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A process evaluation of the PREPARE intervention to promote healthy sexual practices among adolescents in Cape Town, South Africa.

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“We have learned that solving social problems is difficult and exacting and calls for large resources of money, time, will and ideas. Most social problems that nations face are beyond the reach of easy solutions. No magic bullet is going to end crime, poverty, illness, or the degradation of the environment. People will continue to worry about education, violence, and community cohesiveness. Progress will be made in gradual stages, by incremental improvements, and it will take careful, systematic evaluation to identify which modes of intervention have better outcomes. With the information and insight that evaluation brings, organizations and societies will be better able to improve policy and programming for the well being of all.” –Carol. H Weiss (1998), p. ix

Acknowledgements

Two years of hard work, dedication, invaluable new friendships and tons of new and exciting knowledge have come to an end. To produce a master thesis has been, as many before me has acknowledged, a long and teaching process, both professionally and personally.

The fact that preventable infections lead to the death of a significant number adolescents in sub-Saharan Africa has interested me for several years, especially due to the fact that knowledge about how to efficiently prevent infections such as HIV exists. Therefore, being able to dedicate my final thesis to this subject has been a driving motivation. The work with this thesis has helped me gain the understanding that prevention of sexually transmitted infections is very complex and indeed nested within wider constructions such as countries policy, society and history. My gratitude to the researchers in the PREPARE team for letting me use the data they conducted during PREPARE Cape Town, and for trusting me in conducting the process evaluation. I would especially like to thank Catherine Mathews, whom has been very supportive and helpful in answering questions about PREPARE that I was unable to find elsewhere. In addition, I am endlessly grateful to my kind, extremely talented and hard-working supervisor Sheri Bastien for being so wonderful every step of the way and for the never-ending support throughout the process. It has been an honor to work with someone with the amount of knowledge that you have. You have thought me so much, and both this thesis and me have grown because of you.

I would like to dedicate this thesis to my father, Aslak Fonn, whom has supported and motivated me in completing this thesis, thus battling very serious cancer all through the process. I highly admire your ability to remain the positive, kind and supportive father I am so lucky to have, no matter the circumstances.

In addition to my father, I am in debt to a number of individuals for their invaluable assistance in completing this thesis. First, I would like to direct my gratitude to my mother and brother, for endless hugs, support, patience and love. Further, these past two years would not have been the same without my wonderful classmates in the Public health master program. In particular, I would like to thank my colloquium group consisting of Ida, Kirsti, Marte and Sofia. Last, but not least; a very special thank you to my remaining friends and family whom have shown great patience and support during these last months.

Elise Fonn

Abstract (English)

Background: An estimated 36.7 million people in the world were living with human immunodeficiency virus (HIV) in 2015, with approximately 70% of these located in the region of sub-Saharan Africa. In the Western Cape, AIDS is still the leading cause of premature mortality and adolescents commonly report behaviors that increase the risk of sexually transmitted infections, including HIV. In countries where the HIV prevalence has declined at the population level, sexual behavior change among adolescents has been cited as an important contributing factor.

Rationale: As South African adolescents experience among the highest HIV prevalence in the world, the development of effective prevention interventions is a top public health and policy priority. Still, little is known of the implementation processes and the complex social contexts in which such interventions occur, and of their influence on observed outcomes. The PREPARE intervention is an example of a complex intervention tailored to address social influences to affect sexual and reproductive behavioral patterns in the target group. Although carefully planned according to recommendations from previous research, literature, theoretical framework and context, PREPARE did not lead to the expected behavioral outcomes.

Objective: The purpose of the master thesis was to conduct a process evaluation of the PREPARE Cape Town intervention, and to understand participants' experiences and perceptions of the implementation of the intervention. This in order to; 1) assist in the interpretation of the behavioral outcomes, and 2) contribute to the broader evidence base regarding implementation of school-based STI- and HIV/AIDS-prevention programs.

Method: The master thesis followed a phenomenological inductive approach and used qualitative methods to get an understanding of the PREPARE Cape Town implementation from the perspective of implementers. The main data material consisted of semi-structured interviews conducted with participating facilitators, nurses and principals. Systematic text condensation inspired by Giorgi, and modified by Malterud, was used to analyze the interviews. In addition, the process evaluation incorporated document analysis of PREPARE publications and documents, in addition to an interview conducted with one of the PREPARE Cape Town investigators.

Results: The results revealed several structural and contextual factors expected to influence the delivery and hence the behavioral outcomes of PREPARE Cape Town. Among the most central barriers to implementation of PREPARE Cape Town were limitations in time, preconceptions and characteristics in implementers interfering with central intervention aims, lack of ability to reach the adolescents in most need of PREPARE and lack of ability to address social issues. The impediments to curriculum delivery according to plans included factors both in and outside the control of the PREPARE research team.

