence has been proven to be a challenge to the efficacy of oral PrEP, there has been limited knowledge on other factors affecting the uptake of oral PrEP. These factors include the understanding of community attitudes towards the uptake of oral PrEP and the placing of oral PrEP use within other prevention interventions.

A qualitative study concentrating on the psychological and social inhibitors to PrEP uptake and consistent use was conducted in the United Kingdom (Young *et al.*, 2014). This study explored the acceptability of PrEP among high risk populations to inform targeted PrEP implementation strategies and made findings on the five possible barriers to PrEP uptake. The first finding was interpreting PrEP effectiveness, this meant that possible users evaluated the extent to which they are protected by PrEP from HIV infections. However, since PrEP requires the use of other HIV prevention options to realise its full potential as a preventative method, concerns were raised for potential users on the efficiency of this method. The reliance of PrEP on other biomedical interventions, such as condom usage, cemented doubts in the potential users' minds. More reluctance for product adoption came with the evaluation of the shortfalls of oral PrEP in cases of poor adherence (Young *et al.*, 2014). Secondly, building on the point that adherence is important in ensuring efficacy of oral PrEP, adherence was reported as a barrier for study participants. Maintaining daily intake of PrEP was identified as a potential barrier (Biello *et al.*, 2018), especially in the context of raised social stigma associated with HIV medication (Haire, 2015). Thus, maintaining regular adherence to the medication posed challenges when potential users had no privacy or changed environments.

The third barrier to oral PrEP uptake related to the individual's assessment of HIV risk. Participants perceived that they are not always exposed to the risk of HIV acquisition and this hindered uptake of PrEP, as individuals might underestimate their risk to exposure (Biello *et al.*, 2018; Young *et al.*, 2014). Fourthly, users had concerns with the lack of comprehensive protection of PrEP. For example, the use of condoms provide protection against a number of health problems including HIV infection, unplanned pregnancies and STIs, whereas PrEP on its own can only prevent HIV infection but also depends on other HIV prevention methods for effectiveness (Stover *et al.*, 2017). The perception of PrEP as an incomplete prevention option created doubt for potential users as they might be exposed to other conditions, such as STIs, while on PrEP (Young *et al.*, 2014). Lastly, there are debates and fears relating to risk compensation (Underhill, 2013). In other words, when people buy into the use of oral PrEP they might underestimate the benefits of using other preventative methods, such as condoms, for comprehensive HIV prevention. Potential users might rely on PrEP as the sole preventative method thus failing to reduce their risks of HIV acquisition (Young *et al.*, 2014). The finding from this study alludes to the importance of considering how the risk-reduction potential of PrEP is communicated to and received by potential users. The gaps in understanding PrEP and its efficacy can be partly addressed by clear communication strategies.

A similar study on the barriers, opportunities and implications for PrEP implementation among young African women reviewed the behavioural and behavioural economic approaches of this population group (Celum *et al.*, 2015). The VOICE and FEM-PrEP trials showed poor adherence among women and this prompted concerns about the low adherence rate of young women to oral PrEP. These concerns range from questioning whether young people perceived themselves as being at low risk of HIV acquisition; not being interested in a clinical trial that would provide them with a drug that is not proven to work; or there were social and structural barriers that hindered their adherence to oral PrEP, such as stigma or just competing priorities (Thomson *et al.*, 2016; Baeten and Grant, 2013). Qualitative data collected from these clinical trials make no reference to women's poor adherence as a result of lack of interest in the biomedical intervention itself but reported on social and structural barriers to uptake. So, in the context of proved efficacy of oral PrEP, it is important to evaluate the kind of messaging packages and integration of services (such as family planning, post-exposure prophylaxis and skills training) that will be appealing to young African women and encourage uptake and adherence (Celum *et al.*, 2015). Likewise, the socio-cultural contexts and relations of young women should be considered, as they might have an impact in their uptake and adherence to biomedical HIV prevention interventions. Further research on the social and structural factors that influence young women's agency and ability to adopt HIV prevention interventions is needed.

The efficacy of oral PrEP implementation must be thoroughly considered, especially when studying the results of the VOICE and FEM-PrEP clinical trials among young women between the ages of 18 and 35 in South Africa, Tanzania and Kenya (van Damme *et al.*, 2012). The study was discontinued prematurely because it lacked efficacy, there were unexpectedly high rates of sero-conversions in both the intervention and the placebo group. Among the reasons for this was again low adherence, which is a big issue for oral PrEP efficacy. This further points to the need of intensifying implementation strategies, including adherence counselling, especially among young women to ensure uptake and adherence (van Damme *et al.*, 2012).

Adolescent girls and young women's perceptions about oral PrEP use

The recommendation of oral PrEP use for AGYW as they are considered as part of the population at substantial risk of HIV acquisition offers an alternative for young women given the cultural and social barriers they face in society that affect their choices when it comes to

HIV prevention. This section has shown the benefits that oral PrEP offers in the different contexts they find themselves, especially in contexts where they are unable to negotiate prevention methods with their partners and within communities that silences the voices of young women. It has further highlighted the barriers to oral PrEP uptake for young women which includes factors relating to non-adherence and the role of communities in creating enabling environments for young women to adopt oral PrEP as a preferred option for themselves. However, a core missing element are the perceptions of young women themselves on oral PrEP uptake, how they feel about using it and what they consider as the benefits and barriers of taking it. While this study attempts to highlight the importance and the role of social structures in preparing AGYW for oral PrEP uptake, it cannot ignore the views of young women and the nature of support they require in order to fully adopt this prevention intervention.

A number of studies conducted in the African and South African contexts to establish the willingness of young women to use oral PrEP shows great acceptability of the drug (Population Council, 2017; Ndzinisa, 2017; Khoza et al., 2018). In a study conducted in Tanzania on the perceptions of AGYW on oral PrEP uptake, it was found that young women were keen to consider using oral PrEP given their perceived substantial risk to HIV infection, the lack of trust in their relationships as well the gender power dynamics in their societies that oppressed their views on negotiating safer sex practices (Population Council, 2017). Another study conducted in Johannesburg by the Wits Reproductive Health Institute among AGYW to explore their motivations to adopt oral PrEP, the participants showed great favour for PrEP uptake, stating five main motivators (Khoza et al., 2017). These included the lack of trust in the sexual relationships, a similar observation as in the Tanzania study. Some societies have come to accept the idea that it is acceptable for men to have multiple partners and this place young women at an increased risk of HIV infection (Ndzinisa, 2017). Young women also considered the inconsistent condom use behaviour in their relationship as a motivator for oral PrEP use. Again, most women do not have the power to negotiate condom use in their relationships which leads to inconsistent condom use (Pilgrim et al., 2017). Other motivators for oral PrEP uptake in the Johannesburg study were the exposure of young women to people living with HIV on a personal level and this created fear of being infected; the openness to try new innovative prevention strategies; and lastly, the perceived fear of being sexually assaulted and being infected with HIV as a result (Khoza et al., 2017).

Other studies conducted in KwaZulu Natal on the acceptability of oral PrEP and other new HIV prevention innovations among women found that there were high levels of acceptability and willingness to adopt these interventions. A study conducted by Ndzinisa (2017) in Vulindlela, found that AGYW were appreciated the benefits of oral PrEP and were ready to adopt it. The main challenge in this study was poor knowledge about oral PrEP in the community. But positive perceptions about the drug were formulated as AGYW began to understand what oral PrEP is and how it works. A similar study in KZN also found that women showed favour to prevention interventions that were aligned to their existing reproductive health routines, had high efficacy and user-initiated (Govender and Karim, 2018). These studies point to the important considerations in rolling out oral PrEP uptake because understanding their willingness to use oral PrEP requires concerted efforts to ensure that it is provided within favourable contexts to ensure uptake and adherence.

Risk compensation of oral PrEP

The use of oral PrEP as a biomedical HIV prevention intervention has over the past few years received international recognition. The efficacy of oral PrEP for the different populations has also been established through a number of clinical trials and research studies. While there remain adherence challenges that are a barrier to the full implementation and effectiveness of oral PrEP, an added possible challenge is risk compensation (Sagaon-Teyssier *et al.*, 2015). The term “risk compensation” refers to the idea that people might underestimate their risk as a result of using a certain biomedical intervention that is believed to fully protect them from risk. In the case of oral PrEP, users may stop the use of other HIV preventative interventions, such as condoms etc., with the assumption that the use of daily oral PrEP will solely prevent them from HIV infection (Underhill, 2013). This means that users will be likely to engage in risky behaviours while maintaining positive perceptions about the preventative nature of oral PrEP.

Individuals tend to adjust their risk behaviours to match the benefits of the prevention intervention, trying to strike a balance between the perceived risk and perceived benefits of the intervention. The risk compensation is then, at times, a major concern if it undermines the benefits of the interventions or when the behavioural risks are underestimated by the user. Underhill (2013) argues that in biomedical HIV prevention interventions, risk compensation has two main components, firstly, the individual receiving the intervention must believe that the intervention they are receiving is preventative and secondly, the individual must believe

that the intervention is effective in reducing their HIV risk (Underhill, 2013). The perception of risk compensation is engrained strongly on these two components.

Risk compensation can be poised in the form of increased number of sexual partners and a decrease in condom usage. However, studies have not shown anticipation of increased sexual risk as a result of oral PrEP (Koechlin, 2016). The low concern for risk compensation is demonstrated by the behavioural and health related clinical trials outcomes which did not show any significant changes in potential users' sexual behaviour (Fonner *et al.*, 2016). Furthermore, other demonstration projects on PrEP also showed that the use of PrEP promoted safer sexual behaviours. However, even with the generalised low concern for risk compensation among potential PrEP users there is still a need to give great attention to certain population risks that are at substantial risk of HIV acquisition who may engage in riskier sexual behaviours when using PrEP (Koechlin *et al.*, 2016). These include populations of sex workers, transgender people and young women.

Again, a review and meta-analysis of oral PrEP as an HIV prevention strategy in high risk populations showed no direct correlations that indicated uptake as leading to risk compensation. Despite this, results from real-world PrEP implementation in San Francisco showed higher STI cases and up to 41% reported condom use reductions among a subset of PrEP users (Volk *et al.*, 2015). However, research clinical trials are not suitable for assessing risk compensation as participants' perceptions for protection are unknown as some receive placebos unknowingly (Fonner *et al.*, 2016). The open-label extensions studies provide better indications of risk compensation as these studies reflect real-world scenarios. However, in order to guard against risk compensation, participants in these studies were provided with intensive behavioural counselling and this has shown great impact on the reduction of sexual risk behaviour across the open label extension studies and demonstration projects (Fonner *et al.*, 2016). While there is no evidence of risk compensation in PrEP clinical trials, there is a need for intensified behavioural interventions focusing on sexual risks and PrEP uptake, especially amongst youth who have elevated infection rates (Hosek *et al.*, 2013).

The role of schools in reaching AGYW

It is without doubt that the biomedical and behavioural HIV prevention interventions have made considerable strides in reducing HIV infections. But, the infection rates still remain high in some population groups, including adolescent girls and young women. Thus, in ensuring a

comprehensive implementation package that reaches all populations, including the ones at substantial risk of acquiring HIV, community participation in HIV programmes is crucial. Mbuagbaw and Shurik (n.d) state that when community members have assessed their risk factors pertaining to HIV infections and realise the extent that they are affected by the epidemic, they are more motivated to participate in deriving a solution to their challenges. The attitudes of communities towards an epidemic are crucial in determining appropriate prevention programmes because a community with high levels of stigma and discrimination to people infected by an epidemic can be possible barriers to proposed prevention interventions. As such, the role of community structures in HIV prevention is important and to a large extent determines the acceptability of the prevention intervention in a particular community. Since the advent of the HIV epidemic, the participation of the community in fighting the epidemic has had great benefits as it can influence “safer sex practices, social integration and identity” (Mbuagbaw and Shurik, n.d:215).

There are a number of structures in communities that are critical in the implementation of HIV prevention intervention and adopting health behaviour changes (Skodval et al., 2013). These structures include community and religious leaders, community health care workers and health professionals as well as schools (Mottiar and Lodge, 2018). The interaction of these different structures in the community are key in health promotion as they all have an important role in influencing behaviour change and formulating health communication messages that are most acceptable to the community. The experience and knowledge that they have about the community offers the much needed contextual understanding of communities in order to design or promote interventions that responds to the specific needs of their communities (Skovdal et al., 2013). This study recognises the important role played by all community structures and their interrelatedness, however, for the purpose of this research study, the focus is on schools only as an influential structure in health behaviour change and adoption of oral PrEP among AGYW in schools.

Schenker and Nyirenda (2002) argue that schools are influential for educating children about HIV and curbing the spread of HIV infections. Schools are part of community structures and are crucial players in conveying and participating in HIV prevention interventions targeted at adolescent girls and young women of school going age. It is for these reasons that this study proposes schools as a major structural player in meeting the HIV needs of school going AGYW. Furthermore, schools present a good opportunity for reaching children and adolescents with positive HIV teachings at an early age, reinforcing responsible sexual and health practices

which have the ability to curb new HIV infections. Tellingly, in instances where schools do not provide sex education and HIV prevention, the risk of HIV acquisition increases (Lloyd *et al.*, 2012). It is important that the knowledge gap about HIV infections, its spread and preventative methods is bridged through school education (Schenker and Nyirenda, 2002).

Whiteside *et al.* (2017) view schools as protective institutions for children against HIV infections. The assumption is that if comprehensive HIV education is provided in schools then children and adolescents in schools have a better chance of making informed decisions about their sexual and health choices. This assumption is supported by the fact that many governments in Africa make huge investments in education and this is aimed at keeping as many children at school as possible. A number of studies found that if children were kept in the schooling system with fewer drop-outs, there were lesser chances of HIV infections amongst school going children (Whiteside *et al.*, 2017). However, Swaziland, for example, has proved these findings are not necessarily applicable to most of their schools. Even with the huge investments in education, Swaziland has seen high infection rates and elevated pregnancy levels among AGYW. These high rates raise concerns about the quality of HIV prevention education for these young people and further points to the relevance and significant role of schools in reaching AGYW with HIV education. Ensuring quality education that includes HIV prevention is important in reducing HIV infections among school going children. This is key because retention in schools without this education has no impact in the desired goal of having an HIV free generation.

In response to the challenges facing schools in retaining children and providing quality comprehensive education that includes HIV prevention instruction, Chamba (2011) recommends that schools prioritise the implementation of HIV prevention education. The aim of this is “to protect the quality of education by improving the quality of life of the learners and school staff” (Chamba, 2011:2). Moreover, the ministries of education should encourage school leaders and teachers to interact with students in relaying HIV preventative methods to them in their most “receptive development stage” (Chamba, 2011:7). Schools are potentially key players in HIV prevention education, care and support (Andersen *et al.*, 2014). As such, school officials, heads and teachers should be trained in providing such education and support for learners. In the same lens, schools are key in supporting and promoting the implementation of oral PrEP for AGYW that are in schools. Given the influential role they have in the lives of its learners, their role in preparing and promoting use and adherence among learners is critical.

Conclusion

This chapter reviewed literature on HIV infection trends, HIV prevention intervention and community structures that can enhance the effectiveness of the discussed prevention methods. This review acknowledges the progress made to reach the goal of HIV reduction globally, in the sub-Saharan region and nationally, however, focused on addressing the stubborn challenges of HIV infection among adolescent girls and young women in high burdened societies. In addition to the already implemented prevention methods, was the introduction of oral PrEP which was aimed at reducing HIV incidence among population at high risk of HIV infection. Oral PrEP is seen as a promising biomedical intervention to meet the needs of AGYW who are vulnerable to a number of biological, behavioural and structural factors. The PrEP interventions offers an independent prevention method for AGYW who are sometimes in relationships that are predisposed to severe gender imbalances that lead to abuse and lack of safer sex negotiations. Thus, given the promising effects of oral PrEP in reducing HIV infections, schools are seen as a key player in educating AGYW on these biomedical prevention methods and influencing safer sex behavioural attitudes in learners. The effectiveness of HIV prevention interventions including PrEP, relies on supportive environments to ensure uptake and adherence which are important in realising the efficacy of such interventions.

Chapter 3

Theoretical framework

Introduction

Oral PrEP has proven to be an innovative biomedical intervention to curb the spread of new HIV infections (Bekker et al., 2012; WHO, 2015). While the roll-out of oral PrEP has been largely directed to populations at high risk of acquiring HIV, the AGYW have only been recently added to the category of high risk populations; offering them an added prevention intervention given the disproportionately high HIV incidence among AGYW compared to the general population. While the HIV prevention benefits of using PrEP are great, the willingness and perceptions of AGYWs and the role of schools in preparing AGYW for product use remain understudied in many poor communities. It is in this context that this study sought to understand the role of schools in preparing AGYW for PrEP uptake. In realising the main objectives of the study, this chapter seeks to understand the role of schools in preparing AGYW for PrEP adoption from a theoretical perspective in order to make sense of the opportunities and barriers to oral PrEP uptake for AGYW in the Vulindlela community.

This study was premised within the Social Ecology Model for Communication and Health Behaviour (SEMCHB) framework that explains the interrelations between individual and social factors affecting health. It adopts the Health Belief Model (HBM) to support the individual level of the framework. Through the use of HBM this study investigates the extent to which school teachers perceive the risk of HIV infection for the AGYW population. The study further adopts the Culture-Centred Approach (CCA) to support the macro-level of the SEMCHB framework. The CCA acknowledges the importance of culture, agency and structure in health communication which could either act as barriers or facilitators of PrEP uptake among AGYW. This study specifically explores “structure” as a construct of the CCA, whereby schools are perceived as structures in the community that could determine the acceptance or rejection of a health intervention in the community or among its learners.

The Social Ecology Model for Communication and Health Behaviour (SEMCHB)

The Social Ecology Model is a multi-faceted framework that seeks to understand the interactions between different layers; from the individual and up to the environmental factors that influence health behaviours and for “identifying behavioural and organisational leverage points and intermediaries for health promotion within organisations” (UNICEF, 2015). It studies the influential interaction of the social context, including institutional and cultural factors and how these affect behaviour towards health communication (Sallis and Owen, 2002). The main strength of the SEMCHB is in identifying the inter-related interplay between the “economic, environmental and social influences in the community, inter-cultural and interpersonal, and institutions within” (Lindridge *et al.*, 2012). The SEMCHB adopts a holistic approach in understanding health behaviour (Storey and Figueroa, 2012) and is useful in identifying opportunities and barriers for health promotion and behaviour change within each level (Figueroa, 2017 and Lindridge *et al.*, 2012).

In the context of this study, the SEMCHB framework is important in understanding the multi-layered approach to health communication and influencing behaviour for oral PrEP uptake. This study does not only recognise the perceptions of AGYW towards PrEP uptake but also moves to another layer of the SEMCHB to acknowledge the community level of the framework. This community level recognises the role of schools, in this instance, as an influential layer of the framework in determining health behaviour of AGYW and the adoption or rejection of oral PrEP amongst this population group. Health decisions are not solely adopted at the individual level, meaning AGYW rely on other social factors to influence their behaviour and this is where schools are relevant in this research and in the health decision-making of AGYW.

The SEMCHB framework recognises the multifaceted nature of contexts influencing health behaviour and how each level interacts with the other to determine health behaviours (Dutta, 2008). Traditional literature on health communication recognised the individual level of the framework which studied factors such as beliefs and attitudes of individuals towards health decision adoption and communication (Dutta, 2008). The assumption was that positive changes in health behaviour depended on the individual without recognising other social influencers to health behaviour. In response to this limited model of health communication, the SEMCHB

has 4 layers to understating health behaviour, which include macro-level perspectives (Niederdeppe *et al.*, 2013; Kincaid *et al.*, 2007).

The first level of the SEMCHB is the individual level, which is focused on the individual's knowledge, beliefs and perceptions towards a particular health problem (Mckee *et al.*, 2014). Most scholarships on health communication study the individual traits and attitudes towards health behaviour (Moran *et al.*, 2016). Second, is the social networks level which moves beyond the individual level to point to the micro-system (Moran *et al.*, 2016). This level explores the social influences that affect an individual's behaviour, such as family and friends (Dutta, 2008; Kincaid, 2007). The perceptions of these close kinship ties are likely to influence health behaviour of an individual. The third level is the community, which refers to the individual's social community and includes factors related to power dynamics in the community, availability of resources and the level of participation. This level looks at the exo-system in order to understand the wider social context of where health behaviour and decisions are adopted (Moran *et al.*, 2016). Lastly, the societal level speaks to the macro-system which explores the broader national determinants that influence health behaviour, such as governmental leadership, policies and programming, as well as power relations (Kincaid *et al.* 2007).

The assumption with the different levels of the SEMCHB is that each level interacts with the other to produce favourable health behaviour changes (Sallis *et al.*, 2008; Storey and Figueroa, 2012). Health behaviour changes adopted within this framework have the potential to be sustained, as opposed to health decisions taken independently. Storey and Figueroa (2012) argue that an individual's motivation to adopt health behaviour is unsustainable if the other factors of the model are not considered, as these will also influence the decision-making processes. In order to illustrate the interconnectedness of these levels, Storey and Figueroa (2012) make a case of a KZN (KwaZulu-Natal) chief who was concerned about high HIV infection rates in his village and made a decision to have everyone tested for HIV. While he deemed this effort useful in addressing the HIV challenge, the national departments and the political landscape at the time were not supportive of this approach. This illustrates the extent to which all levels of the model must be involved in making health decisions and influencing health behaviours.

Similarly, in order to realise the potential of oral PrEP in reducing new HIV infections, promoting PrEP adoption should not end with AGYW. Rather, schools that form part of the

community structures must also be engaged in order to sustain intervention for AGYW. This study does not assume that the individual and the community levels are sufficient when deciding on health behaviours to be adopted, but, it seeks to understand the role of schools in preparing AGYW for PrEP uptake. The multi-layered approach of the SEMCHB is more effective and sustainable (Harper *et al.*, 2018) and this study does assume that subsequent studies can unleash the potential role of other stakeholders in the SEMCHB framework in order to ensure sustainability of PrEP use amongst AGYW in an effort to reduce HIV infections amongst them.