Conclusion: The process evaluation revealed possible factors of influence to the PREPARE Cape Town behavioral outcomes that outcome evaluations are considered incapable to reveal. The findings hence confirm the importance of conducting process evaluations in order to complement outcome evaluations, and hence to inform the development of future interventions similar to PREPARE.

Sammendrag (Norsk)

Bakgrunn: I 2015 var det om lag 36,7 millioner mennesker som levde med humant immunsviktvirus (HIV). Omtrent 70% av disse var lokalisert i Afrika, sør for Sahara. I Western-Cape er AIDS viktigste årsak til tidlig død. Likevel rapporterer ungdom stadig om adferd som øker risikoen for seksuelt overførbare sykdommer, inkludert HIV. I land hvor forekomsten av HIV har sunket på befolkningsnivå, er endringer i seksuell adferd identifisert som en viktig medvirkende faktor.

Rasjonale: Ettersom forekomsten av HIV er svært høy blant Sørafrikanske ungdommer, er utviklingen av effektive forebyggende intervensjoner under høy satsning, både innen folkehelse og politikk. Det eksisterer likevel lite kunnskap om prosessene og de komplekse sosiale sammenhengene som påvirker slike intervensjoner, og deres innflytelse på studiers resultater. PREPARE er et eksempel på en kompleks intervensjon skreddersydd for å påvirke seksuelle- og reproduktive adferdsmønstre hos ungdom. Til tross for at PREPARE var forankret i anbefalinger fra tidligere forskning, litteratur, anerkjent teoretisk rammeverk og kontekstuelle sammenhenger, førte ikke intervensjonen til forventet endring i deltakernes atferd.

Oppgavens formål: Formålet med masteroppgaven var å gjennomføre en prosessevaluering av PREPARE Cape Town, og å forstå deltakernes erfaringer knyttet til intervensjonens gjennomføring. Dette for å; 1) bistå i tolkningen av effektevalueringen av PREPARE Cape Town og 2) bidra til en bredere forståelse av skolebaserte intervensjoner med hensikt i å forebygge seksuelle overførbare sykdommer, herunder HIV/AIDS.

Metode: Masteroppgaven har en fenomenologisk tilnærming og benytter kvalitativ metode. Dette for å øke forståelsen av PREPARE Cape Town ut fra deltakernes perspektiver. Hoved-datamaterialet bestod av semi-strukturerte dybdeintervjuer med deltagende undervisningspersonell, sykepleiere og rektorer. Systematisk tekstkondensering ble benyttet i analysen. Denne metoden er inspirert av Giorgi og modifisert av Malterud. I tillegg til det overnevnte datamaterialet, ble det utført dokumentanalyse av PREPARE-publikasjoner og prosjektdokumenter, samt intervju med en av forskerne i PREPARE Cape Town.

Resultater: Resultatene avdekket flere strukturelle og kontekstuelle faktorer forventet å påvirke atferdsmessige utfall i PREPARE Cape Town. De mest sentrale påvirkningsfaktorene for prosjekt-implementeringen var tidsbegrensninger, intervensjonsleverandørers fordommer og egenskaper, begrenset antall ansatte, organisatoriske faktorer som kommunikasjon og informasjon, samt manglende evne til å nå ungdommer med størst behov for intervensjoner som PREPARE. Implementeringen av PREPARE Cape Town ble altså påvirket av faktorer både i og utenfor PREPARE-forskernes kontroll.

Konklusjon: Prosessevalueringen avdekket mulige faktorer forventet å påvirke PREPARE Cape Towns utfall. Flere av disse faktorene var ikke allerede avdekket i studiens effekt-evaluering. Det anses derfor at funnene bekrefter viktigheten av at det gjennomføres prosessevalueringer komplementære til utfallsevalueringer, da dette kan bidra til at viktig informasjon av betydning for utviklingen av fremtidige intervensjoner avdekkes.