This study is located across the individual and community level layers of the SEMCHB. The school teachers that were interviewed for the study are considered as representing both the individual and community layers of the SEMCHB. On the one hand, the LO teacher and senior staff member such as the principal, the deputy principal or Head of Department (HOD) were interviewed because of their knowledge of HIV prevention and their level of interaction with learners, as such their perceptions on oral PrEP and its adoption by AGYW, who are the potential users mostly placed in the school environment, is likely to affect the overall position of the school on the issue of preparing AGYW for oral PrEP uptake. These individual beliefs, attitudes and perceptions of the interviewed school teachers shed light on how they perceive the risk of HIV among AGYW and the extent to which they believe oral PrEP can be an alternative prevention method for HIV. On the other hand, the school teachers also represent the schools as a community structure that has influence on the adoption of a health intervention such as oral PrEP.

Given the proximity and interactions between learners and school teachers, teachers are ideally placed to understand the challenges facing AGYW, especially pertaining to health behaviours and how these can affect the adoption of oral PrEP. The main focus of the SEMCHB is understanding the interactions between the different levels and this study sought to explore the two levels of the model. The stance of the school in preparing AGYW for oral PrEP uptake is likely to be influenced by the attitudes of individual school teachers, accordingly, this makes it vital to understand the interaction between teachers at an individual level and the schools as a community structure. In terms of the SEMCHB, the teachers represent both the individual and community levels of the framework in the sense that they hold their own individual beliefs of what HIV prevention means for young women and how they perceive oral PrEP as a suitable intervention for this group. Added to this, as a collective they have a role to mobilise and

support the implementation of oral PrEP, their perceptions of oral PrEP are likely to influence the decisions of AGYW to adopt the intervention.

Storey and Figueroa (2012) argue that the Social Ecology Model is a meta-theory, implying that each level of the model is underpinned by theories that support the particular level. In other words, the different levels of the model are supported by individual theories. In the case of this study, the individual level of the study is supported by the HBM while the CCA supports the community level of the model. This study is framed within the broader SEMCHB framework and supported by the HBM and the CCA in the different levels of interest for this study. These 2 theories are discussed in the following sections.

The Health Belief Model (HBM)

The HBM is a psychological model that describes and predicts the health behaviour of individuals. It explains the health behaviour change process through focussing on the individual's attitudes, beliefs and perceptions towards a health issue (Tarkang and Zotor, 2015). The HBM can be used to assess the individual's abilities and motivations to health behaviour change and understanding these factors is significant to the adoption of health programmes that are informed by individuals (Stanhope and Lancaster, 2000). Similar to this study, the attitudes and beliefs of school teachers towards preparing AGYW for oral PrEP uptake is important to understand the best way to present oral PrEP to AGYW to ensure acceptability. The manner in which school teachers perceive oral PrEP for AGYW use will affect the acceptance of the pill among AGYW and also inform the stance that schools take towards the promotion of PrEP for AGYW.

The HBM has 5 constructs that seek to explain or predict individuals' behaviour towards a health challenge (Louis, 2016; Tarkang and Zotor, 2015). These constructs assess the extent to which an individual aims to prevent, control or accept a health intervention (Louis, 2016). The HBM constructs are: perceived susceptibility, perceived severity, perceived benefits, perceived barriers and cues to action. Jones *et al* (2015) suggest that a health intervention is likely to be effective if all the constructs of the HBM are considered. Individuals are likely to adopt or reject a health intervention depending on whether they believe that they are susceptible to the health condition or not, if they appreciate the severity of the condition, and are aware of the possible benefits and barriers to adopting the health intervention then they are motivated to act (University of Twente, nd; Jones *et al.*, 2015; Louis, 2016). This comprehensive reflection of

the individual encouraged by the HBM is useful in allowing individuals to make informed health decisions for themselves.

Perceived Susceptibility

Perceived susceptibility refers to the extent to which an individual perceives their risk to a certain health condition or challenge (Taylor *et al.*, 2007; Janz and Becker, 1984). The individual evaluates how strongly affected they are by the health condition when assessing their likelihood of being infected by the health condition (Tarkang and Zotor, 2015 and Louis, 2016) and this, in conjunction with other HBM constructs, determines their action towards dealing with the perceived risk. This construct of the HBM assumes that individuals who perceive themselves as being susceptible to a health condition are most likely to engage in alternative health behaviours in order to limit the risk of contracting the health condition (Champion and Skinner, 2008).

The extent to which school teachers perceive the risk of AGYW to HIV infections is likely to influence their attitudes towards the adoption of oral PrEP. Given that school teachers interact closely with AGYW who are in the school, they are more likely to understand the susceptibility of AGYWs to HIV acquisition and in turn this can inform their individual behaviours towards the preparation of AGYW for oral PrEP uptake. Added to this, is the ability of the school teachers to influence the standpoint of the school in ensuring that AGYW are ready for PrEP uptake. This is within the context that individual health behaviour is influenced by other factors such as community structures as discussed in the SEMCHB.

Perceived severity

Perceived severity refers to the individual's assessment of the seriousness of the risk of contracting a health condition (Taylor, 2007). Individuals are most likely to respond to a health condition if contracting or being affected by the condition poses serious consequences for them (Jones *et al.*, 2015). This assessment of seriousness could include both clinical considerations as well as the social consequences associated with the contraction of the disease; these can include the effect that this could have in their work or families. Thus, when encouraging the adoption of positive health behaviour, the consequences of the risk of acquiring a health condition must be specified because people are more likely to adopt the recommended health behaviour change or the proposed health intervention when they understand the extent to which

a health condition can affect their lives (Abraham and Sheeran, 2016; University of Twente, nd).

In this instance, the perceived severity of HIV acquisition among AGYW is important in determining the attitudes of school teachers towards oral PrEP. This construct assumes that when school teachers understand the consequences that high HIV infections will have among AGYW, it will motivate them to prepare AGYW for oral PrEP uptake in order to avoid these consequences. Recognising the seriousness associated with HIV infection will encourage oral PrEP uptake, with school teachers supporting the roll-out at different levels. However, should these consequences not be realised then the subsequent rejection oral PrEP among AGYW becomes a probability. Thus, in order to realise the potential of oral PrEP, school teachers must be aware of the risks and the need to curb these new HIV infections.

Perceived benefits

Perceived benefits refers to the individual's beliefs about the effectiveness and value of engaging in a health intervention (Louis, 2016; Janz and Becker, 1984). This construct further holds that when individuals have perceived their susceptibility to a health condition and acknowledged the consequences they are likely to endure as a result of the health condition, then they are more likely to consider adopting the available or recommended health intervention to reduce the susceptibility and avoid the seriousness of the condition (Jones *et al.*, 2015; Louis, 2016). However, the motivation to engage in health intervention depends on the perceived benefits of the intervention in addressing their risks (Jones *et al.*, 2015). In other words, the individual will assess the efficacy of the health intervention, which is the extent to which they are likely to escape from the severity and seriousness of the health condition if they adopt it.

The benefits of oral PrEP in reducing new HIV infections amongst populations at escalated risk of acquiring the disease are known through different studies (Idoko *et al.*, 2015, McCormack *et al.*, 2016).. When school teachers perceive oral PrEP as a beneficial intervention then they are likely to participate in preparing AGYW for oral PrEP uptake and also influence the school's role in ensuring that AGYW are ready for adopting oral PrEP.

Perceived barriers

The perceived barriers are the potential negative consequences that come with adopting a certain health intervention (Taylor *et al.*, 2007). These can include pain, expense and inconvenience (Janz and Becker, 1984). When individuals perceive the negative effects that come with adopting a health intervention then they are more likely to reject it (Jones *et al.*, 2015). In promoting the adoption of health interventions, the barriers should be identified and addressed where possible so that there is little in the way of individuals adopting the intervention. The HBM proposes that the benefits of a health intervention should always outweigh the barriers in order to motivate individuals to adopt the intervention with limited barriers (Champion and Skinner, 2008; University of Twente, n.d).

While clinical trials and research on the benefits of oral PrEP have been widely published, barriers that are formed from the social construct of the community also need to be identified and this is where school teachers could play a vital role. These barriers should be understood in order to ascertain the extent to which school teachers will be willing to prepare AGYW for PrEP uptake. Social and structural challenges should be identified and understood within the individuals' context so that a balance between the benefits and barriers of oral PrEP can be established. Within the HBM, the benefits must outnumber the barriers in order to promote product adoption.

Cues to action

Cues to action hints to the specific situation or factors in one's social or environmental contexts that act as cues to encourage the adoption of a health intervention (Jones *et al.*, 2015; Champion and Skinner, 2008). In other contexts, the cues to action is identified as strategies that enables readiness for adopting a health intervention (University of Twente, nd). These cues to take action on a health intervention can either be motivated by internal or external factors (Bish and Michie, 2010). The internal factors could refer to showing symptoms of a health condition, the exposure to a health condition and realising the risks of the condition can act as a cue to adopt the health intervention (Jones *et al.*, 2015). The external factors could include the public promotion of the intervention through adverts and campaigns. Exposure to these external factors can serve as cues to action, in other words taking up the proposed intervention (University of Twente, nd; Jones *et al.*, 2015).

The promotion of oral PrEP as an HIV prevention intervention can act as cues to action for school teachers. When knowledge and education about oral PrEP is made available to school teachers through different avenues then that might inform their behaviour to promote oral PrEP use amongst AGYW. Strategies to promote readiness of school teachers to participate in the promotion of oral PrEP need to be explored as these also have great potential in influencing behaviour change favourable to oral PrEP uptake.

The Culture-Centred Approach (CCA)

In addition to the HBM, this study adopts the Culture-Centred Approach within the SEMCHB in understanding the schools' perspective in preparing AGYW for oral PrEP uptake. The CCA moves beyond the individual approach to health promotion and decision making, asserting that individuals are located within spaces requiring collective decision making and collective responsibility for sharing health issues. In other words, through this approach individuals are seen to exist within cultural contexts which influence their decision-making powers. In the case of this study, schools are considered as part of the cultural contexts that influence the health decision making capacity of AGYW in the community. As such, their role in the adoption of health interventions such as oral PrEP is critical as they could facilitate or hinder PrEP uptake.

The CCA places culture at the centre in developing health programs and assessing their outcomes. The CCA suggests that, for a full understanding of people's values and beliefs regarding their health, spaces should be created for the marginalised voices for dialogue (Dutta, 2008). It proposes a bottom-up approach to addressing health issues through the promotion of engagement of subject specialists with communities to foster mutual learning (Dutta and Basu, 2011). Engaging not only the AGYW individually but also trying to understand the views of school teachers in health promotion is important as schools are dominant structures in society that should not be silenced in health promotion for AGYW.

CCA encouraging cultural voices in health communication

The CCA originated from the background of cultural insensitivity in health communication. Traditional theories disregarded the importance of incorporating cultural beliefs and cultural values in constructing health communication theories that sought to explain human behaviours towards the adoption of biomedical interventions (Dutta, 2008; Dutta *et al.*, 2012). The

inconsideration of the cultural component in health communication has in the past led to the omission of cultural voices in the community, regarding these voices as subjective in the promotion of health interventions (Dutta, 2008; Dutta-Bergman, 2004a and 2004b). These traditional conceptualisations of health promotion adopted a top-down approach to communication, meaning that the voices of the local communities were not considered in making decisions about biomedical interventions intended for the community. As such, the absence of the AGYW and school's voices in the promotion of oral PrEP in Vulindlela would undermine the acceptance of this biomedical intervention (PrEP). Giving voice to the schools and AGYW is more likely to facilitate acceptance and uptake of oral PrEP in the community, acknowledging that the decision to adopt oral PrEP does not only lie on the established benefits through research but also on the beliefs and attitudes of the users and communities as these will support the adoption of the health intervention among the targeted population, which is AGYW in this case.

Realising the absence of cultural voices and past theory conceptualisation that encouraged a top-down approach to health communication and health promotion, the CCA offers alternatives to these traditional communication methodologies. The CCA seeks to incorporate the erased voices of marginalised communities with dominant discourses that make decisions on behalf of the subalterns by creating spaces of interactive engagements in order to understand the lived experiences of marginalised communities and the health meanings they associate with these experiences (Dutta, 2008, 2011). The CCA adopts a bottom-up approach to health communication as opposed to Eurocentric theories that marginalised the voices of subalterns. It engages with the traditionally marginalised communities in the crafting of dominant communication theories (Dutta, 2011).

The CCA places value on the voices of subaltern, giving them space to participate in health communication and decision making through the use of communication tools including “dialogues, narrative construction, solidarity building and participatory communication” in order to engage with the subaltern voices (Basu and Dutta 2008; Dutta *et al.*, 2016). These tools are aimed at affording subalterns space to contribute their cultural voices on health issues affecting them in order for specialists to understand these issues from the perspective of the affected as this would ensure tailor made intervention and communication that will reach and be accepted by the local communities (Basu and Dutta 2008). The CCA further seeks to interrogate the extent to which dominant voices in health communication echoes the voices of certain population groups in the community, ensuring that subaltern voices are heard and

actively engaged in health decision making processes in their communities (Dutta and DeSouza, 2008). In this context, the engagements with schools will allow for the incorporation of their voice in preparing AGYW for oral PrEP uptake. Creating interactive spaces with schools will allow for inclusive dialogue on their role in oral PrEP uptake for AGYW because a top-down approach in this instance will undermine the acceptance and uptake of oral PrEP.

Constructs of the CCA: Culture, Structure and Agency

The CCA provides a theoretical base to interpret and analyse the lived experiences of subalterns, asserting that health communication is the engagement and discussion of health experiences and meanings in a cultural context; putting value on the socially and culturally constructed meanings of health (Koenig *et al.*, 2011; Dutta, 2008). This reconstruction of health meanings within communities is achieved through a close interaction of the three constructs of CCA which are culture, structure and agency. Culture refers to the dynamic and changing meanings of the lived experiences of marginalised groups (Dutta, 2011). Culture is embedded in the cultural meanings that subalterns hold about their challenges and experiences in society (Dutta *et al.*, 2012). Structure refers to the social realities that limit or enable people to make health decisions or adopt health behaviour changes (Dutta, 2012). Structures could be policies or institutional networks that favour health choices of certain population groups while inhibiting access for marginalised groups through constraining resources (Dutta, 2011). Finally, agency refers to the space created for marginalised cultural groups to actively engage and make choices regarding their health issues. Through agency, members of a cultural group are afforded an opportunity to engage with dominant discourses in health communication and enable negotiations within their communities (Dutta *et al.*, 2016). These constructs are discussed in detail below also providing operational definitions of these constructs in this study. The CCA suggests that progressive health decisions and commitments are reached through a healthy interplay between culture, structure and agency (Dutta, 2008).

Culture

Culture as a construct of the CCA is rooted in the local context of community members as these provide spaces for negotiating health meanings (Acharya and Dutta, 2013). Culture creates a framework for communicating health meaning, realising that the manner in which cultural members make sense of health issues affecting them is influenced by cultural attributes such

as beliefs, values and practices (Dutta *et al.* 2016). These cultural attributes are context specific, making health meanings of particular cultural groups localised to certain contextual settings. In other words, health meanings will differ across different communities as a result of the differing cultural beliefs, values and practices. Dutta *et al.* (2016) further hold that health meaning within a specific cultural community is not stagnant, denoting that communities continuously change the way they view their health challenges through experience and continuous engagements. Thus, these culturally influenced health meanings are bound to change over time owing to different factors including the manner in which communities view and understand their susceptibility, or lack thereof, to a health challenge over time. The value of culture is in the dialogic engagements with cultural members and how they interpret their health challenges and proposed health interventions.

The role of culture is applicable to this study in attempting to understand the cultural interpretations of HIV infections amongst AGYW in Vulindlela. Though the study does not pay particular attention to this culture construct of the CCA, the health meanings to HIV infection and the adoption of oral PrEP as a prevention health intervention is critical for this study. This study recognises that health decisions in the community are not reliant on the individuals but the understanding of cultural values, beliefs and practices that shape the community's views about oral PrEP is important. Thus, understanding from localised contexts what oral PrEP means for the community is important as this will affect the structural influencers in the community, such as schools in this instance.

Structure

Structures are the social and institutional systems that hold resources to health accessibility of a community (Dutta *et al.*, 2016; Acharya and Dutta, 2013). In health communication, structures determine resource availability and accessibility, health assumptions to providing these resources to a community and the conditions for providing these resources (Dutta *et al.*, 2016). Furthermore, structures have the determining power of health services available and restricted to marginalised communities and this in turn determines the extent to which subalterns are able to enact agency in responding to health issues affecting them (Dutta *et al.*, 2012). Structures have a dominant determining voice on the health options available to marginalised communities as they can offer or limit a community's accessibility to available health interventions. This means that in these instances the power to make health decisions is highly influenced by structures who hold social and structural powers to resource allocation.

In addition to this, structures can also allow space for health changes through challenging dominant discourse in society that influence health communication and policies. Structural constraints become evident within cultural contexts in different communities (Camacho *et al.*, 2008). These constraints are expressed and understood through the everyday experiences of communities within their own cultural contexts as well as the sharing of these experiences.

This study focussed particularly on structure as a construct of the CCA, noting schools in Vulindlela as a structure that can either facilitate or constrain oral PrEP communication amongst AGYW in the community. Schools have the space to educate AGYW on HIV infection and prevention through a number of forums including the LO subject taught in schools. Thus, this school platform has the potential to foster product acceptability and uptake among AGYW. This study specifically investigated how schools, as a structure, can participate in preparing AGYW for oral PrEP uptake. It sought to understand the opportunities and stumbling blocks to oral PrEP uptake that could be presented by schools.

Agency

Agency reflects the active response of individuals, cultural members and communities; in dealing with structural constraints imposed on them in order to openly challenge these constraints while also creating healthy engagements with these structures to overcome the structural constraints (Dutta *et al.*, 2016). Agency further reflects the everyday health choices and health behaviour change decisions adopted by communities in the context of structural constraints facing them. Agency then creates interactive spaces in the community to allow for subalterns to voice their challenges and their struggles and processes of engaging with dominant structural discourses limiting health accessibility and health choices for them (Camacho *et al.*, 2008). Though this study does not focus on agency, realising the interplay between structure and agency is important in understanding opportunities for engagements and challenging the structural constraints imposed by schools in the uptake of oral PrEP by AGYW.

Application of HBM and CCA within the SEMCHB

As discussed above, this study is premised with the SEMCHB frameworks and adopts the HBM to support the individual level of the framework and the CCA for the community level. These theories are key in answering the research questions of the study from a theoretical perspective. The HBM was central in this study as it allowed for a personal reflection of teachers on HIV

prevention issues as they affect young people in Vulindlela. It provided a strong foundation for the understanding of oral PrEP acceptance and adoption among young women in Vulindlela given that the collective decision of communities on health are influenced to some extent by the individual conceptions of the truth and what they believe in. Following these individual explorations of teachers and HIV prevention for AGYW, the CCA was critical in understanding these from a collective perspective considering the cultural values and contexts. This study was placed within the structure of the CCA, recognising the importance of schools as a structure that influences behaviour adoption and the implementation of a health intervention such as oral PrEP. CCA sought to understand cultural contexts in which AGYW are likely to make health decisions regarding the adoption of oral PrEP.

Conclusion

This chapter provided the theoretical basis for understanding the readiness of AGYW for oral PrEP uptake from the perspective of the schools. This study is premised with the SEMCHB framework which places emphasis on the interplay of the different levels from the individual to the community and up to the societal levels. The framework emphasises that sound health decisions are made when there is a clear interplay between all the levels of the framework as each level is dependent on the other. In order to support the SEMCHB framework, the HBM was adopted to support the individual level of the framework and the CCA to unpack the community level. Again, while the HBM is model mainly concerned with explaining and predicting behaviour, the CCA recognises the cultural contexts in which these health decisions are made and how culture, structure and agency influence these individual decisions. This CCA recognises schools as an influential structure in the community and that the AGYW's decision to take oral PrEP will be influenced by schools. Thus, this study and this chapter demonstrate the fact that individual's decisions are made within cultural contexts they live in and structures in the community can either constrain or enable uptake of a biomedical intervention. The interrelatedness of both the HBM and the CCA, in the context of this study will be shown more clearly in the analysis chapter, with the aim of placing meaning to everyday health experiences of communities.

Chapter 4

Research Methodology

Introduction

This study sought to explore the readiness of AGYW for oral PrEP uptake in the community of Vulindlela. The study worked from the understanding that schools are an influential structure in the community that could impact the behaviour of learners in the schooling environment. The recognition of schools as essential in influencing attitudes, knowledge and perceptions of AGYW in preparing them for oral PrEP uptake is important because they have the potential to either facilitate or hinder the acceptance of an HIV biomedical intervention such as oral PrEP. In order to better understand the role of schools in preparing AGYW for oral PrEP uptake, empirical evidence was collected from different high schools in Vulindlela.

Building on existing literature and research on oral PrEP, this chapter seeks to detail the methodology used in the study to sample participants, collect data and analyse data. This chapter begins with a brief description of the research site, which is Vulindlela in Umgungundlovu. This is followed by the description of the research design. The sampling method and the data collection methods are detailed and the data analysis method is discussed. The chapter ends with a section on ethical considerations applied in the research study.

Positioning the research: description of the research site

Vulindlela is a large rural area within the Msunduzi sub-district of the UMgungundlovu District in KwaZulu Natal. It is about 70 kilometres from Pietermaritzburg, which is the capital of KwaZulu Natal. Vulindlela has the second largest population in the Msunduzi Municipality and has a population of about 150 000 (Kharsany *et al.*, 2015) with housing structures around 85 000 (CINDI, n.d). The community is characterised by high rates of poverty and unemployment and is largely underdeveloped. The highly rural community of Vulindlela has poor infrastructure and very limited economic activities (CINDI, n.d and Frohlich *et al.*, 2014). It is serviced by seven primary health care facilities and the closest referring hospitals are about 30 km away from the community (Frohlich *et al.*, 2014). It also has a total of forty-two high schools servicing learners in the community.