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List of acronyms

AIDS Acquired Immune Deficiency Syndrome

EP Educational program

HIV Human Immunodeficiency Virus

IMB Information-Motivation-Behavioral Skills

IPV Intimate Partner Violence

LO Life Orientation

M Mean

PHI Public health interventions

PREPARE Promoting sexual and reproductive health among adolescents in southern and eastern Africa

SHS School health service

SRH Sexual and reproductive health

SSA sub-Saharan Africa

STC Systematic text condensation

STI Sexually transmitted infections

UN The United Nations

WHO World Health Organization

List of tables and figures

1.0 INTRODUCTION

According to UNAIDS (2016) an estimated 36.7 million people in the world were living with human immunodeficiency virus (HIV) in 2015, approximately 70% of these located in the region of sub-Saharan Africa (SSA). In SSA, HIV and Acquired Immune Deficiency Syndrome (AIDS) account for 70% of deaths, remaining one of the foremost health and development challenges of our time (UNAIDS, 2016; UNFPA, 2015). In the Western Cape, South Africa, AIDS is still the leading cause of premature mortality and adolescents commonly report behaviors that increase the risk of sexually transmitted infections (STI), including HIV (Western Cape Government, 2017; Stats SA, 2016). Research shows that the AIDS-related mortality is increasing adolescents, thus decreasing in all other age groups (Idele et al., 2014).

Nearly two thirds of premature deaths and one third of the total disease burden in adults are associated with conditions or behavior that began in youth, including unprotected sex or exposure to violence (WHO, 2017a). Behavioral patterns acquired during adolescence tend to last throughout life (Shaw, 2009). Promoting healthy practices during adolescence and efforts that better protect this age group from risk, therefore may ensure longer, more productive lives for many (Klepp, Flisher, & Kaaya, 2008; Mason-Jones & Beattie, 2013; Shaw, 2009).

In countries where HIV prevalence has declined at the population level, sexual behavior change among adolescents has been cited as an important contributing factor (Chandra-Mouli, Lane, & Wong, 2015; Sani, Abraham, Denford, & Ball, 2016). Interventions comprising multiple components that interact to produce change are considered important in the prevention of adolescent risk behaviors. Such interventions are often referred to as comprehensive or complex interventions (Moore et al., 2015). However, little evidence thus far supports complex interventions direct impact on biological measures of effectiveness. Several trials of comprehensive approaches to adolescent HIV-prevention have failed to significantly decrease adolescents´ HIV-incidence, and only shown modest success in increasing protective behaviors (Harrison, Newell, Imrie, & Hoddinott, 2010; Sani et al., 2016; Aarø et al., 2014).

1.1 Rationale for the thesis

With South African adolescents experiencing among the highest HIV prevalence rates in the world, the development of effective HIV prevention programs is a top public health and policy priority (UNAIDS, 2016). There have been several initiatives and prevention programs aimed at young people's sexual and reproductive health (SRH) in South Africa, and there are currently a plethora of organizations and projects working to promote adolescent´s SRH (Klepp et al., 2008; Morris & Rushwan, 2015). Research indicates that adolescents who receive HIV and sex education are more likely to practice safe sex, preventing the spread of the infection (Chandra-Mouli et al., 2015; Jemmott et al., 2010; Paul-Ebhohimhen, Poobalan, & van Teijlingen, 2008; Sani et al., 2016). Still, behavioral outcomes of previous interventions are generally rather limited and questions remain regarding how to achieve and maintain the behavioral changes necessary to decrease HIV incidence among adolescents (Chandra-Mouli et al., 2015; Harrison et al., 2010; Sani et al., 2016; Aarø et al., 2014).

Relatively few rigorous evaluations of school-based HIV/AIDS interventions in sub-Saharan Africa exist, and even fewer documenting how and why interventions are or are not effective. Therefore, little is known of the implementation processes, the complex social contexts in which these interventions occur and their influence on observed outcomes (Chandra-Mouli et al., 2015; Harrison et al., 2010; Mukoma et al., 2009).

A process evaluation is a study that aims to understand the functioning of an intervention by examining implementation, mechanisms of impact, and contextual factors (Moore et al., 2015). Process evaluation efforts can hence provide a link between factors thought to be essential for intervention success and the final study outcomes (Steckler & Linnan, 2002). Understanding the mechanisms for how and why these constructs produce successful change or fail to produce change is key to refining theory, improving intervention effectiveness and to inform future generations of interventions (Nutbeam & Bauman, 2006; Steckler & Linnan, 2002). As process evaluations may assist in the development of future successful interventions, they may likewise be an essential resource in ending the AIDS epidemic (Harrison et al., 2010; Klepp et al., 2008; Steckler & Linnan, 2002).

1.2 The PREPARE intervention

The PREPARE intervention is an example of a comprehensive intervention tailored to address social influences to affect behavioral patterns in the participating adolescents (Mathews et al., 2016; Aarø et al., 2014). The full title of the intervention was; promoting sexual and reproductive health among adolescents in southern and eastern Africa – Mobilizing schools, parents and communities (Mason-Jones & Beattie, 2013; Mathews et al., 2016; Aarø et al., 2014). The PREPARE intervention was a EU funded project taking place from 2010-2014. The intervention aimed to change sexual and reproductive behavior among adolescents in selected sites in sub-Saharan Africa, by developing new and innovative programs for promotion of healthy sexual practices among adolescents. Schools were used as gateway of delivery (Mathews et al., 2016; Aarø et al., 2014).

Members of the PREPARE consortium are among one of the most active networks in research on HIV/AIDS prevention, prevention of unwanted pregnancies and promotion of healthy sexual practices among adolescents. In 2004, the SATZ intervention was developed, implemented and evaluated by key PREPARE consortium members (Aarø et al., 2014). Similarly to PREPARE, the SATZ project aimed to promote SRH among adolescents in South Africa and Tanzania by developing and evaluating theory-, evidence-based and culturally sensitive SRH interventions targeting school-going adolescents (Mukoma et al., 2009). In SATZ, intervention effects varied extensively across sites, and it was proposed that contextual factors rather than content and delivery could explain the differences (Mathews et al., 2012; Mukoma et al., 2009). Another important lesson learned was that educational interventions in South Africa need to be supplemented with broader school- and community-wide interventions to address environmental and structural issues, including gender inequities, in which adolescents make decisions about their relationships and their sexuality (Mathews et al., 2012; Mukoma et al., 2009; Aarø et al., 2014). Consequently, the PREPARE interventions were developed separately in each site with particular intervention objectives and intervention programs to meet local needs, in order to address the challenges identified from SATZ (Mathews et al., 2010; Aarø et al., 2014). This was expected to increase chances of successful outcomes and insights into contextual and environmental moderators of intervention success. The intervention was conducted at four sites in sub-Saharan Africa; Dar es Salaam in Tanzania, Kampala in Uganda and Mankweng and Cape Town in South Africa (Mathews et al., 2016; Aarø et al., 2014). This thesis will focus only on the Cape Town intervention.

1.3 Research questions

Although the PREPARE Cape Town intervention was carefully planned according to recommendations from previous research, literature, theoretical framework and context, it did not lead to expected reductions in sexual risk behaviors related to HIV prevention (Mathews et al., 2016). The aim of this thesis is to conduct a process evaluation of the PREPARE Cape Town intervention, with the purpose to understand participants' experiences and perceptions regarding the implementation of the intervention. It is anticipated that the findings of this study may; 1) assist in the interpretation of the behavioral outcomes of PREPARE Cape Town and 2) contribute to the broader evidence base regarding implementation of school-based HIV/AIDS-prevention programs.

The research questions guiding this study are:

1. *How was the PREPARE Cape Town intervention intended to be implemented, and to what extent was it delivered as planned?*
2. *What factors influencing the implementation of PREPARE Cape Town do the participating facilitators, nurses and principals identify?*
3. *In what way, if any, can this process evaluation assist in the interpretation of the behavioral outcomes identified in the PREPARE Cape Town outcome evaluation?*

1.4 Delimitations and clarification of concepts

Boundaries were necessary to establish for the process evaluation to fit into the allotted scope of the thesis. Therefore, the following delimitations are important to acknowledge;

There were three main components included in PREPARE; the educational program (EP), the school health service (SHS) and the school safety program. This process evaluation focuses on the following two components: the health intervention and the educational program.

Within a process evaluation it is possible to study numerous aspects of an intervention (Mukoma et al., 2009; Saunders, Evans, & Joshi, 2005). With reference to the aforementioned areas of concern identified in SATZ, the study which included many of the same consortium members as PREPARE, this process evaluation particularly focuses on structural and contextual factors influencing the implementation of PREPARE Cape Town. Structural factors refer to how the intervention was structured by the PREPARE team, including

organizational factors and physical limitations such as time limitations. Furthermore, contextual factors refer to factors that can be linked to the wider social, cultural, political and environmental aspects of PREPARE, both locally and distally (Steckler & Linnan, 2002).

PREPARE Cape Town was rooted in a comprehensive specter of theoretical frameworks for behavior change (Aarø et al., 2014). Though considered important means to behavior change, these frameworks will not be discussed comprehensively in this thesis. Still, the theoretical framework of PREPARE Cape Town is elucidated in the conceptual framework, in order to explain how the PREPARE Cape Town intervention was intended to be implemented, as addressed in the first research question.

Nurses, facilitators and principals are referred to as participants or implementers in the thesis, while the intervention target group is referred to as adolescents or learners.