The Vulindlela community is at the centre of the HIV epidemic both globally and nationally (Frohlich *et al.*, 2014). While the province of Kwa-Zulu Natal is recorded to have the highest HIV burden, with women accounting for almost 60% of the infections (Abdool Karim *et al.*, 2010), the Vulindlela community bears the largest brunt of these infections. These increasing infection rates in the Vulindlela community have been recorded even in spite of accelerated treatment interventions and decreasing global HIV prevalence (Frohlich *et al.*, 2014). The HIV infection rates remain higher among AGYW as compared to the general population.

To illustrate this further, a study conducted by CAPRISA followed a cohort of young pregnant women between the ages of 15 and 24 attending ante-natal clinic in Vulindlela for over a period of twelve years. These young women were provided with prevention and treatment interventions and the assumption was that the HIV prevalence in the 15-24 age group would decrease as a result. However, even in the presence of these intensified interventions, HIV prevalence continued to increase from 35.3% between 2001 and 2003 - prior to ART- to 39% between 2004 and 2008, the period when ART was beginning to be available (CAPRISA, 2016). The HIV prevalence amongst this group further escalated to 39.3% between 2009 and 2013, this was in the presence of a full ART roll-out in the country (CAPRISA, 2016). A further study conducted with high school learners by CAPRISA between 2010 and 2011, showed consistently higher prevalence rates amongst the adolescent girls as compared to adolescent boys. Adolescent girls in the 15-19 age group acquire HIV at least five to seven years earlier than their male peers and have a three to four times higher incidence rate (West and Haddad, 2016). All these studies highlight the intensity of the HIV burden among AGYW in the Vulindlela community even with the implementation of HIV prevention strategies.

The consistent high rates of new HIV infections are highly influenced by social and structural drivers that make the population prone to HIV vulnerability. Over the years, there has been great focus on biomedical and behavioural interventions to reduce HIV infections, however, a more comprehensive and effective approach to HIV prevention is needed (Auerbach *et al.*, 2011). Social and structural interventions to HIV prevention are aimed at addressing the social issues that put people at increased risk of HIV infections. These social issues tend to influence the risky behaviours that people elect in response to the social challenges they face in their communities (Auerbach *et al.*, 2011).

Similar to the case of Vulindlela, the high rates of poverty and unemployment have been identified as some of the major HIV drivers in communities (CAPRISA, 2006). These social

ills have led to increased health risks, such as high occurrences of sexually transmitted infections (STIs) and unplanned pregnancy amongst teenagers who are supposed to be at school. The vulnerability of adolescent girls and young women is even greater given the social and gender power dynamics in communities. One of the examples of these power dynamics is the concept of “sugar daddies” which affects many communities but is more apparent in poorer ones. Sugar daddies are older men who have sexual relationships with younger girls in exchange for money, food, clothes and other material supplies. This behaviour puts young women at substantial risk of HIV acquisition because of the power dynamics in these relationship set-ups. A study conducted in South Africa found that teenage girls who are sexually involved with men who are five years and older than themselves are at increased risk of HIV acquisition than those who have sex with partners of their own age (CAPRISA, 2006).

Furthermore, given the social and economic status of Vulindlela, many men in this community migrate to other towns for work and return home on weekends. These men then have more power to engage in sexual relationships with younger girls as they can offer them money and luxurious goods. In 2006, it was recorded that over 25% of the teenage girls in this community were HIV positive (CAPRISA, 2006). The age of sexual debut is an important factor in understanding HIV infection in many communities. Adolescent girls and young women are at increased risk of acquiring HIV in their communities and the social, structural and economic statuses of their communities are great determinants of these new HIV infections. It is therefore, critical to focus on AGYW as a sub-group of the population that requires tailor-made and intensified interventions in order to reduce the HIV prevalence in this age group (Frohlich *et al.*, 2014).

Constructivist philosophical paradigm

This study adopts the constructivist paradigm to explore the readiness of AGYW for oral PrEP uptake from the perspective of the schools. The constructivist paradigm holds that individuals construct their own meaning and understanding of the world around them through experience and reflection on their lived experiences (Adom *et al.*, 2016; Hamlet *et al.*, 2015). This paradigm places people at the centre of knowledge creation as they continuously learn through their experiences in the community. The schools in Vulindlela are key to understanding the needs of the AGYW in the community as they may also be affected by the scourge of HIV infections amongst this population group. This paradigm assumes that people construct their

realities through experience and assigning meaning to these experiences (Hamlet *et al.*, 2015). Therefore, the urgency of schools, or lack thereof, to prepare AGYW for oral PrEP uptake in Vulindlela will be largely influenced by the manner in which they understand the need for this prevention intervention to respond to the needs of the community, assuming that they understand their communities better.

The constructivist paradigm draws its origins from the philosophy of Edmund Husserl's phenomenology and Wilhelm Dilthey's study of hermeneutics (Eichelberger, 1989). In short, hermeneutics is the study of "interpretive understanding or meaning" (Research and evaluation in education and Psychology, nd). Within the constructivist paradigm, the term hermeneutics is used as a way of interpreting meaning of a situation or an event in a given context (Schwandt, 2000). In other words, knowledge is developed within pre-existing social settings and these determine the manner in which meaning is then constructed in different settings. In essence, the constructivist paradigm is underpinned by the thinking that all knowledge in society is socially constructed by individuals through their experiences, thus a constructivist researcher should attempt to understand the realities of the participants' world through their own lenses, as they are the true narrators of their own stories (Schwandt, 2000).

The constructivist paradigm's assumption that knowledge and meaning are socially constructed through lived experiences is relevant for this study as it looks beyond what AGYW themselves perceive as the benefits or hindrances of oral PrEP uptake. The focus is not only on what the individual needs but considers the social settings of where these health decisions are taken. As such, the readiness to take oral PrEP is not solely reliant on AGYW but also on social structures in the community, where understanding and meanings are constructed. As such, schools are key in contributing to the social construction of what it means for AGYW in the Vulindlela community to take oral PrEP and will thus play a critical role in creating conducive environments for oral PrEP uptake.

Qualitative research design

A qualitative research design was adopted for this study. According to Babbie and Mouton (2008), qualitative research seeks to study human behaviour and action from the perspective of the participants themselves. Qualitative research attempts to understand and describe human behaviour and experiences rather than explaining it (Austin and Sutton, 2014). The strength of qualitative research is in its ability to understand the attitudes of participants within their own

settings and seeing the world through the lenses of the participants themselves (Mohajan, 2018; Berger, 2013). Similarly, this study aims to understand the perceptions of teachers in Vulindlela in their own settings, to understand how best they are able to support oral PrEP uptake among AGYW. Given the high HIV prevalence among AGYW in the community of Vulindlela, it was important to understand the schools' perspective on the topic under study. The knowledge creation and interpretation of the phenomenon and situations were crucial in not only understanding the schools' role in promoting oral PrEP but also the acceptability of this prevention method in the specific community and school context.

Given the nature of this study, the qualitative research design is crucial in gaining an in-depth understanding of schools' role in preparing AGYW and promoting oral PrEP uptake among this highly affected population group. Babbie and Mouton (2004) argue that through the adoption of the qualitative research design, the researcher is able to gain deeper insights and understanding of the topic studied. The qualitative research design allows the researcher to collect rich data that reflects the depth of the participants understanding (Mason, 2002).

The strength of the qualitative research design is in its ability to allow for detailed engagements with the study participants in a way that reveals and appreciates their understanding, perceptions and experiences of the social world (Mason, 2002). This research design is often associated with the constructivist view which suggests that there are no universal truths in society, rather, there are truths that are formulated by individuals considering their contexts and experiences (Kielmann *et al.*, 2002). Unlike the quantitative research design, qualitative research aims not to categorise people's truths and experiences but appreciates the narrated experiences of the study participants and how they define their truths and realities in their own communities. Through this study design, the researcher gets to understand how the study participants create meaning to their everyday life encounters.

When considering health related research, quantitative research would seek to give a broader understanding of health issues, clearly defining indicators to be measured and compared. However, qualitative research aims to gain a deeper understanding of the health issues, exploring how they perceive the health issues in their communities, their perceptions on recommended treatments and other related questions that unravels the truths and realities of people in their given communities (Kielmann *et al.*, 2002; Austin and Sutton, 2014). This is important to understanding the views and truths of schools in the Vulindlela community in responding to the issue of elevated HIV infection rates among AGYW and how they see the

role and extent to which PrEP can offer an effective prevention option for AGYW in the community.

The value placed on contexts sets qualitative research methods apart from the rest. This research design is context specific as situations and people are understood in their own contexts, casting insight on their fears, attitudes and perceptions of social issues around them (Mason, 2002). Given the depth of qualitative research, engagements with the school personnel sought to understand their role in promoting oral PrEP and preparing AGYW for PrEP uptake in their own contexts. Considering the social, economic and cultural factors in Vulindlela is vital to investigating the readiness of AGYW in this specific community. The effectiveness of biomedical HIV interventions does not only rely on individuals, there are also socio-cultural factors that need to be considered that could either encourage or hinder people (AGYW in this case) from accessing care. Thus, it is also a strength of qualitative research to explore the role of schools in Vulindlela in preparing AGYW for oral PrEP and promoting uptake and adherence for this population.

While the context specificity of qualitative research design is very important and a strength of this research design, critics of qualitative research have pointed to the lack of generalisability of the study results as a shortfall of this research design. Given that qualitative studies are concerned with gaining an in-depth understanding of the studied phenomena, the sample sizes are generally small and not randomised as compared to quantitative research samples (Hancock *et al.*, 2009). As such, the results gathered from qualitative research cannot be generalised to the general population. In its nature, qualitative research is not meant to be statistically representative of the general population but aims to provide a deeper understanding of the phenomena under study in its given context. Likewise, this study is not meant to generate results that are representative of the views of all schools in KwaZulu Natal and beyond. However, it is meant to understand the role of schools in Vulindlela when assessing AGYW readiness for oral PrEP uptake. Furthermore, it is not the aim of this study to select a population that is representative of the broader population, as this would not assist in answering the study's research questions which are specific to the Vulindlela schools.

Sampling

Sampling refers to the process of selecting a proportion of the population that will be included in the study (Martinez-Mesa, et al., 2016). The population selected to participate in the study

are referred to as the sample. Depending on the research design of the study, the researcher could either adopt the probability or non-probability sampling methods. The probability sampling method refers to the selection of a sample that is statistically representative of the general population under study (Bottaglia, 2011). Whereas the non-probability sampling method seeks to identify certain core characteristics of the subjects studied as opposed to randomly selecting a sample (Bottaglia, 2011). This study adopted the non-probability sampling method to sample the schools and teachers that were included in this study. This means that the study did not aim to select schools and teachers that would be statistical representative of the situation on the ground but selected the population that had knowledge of the topic studied that met certain set characteristics.

The schools referred to throughout the study were represented by school teachers and senior staff members (eg. principal, deputy principal or HOD) in the research and were sampled purposively to participate in this study. The purposeful sampling method was applied at two levels in the study, firstly, in the selection of high schools in Vulindlela and secondly, in the selection of school teachers to be interviewed. Purposive, also referred to as judgemental sampling is a non-probability sampling method that relies on the researcher's judgement to purposefully select participants to be included in the study (Babbie and Mouton, 2008; Palinkas *et al.*, 2015). This sampling method is a deliberate selection of participants into the study based on the qualities they possess and usefulness in achieving the research objectives (Etikan *et al.*, 2016). This method is not based on statistical representation of the sampled participants but rather on the knowledge and experience that the sampled participants have to contribute to the data collection and deeper understanding of the subject under study.

The sampling of school teachers supported the individual level of the SEMCHB framework that sought to incorporate the views of individuals which are school teachers in this instance in the understanding of prevention interventions designed for young women. The school teachers were recruited as part of the study to support this view as the SEMCHB seeks to understand the interrelatedness between the different layers which are individuals and communities in this case. Further, the selection of schools was meant to support the community level of the framework, drawing from the understanding that while school teachers represent the individual level of the SEMCHB, schools represented the community level and as a collective schools had the potential to facilitate or hinder oral PrEP adoption in schools. Thus, given the importance of schools as community structures in influencing attitudes, knowledge and perceptions of learners it was important to include them in the study. However, the study was

not dismissive of the fact that individual perceptions also contribute in shaping community perceptions. In other words, the individual perceptions of teachers on HIV prevention and AGYW would affect or determine the stance of the school in matters of HIV prevention for its learners, particularly oral PrEP for AGYW in this instance.

Selection criteria

While the purposive sampling method allows the researcher to select individuals to participate in the study, it also requires that the deliberate selection of participants is justified by the contribution that the participants will make to the study. The initial sampling conducted was for high schools in Vulindlela. The high schools were preferred over primary schools in the community because most AGYW are in high school. Subsequently, the challenge of high HIV infections in Vulindlela would be better understood by high school teachers as opposed to primary school teachers.

Although Vulindlela community has a number of high schools, for the purposes of this study only six high schools were selected. The sampled high schools were selected because of their close proximity to primary healthcare facilities (PHC) in their communities. The main reason for selecting schools based on their proximity to the facility was to understand what this proximity meant for schools in learning about available HIV prevention methods and oral PrEP in particular. It was important to understand the extent to which schools and PHC facilities interact to provide health information and services to AGYW. The assumption was that the relationship between schools and PHCs may have an influence on whether positive or negative on preparing AGYW for oral PrEP uptake. The easy accessibility of PHCs to these schools was perceived as an opportunity for both school teachers and learners to receive health knowledge more conveniently than schools located further from the PHC facilities.

Following the sampling of the schools, the school teachers to be interviewed were sampled. The teachers were selected based on their knowledge on the subject studied. The participants needed to have knowledge about their school's stance on HIV infection among AGYW and HIV prevention interventions available for AGYW. The total sample was twelve, with two participants from each school. In each school, a senior staff member was interviewed as well the Life Orientation (LO) teacher. The selection of senior staff member varied from each school but the first option was to interview the school principal. However, due to commitments, the school principals were not always available and the next senior staff member was interviewed.

In the absence of the school principal, the deputy principal was to be interviewed and in the absence of both, a senior teacher who is the Head of Department (HOD) in charge of learner well-being was to be interviewed. The assumption was that these senior staff members could shed some light on how schools see their role in ensuring that AGYW are ready for oral PrEP uptake.

The LO teachers were also interviewed in each school. Since the research was conducted in high schools with most female learners falling into the category of AGYW, there were no distinctions made for LO teachers. In other words, it did not matter which grade the LO teacher was teaching, as long as they were teaching LO they were considered to participate in the study. LO is one of the compulsory school subjects that aims to teach learners life skills, engaging learners on personal, psychological and social issues (Jacobs, 2011). The knowledge and interaction of LO teachers with learners was considered important as they had the potential to offer insights on how teachers perceived the risks of learners to HIV infections and awareness about prevention interventions. The final list of interviews conducted is presented in table 4.1.

School	Senior staff member	Teacher
School 1	Principal	LO teacher
School 2	Principal	LO teacher
School 3	Head of Department (HOD)	LO teacher
School 4	Deputy Principal	LO teacher
School 5	Head of Department (HOD)	LO teacher
School 6	Head of Department (HOD)	LO teacher

Table 4.1: Summary of interview participants

The purposive sampling of both high schools and school teachers was relevant in ensuring that the selected participants and schools had known characteristics that were useful in answering the studies main research question. However, this sampling method has its limitations. The number of sampled participants is small, which limits the extent to which results generated from the samples can be generalised. As discussed earlier, it was not the aim of this study to select a statistically representative sample but to sample a population that will shed deeper knowledge on the understanding of schools and their role in getting AGYW ready for oral PrEP

uptake. As such, the number of teachers in schools was not considered when selecting the participants but the aim was to purposefully sample teachers who had certain characteristics that are useful for the study as this would facilitate the data collection process. Babbie and Mouton (2008) argue that the findings from such a research can only apply to the population studied and cannot be generalised to a broader population. As such, the findings from the study shed light on the perspective of schools on preparing AGYW for oral PrEP uptake and are applicable to the sampled high schools in the Vulindlela community.

Data Collection

Data was collected in Vulindlela to explore the readiness of AGYW from a school based perspective. The data was collected from the sampled senior staff members and LO teachers from the six sampled schools in Vulindlela. In preparation for the data collection, an interview guide was developed covering the themes that had to be answered in order to answer the research questions. These themes broadly covered the perceptions and attitudes of AGYW on HIV prevention interventions, the knowledge of school teachers about available prevention intervention methods, particularly oral PrEP, and the extent to which they thought AGYW are ready or can be prepared for uptake.

Data was then collected in September 2018 over a period of two weeks in Vulindlela. Two interviews a day were conducted in each school with the school senior staff member and the LO teacher. One of the schools was an exception and the interviews of the LO teacher and senior staff members were not conducted in a single day, due to the school's busy schedule since the interviews were conducted during the Grade 12 trial examinations.

Semi-structured interviews

The data collection method that was used for this study was semi-structured interviews with the twelve sampled participants from six high schools in Vulindlela. Semi-structured interviews were relevant for this qualitative study as they allowed for a subjective exploration of the schools' role in preparing AGYW for oral PrEP uptake (Evans, 2017). The views and experiences of the study participants were at the centre of the data collection process, allowing for a deeper understanding of the subject under study from their own viewpoints. Unlike quantitative data collection methods, semi-structured interviews allow participants to narrate

their own perspectives and experiences, as opposed to categorising responses for the participants as is the case with quantitative studies (Rapport et al., 2018). Through semi-structured interviews, participants are not subjected to predetermined responses but rather, they have the opportunity to shape their own responses as it reflects their realities (Babbie and Mouton, 2008). The understanding of the participants' perspectives and experiences relating to the preparedness of AGYW for oral PrEP uptake were of great importance as they unlocked knowledge on to the opportunities and barriers of oral PrEP uptake among AGYW. Thus, semi-structured interviews was a relevant data collection method as it had the potential to capture a detailed narrative of the experiences and meanings allocated to these experiences by the high school teachers that were interviewed.

Semi-structured interviews are characterised by flexibility and continuity because the participants' responses can explore other aspects related to the subject without the pressure of having to stick to the developed interview questions (Babbie and Mouton, 2011). An interview guide was developed with themes and questions that had to be covered during the interviews. The interview guides were useful in ensuring that the interviews did not deviate from the subject under study. However, the use of the interview guide in semi-structured interviews was only to guide and was not to restrict participants from exploring other issues related to the subject studied (Doody and Noonan, 2013). Flexibility was important in conducting the semi-structured interviews, questions were not asked in a specific order but asked in a way that flowed with the conversation but still ensured that all themes were covered. While the interview guide is useful, additional themes raised by participants were explored during the interviews and these were not anticipated when the initial interview guide was developed. Kajornboon (2005) refers to this flexibility as the strength of semi-structured interviews, because it allows for detailed exploration of the phenomenon under study without sticking to prescribed questions and themes.

Among the strengths of semi-structured interviews, is the ability for the researcher to probe for clarity during the interviews (Kajornboon, 2005). The researcher has the opportunity to pursue some of the points raised by the participants in order to gain deeper insights into their thoughts (Edwards and Holland, 2013). This was evident during the interviews, some of the responses given by the participants opened a line of discussion that was worth pursuing as they uncovered their understanding and beliefs of oral PrEP uptake amongst AGYW. These points raised by the participants were not part of the interview guide but were crucial in obtaining an in-depth knowledge of the subject from their own lenses. Edwards and Holland (2013) state that semi-

structured interviews focus mostly on the context and content of the interview in order to understand the views of the participants and the messages they want to convey to the researcher. The study participants were afforded space during the interviews to express their perspectives on the issue of oral PrEP uptake among AGYW.

Methods of data analysis

The thematic analysis method was used to analyse the data collected from the interviewed high school teachers. The thematic analysis method refers to the ordering of data into themes as they emanate from the research or data collected (Alhojailan, 2012). This analysis method requires that themes emanating from the interviews be identified and analysed to establish patterns arising from the data (Braun and Clarke, 2006). Through the thematic analysis method the researcher is able to engage with the data, not only to identify themes but to also try to understand the hidden meanings of the data. Namey *et al.* (2008) describes this data analysis method as unfolding both implicit and explicit ideas gathered from the data. In other words, thematic analysis does not only consider the data as presented but attempts to uncover deeper truths that can be established from the data, ensuring that the richness of the data is conveyed.

This study adopted the 6 phases to thematic analysis as proposed by Braun and Clarke (2006) in order to make sense of the data collected. The first step of this approach requires the researcher to familiarise themselves with the data in order to have a deeper understanding of the subject studied and the data collected. In getting familiar with the data, the researcher immersed themselves in the data in search of data meanings emerging from the study. The data was collected through interviews and was then transcribed and through this transcription process, the researcher gained more insights on the data. The second step follows the process of data immersion and familiarisation when the researcher now has ideas on the interesting ideas coming from the data. The next phase requires the researcher to begin developing codes for the data. Data coding allows the researcher to group the transcribed interviews into meaningful sections that make sense. The interviews from the school teachers were coded as the next step in order to put together information related to each other in one group.

The third step of the analysis was the search for themes that emanate from the data. This process requires the researcher to study the coded data and search for broader themes represented within the coded data (Braun and Clarke, 2006). In this way the data moves from the finer coded information into broader themes that creates meaning across the different codes.

Following the coding of the interviews with the teachers, the researcher moved to searching for themes from the coded data. The fourth step of the thematic analysis is the reviewing of the identified themes. In this step the researcher attempts to refine the broad themes identified in the previous step. This is meant to ensure that themes identified have sufficient evidence to support them and make a valid discussion, it is to also ensure that themes that are relevant with similar information are merged while there might also be a need to break down some of the themes. The aim of this step is to ensure that meaningful themes supported by data are developed. The same applied in this study, some themes were collapsed as they did not have enough supporting evidence while some were expanded in a meaningful way. The aim was to have themes that were coherent, valid and accurate, representative of the data.