PREPARE Cape Town will be referred to as the PREPARE intervention or the PREPARE study throughout the thesis. In contrast, this particular thesis will be referred to as the master thesis or the process evaluation, in order to avoid confusion about whether the master thesis or the PREPARE study is referred to.

Remaining key concepts will be explained when mentioned in the thesis.

1.5 Thesis structure

The thesis is divided into the following seven chapters; Introduction, Literature review and Conceptual framework, Methodology, Findings, Discussion, Concluding remarks and Recommendations for future research.

The current chapter (Chapter 1) has introduced the focus for the process evaluation and discussed its relevance to public health, provided a short introduction to PREPARE, discussed the rationale of the thesis, presented the research questions, and clarified central concepts and the delimitations that were made for the thesis to fit into the allotted scope. The following (Chapter 2) will present the literature review and conceptual framework relevant to the research questions. Chapter 3 presents the methodology and research strategy, consisting of a detailed description of the specific methods, sampling and data analysis and the ethical considerations relevant to this thesis. The findings will be presented in Chapter 4. In Chapter

5 the findings will be discussed in relation to the broader literature and conceptual framework that guided the master thesis, in addition to presenting a discussion of the methodological strengths and limitations. Chapter 6 provides the concluding remarks, before bringing forward recommendations for future research relevant to the topic in chapter 7.

2.0 LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

Having presented the rationale of the thesis, research questions, delimitations and the thesis structure, this section aims to present the conceptual framework and previous research on the area. The chapter will start by giving a brief overview of recommendations for adolescents' SRH interventions in sub-Saharan Africa, explain how social determinants of SRH may influence the effectiveness in interventions such as PREPARE and give a brief demographic overview of the area where PREPARE was implemented. Further, a detailed overview of PREPARE Cape Town will be presented, before explaining the concept of process evaluation and the key process evaluation measures chosen to guide this study in the end.

2.1 Adolescent sexual and reproductive health interventions in sub-Saharan Africa

WHO (2017b) defines adolescents as those people between 10 and 19 years of age. Further, adolescent SRH is defined as a state of physical, emotional, mental and social well-being related to sexuality, not merely the absence of disease, dysfunction or infirmity (WHO, 2002). It is suggested that SRH requires a positive approach to sexuality and intimate relationships. Further, sexual experiences should be pleasurable and safe, without coercion, discrimination and violence (Edwards & Coleman, 2004; WHO, 2002). Public health interventions (PHI) focused on SRH are often rooted in these requirements, and typically focus on the prevention of STIs and positive health promotion, rather than treatment of illness (Moore et al., 2015).

In general, recommendations for the development of effective school-based SRH-interventions include that they should be theory-based, adapted from other programs, and taking previous research and literature into account (Harrison et al., 2010; Klepp et al., 2008). In addition, interventions should modify the structural context of HIV-risk, target school-level factors and engage schools as active partners. The broader "school community" of students, teachers, parents and community members should also be mobilized (Harrison et al., 2010; Moore et al., 2015). It is suggested that programs that are not successful in changing sexual risk behaviors often treat HIV/AIDS as an isolated problem (Michielson, Bosmans, & Temmerman, 2008). Instead, PHI are considered most likely to succeed when they take into

account the social determinants of health, needs and motivation in the specific target group (Michielson et al., 2008; Sani et al., 2016).

2.1.1 Social determinants of sexual and reproductive health in sexual and reproductive health interventions

Social determinants of health are defined by WHO (2017a) as the conditions in which people are born, grow, work, live and age, in addition to the wider set of forces and systems shaping the conditions of daily life. These conditions or circumstances include economic policies and systems, development agendas, social norms, social policies and political systems (Belton & Skovdal, 2014; Shaw, 2009; WHO, 2017a). A range of fundamental conditions are essential for adolescent health, such as peace, shelter, education, food, income, a steady environment, sustainable resources, social justice and equity (Svanemyr, Amin, Robles, & Greene, 2015). As adolescents make behavioral choices within the context of their relationships, families, communities, economic circumstances, and social norms and traditions, social determinants of adolescents' SRH also influence outcomes of interventions to protect adolescents´ SRH. Therefore, they are perceived important to consider in SRH-interventions (Chandra-Mouli et al., 2015; Kamangu, John, & Nyakoki, 2017; Sani et al., 2016).

Dahlgren and Whitehead (1991) present a holistic perspective of the social determinants of health in their ecological model. According to this model, all levels in society may affect determinants. Further, different determinants may interact with each other and cause different effects on different people. As the health challenges that adolescents encounter are often closely related, effective interventions in one area may have the potential to affect positive outcomes in other areas (Dahlgren & Whitehead, 1991; Klepp et al., 2008; Naidoo & Wills, 2016). The model contains four "layers" of determinants that can threaten, protect, or promote health and that can be affected by different types of action (see Figure 1).

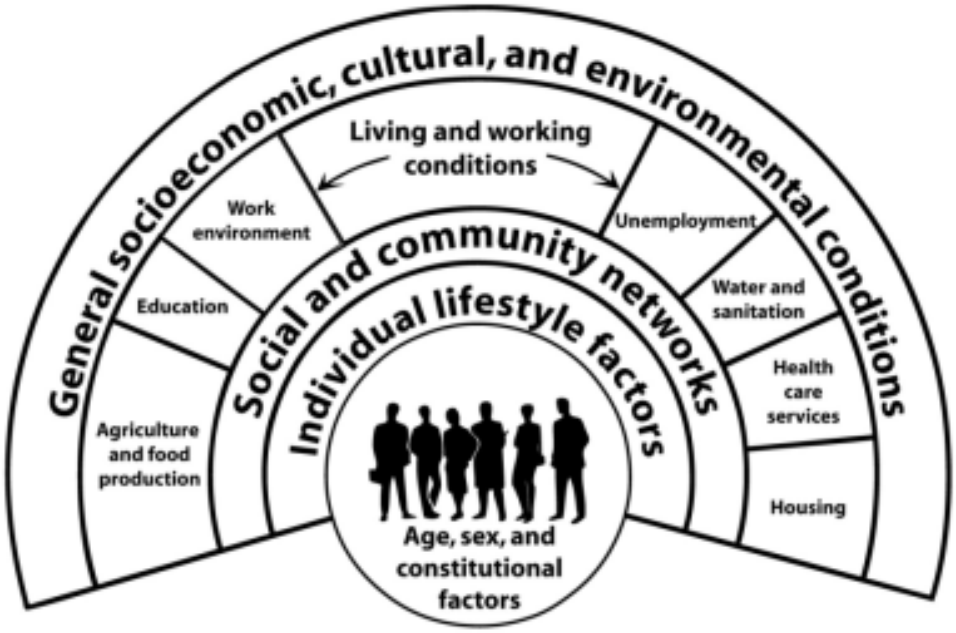

Figure 1: The social determinants of health (Dahlgren & Whitehead, 1991).

The core of the model represents individual factors like age, sex and genes. Even though important to how interventions affect people, these factors are readily modifiable (Dahlgren & Whitehead, 2017; Dahlgren & Whitehead, 1991).

The **first adjustable layer** is individual lifestyle behaviors, including individual factors such as sexual behavior, diet, consumption of alcohol and exercise. To enable people to change their lifestyle, public health efforts often focus on giving the individual information and tools for change (Dahlgren & Whitehead, 2001; Dahlgren & Whitehead, 2017). Effective programs typically provide adolescents with consistent, accurate messages and information, life-skills needed to protect their health and well-being, and with social support and access to contraceptives. However, interventions only including information have been found to have poor effect, while interventions targeting social and psychological factors, are those suggested to be most effective (Klepp et al., 2008; Salam et al., 2016). In addition, previous research on promotion of healthy sexual behavior among adolescents in sub-Saharan Africa has demonstrated limitations of approaches focusing on individual behavior change only, while neglecting the wider societal, organizational, physical and cultural contexts (Campbell, Foulis, Maimane, & Sibiya, 2005; Chandra-Mouli et al., 2015; Mukoma et al., 2009).

Layer two represents the network that surround and give support individuals, such as family, friends and the local community. To promote change on this level, efforts should focus on reducing health hazards in the local community, and on social support to individuals and families (Dahlgren & Whitehead, 2001; Dahlgren & Whitehead, 2017). Coetzee et al. (2014) suggest that programs should target parents' knowledge, skills and comfort regarding effective parent-adolescent communication, as parental involvement in SRH-interventions is seen as a protective factor that is considered essential to interventions that intend to decrease adolescent sexual risk behavior and change social norms (Bastien, Kajula, & Muhwezi, 2011; Biddlecom, Awusabo-Asare, & Akinrinola, 2009; Kamangu et al., 2017; Zuch, Mason-Jones, Mathews, & Henley, 2012).