The fifth step requires that the researcher defines and further refines the themes that will be used to present the data. In this step, it is essential that the themes in a manner that connects them to broader discussion of the study also considering how the different themes relate to each other in creating meaning and knowledge. After completing all the above steps, the last step is to write up the analysis in a concise manner that portrays the validity of the study and the accuracy of the findings (Braun and Clarke, 2006). All the 6 steps were employed in a meaningful way in this study and the results are presented in themes as they emanated from the data.

Validity and reliability of the study

The study sought to ensure rigour and validity of the research findings through adopting the triangulation method. The triangulation method refers to the verification of the data against multiple data sources (Honorene, 2017). The data collected from one source was constantly reviewed against other sources in order to ascertain the validity and reliability of the data. The researcher continuously engaged with the data collected in order to understand it and search for any inconsistencies in the data. The data collected from the different participants was checked against each other to establish linkages and disparities. However, the aim of triangulation is not to exclude and disparities identified but to focus on what these mean for the study and understanding the phenomenon under study.

The data collected through interviews was not only triangulated against each other but also considered existing literature on the subject studied. Like many methods, the triangulation method also has its disadvantages, among these Hammersley and Atkinson (1995) note that a

researcher may use their own judgment in deciding what is correct and incorrect in the data and these may be inaccurate. In order to avoid this, the researcher guarded against disregarding information and considered the context and other factors that contributed to the conception of these narratives by the participants.

Limitations of the study

Similar to many qualitative research studies, the one key limitation of the study is that its findings are not generalizable. The sample of the study was not selected with the aim of providing a statistically representative sample but rather to select participants that had knowledge of the subject under study or could make a valid contribution to the discussions and interviews. Likewise, the selection of the schools did not represent the total number of schools in the community but the schools were sampled because of their close proximity to the healthcare facilities in the community with the assumption that their proximity to clinics would facilitate interactions and knowledge acquisition on oral PrEP. Even though the population was not representative of the general population studied, this study still achieved its aim and that was to explore the role of schools in preparing AGYW for oral PrEP uptake.

Another limitation of the study was the unavailability of the school principals for interviews as the sample was initially conceptualised. Due to other commitments the principals were not available in some schools to participate in the interviews. Their contribution in the study was to give an understanding from the view of the school heads on what they perceived as their role in influencing the attitudes and perceptions of young women towards oral PrEP uptake. However, in their absence, the next available senior staff member was interviewed as they would also give an in depth understanding to the perceived role of schools in preparing AGYW for oral PrEP uptake.

Accessing the community and participants

There are reservations in some communities about issues of HIV prevention, especially among young girls. In order to ensure that the researcher was welcomed in the community and within schools, a local non-governmental organisation conducting community work in Vulindlela facilitated entry into the schools. COMOSAT is a well-known NGO based in Vulindlela that provides HIV education and other related services in the community. Through its close ties

with the community it facilitated data collection in the sampled schools. COMOSAT was responsible for recruiting schools using the selection criteria discussed above, it further set appointments with the relevant schools, teachers and senior staff members for the interviews. It served as the gatekeeper to accessing the schools and teachers in the community making the data collection possible.

Ethical consideration

In order to ensure that the ethical guidelines in conducting social research were maintained, measures were taken to protect the study participants. Ethical clearance was obtained from the Biomedical Research Ethics Administration, ethical number BE500/17. In addition to this, informed consent was obtained from all the study participants before the start of the interview. During this process, the aims and objectives of the study were explained to the participants to ensure that they understood what the study was about. Issues of voluntary participation, confidentiality and anonymity were discussed with the participants. In ensuring that these were guaranteed, the names of the schools and participants interviewed were not mentioned throughout the dissertation. Instead, pseudonyms were used where the need arose. Furthermore, the interviews were recorded and verbal and written consent was obtained from participants to do so. Participants received a copy of the informed consent for their own reference, which included contact details they could use should they require further information about the study.

Chapter 5

Research findings and analysis

Introduction

This study sought to explore the readiness of AGYW for oral PrEP uptake in Vulindlela from the perspective of the schools. In order to complete this exploration, empirical evidence was collected through interviews with LO teachers and senior staff members from six sampled schools. The main purpose of this chapter is to present the findings that came out from the interviews with the school teachers. This chapter is not only limited to presenting findings that relate to the study's objectives but also captures the unique and important themes that came up from the interviews. These themes are critical to understanding the true perceptions and attitudes of school teachers towards oral PrEP in their own contexts. To recall, the study was guided by three research objectives; firstly, to understand the knowledge and attitudes of school teachers towards oral PrEP; secondly, to explore the benefits as well as the barriers of oral PrEP that could possibly promote or hinder user readiness; lastly, to explore the cues to action to facilitate user readiness of oral PrEP from a school based perspective. This chapter will present the reflections of the school teachers on the issues of HIV infections among AGYW and the acceptance and willingness to prepare AGYW for oral PrEP uptake.

Several themes emanated from the research and will be unpacked in detail. The first theme relates to the perceived risk of HIV in Vulindlela and understanding the attitudes of school teachers towards the risk of AGYW to HIV infections. The second theme covers the societal pressures that increase the risk of HIV acquisition among AGYW and the normalisation of the HIV virus in the community which thereby dismisses its seriousness. In order to establish the extent to which the school teachers were aware of the available prevention methods and the opportunities for supporting oral PrEP, the third theme that emanated from the research covers this by understanding the prevention methods for AGYW that were preferred by the teachers. The fourth theme explores the teachers' knowledge on oral PrEP. The perceptions of the schools' teachers on oral PrEP is the fifth theme and covers their perceived benefits and barriers

of oral PrEP. The final theme explores the opportunities for schools to support oral PrEP uptake and the involvement of multiple stakeholders in the promotion of oral PrEP.

The perceived risk of HIV in Vulindlela

The community of Vulindlela is known for its high rates of HIV infections, especially among young women (Frohlich *et al.*, 2014). Even in the context of observed global decreases in new HIV infections, the rural community of Vulindlela still has escalating numbers of HIV infections among adolescent girls (Karim *et al.*, 2011). These high infection rates are associated to a number of factors, with some arguing that the scourge of HIV in this community is driven by structural, social and economic factors (Auerbach *et al.*, 2011). These are evident in the high cases of teenage pregnancy, high STI incidence and high rates of unemployment and low educational levels in the community (Frohlich *et al.*, 2014). The extent to which these structural, social and economic exclusions fuel HIV infections in Vulindlela needs to be addressed.

Although there is literature that discusses the risk of HIV in poor communities such as Vulindlela, this study sought to understand what the school teachers perceived as the main factors contributing to increased HIV risk among AGYW in Vulindlela. This was to ensure that a blanket approach to understanding the HIV challenge and how community members perceive the HIV risk in the community is avoided in order to guard against misconception of the risk. A contextual understanding of the HIV risk was captured in order to understand the need for relevant responses to the HIV challenge in Vulindlela. The perceptions of school teachers on the HIV risk in the community would arguably shed light on the extent to which schools would be willing to support the adoption of oral PrEP for AGYW, notwithstanding other factors that could influence their perceptions and attitudes towards oral PrEP.

School teachers recognise the HIV risk in the community

As established through literature, the community of Vulindlela carries the greatest burden of HIV globally, with the highest incidence recorded among young women (McKay 2018). In order to determine the level of support that schools can provide in preparing AGYW for oral PrEP uptake, the study sought to investigate the perceptions of school teachers on the HIV risk in the community especially among AGYW. The school teachers were requested to share their

perceptions and attitudes on how they perceive the HIV risk and how they think it affects AGYW in the community. A range of responses were recorded as school teachers reflected on the social and economic exclusions that lead AGYW to engage in risky sexual behaviours, the attitudes of AGYW towards their sexual health and the general attitudes of the community towards HIV.

It's just that there is ignorance with thinking that if you don't allow to sleep with the [partner] without a condom they will go to somebody else (Langalakhe LO teacher, 18 Sep 2018).

They are sexually active but we try by all means to control them, I think it's because of peer pressure because some of them attend virginity testing (Qoqisizwe LO teacher, 19 Sep 2018).

These reflections unlocked a number of sub themes that need to be unpacked if a detailed understanding of the attitudes of AGYW on HIV is to be achieved. These sub themes include sexual health behaviours, which in this context relates to the observed attitudes of adolescent girls and the sexual decisions that they make. There were identified challenges with controlling the narrative on what is perceived as acceptable and fashionable in the community versus what is more sensible health wise. By this, the school teachers referred to addressing social myths that had an effect on the well-being of the adolescent girls. The study participants also reflected on the observed dismissal of HIV risk, not only by learners but also the community. In other words, community members did not view HIV as a life-threatening health risk for a number of reasons that will be discussed.

Risky sexual health behaviours as a response to social and economic exclusions

Poverty was identified as an HIV driver in the community. Owing to the limited economic opportunities, most households are dependent on government social grants, however, these are not sufficient to sustain big families in rural communities as the needs of the families grow, opening a huge gap in the lives of these families in terms of providing food, school necessities and clothing for their families. Young women respond to these challenges by engaging in risky sexual behaviours in order to obtain material favours from their partners who offer them money for food, clothes and other material needs they have. “Sugar daddies” or “blessers” are terms popularly used to refer to older men who are sexually involved with younger women in exchange for material goods.

The problem in this area is poverty, parents are not working, you find a big family depending on social grants and that money is very little I tell you, the families are struggling to feed themselves. I can tell you poverty drives these girls to sleep with men just to feed themselves (Langalakhe LO teacher, 18 Sep 2018).

Old men take advantage of these poor girls, they give them food and because they are young they fall for such things and expose themselves in the process (Asibemunye HOD, 12 Oct 2018).

These “sugar daddy” relationships were observed in Vulindlela as many AGYW come from poor households and see the need to have a provider for their unmet needs. The study participants noted that the material gains from these relationships do not only benefit the AGYW individually but also their families. The money they acquire from their partners is used to supplement the household income, contributing to the cost of groceries, clothes for siblings and other financial needs. This meant that because these sugar daddy relationships were beneficial to the overall well-being of the family, the young women were under more pressure to pursue or sustain these relationships which put them at even greater risk of acquiring sexually transmitted infections. The age disparities in these relationships makes it difficult for young women to negotiate safe sex practices with their partners which subsequently leads to increasing incidences of infections among AGYW in the community. Thus, for the study participants, addressing the HIV burden among AGYW required an intentional focus on fighting the social and economic exclusions faced by many young women in the community.

The power dynamics fuelled by age disparities and financial power leave AGYW with little control over their own inclination to practice safe sex. One of the study participants eluded to the point that there is no room for negotiating sex with a man who is deemed as the provider in the relationship.

How do you tell your father who provides for you, rules for having sex without losing him? This is exactly what happens with our girls, an old man will always have power over them because they are experienced in manipulating girls and they provide for them. Their entire life is in their mercy, not just them but their families as well (Langalakhe LO teacher, 18 Sep 2018).

Age disparities in sexual relationships are among the factors contributing to increased HIV infections among AGYW compared to males of the same age. A study conducted by Maughan-Brown *et al.* (2018) in KZN found that age disparate relationships, where the male partner was five years (or more) older, increased the risk of HIV infection for the young women. While the study, like others, establishes the correlation between increased HIV risk and age disparate

relationships (McKay, 2018), there is no conclusive evidence to confidently establish this correlation (Maughan-Brown *et al.*, 2018). A further study conducted by CAPRISA in 2016 discovered that young women were infected by men with an average age of 8.7 years older than them (McKay, 2018). These studies signal the great risk of HIV transmission in these relationships.

Maughan-Brown *et al.* (2018) states that the factors supporting the hypothesis that age disparate relationships increase the HIV risk among young women are two-fold. Firstly, the HIV incidence among men generally increases with age up to around age 40 (Shisana *et al.*, 2014), this then means that these group of men are more likely to be HIV positive when compared to younger males. Clearly, if young women could select HIV-negative men then their risk could be reduced. But, this is not feasible in many relationship set-ups and the mere predicament of being in a relationship with an older man increases a young woman's risk of HIV acquisition. Secondly, a number of studies have indicated the sexual risks evident in age disparate relationships and these include, poor condom use, transactional sex and concurrent multiple sexual partners (Beauclair *et al.*, 2012; Volpe *et al.*, 2013; Malema, 2012; Maughan-Brown *et al.*, 2016). These sexual risks were also identified by school teachers that were interviewed.

This trend is observed in many communities where the grounds for sex negotiation is almost non-existent because of the financial favours gained through the relationship. Another challenge in these relationships is the unknown HIV status of the partner. In McKay's study in Vulindlela, a young woman in a relationship with an older man illustrated this point by stating that she does not know the HIV status of the partner, yet they do not consistently use condoms. Due to the age gap and the financial power he wields, the male partner considered himself entitled to make the decisions about using a condom. The young woman was quoted saying that the older man refuses to use the condom because he supports her (McKay, 2018). This corroborates the views of the teachers in Vulindlela that the HIV risk in age disparate relationships is even greater for young women, signalling the need to direct efforts of curbing the spread of HIV considering these social ills.

Societal pressures that pose HIV risk to AGYW

Society holds a significant role in determining behaviour adoption towards a health problem. The health decisions made by individuals are influenced by the immediate environment they

find themselves in and this underscores the importance of understanding the contextual setting in a community where health decisions and behaviour changes are adopted. The study participants held this view, emphasising how the thinking and attitudes of the society in general contribute to the manner in which AGYW perceive their HIV risk and how they adopt behaviours that either put them at risk of acquisition or helps them escape the risk zone. This suggests that a contextual understanding of the community in exploring how the HIV risk is perceived in the community is vital as AGYW are faced with societal pressure and myths that expose them to great health risks.

These girls are faced with a lot of pressure from the community, their friends and even from their families, it's as if no one is telling them not to behave in a certain way as they will get sick (Qoqisizwe LO teacher, 19 Sep 2018).

I sometimes feel sorry for these children as some of the behaviours we see here [among learners] it's as if there is no way of breaking it, there are so many myths and incorrect beliefs like when to have children, when to start sleeping at your boyfriend's place. Some of the things they do to respond to all these things and beliefs from others (Asibemunye Lo teacher, 12 Oct 2018).

Having a man who provides for them is fashionable, they want men who are working so that they can get money for lunch, clothes and other things... You will think that is all, sometimes they are even controlled by their boyfriends just here in the neighbouring high schools, these girls need to be empowered to think better about their health (Asibemunye HOD, 12 Oct 2018).

It is undisputable that age disparate relationships increase the risk of HIV acquisition among AGYW significantly, however, the adoption of risky sexual behaviours among partners of the same age also contributes to the increased HIV risk. The study participants argued that AGYW in the community are faced with a lot of pressure to make sexual health decisions that are at times unfavourable to them but accepted in the community and by their peers. Thus, AGYW feel the need to be accepted and integrated into society through adopting behaviours that are largely accepted in the community.

The study participants observed that AGYW did not only engage in risky sexual behaviours when they were in age disparate relationships but even in relationships with males of the same age owing to the superiority status awarded to males and the idea that women are inferior in sexual relationships in the community. In order to be accepted in the community by their peers

even in the schooling environment, AGYW respond to a number of societal pressures that put them at risk, such as engaging in sexual relationships at an early age.

When the girls first come to school, they are fine, but before the end of the first term, we start noticing changes, they will be around boys, more aware of how they look, their uniforms become shorter, the hair, the lip gloss before you know it they are standing with boys secretly during lunch and after school. They feel they are all grown and need a man to prove that (Qoqisizwe HOD, 19 Sep 2018).

In sexual health, some... you see what helped us a lot... they didn't care about sexual health in this school... We once had a case where there were 34 pregnant learners per year. Which means they are engaging in unprotected sex. So, you can see that they do not care... Sometimes some of them are sexually active, you can see that because they fight... we see girls fighting and when you attend their case you find that they were fighting over a boy (Ngcedomhlophe principal, 17 Sep 2018).

The study participants noted that when young girls get to high school they feel the need to be relevant to their peers and do so by being in relationships. The study participants reflected on how girls in the school put value on being in relationships because there is this idea that it demonstrates maturity which in turn makes them popular amongst their peers. Thus, as they enter high school, behavioural changes are observed in many girls, particularly in the initial high school years.

As suggested by Mabaso *et al.* (2018), sexual behaviours adopted by AGYW are highly influenced by societal norms which largely support the view that men are superior and have sexual entitlements over women. This view fuels gender imbalances in the community, favouring men at the expense of women and putting pressure on women to be generally sexually submissive to their male partners. In the context of such societal norms, AGYW struggle to find an assertive voice in sexual health decision-making with very minimal space to negotiate safer sex practices in their relationships such as condom usage, cutting-out multiple partners, age of sexual debut, gender-based violence and other risky exposures (Sommarin *et al.*, 2018). The suppressed voice of AGYW in the community poses greater health challenges not only from older men but from male partners in general.

Responding to such societal pressures is not always favourable to the sexual health of AGYW as these relationships often develop into sexual relationships. The challenge with AGYW sexual engagement is not solely the idea that they are not aware of the health consequences or

other outcomes, such as pregnancy, but great emphasis is placed on what is perceived as acceptable in society when it comes to sexual engagements.

Yes, they are aware. You see here at home [school] we are next to a clinic, we are next to CAPRISA. CAPRISA once helped us, you see the time we had a drop in pregnancies, CAPRISA also had a contribution, they would come and have programmes that they did within the school. We once had the one called RIVER that was related to HIV. It was also very helpful. You see in terms of awareness, they are very much aware because there are programmes that are ran in the school. Even in the community you find a child saying, "I was attending something at CAPRISA, I was participating in something". They are aware. As we speak, CAPRISA comes and parks their car there every Tuesday and they do go and get tested... Do you know how I know that they do go and get tested? You find that they are now fighting and the other says "I told you my HIV status and now you have told other people". So, you see, they are aware and they do get tested (Ngcedomhlophe principal, 17 Sep 2018).

There is a programme that the clinic normally brings to the children where they provide health education and awareness, they also provide HIV counselling and testing and this was approved by parents (Langalakhe LO teacher, 18 Sep 2018).

Almost all the schools included in the study had active health education programmes, most of which were provided by external stakeholders in the health sector such as the Department of Health through clinics and health NGOs in the community; these programmes provided health education sessions including sexual health behaviour, HIV prevention and testing. The study participants believed that the provision of these services as well as the education provided through LO classes equipped learners to make more informed sexual health decisions, however, the opposite was observed in many schools. The study participants maintained that AGYW have knowledge about healthy sexual behaviours but they consciously engage in risky behaviours which are perceived as acceptable in the community and favourable to their male partners. The LO teachers reflected on the extent to which condom-less sex has become an accepted behaviour in the community despite what young women are taught about sexual health and prevention. The quotes below further demonstrate the extent to which AGYW are willing to disregard their sexual health in an attempt to please their male partners.

we communicate [about HIV prevention] as adults. It's just that there is an ignorance with thinking that if you don't allow to have sex with him, he will go to somebody else, (Langalakhe LO teacher, 18 Sep 2018)

if you keep telling him about prevention, to use a condom, he will go to others. Especially in this community (Langalakhe LO teacher, 18 Sep 2018)

We emphasise that they must use condoms rather than these prevention. Because if we encourage them to use contraceptives they will not use condoms. As there is also the femidom, yeah, we encourage them to always have one in their pocket so they can be able to wear it themselves. Because sometimes there is this thing of gender imbalance, where men have that power. So encourage them to wear the condoms themselves (Qoqisizwe LO teacher, 19 Sep 2018).

The most popular misconception in AGYW's sexual relationships is that engaging in condom-less sex is appropriate behaviour. The study participants held a view that AGYW tend to be concerned about the sexual satisfaction of their partners while compromising their own health. The idea of not using a condom is largely accepted in the community as preferred by male partners and women tend to submit to this sexual need in order to keep their men happy. This misconception places AGYW at elevated risk of acquiring sexual transmitted infections, not just limited to HIV.

It is important to note that there was an over reliance on external stakeholders to educate about condom use and other HIV prevention strategies available to learners, especially AGYW. While some teachers encouraged AGYW to use condoms and break the societal myths about condom-less sex being a means to guarantee affection from the partner, a significant number of teachers promoted abstinence among AGYW, limiting the spread of knowledge on condom use. The idea of abstinence will be discussed in detail later but worth noting in this discussion.

Added to the challenge of sexual health risks was teenage pregnancies in most schools. All the sampled schools reported decreases in the teenage pregnancy rate over the years, signalling a positive messaging reach on prevention strategies including abstinence, condom and contraception use.

We once had a case where there were 34 pregnant learners per year. So the department sent us the people called the learner support agents to assist us... So that they can assist us by doing awareness campaigns and all those things (Ngcedomhlophe Principal, 17 Sep 2018).

The pregnancy rate has decreased. As we speak we don't have pregnant learners but I am not sure of their HIV status. Because you can only tell when they get pregnant that they don't listen, you see. (Siyanda HOD, 25 Sep 2018).

The decrease in teenage pregnancies can also be attributed to the work of health organisations and the Department of Education's support through "learner support agents" who provide a safe space for learners to engage with qualified young people to address social and relationship problems and uncertainties they might have. Most schools attributed the success in reducing pregnancies to the effectiveness of the work done by learner support agents who are placed in schools to support the psychosocial well-being of learners.

The learner support agents and the work done by health NGOs have assisted schools in managing the teenage pregnancy challenge. Ngcedomhlophe managed to reduce their teenage pregnancy numbers from 34 in 2015 to 5 in 2017, which was a significant decrease of 85%. One teacher argued that with decreased teenage pregnancy rates, the assumption is that AGYW engage in safer sexual behaviours, "there is nothing that can stand as proof that they are having unprotected sex, such as pregnancy" (Bhekuximba Deputy principal, 19 Sep 2018). As such, decreased teenage pregnancies can be assumed as a positive indication that health messages have effectively reached the AGYW. However, all the sampled schools still had young girls who were pregnant, though in smaller numbers. This, for many teachers, indicated that some AGYW are still engaging in unprotected sex and the extent to which the AGYW were aware of their partners' status was unknown which meant that their risk to exposure was a concern.