Layer three consists of the material and social conditions people live in, such as housing, education and health care. Improvements on this level should focus on policies and strategies (Dahlgren & Whitehead, 2001; Dahlgren & Whitehead, 2017). Contextual factors both within and outside school, such as absence of support from principals, undisciplined teachers, the low status of sexual education and lack of resources, may impede implementation and render interventions ineffective in changing behavior (Mukoma et al., 2009). Ahmed et al. (2006) suggest that the facilitators and nurses providing the interventions are key to the success of school-based sex education programs, and that it is important to equip them with the knowledge and skills needed prior to the intervention. Further, creating enthusiasm among teachers and nurses and high quality training of those responsible for delivering the programs is seen as a fundamental requirement for all effective interventions (Mathews et al., 2016; Pettifor et al., 2005; Aarø et al., 2014). In addition, it is suggested that investigators in interventions like PREPARE should ensure and promote providers comfort in teaching sex education, determining their resistances and establishing a deep understanding of the providers' values and ideologies (Ahmed et al., 2006; Helleve et al., 2009; Shaw, 2009).

Further, it is suggested that interventions should include provision of health services (Michielson et al., 2008; Sani et al., 2016). The recognized benefits of providing health services located in schools and customized for young people include that it is safer, more accessible and requiring less travel, more likely to be confidential as people from the community are not going to see them at the clinic, reliable with continuity of care and that it gives adolescents easier access to contraception include, having staff particularly trained for working with young people, normalization of sexual health and attendance in health clinics,

young people feeling less judged, suitable for both men and women, and the ability to address topics particularly relevant to young people (Michielson et al., 2008; Sani et al., 2016; Chandra-Mouli et al., 2015; Mason-Jones & Beattie, 2013). Like in educational programs, it is considered that adolescent's use of SRH-services can be improved when providers are trained, nonjudgmental and friendly to adolescents (Chandra-Mouli et al., 2015; Denno, Hoopes, & Chandra-Mouli, 2015; Dick et al., 2006; Mavedzenge, Doyle, & Ross, 2011).

In the fourth level are the major macro structures of the nation, the region and the world, including general socioeconomic, cultural and environmental conditions (Dahlgren & Whitehead, 2001; Dahlgren & Whitehead, 2017). In spite being at the center of the HIV epidemic in terms of transmission, vulnerability and impact, the majority of adolescents encounter substantial barriers to sustaining their SRH, such as stigma and discrimination (Klepp et al., 2008; Aarø et al., 2014). In order to meet environmental needs it is highlighted that interventions should seek to alter culture-specific norms, attitudes and beliefs that discourage behavior change (Ahmed et al., 2006; Belton & Skovdal, 2014; Ben-Arieh, Casas, Frønes, Korbin, & SpringerLink, 2014). A review of behavioral interventions to reduce HIV, STIs and pregnancy among adolescents showed that programs with longer duration were more effective than shorter ones (Chandra-Mouli et al., 2015). In addition, interventions that are not sustained tend not to bring about long-term change at community level (Tu, Lou, Gao, & Shah, 2008). Chandra-Mouli et al. (2015) suggest that this may be because longer interventions allow more time for in-depth discussion of and reflection on cultural and gender norms and other social structures that may affect the capacity to change behaviors.

The high prevalence of HIV among adolescents has added greater weight to the discussion in support of adolescents' rights to SRH. As many of the social determinants are also articulated as rights, such as the rights to education, equality, information, housing and social security, links between health and human rights are considered crucial when relating to adolescents and youth (Koech, 2013; Shaw, 2009). The rights for adolescents to SRH is not a separate set of rights, but can mainly be found in the Convention on the Right of the Child, the Universal Declaration of Human Rights and in the Convention on the Elimination of Discrimination Against Women (United Nations General Assembly, 1948; United Nations General Assembly, 1979; Unicef, 1989). The UN (2011) advocates that protection and promotion of adolescents' rights to SRH is essential in preventing the spread of HIV and to mitigating the social and economic impact of the pandemic. However, though adolescent's rights have been

enshrined in multiple documents, there are still struggles to implement their rights to SRH, especially those of females (Shaw, 2009).

Coovadia, Jewkes, Barron, Sanders, and McIntyre (2009) suggest that programs that directly address social determinants of health and development, such as discrimination and stigma, subordination of women, poverty and inequality, violence and traditional practices are essential for promoting health and reducing disease (Chandra-Mouli et al., 2015). In this context, schools are seen as the ideal location for obtaining information on adolescents and their behaviors as they have the potential to reach many and present opportunities to influence not only individual factors such as beliefs, attitudes and self-efficacy, but also social factors such as group norms (Mukoma et al., 2009; Sani et al., 2016; Timol et al., 2016).