Teenage pregnancy is motivated by a number of factors, one of which is individual reproductive ignorance. This means that teenage mothers do not critically consider sexual engagements and the use of contraceptives (Department of Social Development, 2014; Macleod, 1999) or are obstructed by familial challenges. This is present in instances where families are uncomfortable discussing sexuality with teenagers, resigning it to a taboo topic (Thobejana, 2015). In such situations, peers play a significant role in influencing behaviour (Macleod, 1999; Thobejana, 2015), thereby translating into increased cases of teenage pregnancy. Peers' influence on teenage pregnancy in schools was observed by the study participants, whereby AGYW fell pregnant to remain relevant and acceptable to their peers.

Because it's like there is a need that... uhmm before you finish matric you must have a kid, otherwise it means you are infertile (Qoqisizwe HOD, 19 Sep 2018).

They (girls) don't even use contraceptives well especially when the baby has grown. Because they each have two or three children... I think they take them whilst the baby they have is still small and then after a while you find that they get pregnant again. They seem to be fulfilling some pressure to have babies while still at school (Langalakhe, LO teacher, 18 Sep 2019).

In addition to these are further societal and cultural factors which were also drawn from the interviews. Macleod (1999) holds that the cultural factors influencing teenage pregnancies are also two-fold. First, the traditional values held by communities to control sexual engagements among young people arguably contribute to teenage pregnancies, because when conversations about teenagers' sexual health are avoided and suppressed while promoting sexual control measures, AGYW rely on unreliable sources for sexual health education, thereby increasing their chances of pregnancy. Second, in some communities, as also alluded to by the study participants, the cultural value attached to fertility encourages teenage pregnancy. This is the notion that a woman is regarded as 'complete' when they have a child, as reported by one of the study participants.

In the context of increased societal pressures influencing AGYW sexual health behaviours, targeted prevention strategies are required to not only address the health challenges but also the social and cultural factors that influence behaviour. The logic is that when the contextual barriers affecting health are addressed, then a more conducive environment for adopting any biomedical prevention intervention will be created. Understanding the social and cultural factors that are perceived as posing health risks to AGYW and exacerbating the HIV challenge in the community will allow schools to better conceptualise the needs of AGYW and consider interventions that might curb the spread of HIV such as oral PrEP.

Normalising HIV in the community

The HIV epidemic is widespread in the community of Vulindlela to the extent that community members are beginning to normalise it as part of their life narratives. It can be argued that this is a way of coping with its effects and the stigma associated with the disease. AGYW tend to downplay the risks of contracting HIV, drawing from narratives that HIV is just like any other disease and manageable. In other words, AGYW see nothing extremely devastating about the disease as they have lived and shared the experiences of people living with HIV. A teacher in Langalakhe said the following regarding the dismissal of the HIV risk among AGYW.

You see when you talk about HIV, you are out of point to them because it is something they have accepted, and it's nothing to them (Langalakhe LO teacher, 18 Sep 2018).

They take it lightly, and when you follow up on it you can see that they come from rural areas and even the parents are not concerned about it (HIV). So when you try and emphasise on it

they just say it is okay, however, they won't stop whatever they are doing (Langalakhe LO teacher, 18 Sep 2018).

While this narrative helps in diffusing tensions and stigmatisation in the community, the extent to which the community and its AGYW have normalised the HIV risk was deemed as an HIV risk in its self. Furthermore, these narratives were also received and interpreted differently by communities. The observed actions of learners in schools also signified dismissal of the HIV risk. The teachers learnt the sexual behaviour of learners from the way in which they behaved in school. Some teachers mentioned that young girls are comfortable in relationships to the extent that they might not be considering the repercussions of their actions.

They may be clued up, but they are very ignorant. They are very ignorant in a sense that every Friday we have to reprimand these children because you find that they are kissing. They are kissing in an intense manner (Ngcedomhlophe LO teacher, 17 Sep 2018).

Somehow, they do understand but I'm not sure whether its peer pressure or a stage they are in. It's like a competition that a person... It's like some kind of style for someone to be doing this... kissing in public- it's a normal thing (Ngcedomhlophe LO teacher, 17 Sep 2018).

So, you can see that they do not care... Sometimes some of them are sexually active, you can see that because they fight... we see girls fighting and when you attend their case you find that they were fighting over a boy (Ngcedomhlophe principal, 17 Sep 2018).

This trend of normalising the HIV infection in the community of Vulindlela was also observed in another study where a 23-year-old female from Vulindlela, cited in McKay (2018), states that learning about her HIV positive status did not come as a surprise to her as it was becoming normal to receive an HIV positive test. HIV infection in the community is no longer a foreign subject to many as they are either infected or affected by HIV in one way or the other. People in this community arguably experience HIV first hand by either living with the disease themselves or being surrounded by people living with the disease. The exposure to HIV has affected the way they perceive the risk of HIV and the extent to which they are willing to adopt prevention strategies and change health behaviours. The lived experiences of community members and particularly AGYW are important as they have been observed to shape the way they perceive their risk in their own contexts and how they respond to prevention interventions implemented.

Concerted efforts have been made by countries' governments to routinize HIV within public health facilities, ultimately treating it like any other chronic disease that is manageable through treatment such as diabetes. This was done mainly to integrate HIV care within the broader clinical services in order to avoid stigma associated with the isolation of HIV positive clients receiving services (Philbin, 2016). While the study participants believe that this messaging may have been misinterpreted by AGYW in the community leading to the normalisation of HIV and dismissal of its effects, Philbin (2016) argues that routinizing HIV care and treatment does not normalise it in the lives of adolescents living with HIV. In a study conducted in Baltimore, it was found that the narratives of normalising HIV in the community does not apply to HIV positive people whose lives unintendedly change. It can be argued that HIV is assumed as normalised by HIV negative people who do not individually carry the psychological strain associated with HIV and the stigmatisation they experience. Unless the narratives of HIV positive adolescents are captured, the idea of normalised HIV in society remains unsubstantiated (Philbin, 2016).

The major concern that teachers have with AGYW normalising HIV is the risk of HIV infection it poses because prevention messages are not carefully considered when the risk to HIV infection is not deemed as a serious challenge in the community. This on its own highlights the challenges of adopting HIV prevention interventions in the community, making it critical for schools to have a stand on the preparation of AGYW for oral PrEP, given the extent to which they perceive them (AGYW) as dismissive of the HIV risk. Community structures, such as schools, then have a role in influencing the way in which AGYW perceive their risk of HIV and participate in controlling narratives that exacerbate the HIV risk among this highly affected population group of AGYW.

School teachers preferred prevention methods for AGYW

The role of school teachers is a comprehensive one, they should support learners with diverse learning needs in order to attain an inclusive education system (Jonker, 2011). Their roles are not limited to being subject specialists but also to professionally participate in community activities and engagements whilst providing a pastoral role to learners (Department of Education, 2000; Department of Higher Education and Training, 2010). There is a growing need for teachers to be multi-skilled in order to adequately respond to the complex needs of learners and the community in the face of increasing social ills affecting predominantly young

people, such as the spread of HIV/AIDS (Ferreira and Ebersohn, 2011). Given the significant role that teachers play in the education sector through providing comprehensive quality education, they can be regarded as key in addressing societal challenges such as HIV/AIDS and should be in a position to adequately respond to HIV challenges in the community as experienced by learners.

Boler (2003) maintains that schools are viewed by the community as institutions that can reach young people with HIV/AIDS education. Thus, the role of teachers should expand beyond academic attainment to include successes in other social aspects affecting learners, as the performance of learners academically is influenced by these social challenges they face in their communities (Nodding, 2010; Jonker 2011; Boler, 2003). It is against this backdrop that themes relating to HIV prevention methods available for AGYW were explored with the school teachers. Questions covered in exploring this theme included, how they (teachers) communicate HIV prevention to their learners and their preferred prevention methods for AGYW. Understanding these factors would highlight the role teachers are willing to play in promoting prevention interventions for AGYW. It would also unveil the extent to which they are willing to support the adoption of oral PrEP as a prevention method for young people.

Abstinence: a preferred HIV prevention method

There are a range of HIV prevention options available to young people and some have been proven effective in reducing the HIV infection rates. Included in these prevention interventions are behavioural change interventions that are targeted to reduce the risk of HIV infection by changing behaviours towards early sexual engagements and inappropriate drug use (World Health Organisation, 2006); biomedical interventions such as the use of ART for prevention, Medical Male Circumcision (MMC); as well as condom usage. However, the context in which these interventions are tried is key, especially when considering that the adoption of prevention interventions do not solely rely on potential users but also on the social and cultural contexts they find themselves in. Amongst these is the influence of schools, since they are viewed as important in influencing behaviour change and adoption of biomedical interventions among AGYW and learners in general. Thus, the preferences of teachers are likely to channel the perceptions of AGYW on the methods they may possibly adopt.

We start by saying as a woman you must respect yourself. Be self-disciplined. And then we tell them the consequences of the things they are doing. One, being seen kissing men... kissing

leads to sex, and you can't control your feelings because you are still young... We tell them about feelings, that feelings are very overwhelming. So once a boy touches you, you can't control yourself at that age so they must be careful not to allow themselves to be touched by boys at their age (Ngcedomhlophe LO teacher, 17 Sep 2018).

Abstain, abstinence... What else is there, because you cannot say condoms. Condoms don't prevent HIV. It's only that they reduce this... yes by 60% (Siyanda LO teacher, 25 Sep 2018).

In the case of this study, there was clear evidence that the school teachers preferred AGYW to abstain from sexual intercourse in order to prevent being infected with HIV. The study participants held a strong view that, among all the available prevention options, abstinence was the safest as it posed no risk of infection at all. The preference for abstinence among AGYW was not a result of teachers having no knowledge of alternative prevention options, they indeed had knowledge about the need to teach learners about methods of contraception, however, considering what they believed are the perceptions and behaviours of AGYWs in the community and school setting, abstinence was seen to have the greatest potential in reducing HIV infections.

One participant mentioned that their preference for abstinence was that it was the cheapest option compared to the rest of the available prevention methods that require the government to spend money to procure them.

I do have this concern that, the interventions that we are talking about mainly focus on prevention whereas the ABC strategy starts with abstain but not much is said about that. Why are there no campaigns that encourage abstinence? (Langalakhe principal, 18 Sep 2018).

You see, maybe this is driven by the companies that make drugs and sell drugs because abstinence doesn't require anything. We don't go and buy... the country doesn't go and buy. You see these big companies that sell chemicals? I suspect that... Because when we talk about abstinence it needs nothing. You don't buy anything, you just abstain, you see (Langalakhe principal, 18 Sep 2018).

Echoing the views of the study participants, Long-Middleton *et al.* (2013) argue that indeed sexual abstinence when practiced can be the most effective prevention for HIV and other sexual infections as opposed to other available prevention methods. However, given the emphasis of the study on context, the reasons for abstinence and non-abstinence should be understood from the AGYW perspective, suggesting that the schools teachers' preferences alone may not be

able to effect the behavioural change towards abstinence. Long-Middleton *et al.* (2013) hold that engagements between school teachers and AGYW is important in gaining deeper insights into AGYW's motivation for abstinence and how these motivations can be effectively shared with others to inform behaviour change and adopt this prevention method. Since the study focussed on the schools' perceptions of HIV and prevention, the preference for abstinence was solely the perspective held by school teachers and not informed by learner preferences pertaining to their sexual health.

Notwithstanding the efficacy of abstinence in HIV prevention, a number of studies point to the disadvantages of promoting solely abstinence in prevention for HIV, sexual infections and even unwanted pregnancies (Advocates for you, n.d). The exclusive promotion of abstinence has been found to yield low results in prevention, though its efficacy has been shown in younger individuals who are sexually inexperienced (Underhill *et al.*, 2005; Bradley *et al.*, 2012). There is very limited information, if any at all, on the effectiveness of abstinence, although there is some evidence of reducing HIV, STI and unplanned pregnancy risks among young people who are sexually inexperienced and to what some refer to as secondary virginity (the decision to abstain after having had sexual intercourse). Thus, the success of the abstinence approach to HIV prevention requires a detailed understanding of how it will be accepted among sexually experienced young people who might not be sold on the idea (Kabiru and Ezeh, 2007).

The motivation for the study participants to prefer abstinence over condom use and other prevention methods was driven by a number of factors, ranging from their personal beliefs and attitudes towards HIV prevention and the level of efficacy they believed was attainable with the adoption of alternative prevention options.

Interviewer: And for those who are not abstaining, what educational messages do you pass to them?

Ngcedomhlophe LO teacher: To be honest I don't tell them to use condoms. Even though I'm a LO teacher, I avoid saying they must use condoms... Even though I know that it's compulsory for those who have already started to use condoms (17 Sep 2018).

Interviewer: Why?

Ngcedomhlophe LO teacher: My religion (17 Sep 2018)

Ngcedomhlophe LO teacher: This one of a condom I sometimes highlight it in the classroom because we have to teach it but on one-on-one basis I don't even talk about it. But in the classroom because it's compulsory, yes (17 Sep 2018).

The cultural and religious beliefs of the school teachers were challenged as they had to teach and communicate topics that were religiously and culturally inappropriate for them. A LO teacher in Ngcedomhlophe understood that teaching learners about the available prevention methods was part of the LO curriculum in some grades, therefore it was compulsory for her to do so. But, teaching learners at a young age about condom use was uncomfortable for her.

This interaction with the LO teacher at Ngcedomhlophe signalled what was a challenge for many teachers, considering the cultural values that many hold. It also raised concerns about the extent to which relevant prevention methods reach AGYW through the barrier of clashing religious beliefs and what is entailed in the teaching curricular. This clearly points to the need of understanding the cultural contexts in communities while promoting HIV prevention as messages may not reach the intended audiences in the same manner.

The role of the school in HIV prevention is to provide education and create space for health education discussions that promote positive health behaviour changes that will reduce the risk for HIV infection (Chabilall, 2012). Arguably, the approaches that schools take to reach this aim may differ and be influenced by some of the cultural and religious beliefs discussed. It remains questionable if their strong beliefs can be influenced in order to offer learners a comprehensive understanding of HIV and prevention methods. Thus, as prevention interventions are designed, efforts must be made to understand the contexts of where these interventions are implemented because community values can be barriers to full and efficient adoption of these programmes.

It was also observed during data collection that some of the study participants were in denial about the sexual activeness of the AGYW in their schools and this would have also potentially influenced how they conceptualised their thinking regarding abstinence as opposed to also including education on condom usage for the sexually active learners. There was great emphasis on the fact that the AGYW in school were children and should not be sexually engaged either way, thus promoting condom use would be promoting sexual engagements. The study participants reflected on the manner in which they perceived the learners as their own children, perpetuating the idea that they would not tell AGYW about condom use as they would

not with their own biological children. The HOD in Qoqisizwe, when asked about HIV prevention methods she discusses with her learners, replied as follows:

Abstinence, and that they have to wear gloves if they are nursing a sick person... because they may contract HIV if they have an open wound (Qoqisizwe HOD, 19 Sep 2018).

This shows the extent to which sexual activeness of AGYW was avoided as a topic of engagement, especially in contexts where a huge proportion of HIV transmissions happen through sexual intercourse. When asked specifically about her perceptions on condom usage, she was against the idea, stating the following:

No, I don't like condoms among children because it would be like I'm saying to them guys go and have sex, as long as you use protection. As a parent, because I have to take off the teacher hat and become a parent and ask myself if I can tell my child to use a condom at this age. Because grade 11 and 12 learners are around 16 years you see, so if I say to them they must use a condom I am giving them the licence to have sex (Siyanda HOD, 25 Sep 2018).

The reservations about educating AGYW about condom use as an alternative prevention method in addition to abstinence was fuelled by fears of encouraging sexual engagements. The parent-daughter relationship in school also has a role to play in what teachers are comfortable communicating with AGYW. It can be argued that this nature of a relationship needs to be thought through to acknowledge the benefits it has for the learner. While it is advantageous to have a caring adult in the school environment, this kind of relationship has limitations when it comes to engaging in uncomfortable conversations. The study participants themselves believed that the relationships they had with learners in school were healthy and allowed free communication about certain issues, however, they believed that there are some topics that the learners were uncomfortable discussing with them, such as their relationship issues. A principal in Langalakhe believed that teachers had to assume a parent role within the school and act as extensions of their parents. He emphasised the point that the school reflects the parents' values in the school, so, if parents do not promote condom use amongst their own children at home, then the school would also not assume such a responsibility as the school is governed by parents through the school governing body (SGB).

Because knowing the parents in our communities, as a traditional parent, here is my little girl bringing a condom at home and they say they got it from school. What would be the interpretation? "Are you not learning at school, they encourage you to be sexually active". We might have parents coming in here (Langalakhe principal, 18 Sep 2018).

However, I would not do with them within the school what the parents do not do with them in their homes (Langalakhe principal, 18 Sep 2018).

With some teachers, their relationships with the learners were comfortable enough for them to be approachable about challenges that the learners were facing, however, there was a limit to what the girls would approach them about. This was observed through a number of interviews where teachers described their relationships with the girls as a teacher-learner relationship.

I can say that it's a close relationship, it's good because whenever they've got problems they come to us, not me alone but as female teachers. Like also, they need pads... we supply them with pads from the government. But whenever there is an accident, they are free to come to the office... whatever problems (Qoqisizwe HOD, 19 Sep 2018).

We are open, it's a healthy relationship but not all of them are open to talking about their personal issues but most of them are open (Siyanda HOD, 25 Sep 2018).

The nature of these relationships allowed communication but also presented barriers for school girls to openly share their relationship problems with their teachers because they also viewed them as parents. The one teacher stated that she had an open relationship with the learners but it was a parent-learner relationship and this kind of relationships presented challenges in free communication regarding sexual engagements and HIV prevention for learners, especially girls.

The relationship that I have with the learners, especially females, it's like a mother-to-daughter relationship. Besides being a teacher, I'm like their mother (Ngcedomhlophe LO teacher, 17 Sep 2018).

Most traditional societies make a clear distinction between parents and children and this is clear in research showing interaction challenges between both groups on HIV and prevention issues (Macleod, 1999; Thobejana, 2015; Department of Social Development, 2014). As such, one can argue that the nature of the relationship between teachers and learners poses limitations in HIV and behavioural education. A detailed exploration of this relationship set-up is crucial in order to understand the extent to which prevention interventions such as oral PrEP would be supported in schools and how the parents can be integrated into the learning and teaching of their children about HIV. This idea assumes that when parents are part of the HIV education processes they can offer opportunities for the adoption of prevention intervention or alternatively hinder its adoption.

Some of the study participants supported traditional practices such as virginity testing, as it promoted abstinence. Virginity testing ceremonies were not initiated by the school but by communities and schools created an environment that encouraged girl learners to attend. This was done by allowing girls who participate in virginity testing to leave the school early at the request of leaders of this practice in the community.

Sometimes we use some things in the community, the traditional leaders who take girls to go for virginity testing. They give us a notice and then we tell the girls to go and get tested. But we don't force them (Bhekuximba Deputy principal, 20 Sep 2018).

They are sexually active but we try by all means to control them. I think it's because of peer pressure for others, because some of them attend this thing, virginity testing. We also give permission, just as there was virginity testing recently. The women taking care of them ask permission for them to be released early on Thursday so they can go and make preparations (Qoqisizwe LO teacher, 19 Sep 2018).

It's just that we work in collaboration with their leaders because sometimes they come here and request for certain girls to participate in virginity testing. So, they request for them to leave school early because there is some sort of function or event related to that (Langalakhe principal, 18 Sep 2018).

The study participants believed that working with the community and traditional leaders in supporting the practice of virginity testing will have an impact on controlling the sexual behaviours of AGYW, as through these traditions girls who have had sexual intercourse can be identified. The study participants emphasised that the girls' participation was voluntary or approved by their parents, the school had no direct role in what happens besides merely allowing them time off. It is believed that behaviour change among AGYW cannot be achieved by one party but by collaborations between schools and communities that can foster positive behaviour changes and reduce the risk of HIV infection among AGYW.

In a further effort to promote abstinence, some study participants alluded to the fact that they adopt communication styles that instil fear but increase the chance of message adoption.

I think if we can come with the end results of being sexually active, that if you are sexually active you might contract HIV, you might get STIs, you might become pregnant then the child will see how being sexually active may affect them. If we address it from that angle then maybe they can see that they have to stop being sexually active (Siyanda HOD, 25 Sep 2018).

Mainly because advocacy for ABC has been overdone, the new approach now that we equip them with, even by the department is to highlight the opportunities the learners have at their age. As well as for them not to expose themselves to situations that may hinder those goals that they have (Langalakhe principal, 18 Sep 2018).

The messaging about sexual engagements was phrased in a way that showed all the disadvantages that came with being sexually involved, such as unwanted pregnancies, STI contraction, HIV infection, delayed educational progress and limited chances of succeeding in life. In this way, the assumption was that learners will consider the dire consequences of sexual debut and opt for abstinence as it had more attractive benefits. The aim is to emphasise educational opportunities that learners can explore and sexual activeness will limit these.

This section has focused immensely on the social, cultural and religious factors contributing to the promotion of abstinence as opposed to condom use and other interventions, but there are also issues about the efficacy of condoms in particular in HIV prevention. The fact that condoms do not offer a 100% assurance for HIV protection caused doubts in the minds of some study participants, thus making it an un-preferred method.

What else is there, because you cannot say condoms? Condoms don't prevent HIV. It's only that they reduce this... yes by 60% (Siyanda HOD, 25 Sep 2018).

Abstinence is what I am 100% confident with (Ngcedomhlophe LO teacher, 17 Sep 2018).

Though not a preferred method by the study participants, scientific research has found that condoms are about 90% effective provided they are used correctly and consistently, thus increasing the protective value against HIV infection (UNAIDS, 2004). In establishing the role of schools in getting AGYW ready for oral PrEP uptake, it is important to closely consider the views of teachers in relation to condom use as oral PrEP is implemented as part of an HIV prevention package which includes condom use. Drawing from the teachers' views, an overarching question is how the success of condom use will be integrated in the implementation of oral PrEP and, furthermore, ensure that the messages around PrEP recognises and promotes the use of condoms and other prevention methods.

Knowledge about oral PrEP

Since its adoption by the South African Department of Health in 2015 following the WHO recommendations, oral PrEP is targeted at specific population groups perceived to be at

substantial risk of HIV acquisition (WHO, 2015). These population groups mainly include sex workers and men who have sex with men, amongst others, thereby paying limited attention to the provision of oral PrEP to AGYW who are also at substantial risk of acquiring HIV, as indicated through research and statistics (Cowan *et al.*, 2016). Given the initially narrow inclusion criteria for oral PrEP uptake, the study participants had limited to no knowledge at all of what oral PrEP is and what it is meant for. Some of the study participants were hearing about the term oral PrEP for the first time during the interviews, while others had heard about it in informal settings and did not understand what it was or its purpose. When asked about what oral PrEP was and what purpose it served, the below responses were provided by some of the study participants. In the first response, the Deputy Principal in Bhekuximba was asked if he has ever heard about PrEP.

No, what is that? (Bhekuximba Deputy School, 20 Sep 2018).

In the second response, the LO teacher provided details on what she thought oral PrEP was after hearing the word without prior information about it.

Okay for oral PrEP, even though I am not as clear about it but I know that oral PrEP prevents a child [AGYW] from falling pregnant...they have to use it... If a person is already infected [with HIV] they must use it, they must go to the clinic to get this... I think it's an oral something that they drink, a certain pill (Qoqisizwe LO teacher, 19 Sep 2018).

In this last response, the LO teacher in Ngcedomhlophe had heard about oral PrEP informally but did not fully understand what it was.

Oral PrEP. I normally hear it being spoken about in the media but I don't have much information (Ngcedomhlophe Lo teacher, 17 Sep 2018).

The above responses represent the thoughts of the study participants, all of whom were in one of three categories that are; having no clue of what oral PrEP is; having made their own meaning of what it is; or having acquired some information about it though not enough to fully comprehend what it meant. This clearly points to a serious need of ensuring that influential structures within communities, such as schools, are well informed about what it is and how it works so that they are afforded an opportunity to make informed decisions about preparing AGYW for oral PrEP uptake. But for the purpose of this study and in order to facilitate conversations about oral PrEP, a brief explanation of what oral PrEP is was provided to the study participants. This included, how it works, the targeted population for oral PrEP uptake

and how it fits into the combination HIV prevention intervention packages that incorporates education on using oral PrEP together with other prevention interventions in order for it to be more effective. Following this overview, the study participants were asked to reflect on their thoughts and perceptions about oral PrEP, as well as share what they perceived as benefits of oral PrEP particularly for AGYW and also reflect on their reservations with oral PrEP. This was important because getting some understanding of the study participants' perceptions about oral PrEP would offer insights into the extent to which they will be willing to play a role in preparing AGYW for uptake.

Perceptions about oral PrEP

The perceptions of the study participants on oral PrEP differed, with some noting major challenges with its implementation for AGYW. But a common factor was that most of the study participants believed that oral PrEP was a good intervention that will benefit AGYW in the face of increasing HIV infection rates amongst them even though it had major challenges. The differences in their perceptions were to what extent oral PrEP will be effective amongst the AGYW group specifically. Their reservations ranged from the individual behaviours of AGYW towards HIV issues and prevention, to family and societal issues that might influence their behaviours towards the adoption or rejection of oral PrEP. A major observation made during the interviews with the study participants was that they had minimal reflections about the benefits of oral PrEP use amongst AGYW and most emphasised what they perceived as barriers of oral PrEP and this raised concerns about their willingness to support its adoption. However, efforts were made to probe study participants to also reflect on the perceived benefits of oral PrEP uptake for AGYW in addition to perceived barriers.

The major consensus about oral PrEP was the protection benefit considering the increasing rates of HIV infections among AGYW in the community of Vulindlela. The study participants understood that while they encourage learners to abstain, there were still a large number of AGYW who were sexually active and exposed to the risk of acquiring HIV. Thus, oral PrEP was seen as beneficial in offering HIV prevention for the sexually active AGYW.

But also let us look at it this way. They are sexually active, whether we like it or not, they are sexually active so maybe it can help them in that case (Siyanda HOD, 25 Sep 2018).

Yes, it will. Not only among teenagers, even for us old people. Honestly because it's not only them who are being infected. Even us old people need to have knowledge (Bhekuximba Deputy principal, 20 Sep 2018).

The benefits of oral PrEP... It will help them not to get infected with HIV if they take it accordingly, with a condom (Ngcedomhlophe principal, 17 Sep 2018).

However, there were concerns that AGYW are generally irresponsible about adopting safer sex behaviours and using condoms correctly and consistently with all partners. So, oral PrEP would be an alternative for those who find it difficult to use condoms for different reasons. In light of the many barriers AGYW face in accessing and using condoms, oral PrEP can serve as a self-initiated intervention for AGYW.

You need it... these kids, anything that requires the use of a condom, the way I see it, they don't use it. Or maybe the girls are afraid to tell their boyfriends. Maybe the boyfriends scare them by saying 'oh you are asking for a condom yet the other girl doesn't ask for one'... So, oral PrEP can help a lot on that way because they can be able to take the pills (Ngcedomhlophe principal, 17 Sep 2018).

A report by the Global Fund revealed that AGYW find it difficult to negotiate condom use in their relationships and male partners are often opposed to the idea of using condoms, thereby increasing the infection risk for AGYW (The Global Fund, 2017). Thus, addressing these challenges with condom use, AGYW require interventions that empower them to make independent decisions about their sexual life in order to address some of these barriers.

Integration of oral PrEP into SRH services

The study participants further believed that oral PrEP will be more effective for AGYW if it is made easily accessible in primary health facilities and one way of doing this is through integrating oral PrEP with sexual and reproductive health (SRH) services. A number of AGYW are already accessing SRH services in clinics. Accordingly, if they receive a comprehensive service when they go to the clinic then they might be motivated to take the pill.

Also, because some of them are already used to taking pills because they are taking contraceptives. So, they will take they will take oral PrEP as they take their contraceptives (Ngcedomhlophe principal, 17 Sep 2018)

As long as it will be available in clinics and not administered separately. Like if they go to get contraceptive pills they can also get it, but it must be voluntarily. It can help to reduce HIV infection rates (Siyanda HOD, 25 Sep 2018).

This integration will also be beneficial in ensuring daily dosing of the pill for those AGYW who use oral contraceptives because they are already used to taking pills. The correct and consistent dosing of oral PrEP will be achieved among AGYW who are already using oral contraceptives well because daily dosing requires discipline and becomes learnt behaviour overtime. Thus, starting to learn daily dosing will be a challenge for AGYW, especially considering that they are not sick, but could be easily integrated for those AGYW who are already used to taking daily pills.

The integration of oral PrEP with other clinic services, such as SRH, is likely to reduce the stigma associated with HIV and ART taking to some extent. Oral PrEP is often associated with HIV positive individuals, this forms the assumption that people taking oral PrEP are dishonest about their true statuses and that they are already HIV positive (Golub *et al.* 2017). Furthermore, oral PrEP is associated with promiscuous behaviour and condom-less sex in many communities (Dubov *et al.*, 2018; Golub *et al.*, 2017). Thus, managing the manner in which oral PrEP is distributed in health facilities can eliminate some of the challenges and offer a better opportunity for AGYW to use the pill.

Perceived barriers to oral PrEP

Oral PrEP has the potential to reduce HIV infections among AGYW in Vulindlela, as identified by the study participants. It offers an alternative prevention method in the context of suppressed female voices when it comes to sexual behaviours and condom use, it also empowers female users as it can be adopted independently by AGYW without seeking consent of the partner. These are key benefits that might translate to reduced infection rates when AGYW adopt PrEP. However, the study participants still foresaw a large number of challenges associated with oral PrEP uptake, especially amongst AGYW in the community. These challenges could pose barriers to the uptake of oral PrEP and its effectiveness amongst users. The study participants noted challenges, including increased sexual risk behaviours, adherence, accessibility of oral PrEP and social challenges. These perceived barriers presented challenges with schools playing a role in ensuring that AGYW are ready for oral PrEP uptake. The sub themes that emanated from the discussions about perceived barriers were; minimal or poor condom usage as a result

of taking oral PrEP; beliefs that its use would promote promiscuity among AGYW; its accessibility in health facilities and barriers to daily administering of the drug; and finally, were the concerns about its efficacy in HIV prevention.

Disregard for condom use

The use of oral PrEP is largely associated with poor condom usage, suggesting that users would generally substitute condom use with oral PrEP. This is entrenched in the belief that oral PrEP will protect against the HIV risk and this was a major concern for the study participants, especially in the context of perceived poor condom use amongst AGYW.

I see it [oral PrEP] as having similarities with male circumcision. It is going to change people's perceptions because now this drug it is the only prevention now that covers everything. Once you take it you won't be infected. You can have unprotected sex and so on, you see... Whereas people will be exposing them to different... (Bhekuximba Deputy principal, 20 Sep 2018).

You find that they were using a condom continuously, but they may now stop using it because it gives them the impression that they can use this prevention method instead... So it means if a person doesn't want to use a condom they can use these pills to prevent HIV (Langalakhe principal, 18 Sep 2018).

The study participants believed that oral PrEP will be misunderstood and become a motivator to stop using condoms and expose themselves to the HIV risk, understanding that for effective results, oral PrEP must be used with other HIV prevention methods such as condoms. There were fears that AGYW are most likely to offset the risk of HIV exposure as a result of using oral PrEP. In other words, oral PrEP use among AGYW will result in risk compensation, where they would underestimate their risk to HIV infection as a result of using oral PrEP, thereby choosing one method over the other, that is oral PrEP over condoms.

This idea of disregarding condoms when using oral PrEP was also evident in a study of gay men taking oral PrEP, the study found that PrEP offered gay men freedom to have condomless sex without worrying about health implications associated with such a behaviour (Grace *et al.*, 2018). They believed that through the use of oral PrEP they obtained sexual freedom that would have not been possible if condoms were the only available option for HIV prevention. Condoms are believed to hinder sexual pleasure thereby motivating engagements in condomless sex, whereby PrEP does not constitute such sexual pleasure barriers, making it a preferred

method (Calabrese and Underhill, 2015). Research seeking to understand the narratives that the sexual pleasure interruptions posed by condoms are likely to motivate individuals to take oral PrEP, suggests that people are prone to use oral PrEP when they believe that the sexual value of not using condoms is higher (Gamarel and Golub, 2015). Oral PrEP in these instances is seen as important in reducing risks of HIV acquisition without compromising the perceived sexual pleasures (Calabrese and Underhill, 2015). These studies establishing the link between condom use and oral PrEP corroborate the beliefs of the study participants on the increased risk of not using condoms as a result of using oral PrEP. Appreciating this possible barrier to oral PrEP uptake among AGYW is most likely to play a crucial role in the effective implementation and use of oral PrEP by the intended users when understanding that oral PrEP is not effective if used as a sole prevention method.

Promoting promiscuous behaviours

The idea that oral PrEP can prevent HIV raises concerns as it is believed that it could fuel promiscuous behaviour among AGYW in the community. The fear of HIV infection is believed to calm or control AGYW from engaging in risky sexual health behaviours to some extent. However, when oral PrEP is adopted and there is growing education about the protective benefits of oral PrEP then the need to adopt positive sexual health behaviours will be offset and mistaken for sexual freedom. The school teachers believed that oral PrEP is likely to be misunderstood as a saviour of all while promoting irresponsible sexual behaviours.

It's like giving them the licence to go there and enjoy sex but before you indulge in sexual activities, here is a capsule or a tablet... you see (Asibemunye HOD, 12 Oct 2018).

They will totally disregard the condom once they hear that there is this kind of a pill, and they will be loose, I'm telling you (Ngcedomhlophe LO teacher, 17 Sep 2018).

...my fear is that it is likely to promote promiscuity amongst teenagers because of their immaturity and the way they are likely to interpret its use (Langalakhe principal, 18 Sep 2018).

A number of qualitative studies have shown that communities perceive oral PrEP as promoting promiscuous behaviours among users. In a study conducted in Vulindlela to explore the HIV risk of AGYW and perceptions about PrEP, the AGYW interviewed reported on how their partners believed that oral PrEP will lead them to sleep around (Ndzinisa, 2017). This study showed that PrEP was not highly accepted in the community of Vulindlela as it was linked to promiscuity among AGYW. In another qualitative study, conducted in Bangkok, the

researchers found that poor adherence to oral PrEP was a result of associating oral PrEP with stigmatised identities and promiscuity (Haire, 2015). This growing trend in society of stigmatising PrEP users as promiscuous has the potential of discouraging PrEP uptake. The teachers identified the need to promote relevant oral PrEP communication so that the AGYW can fully grasp how it works and the need for using it as part of a combination prevention package.

Accessibility of oral PrEP

The uptake of oral PrEP among populations at substantial risk is varying and reports monitoring oral PrEP distribution programmes suggest that uptake amongst AGYW specifically is slow and low (Dunbar *et al.*, 2018). This means that a large number of AGYW are not accessing the service which should be offered to them given their risk profile and this can be attributed to a number of reasons. Some study participants believed that, while the distribution or collection of oral PrEP from the clinics will create opportunities for uptake through the integration of the services with existing clinic services such as SRH, it would also create accessibility challenges for AGYW because of the health providers' attitudes.

And they will be scared to go to the clinic because they will be scared of what the nurses will say (Ngcedomhlophe principal, 17 Sep 2018).

See the problem is that these children will be saying the nurses in the clinic shout at them when they come for contraceptives because they question them that why are they having sex and unprotected sex for that matter as they are children. So when children do not want to be reprimanded they avoid accessing services from the clinic and I strongly believe the same thinking will apply to them going to get this PrEP from the clinics (Asibemunye LO teacher, 12 Oct 2018).

The manner in which health providers perceive PrEP and its users is likely to affect the accessibility of the service because of potential stigmatisation, thus lowering uptake, adherence and any support that health providers need to give to users (Haire, 2015). AGYW are generally stigmatised in clinics and this limits their willingness to access health facilities for prevention purposes. A study exploring the readiness of health providers to implement oral PrEP for AGYW, reported that AGYW were in many instances discriminated against for accessing SRH services at a young age, leaving them embarrassed and discouraged to access health services

(Pilgrim *et al.*, 2018). One teacher said the following regarding the experience of AGYW when accessing clinics for oral PrEP.

The stigmatising perceptions of some health providers are likely to be barriers to AGYW PrEP uptake. A study conducted in North America in 2013 on the practices, perceptions and attitudes of health providers in the infectious diseases portfolio found that while most of the providers in the study supported the implementation of oral PrEP, very few of them were actually prescribing it to patients for a number of varying reasons. Amongst these were concerns about negative behaviour changes amongst users, alluding to the point made above that oral PrEP is perceived to encourage risky sexual behaviour. Their personal beliefs of what constitutes good behaviour influenced their judgement on providing oral PrEP and some believed that the use of medication such as oral PrEP to address poor sexual behaviours was unacceptable (Haire, 2015). Thus, the provision of oral PrEP is seen as ethically complex (Venter *et al.*, 2014) as it is influenced by the cultural values of the health providers and this determines the extent to which they are willing to provide and promote oral PrEP for AGYW (Ndzinisa, 2017). As Haire (2015) puts it, effective adoption and implementation of oral PrEP relies on open communication between the potential user and the provider. As such, the negative attitudes of not just health providers but the school teachers as well around oral PrEP are most likely to lead to slow and low uptake of oral PrEP even among AGYW in the community of Vulindlela.

Oral PrEP efficacy

Oral PrEP is a relatively new intervention in the community of Vulindlela and there is very limited knowledge and understanding of what it is, how it works and where it has been proven to work in decreasing new HIV infections. At this point, oral PrEP in this community is regarded as a hearsay intervention because people have not been exposed to it and understanding its effectiveness in reducing HIV infections is still questionable in the minds of many. This was noted by the study participants when they were asked to reflect on their perceptions of oral PrEP and many mentioned that since it is a new prevention method they were sceptical on the extent to which it can really prevent infection.

I was telling them yesterday that I don't like this PrEP. Is it not on the research stage, maybe there are side effects (Qoqisizwe HOD, 19 Sep 2018).

It's hard for me to say because I have no experience of the efficacy of oral PrEP, you see. It's a new thing so at this stage my knowledge is very limited (Langalakhe principal, 18 Sep 2018).

While studies and clinical trials have shown that oral PrEP is an effective prevention method when adherence levels are high (Grant *et al.*, 2010), the community of Vulindlela considered it as a fairly new intervention with an effectiveness that was yet to be established in their community. A study conducted with AGYW in Vulindlela noted that some participants had doubts about the efficacy of oral PrEP, since there were no users in the community that they could reference in order to understand the preventative value of oral PrEP (Ndzinisa, 2017). This lack of proof on the efficacy of oral PrEP is likely to hinder AGYW readiness for oral PrEP uptake because if school teachers, who could play a vital role in PrEP promotion, have doubts about its protective effect then the messaging about PrEP use might not be communicated positively to AGYW.

As studies have noted, a challenge with oral PrEP efficacy is non-adherence. In studies where users had low traces of the drug in their blood, which signalled poor adherence, the effectiveness of PrEP to prevent HIV infection was compromised. Knowing this information about oral PrEP, the study participants raised major concerns about the possibility of AGYW being non-adherent to the medication, citing negligence, irresponsibility and lack of motivation for daily pill taking when one was not sick. These reasons posed serious challenges to adherence and ultimately to the realisation of the full effectiveness of oral PrEP. The study participants were asked to reflect on their attitudes and beliefs on how they thought oral PrEP would be effective for AGYW and how they would know when AGYW are ready for oral PrEP uptake. It was clear from their responses that with the current behaviours and attitudes of AGYW the efficacy of oral PrEP would not be achieved because of the dismissive attitudes of AGYW towards sexual health education and HIV prevention. One of study participants pointed to the irresponsible behaviour of AGYW when it comes to their sexual health.

Not paying attention. Can you see how negligent they are? They will forget to take the pills because they are very inattentive. That's another challenge... Some will take it once or twice and say that it makes them sick, and just make up stories (Ngcedomhlophe principal, 17 Sep 2018).

Another behavioural challenge to the effective adoption of oral PrEP was drug and alcohol use in the community. One of the study participants noted that the community of Vulindlela had

high levels of drug and alcohol abuse and that learners were exposed to this behaviour in the community which could have a negative impact for the exposed AGYW.

The disciplined ones can cope. I am worried about the ones who are on drugs and alcohol. Once you are drunk you end up forgetting that there is a treatment that you have to take because you are not sober minded at the time (Asibemunye HOD, 12 Oct 2018).

Another study participant strongly believed that the effectiveness of oral PrEP among AGYW required responsibility from their (AGYW) side as this could ensure proper and consistent use of the drug and yield positive results in reducing HIV infection. This teacher eluded to the question that was asked on how teachers will know that AGYW are ready for oral PrEP uptake.

You see the way you have explained oral PrEP, it is not for everyone. It needs a responsible person. For a responsible person it is the best. It's just a matter of responsibility because it's the same as contraceptives. But the difference is that you are preventing death here. As long as there is responsibility. Maybe before anything else a person must take charge and be educated to see if they need it so that they don't get sick. But it's just responsibility (Langalakhe LO teacher, 18 Sep 2018).

Oral PrEP is recommended to be used as part of a combination prevention programme (WHO, 2015) which means that it is not meant to substitute existing prevention methods but is aimed at complementing them in order to achieve high efficacy. Oral PrEP has been tested with other prevention methods in cases where its efficacy has been realised (DOH, 2016). However, the dependence of oral PrEP on condoms in order to achieve great effectiveness created doubts in the minds of the study participants. The “partial efficacy” of oral PrEP demotivated the study participants to support its implementation. Malekinejad *et al.* (2017) note that individuals prefer a prevention intervention that is 100% protective and not reliant on other prevention methods. This idea of “partial efficacy” lead participants to rejecting the intervention. In a study that explored oral PrEP awareness among Men who have sex with men (MSM) in Scotland, the participants expressed concerns with the messages for dual protection when using oral PrEP as this for them signalled uncertainty with the effectiveness of the drug (Frankis, *et al.*, 2016) thus creating scepticism about willingness and readiness to adopt PrEP.

This uncertainty caused by messages encouraging condom use together with oral PrEP raised concerns to the study participants noting that the need for dual protection means that oral PrEP is not effective enough. There were some views that an effective prevention method must be effective even when used alone because in the context of Vulindlela, where it is believed that

condom use is significantly low among AGYW, oral PrEP will not make much of a difference in reducing HIV infections if it still requires the use of condoms as this is already identified as a challenge.

What's the use of taking oral PrEP if it has to be accompanied by another protective measure? So, it would have been good if oral PrEP was effective on its own, to say 'oh, I'm covered if I'm taking oral PrEP I don't need to have a condom'. So why does it have to be accompanied by a condom? (Ngcedomhlophe LO teacher, 17 Sep 2018).

Adherence was noted as another challenge that would be a barrier to the effective adoption of oral PrEP in the sense that it did not provide sufficient motivation for adoption. Firstly, because it does not offer 100% protection but secondly, if its efficacy is reliant on condoms then daily pill taking when one is not ill would not motivate potential users, "Taking medication everyday yet I'm not sick, no" (Ngcedomhlophe LO teacher, 17 Sep 2018). The daily dosing was seen as a major challenge and that AGYW might not be able to sustain as they would need to adjust their lifestyles to accommodate taking this pill, ensuring that they are home during certain hours of the day to allow for dosing. One study participant noted that some of these challenges with adherence will even be beyond the AGYW's control as some learners come from poor households and they do not always have food to take prior to taking the pill, so if they take the pill on an empty stomach it might make them sick thus demotivating them from continuing with taking it.

Also, because when you take a pill you need to eat first, so for some you find that they don't have food. So, some will take it on an empty stomach and it will make them sick, so others will then not take it because they don't have food (Ngcedomhlophe principal, 17 Sep 2018).

A study conducted with transgender women in New York on the barriers and facilitators of oral PrEP, echoed the views of the study participants in Vulindlela about pill taking, some transgender women in the study were opposed to the idea of taking pills noting 3 main reasons. Firstly, the large pill size caused discomfort with users, secondly, oral PrEP was seen to cause pill fatigue because of the difficulty and strain that users endured in trying to swallow the pill and lastly, some participants generally disliked pills (Rael *et al.*, 2018). The stress with adopting pill taking behaviour has the potential of demotivating potential users and the study participants believed that the challenges with pill taking had to be considered if oral PrEP was to be adopted and adhered to by AGYW.

However, some study participants believed that since some AGYW were already taking contraceptive pills they would not have major challenges with taking oral PrEP as they were already used to the practice of daily pill dosing. As one of the participants noted, “some of them are already used to taking pills because they are taking contraceptives, so they will take oral PrEP as they take their contraceptives” (Ngcedomhlophe principal, 17 Sep 2018). This supports that oral PrEP should be integrated to existing behaviours such as taking pills to ensure continuity. But, Rael *et al* (2018) found in their study that the addition of oral PrEP to already existing pills caused pill fatigue for some of their participants, making it difficult to cope with even the existing medications. One of the study participants (Langalakhe principal) also alluded to this point, noting that adding oral PrEP to the contraceptives that AGYW are already taking could be a challenge as some are already struggling to adhere to their contraceptives. This pill could add more strain on AGYW who struggle with pill taking thus compromising their uptake of contraceptives in trying to accommodate oral PrEP.

Opportunities for schools to support uptake

The teaching profession in South Africa is the largest occupation group, which makes teachers central in the quest of promoting improved positive health behaviours that minimises the spread of HIV infections amongst learners (Jonker, 2011). This can be done through providing learning and psychosocial support opportunities to learners. The schools are also better placed to play a role in preparing AGYW for oral PrEP uptake. This study recognised the role of schools in influencing behaviour change amongst learners and influencing decisions relating to the adoption of oral PrEP by AGYW in high burden communities, such as Vulindlela in this instance. In order to establish the role that schools could play in this regard, the study participants were asked what they perceived the role of schools were in getting AGYW ready for PrEP uptake in Vulindlela. They were further asked to reflect on HIV prevention programmes that they were implementing in schools in order to establish their current involvement in health promotion and HIV prevention. Obtaining an understanding of these existing programmes created opportunities for understanding the extent to which they could build on these programmes to include the promotion of oral PrEP, or rather, the preparation of AGYW for PrEP uptake within the school setting. The opportunities for schools to support oral PrEP uptake among AGYW included their role in educating learners about it as a HIV prevention option, the use of Learner Support Agents in schools (appointed by the Department

of Education) to support the social well-being of learners, as well as a conducive environment for external stakeholders in the health field to provide support and education.

The important role of education in HIV prevention and oral PrEP

In the absence of a cure for HIV, education remains central to the efforts of curbing the spread of the disease. This means that schools have an important role to play in providing the necessary education on HIV prevention and in national responses to HIV/AIDS (Chamba, 2011). Furthermore, schools are ideally placed to provide a conducive environment for the implementation of school health programmes aimed at reducing the spread of HIV among its learners. Fundamentally, education is deemed as a major contribution of schools in HIV prevention. International policies encourage the involvement of schools in HIV prevention and, through pastoral care, supporting children affected and at risk of HIV infection. Added to this, UNESCO advocates for an inclusive education sector that goes beyond the academic needs of its learners to also participate in school responses to HIV/AIDS and also forging linkages with the health sectors (UNESCO, 2008). Thus, school teachers must receive proper training to undertake the roles that will benefit learners by reducing the social and structural risks of HIV infections through education, as well as improve the academic performance of learners if they are able to deal with these issues (Jonker, 2011; Andersen *et al.*, 2014).

Similar to this view of promoting education in schools, the study participants noted that their role in preparing AGYW for oral PrEP uptake will be to educate them about what it is, how it works, and the benefits and challenges of taking oral PrEP so that they can make informed decisions about adopting it or not. Learners are generally reached with HIV education and prevention messages through the Life Orientation classes and teachers who are trained in providing these lessons that form part of the curriculum. As discussed, the study participants currently do not know anything about oral PrEP, which means that they cannot even start conversing about the use of oral PrEP with learners. If they were to be trained then they might be comfortable to educate AGYW about oral PrEP and its adoption because it starts with them understanding it well.

Because as I am talking, I am thinking maybe we can have someone from the Department of Health, the clinic, a nurse can come here and educate us teachers to know. Because honestly, I don't know some of these things like what you have just said, I don't know it. Worse part, some of us are not orientated about working with HIV and AIDS, even though eventually it

comes in because we look at all the learner's needs. So maybe it can help a lot in reducing infections (Bhekuximba Deputy principal, 20 Sep 2018).

I think we need to have... what do you call this? Like workshops to educate the kids on how to take PrEP. And also, how to conduct themselves once they take it. Their behaviour, the use of the condoms, not only condoms but also the... what is this called? The pregnancy, birth control (Bhekuximba LO teacher, 20 Sep 2018).

Educating teachers on oral PrEP is critical to realising the perceived role of schools in getting AGYW ready for uptake. However, some study participants raised concerns about the stance of the Department of Education in providing oral PrEP education in schools. Since many study participants did not know much about oral PrEP, there were uncertainties on whether the Department of Education endorsed it as it is a key player in curriculum development. One study participant drew comparisons between the question of oral PrEP promotion in schools and the reservations of issuing condoms in schools. This participant raised concerns about the school independently taking the decision to provide HIV prevention education that is not endorsed by the Department of Education, as they have the overall authority on what is happening in schools. He believed that if the teaching of oral PrEP was to be done in his school then the instruction to do so must come from the department. His response was captured in the quote below:

Once the department okays it, then we would have no choice but to participate in rolling it out. Just as I said the same thing about condoms. Once the department says it's now okay for schools to hand out condoms then I know I will be in breach of the rules of the department if I were to say at this school we are not issuing out condoms to the kids (Langalakhe principal, 18 Sep 2018).

This concern about the department's views on providing oral PrEP education was observed as a barrier to schools playing a critical role of preparing AGYW for uptake. It was also observed that the concerns about the department's stance was linked to individual negative beliefs about the effectiveness and appropriateness of oral PrEP use by AGYW. For example, the school principal who strongly held the view that the department must endorse oral PrEP was also vocal about his objection to the promotion and adoption of oral PrEP by AGYW instead of promoting abstinence messages. In such similar instances, the role of schools in providing health education that would prepare AGYW for uptake was highly affected by the individual teachers' beliefs and attitudes towards oral PrEP.

The education ministry policies have been identified in other studies as sometimes negatively affecting the adoption of new interventions to reduce HIV infections among young people in schools. In a study in North Carolina, aimed at exploring the factors contributing to increased HIV infection rates, the participants identified the education policies promoting abstinence in schools as the main barrier to the effective implementation of proven prevention methods among young people (Lloyd *et al.*, 2012). The study proposed the inclusion of HIV programmes in the education policy that will reduce the scourge of the disease, especially in rural settings. Schools must create safe spaces for health and HIV prevention education to take place as it is within the school context that a large proportion of young people are reached with prevention messages. Similar to the South African context, the Department of Education must closely consider some of the policy limitations to adopting health interventions in schools that hinder the implementation of prevention programmes in schools and doing little in addressing the scourge of HIV in highly affected communities such as Vulindlela.

Creating space for learner support agents and external stakeholders

In addition to the perceived role of providing oral PrEP education and also acknowledging the limitations to educating AGYW on this prevention intervention in schools, some study participants mentioned the need to forge partnerships and linkages with other stakeholders in order to provide education on oral PrEP. These study participants believed that there are stakeholders in the health sector who are more knowledgeable about oral PrEP and could draw from their expertise to educate AGYW on the benefits and barriers of oral PrEP uptake.

When learners have problems we refer them to the NGOs that we work with or sometimes give them a referral slip as we are next to the clinic (Qoqisizwe HOD, 19 Sep 2018).

They [learners] participate in the sexual health programmes that we have in the school (Langalakhe Principal, 18 Sep 2018).

They have attended the DREAM girls' programmes and Siyanqoba (Qoqisizwe HOD, 19 Sep 2018).

Most of the schools had existing working relationships with health NGOs and clinics in the community who provide health services to learners in schools. Most of these services included health screenings, HIV testing and behavioural interventions specifically for young women; oral PrEP education and awareness can be added to these services. Again, the integration of

oral PrEP in these existing services would need the approval by the Department of Education and parents represented through the School Governing Body (SGB). One study participant mentioned that even prior to the implementation of these services in school, the department and the parents were informed and then subsequently endorsed them. If the approach to involve external stakeholders in oral PrEP education and promotion is adopted, then the role of schools would be to facilitate this approach.

Most of the schools recruited in this study had Learners Support Agents (LSA) appointed by the Department of Education to provide psychosocial support to learners in school. The LSAs are generally out of school youths who are employed to respond to the non-academic needs of learners by providing peer-support education and support programmes that address the growing social ills in schools (KZN DoE, 2016). LSAs work under the direct supervision of the school principal and are tasked with reducing drop-out rates, addressing teenage pregnancy, tackling drug and alcohol challenges and providing overall support for the well-being of learners (KZN DoE, 2016). The LSAs were seen as another opportunity or resource within the schools to create awareness and prepare AGYW for oral PrEP uptake since they interact more closely and in more relaxed settings with learners as opposed to the teacher-learner interactions.

The LSAs were said to be very effective in addressing social ills affecting learners. The Department of Education appointed an LSA to Ngcedomhlophe when they had very high rates of teenage pregnancy, the school principal reported that since the appointment of the LSA, the pregnancy rate amongst learners dropped from 34 in 2015 to 5 in 2018, this drop was obtained through the increased health awareness and one-on-one engagements with learners that required assistance.

I even went to report at the Department of Education because we had a high rate of pregnancy. We once had a case where there were 34 pregnant learners per year. So, the department sent us the people called the learner support agents to assist us... So that they can assist us by doing awareness campaigns and all those thing (Ngcedomhlophe principal, 17 Sep 2018).

The fact that LSAs are young people encourages communication between them and learners as opposed to a more formal communication they have with teachers. The peer-education model to addressing health and HIV prevention challenges is effective and in efforts to address the specific needs of young people, peer-educators must be well equipped because young people are more likely to open up to them about life challenges that could put them at health or

behavioural risk (Frantz, 2015). These are the same sentiments that one of the study participants held about LSAs taking the peer support role in engaging with young people and addressing their needs.

I think it helps a lot because she is almost around the same age group as them, so I think it helps because we are a bit older and the kids sometimes aren't comfortable talking to us, so I think she really helps them (Asibemunye HOD, 12 Oct 2018).

Given the characteristics and the role of LSAs, the study participants believed that oral PrEP education and support would best be carried out by LSAs. This is because of their proximity to learners and the level of understanding of the challenges facing them.

We are fortunate because we have a learner support agent that will be her role or their role because it's two of them, to educate the children on oral PrEP (Asibemunye HOD, 12 Oct 2018).

Learner support as well, like with the pregnant learners, they also remind them. They bring their clinic cards and show the learner support, and then the learners support will say "don't forget that you are going to the clinic tomorrow". So, you see, they can support us in terms of reminding them. Where they may not be able to get assistance is by providing storage for their pills. But if someone brings their own pills and they need to be reminded to take them... and we also need to educate them on the advantages of using oral PrEP. We can also provide support there as the school (Ngcedomhlophe principal, 17 Sep 2018).

However, what did not come out clearly on the role of LSA in oral PrEP education and promotion was the role of the school and teachers in supporting them as they take-up this task. This raised concerns about the extent to which schools would be willing to support this task without delegating to other parties in the sector such as NGOs and LSAs. How will they use other forums in the school to prepare AGYW and to what extent they would incorporate this education into their existing schedules where HIV and prevention methods are discussed?

Community and parental involvement

Traditional African families are often known to avoid sexual health and HIV prevention discussions with adolescents and young people, labelling these talks as taboo (Thobejana, 2015). Dismissing HIV and sexual health talks was seen by participants as undermining the progress that could be made in influencing positive sexual behaviour changes among AGYW.

Some study participants believed that the parents' or guardians' avoidance of these topics undermine the prevention communication initiated in schools. One study participant believed that if any of the behavioural and HIV interventions are to work then the parents must also play a role so that learners do not only learn about these topics at school but they are also encouraged at home to adopt healthier sexual behaviours.

I think everything concerning HIV boils back to us parents. Our involvement is needed because the teenager that I am going to give this to is not going to be trustworthy. They will just do it but there is also a need for the involvement of a parent (Langalakhe LO teacher, 18 Sep 2018).

In some instances, the parents were observed to be shifting their responsibility of sexual education and HIV prevention for their children onto the teachers.

We normally call the parent and tell them that we found your child doing this (kissing). You find that the parent has no control over the child, this is something they do at home as well. The parents normally say, "you teachers must do what you think is best". So as teachers we normally... the male teachers talk to the male learners, and us females will then address the female learners about how a girl child is supposed to behave (Ngcedomhlophe LO teacher, 17 Sep 2018).

Some study participants also reflected on the role that parents play in encouraging negative sexual behaviours among AGYW, whether they do this intentionally or not was not established during the study. These study participants noted that the encouragement that the AGYW received in school to abstain or practice safe sexual behaviours was not supported at home. The disconnect between parental and school teachings poses challenges to the adoption of health behaviours and might also affect the effective implementation of oral PrEP among AGYW in the community. One study participant recalled a time when parents were called in after a learner was reprimanded by the school for missing classes while sleeping at a boyfriend's house.

there was a case I was with the parents. And you can see that the parents don't have a problem with the girls going to sleep at the boy's house. Like they know each other, so I also end up saying since you as the parents are okay with it, then it's fine they can do it (Bhekuximba Deputy principal, 20 Sep 2018).

Assuming that most parents are aware of the sexual behaviours of AGYW, their knowledge should be used to assist schools in promoting prevention interventions. This would be a great

opportunity to ensure that health and HIV prevention is not only limited to the classroom and school environment. One study participant noted the manner in which parents can be involved in oral PrEP education and promotion.

For them to check whether they are taking them accordingly because as I am telling you that in this community there are no secrets, the parents know. So maybe they can help them to be consistent in taking the pills because they are still children, they always need guidance (Bhekuximba LO teacher, 20 Sep 2018).

Andersen *et al.* (2012) note that in instances where communication and collaboration between school teachers and parents is poor, the efficacy of programmes is most likely to be very low. This is due to the fact that for a successful implementation of any programme targeted at young people, the teachers and parents must work together in order to understand what the intervention is and how best to support it in order to obtain positive results from the intervention. Thus, parents can be engaged through school meetings and the success of prevention interventions will require their involvement because in some instances, as noted by one study participant, the AGYW might end up not adhering to oral PrEP if they are too scared to explain to their parents about the pill they are taking and why they are taking it since PrEP is associated with HIV positive people and promiscuity. This teacher-parent collaboration will also be important in the implementation of oral PrEP in Vulindlela.

Conclusion

These research findings shed light on the extent to which school teachers are willing to prepare AGYW for oral PrEP uptake in the community of Vulindlela and this was the main aim of conducting this study. This aim was achieved through exploring the perceptions of school teachers on the risk of AGYW to HIV acquisition, their perceptions on HIV prevention and their willingness to support oral PrEP, noting its benefits and barriers. The findings showed that school teachers were aware of the vulnerability of AGYW to HIV acquisition but still believed that amongst all prevention options abstinence was the safest. However, considering that the community of Vulindlela is faced by a number of social and economic ills, abstinence was not always the best suited method which opened opportunities for the consideration of oral PrEP as an option to HIV prevention. Some school teachers believed that PrEP will be beneficial in reducing the risk of infection among AGYW and offer a self-initiated option to AGYW who sometimes do not have capacity for sex negotiation in their relationships.

However, there were also notable social and structural challenges encountered by oral PrEP that could limit the extent to which schools could prepare AGYW for uptake. In many instances, this was fuelled by the lack of knowledge about PrEP and contextual issues. As such, a contextual understanding of Vulindlela, its challenges, cultural and religious values will be central in adopting an intervention that addresses the specific needs of that community.

Chapter 6

Summary of Main Research Findings and Conclusion

Introduction

Oral PrEP offers a unique opportunity for Adolescent Girls and Young Women (AGYW) to make independent HIV prevention decisions (Ndzinisa, 2017) especially in the case of women in traditional communities whose voices tend to be suppressed by cultural norms and beliefs (Sommarin et al., 2018). The purpose of this study was to determine the preparedness of schools to support the roll-out of oral PrEP among young girls of school going age. The underlying premise that informed the study was that schools are a key community structure that play a major role in shaping the choices of the target research group, and thus the attitudes, perceptions and knowledge of teachers could be critical in the uptake of oral PrEP by school-going girls. The study focused on six public high schools in Vulindlela, a sub-district in the UMgungundlovu district of KwaZulu Natal province. The choice of the schools was informed by the fact they are all located close to health facilities, and would thus be easily accessible to health workers. This final chapter of the dissertation builds on the analysis in chapter five to present a summary of the key findings of the study in relation to research questions. It also attempts to make sense of the findings of the study in the context of existing literature and theories of health communication, notably the Health Belief Model (HBM) and the Culture Centred Approach (CCA).

Summary of key research findings

Research question 1: Teachers' knowledge and attitude on oral PrEP and HIV prevention

In relation to the first research question on the knowledge and attitude of teachers on the use of oral PrEP in the prevention of infections among school-going girls, the study found that as it is the case in other parts of the KwaZulu-Natal province, teachers consider the risk of HIV

infection to be high among girls and young women in Vulindlela schools. A number of reasons were put forward to explain this situation. Among them is the fact that school girls engage in risky sexual behaviour, such as sleeping with older men and having multiple sexual partners without the use of protection. Societal pressures in relation to sexual behaviour in relationships were also identified as a contributing factor to the high risk of HIV infection among school girls. Moreover, given the improvements in HIV/AIDS treatment in recent years, there is a sense of normalization of the disease in local communities as more and more people infected with the virus are able to access ARVs. This encourages school girls to be negligent about protecting themselves from infections. In the context of these societal influences and pressures and the risks that they generate, the study further found that abstinence was considered by teachers as the main strategy for protecting school girls from being infected with the HIV virus. This was justified on the assumption that this is the only HIV prevention method that did not pose any risks to school girls. Despite this high risk-prone context and the need for effective prevention HIV methods, the research found that there was little knowledge among teachers on the use of oral PrEP in the prevention of HIV infections in schools. For those who are familiar with oral PrEP, there was a sense that it offers only partial protective benefits. Teachers felt that oral PrEP would be effective as a prevention intervention only if it is combined with other prevention methods such as the use of condoms or even abstinence.

Research question 2: Perceived benefits and barriers to the use of oral PrEP

The second question that the study sought to answer had to do with the perceived benefits and barriers to using oral PrEP in the school context. The research findings reported in chapter five suggest strong scepticism among teachers about the potential benefits of oral PrEP in the fight against HIV infections among school-going girls. On the one hand, the participants acknowledged that, because school girls are sexually active but are not consistent in the use of condoms, oral PrEP could be beneficial as an additional safeguard to protect learners from being infected with the virus. On the other hand, there was a sense that this potential benefit could be offset not only by the fact that oral PrEP provides only partial protection, but also by concerns that its roll-out may encourage school girls to become even more irresponsible in their sexual activities, owing to the misplaced belief that the drug offers complete protection from HIV infections. This poses a major barrier to its uptake because many teachers would not be willing to support its use in schools for fear that it may lead to a complete disregard for condoms and thus be counterproductive in the fight against HIV/AIDS among school girls by

inadvertently increasing the risk of infections. Another potential barrier to the successful roll-out of oral PrEP in schools relates to the attitude of health providers. Respondents were of the view that the generally negative attitude of health providers towards young girls and women that seek to access sexual and reproductive health services could discourage school girls from signing up to the use of oral PrEP. This potential barrier could be compounded by the fact that there is little precedence of the use of the drug in the local communities where the schools are located. Its effectiveness can therefore not be vouched for. Moreover, school girls could also be discouraged from using oral PrEP as an HIV prevention method because of the requirement to take the pills religiously on a daily basis even when one is not sick. The study found that the target group in the respective schools already struggle with taking their contraceptive pills in a consistent and disciplined manner.

Research question 3: Role of teachers and schools in the roll-out of oral PrEP in schools

In terms of the role that teachers and other school actors can play in creating an environment that is conducive for a successful roll-out of oral PrEP, the study identified education as one of the key areas of interventions in this regard. Respondents noted that schools could educate their adolescent girls and young women on the benefits and risks associated with the use of oral PrEP. It is believed that this would not only encourage the target population to consider making use of oral PrEP, but would also enable them to make a careful and well informed assessment of the benefits and risks that come with this choice. Relating to the education role that schools could play is the need for external stakeholders in the targeted communities such as clinics and health NGOs with significant knowledge of HIV prevention pills to create awareness among school girls on the availability of oral PrEP as an alternative or complementary method of preventing HIV infections. Other actors identified with the potential to contribute to creating a school environment that is favourable to the uptake of oral PrEP are learner support agents employed by the Department of Education to provide psycho-social support to learners. These LSAs constitute a readily available resource for sensitizing and educating school girls on the benefits and risks associated with taking oral PrEP.

Theoretical significance of research findings

This study was guided by the SEMCHB framework that seeks to understand the interrelatedness of different levels in health communication. These range from the individual to the social factors influencing health behaviour (Harper et al., 2018). In order to address the objectives of the study, the HBM and the CCA were adopted to understand the individual and community levels of interaction within the SEMCHB. The HBM focussed on the individual level which in this case were teachers. It sought to understand the individual perceptions of teachers and how these affected their attitudes towards the possible implementation of PrEP in schools. The individual perceptions as shown in the previous chapter holds great value in understanding the role of schools in preparing girls and young women for oral PrEP uptake in Vulindlela. The study also acknowledged that health and behavioural change decisions in a community are not made independently, and that there are other factors that influence behaviour. These are identified by the CCA approach identified through culture, structure and agency. This study focused specifically on the structural element of the theory, and recognised schools as an important community structure that can influence health behaviour change and decision making.

The findings detailed in the previous chapter and summarised above confirm the critical role that both structures and individual agents can play in influencing responses intended to produce behavioural change in the targeted audience. In particular, school teachers had strong views on the implications of introducing oral PrEP in schools, and this gave an idea on the extent to which they were willing to support its implementation. The misgivings of teachers, coupled with their role as significant opinion leaders within the school system, further suggests that they could be an obstacle to a positive response by school girls to the roll-out of oral PrEP. Thus, understanding the role of schools as influential community structures and the individual perceptions of the school teachers is important in making sense of the significance of the findings of this study. While acknowledging the role of schools as a structure that can catalyse behavioural change, the remainder of this chapter however reflects on the findings of the research in the context of the main constructs of the HBM only. The constructs are perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy and cues to action.

Perceived susceptibility to HIV infections

The HBM specifically focuses on the individual's perception of the health risk they might be facing, suggesting that the individual makes a number of considerations to decide on how they respond to the health issue (Tarkang and Zotor, 2015). The first construct of the HBM, which is perceived susceptibility to risk, refers to the individual's perception or belief of the possibility of contracting a disease or a health condition (Champion and skinner, 2008). The HBM predicts that individuals are more likely to respond positively to health communication messages by taking treatment or other care to reduce their risk only when they believe that they may be susceptible to a particular health condition (Jones et al., 2015). In the context of this study, school teachers were interviewed to reflect on the perceived susceptibility of school girls to HIV infections and the findings showed that the teachers believe that these girls were highly vulnerable to the HIV disease due primarily to their risky sexual behaviour. The scourge of HIV infections among young women of school-going age in Vulindlela is continuously increasing and expected to increase if not addressed. There has been a range of prevention interventions adopted in the community some of which have assisted in reducing new infections but there still remains a significant proportion who are at risk of HIV acquisition.

In the context of the perceived vulnerability of school girls to HIV infection, one would assume that school teachers would support the implementation of oral PrEP to contain the spread of the disease in the affected schools. However, this susceptibility did not translate into the envisioned behavioural change suggested by the HBM theory. This could be explained by the fact that the HIV/AIDS disease appears to have been normalised in the communities under study, arguably because of improvements in treatment that has seen many people live relatively healthy lives with the virus. Thus, despite the increasing susceptibility of school girls to the disease, other factors seem to be given greater weight by teachers in their consideration of whether oral PrEP should be introduced in schools for the benefit of young girls. These include the implications that such a programme would have for the already high levels of sexual promiscuity among school girls.

Perceived severity of HIV infections

In terms of the HBM theory, perceived severity refers to the extent to which individuals believe that being infected by a disease or having a particular health condition will have serious

consequences for them, whether physically, socially, economically or even lead to death (Jones et al., 2015). In order to avoid these dire consequences the individual will be motivated to adopt behavioural changes. On the one hand, the school teachers interviewed for the study recognised both the high susceptibility of school girls to HIV infections, and the devastating consequences that the pandemic is having on the lives of individual girls and the broader community, including schools. On the other hand, in their consideration of the use of oral PrEP in schools, they seemed to attach little weight to the severity of the disease and its consequences on the lives of schools girls in the community. Instead, their response to this particular health communication message seemed to have been influenced more by existing cultural norms and values. It should be noted that all the schools under study are located in rural areas where older generations still hold strongly to traditional values, including with respect to age appropriate sexual behaviour. In this context, despite the recognition that school girls are already active in risk sexual behaviour, and that this is posing a serious threat to their health and the well-being of the community, the question of abstinence came up prominently as the preferred method to deal with the scourge of HIV infections among school girls. The respondents subscribed only reluctantly to the use of condoms as a viable prevention method. Oral PrEP was generally not seen as a preferred method of prevention, especially in the context of perceptions that it may encourage further promiscuity among school girls. These findings point to certain limitations in the HBM theory in explaining an individual's response to health communication messages. In particular, they suggest that culture can be an intervening variable that influences the way people respond to health messages and not just the perceived severity of a particular health condition.

Perceived benefits of oral PrEP

Individuals are assumed to adopt a positive behaviour change or take up an intervention if it is perceived that it can reduce their risk of susceptibility and severity (Jones et al., 2015; Louis, 2016). When individuals perceive that an intervention has great benefits to manage their health conditions then they are more likely to adopt a health action. In this case, oral PrEP must be seen to offer great benefits for school girls in order for teachers to support its implementation. However, as argued earlier, the study revealed strong reservations on the part of teachers in endorsing the introduction of oral PrEP in schools. The perception among teachers was that oral PrEP offers few health benefits, while having the potential to fuel risky sexual behaviour among school girls in the community, thereby increasing their susceptibility to HIV infections.

The belief that oral PrEP might not comprehensively offer HIV prevention benefits is of concern as its adoption in the community of Vulindlela will be affected by these conceptions. This understanding of the benefits of oral PrEP vis-à-vis its potential risks could be explained by the limited knowledge in the community, including among school teachers, about the drug. It can thus be argued that with increased knowledge and understanding of oral PrEP, the school teachers can formulate a better conceptualisation of oral PrEP and its benefits. Currently, the support of schools in the adoption of oral PrEP was clouded by the belief that there are existing prevention interventions that are not being too effective in reducing new infection because of poor use and the introduction of oral PrEP does not offer a better option but rather introduces further challenges in the community when it comes to HIV issues. This then leads to the next construct which is perceived barriers to oral PrEP uptake.

Perceived barriers to oral PrEP uptake

According to the HBM, individuals are less likely to adopt a health behaviour change if they perceive that there are negative attributes associated with adopting the health action and these outweighs the benefits of taking the health action (Jones et al., 2015). This study identified a number of perceived barriers to oral PrEP uptake, which have made teachers to adopt a relatively negative attitude towards the roll-out of the drug among school girls. The barriers include the fear of increased risky sexual behaviour among what they perceived as an already promiscuous learner population, the partial effectiveness of the drug, as well as concerns about its accessibility to young women particularly in health facilities, given the attitude of health providers towards young people in the community. Together with existing cultural norms and values on appropriate sexual behaviour, these factors have made teachers to be reluctant in endorsing the introduction of oral PrEP in schools. Thus in order to realise the effectiveness of oral PrEP in curbing the spread of HIV infection among school girls, there is a need to address these barriers as they may affect the implementation of oral PrEP in schools.

Cues to action

In the HBM theory, the cues to action can be described as the techniques to stimulate user readiness for a prevention intervention (Glantz et al., 2008). Cues to action denote a trigger to adopt a health behaviour when the individual believes that adopting the behaviour could lead to improved health outcomes (Orji et al., 2014). These could either take the form of external

cues such as mass communication and promotion, or internal cues such as the perception of bodily changes as a result of adopting a health action (Orji et al., 2014). In the context of this study, school teachers, as both opinion leaders and change agents, are expected to provide the external cue that would catalyse action on the part of school girls, who are expected to embrace the use of oral PrEP as a viable method of protection against HIV infection. However, it has been established above that school teachers themselves have strong misgivings about the appropriateness of oral PrEP as an HIV prevention method among school girls. Their ability and willingness to formulate positive communication messages that would promote the adoption of oral PrEP in schools is therefore in doubt. Likewise, the belief that oral PrEP has limited effectiveness in addressing the HIV challenge among school girls also serves as a disincentive for schools to play a leading role in creating an environment that is conducive for the roll-out and uptake of oral PrEP in schools.

Self-efficacy

Self-efficacy refers to the idea that individuals would adopt a health behaviour change if they believe on its benefits for their well-being and they further believe that they are capable of adopting and sustaining the behaviour. The perceived benefits of the intervention are key in motivating individuals to adopt a particular behaviour or health action. However, when the self-efficacy is low then the individuals may not adopt the behaviour (Orji et al., 2014). The study found perceptions of low self-efficacy among school teachers, who believed that school girls were irresponsible to effectively use oral PrEP. The teachers interviewed as part of the study expressed concerns about the ability of school girls to adhere to instructions on the proper use of the drug. The respondents were also concerned that, given the high levels of irresponsible behaviour among school girls, the latter may not be able to effectively combine the use of oral PrEP with other prevention methods such as the use of condoms. On the contrary, the introduction of oral PrEP in schools may instead result in the loss of the possible benefits associated with the use of condoms and other prevention methods. The belief that condom usage would deteriorate and promiscuous behaviour would be encouraged shows the extent to which the AGYW might not be able to effectively use oral PrEP and realise the full potential of the drug. Thus, as a result of low self-efficacy, most of the school teachers interviewed for the study were not willing to fully support the roll-out of oral PrEP in schools. This further signals the need for intensified communication campaigns on oral PrEP targeting school

teachers, which address the issues of self-efficacy and what it means to use oral PrEP as a prevention method.

Bridging the societal gap in HIV prevention

Another major theme that emerged from the study, and which is worth reflecting on here is the stigma that is associated with the use of oral PrEP and the implications of this for the roll-out of the drug in schools. Stigmatising oral PrEP is a challenge in many communities as revealed by the available literature (Grace et al., 2018; Haire, 2015) and through this study. Oral PrEP is highly associated with promiscuous behaviour and unprotected sexual interactions, and this affects the perception of people about the drug, including key opinion leaders and change agents in communities who are supposed to promote its adoption (Haire, 2015). The findings of this study reinforce this observation, with school teachers arguing that the use of oral PrEP would exacerbate risky sexual behaviour among school girls, and may therefore not be the most suitable intervention for fighting the scourge of HIV in schools. The challenge, with successfully diffusing personal perceptions and beliefs is still prominent in many communities and it affects the adoption of relevant interventions that have the potential to reduce new HIV infections amongst the most vulnerable groups such as adolescent girls and young women. There is therefore a great need to formulate oral PrEP communication in a manner that addresses the misconceptions of school teachers so that they can play a catalytic role in the adoption of this preventative method.

Moreover, this study acknowledged the role that culture, structure and agency play in influencing the manner in which individuals perceive health communication, as articulated by the CCA theory. The CCA recognises that health decisions do not rely solely on the intended recipient but are influenced by cultural beliefs and values in a community as well as by structures in the community that have influence in determining behaviour. This set the focus of the study on schools in the community of Vulindlela because the decision for school girls to adopt oral PrEP as a prevention method for reducing new HIV infections was to some extent influenced by schools. As such, the views of the schools, through the school teachers as established in this research, presents a concerning picture with regard to the extent to which they will be willing to promote the adoption of the drug among AGYW.

Furthermore, the constructs of the HBM as shown above point to the idea that the school teachers, as change agents, must believe in both the susceptibility of the target group to a

particular health condition, and the severity of the health condition on the quality of life of the target group. It is this conviction that would determine their willingness to consider effective communication on available prevention interventions. But in the case of this study, perceived susceptibility and severity were low which could affect the promotion of oral PrEP uptake by schools for AGYW. Furthermore, the low perception of the benefits of oral PrEP and increased belief of the barriers also had an effect on the schools' stance on oral PrEP promotion. These findings raise concerns about the need to bridge the gap between the perceptions of school teachers and the actual needs of school girls at risk of HIV infection. The risk of HIV among the latter group is real and therefore the unwillingness of teachers to fully support this intervention has a great potential of undermining the implementation of this intervention. Thus, the findings of this study suggest that a balance must be struck to ensure that proved interventions are considered by community structures in order to fight the spread of HIV infections in the community. Instead of dismissing the prevention benefits of oral PrEP, a contextual analysis considering the cultural beliefs and values of the community must be considered to ensure that communication about oral PrEP and its implementation responds to the cultural needs of the communities. In other words, oral PrEP communication must be context specific and relevant to the communities that need to adopt it.

Department of education to respond to the HIV needs of schools

Finally, the role of the Department of Education (DoE), as the key stakeholder in the education sector, in catalysing the uptake of oral PrEP by school girls is also worth reflecting on here. As established in this study, the DoE is yet to adopt a clear stance on oral PrEP education in schools. This ambivalent posture on the part of the department could arguably be attributed to the limited knowledge that is available on oral PrEP. However, the possible stance of the DoE on oral PrEP can be inferred from its position on the availability and accessibility of condoms in schools. In a number of the schools studied, it was reported that the DoE did not condone the distribution of condoms in schools. Arguably, the negative attitude of some of these schools towards oral PrEP has been influenced by the fact that the roll-out of the drug in schools has not been endorsed by the department. However, Beksinka et al. (2012) argue that although the DoE has left the distribution of condoms in schools to the discretion of school management bodies, few schools have taken up this mandate because of the belief that the distribution of

condoms in schools would encourage inappropriate sexual behaviour. For the most part, access to condoms in schools is limited to learners who are at risk of acquiring HIV. The indecisiveness of the DoE on the distribution of condoms in schools has been observed to cause confusion in many schools, as some schools believe that the department is not in support of the practice, yet there are provisions in the DoE's policy for condom distribution in schools. Han and Bennish (2009) further state that the ambiguity of the DoE policies on condom distribution in schools leaves teachers unclear on how to deal with the issues and in schools where condoms are distributed this is done discreetly. Thus in the era of increased HIV risk among school girls there is growing need for policy clarity on issues of HIV prevention. The same would apply to the adoption of oral PrEP in schools to protect AGYW from HIV infection. The DoE should encourage conversations between schools and communities in dealing with the HIV challenge and the adoption of effective HIV prevention methods.

Conclusion

This study sought to explore the readiness of AGYW for oral PrEP uptake from a school based perspective. In order to comprehensively undertake this exploration, the study was guided by three research questions. Firstly, it sought to understand the knowledge and attitude of teachers towards oral PrEP as a method of HIV prevention among adolescent girls and young women attending schools in Vulindlela. Secondly, the study aimed to explore the perceived benefits that could serve as an incentive for the adoption of the drug in high schools in Vulindlela, as well as the potential barriers that could hinder user readiness for oral PrEP. Lastly, to study sought to understand the proposed cues to action with teachers in Vulindlela. Literature was reviewed that pointed to the high risk of HIV infection among school girls and the contributing factors to the increased risk of new infections. These included social, economic and structural factors. School girls were established as the most affected group and thus an intentional focus on promoting oral PrEP amongst them was important. Schools were identified as an influential community structure that could influence the decision of adolescent girls and young women to adopt oral PrEP. Empirical evidence was collected through interviews to understand the perceptions of school teachers in Vulindlela on the issue of HIV risk among AGYW and their perceived role in supporting the preparation of school girls for the uptake of oral PrEP. In the main, the study found that school teachers were of the view that oral PrEP offered few benefits as a prevention method against HIV, but came with the risk of undermining the effectiveness

of other prevention methods such as the use of condoms and abstinence. This negative perceptions about the drug serves as a barrier to school teachers supporting the adoption of oral PrEP by school girls. In addition to the influence of traditional norms and values, poor knowledge about oral PrEP also contributed to the negative conceptions of oral PrEP and its benefits.

In realising the benefits of oral PrEP in reducing new HIV infections, schools must be equipped with the relevant information to allow for more informed decisions about this prevention method. A contextual understanding of the community, its challenges, cultural beliefs and values remains central to the effective implementation of oral PrEP in the community of Vulindlela. The findings of the study underscore the important role that culture plays in behavioural change in such contexts, and must therefore be given serious consideration in planning effective communication on oral PrEP. Efforts should also be made to enhance awareness and education around oral PrEP, targeting particularly opinion leaders and change agents such as school teachers, whose perceptions and attitudes of the drug is critical in ensuring a successful roll-out among AGYW in schools.

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Appendix I

Informed Consent Form: interviews

Schools- adults

Project title: Exploring adolescent girls and young women's oral PrEP readiness from a school based perspective in Vulindlela, KZN

Dear Participant,

My name is Simamkele Bokolo, a student at the Center for Communications media and Society (CCMS) department at University of KwaZulu-Natal in Durban.

Contact details

Centre for Communication, Media and Society

Memorial Tower Building |Howard College Campus

University of Kwa-Zulu Natal

4041|South Africa

Phone: +27 073 829 7261

Email: simamkele.bokolo@gmail.com |Website: <http://ccms.ukzn.ac.za>

Project Details

You are invited to participate in my project. This project seeks to understand if adolescent girls and young women are ready to use oral pre-exposure prophylaxis, known as PrEP. Oral PrEP is a pill which can help reduce your risk of getting HIV. The main reason for this project is to investigate the role of schools in supporting oral PrEP uptake among adolescent girls and young women in order to reduce new HIV infections. This research will be conducted under the supervision of Dr Eliza Govender. Your participation in the study will add value to this project so we can better structural influences to oral PrEP uptake. This research aims to understand the role of schools in preparing adolescent girls and young women for oral PrEP uptake and the schools' role in promoting uptake.

Participation is Voluntary

You can choose whether or not you want to participate, you do not have to decide immediately. Even if you agree now, you can change your mind at any point. This decision can be difficult because sexuality and sexual health is a sensitive topic, so you are free to ask as many questions

as you like. Participation is voluntary and the participant is free to withdraw from the study at any stage, for any reason. The participant has the right to decide to stop participating in the discussion at any time that you wish.

If you agree to take part in the interview, you will be asked questions surrounding oral PrEP and your opinions, thoughts, and knowledge about oral PrEP. You will not be asked to share any personal stories that you are not comfortable to share.

If you do not wish to answer any of the questions, you may say so. You do not have to give any reason for not responding to any questions, or for refusing to take part in the interview.

Data storage and confidentiality

The interview will be electronically recorded and kept confidential. The recording will be kept securely for 5 years at UKZN. Your information will not be shared outside of the research team. Any information about you will have a number on it and your name will not be recorded or mentioned in the research.

Reimbursement

You will be reimbursed R100 for your participation in this project, this is to show appreciation for your time spared for the interview.

Problems/Questions

In the event of any problems or concerns/questions you may contact the student at (073 829 7261) or the study supervisor Dr Eliza Govender at govendere1@ukzn.ac.za. This study has been ethically reviewed and approved by the UKZN **BIOMEDICAL RESEARCH ETHICS ADMINISTRATION**, ethical number **BE500/17**.

CONSENT (Edit as required)

- I _____ have been informed about the study entitled “Exploring adolescent girls and young women’s oral PrEP readiness from a school based perspective in Vulindlela, KZN by Simamkele Bokolo.
- I understand the purpose and procedures of the study.
- I have been given an opportunity to ask questions about the study and have had answers to my satisfaction.

- I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any treatment or care that I would usually be entitled to.
- I have been informed about any available reimbursement of R100.
- If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at simamkele.bokolo@gmail.com or on 073 829 7261.
- If I have any questions or concerns about my rights as a participant, or if I am concerned about an aspect of the project or the researchers then I may contact:

BIOMEDICAL RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001
 Durban
 4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604769 - Fax: 27 31 2604609

Email: BREC@ukzn.ac.za

Signature of Participant **Date**

Signature of Witness **Date**

(Where applicable)

Signature of person obtaining consent **Date**

Appendix II

Interview guide

1. How would you describe your relationship with the girls in your class or in the school?
2. How would you describe the attitude of girl children in the school towards health issues including sexual and reproductive health and HIV?
3. Could you describe your knowledge of HIV prevention methods available to girls and your attitude towards these?
4. What are the perceptions and attitudes of adolescent girls towards HIV prevention methods?
5. What are your thoughts regarding AGYW's understanding of HIV transmission and exposure?
6. Have you heard of PrEP? What is your knowledge and understanding of oral PrEP?
7. What are your thoughts about oral PrEP and would you promote PrEP to AGYW if it was available?
8. How do you think oral PrEP will benefit adolescent girls in this school?
9. What do you think could be challenges for adolescent girls to take oral PrEP?
10. How do you think the school can support adolescent girls in taking oral PrEP?
11. What kind of support would the school need from external stakeholders in promoting and supporting oral PrEP uptake among AGYW?
12. What kind of activities does the school have in general to support girls in terms of health and reproductive issues?
13. How would you know when AGYW are ready to take PrEP?

Appendix III

Ethics Approval letter



01 June 2018

Dr Eliza Govender
School of Applied Human Sciences
Faculty of Human Sciences
Eliza.govender@caprisa.org

Dear Dr Govender

PROTOCOL: User Readiness for oral Pre-exposure Prophylaxis: Strengthening HIV prevention efforts in the high HIV burden district of UMgungundlovu, KwaZulu-Natal, Non-Degree
BREC reference number: BE500/17

Your Application for Amendments received on 14 May 2018 to add the students listed below to the above study has been noted and approved by a sub-committee of the Biomedical Research Ethics Committee.

Name of student	Title of masters study
Gethwana Mahlase	Exploring readiness of the Primary Health care clinics for the provision of pre-exposure prophylaxis to Adolescent Girls and Young Women (AGYW): A case study in Vukindlela
Noluthando Precious Nomalungisa Fadane	The role of community leaders in effective implementation of oral pre-exposure prophylaxis in the Vukindlela community in Kwa-Zulu-Natal.
Simamkele Bakolo	Exploring adolescent girls and young women's oral PrEP readiness from a school based perspective in Vukindlela , KZN

This approval will be ratified at the next BREC meeting to be held on 10 July 2018.

Yours sincerely

Mrs. A. Marimuthu
Senior Administrator: Biomedical Research Ethics