Sani et al. (2016) suggest that to ensure that adolescents have adequate exposure to SRH-interventions such interventions should be embedded in the school curriculum, as interventions after school often do not obtain high attendance rates and tend to attract participants less vulnerable to adverse outcomes (Botvin, Schinke, & Orlandi, 1995; Western Cape Government, 2017). However, the local government does not always permit this (Mathews et al., 2016). In addition, adolescents infected or affected by HIV are more likely to drop out of or underperform at school due to psychosocial factors including financial pressures, grief and mental health problems as a result of the illnesses and deaths in the family, and discrimination and stigma, causing the possibility that interventions don't reach the most vulnerable even when imbedded in the school curriculum (Health Basic Education, 2012).

It is important to outline the fact that the social ecological model is layered does not mean that different issues are only attributed to one level. Sexual behavior is for example is not only an individual lifestyle factor (Dahlgren & Whitehead, 2017; Söderbäck & Udén, 2009). Far from being an individual decision-making process, sexual behavior is shaped by social relations and institutions at the local level, such as kinship groups, informal social networks, local political institutions, and religious and spiritual advisors, which are influences by and the product of the wider social, political, economic and historical processes (Belton & Skovdal, 2014; Shaw, 2009). For example, adolescents are unlikely to be receptive to information about the importance of safer sex practices in the event of being homeless and dependent on

income derived from commercial sex. However, such conditions are often not directly addressed in adolescents' SRH interventions (Pillay & Flisher, 2008).

As SRH behavior is multifaceted and the social determinants of SRH are considered to influence effectiveness of SRH-interventions, the culture and history of the location where interventions are conducted should be kept in mind, both during intervention development and when evaluating interventions (Moore et al., 2015; Svanemyr et al., 2015). Accordingly, the culture and history of Western Cape, the location where PREPARE Cape Town was conducted, were considered both in the development of PREPARE Cape Town and in this particular process evaluation.

2.1.2 The Western Cape culture and history

As elsewhere, the public health in Western Cape is rooted in the country's history, policy and culture. The Western Cape has wide differences in language, race, religion, ethnic community, rural-urban residence, age, health status, and economic condition (Globalis, 2016; Gibbons, Poelker, & Moletsane-Kekae, 2017; Stats SA, 2016). Such differences were reinforced in 1948, when the National Party was voted into power in South Africa. The party instituted the policy of apartheid, a set of rules that favored the white minority and excluded the dark skinned majority of the population from having any political, social and economic rights (Globalis, 2016). The legacy included racial and gender discrimination, vast income inequities, extreme violence, a migrant labor system and destruction of family life (Central Intelligence Agency, 2017). Although apartheid ended in 1994, the legacy of the regime is very visible with large social and economic differences between black and white, violence, gender inequities and poverty (Central Intelligence Agency, 2017; Globalis, 2016). In South Africa, the Gini coefficient, a measure of economic disparity, is one of the highest in the world (Bhorat, 2015; Group, 2016).

The post-apartheid constitution of 1996 is one of the most progressive in the world and prohibits direct or indirect discrimination on the basis of race, gender, sex, ethnic or social origin, color, age, religion, belief, culture and language (Government of South Africa, 1996). Despite governmental and legislative efforts to address violence against women, the government of South Africa still recognizes gender-based violence as a key ongoing issue (Government of South Africa, 2016). It is important to note that violence has historically been

viewed as an acceptable way to solve problems in South African society, and that violence is often viewed as a permitted outlet to express anger and utilize authority (Abrahams & Jewkes, 2005; Jewkes, Dunkle, Nduna, & Shai, 2010), and although women are guaranteed equal rights as men, cultural rights are also recognized. Because most traditional cultural groups in South Africa are patriarchal, a system in which men are seen as the unquestioned authority, traditional societies still leave many women suffering from discrimination (Bower, 2014; Gibbons et al., 2017; Park, Fedler, & Dangor, 2000). High levels of violence against women occur in South Africa (UNAIDS, 2014; Aarø et al., 2014). Sexual assault and intimate partner violence (IPV) is expected to contribute to an earlier sexual debut, experience of forced sex and increased risk for HIV infection (Jewkes et al., 2010; UNAIDS, 2014; Aarø et al., 2014). In fact, the South African females are three-four times more likely to contract HIV as their male counterparts (Gibbons et al., 2017; Shisana et al., 2014). The higher infection rate of women can be attributed to a variety of causes in which women are at a disadvantage: poverty, gender-based violence, and low social power (Avert, 2016).

Research on sexuality and romance in South Africa has revealed that adolescents' conceptions and behavior are often rooted in gender-role stereotypes. In fact, South African adolescents describe male dominance and sometimes verbal and physical aggression when describing romance and intimacy (Lesch & Furphy, 2013). Similarly, a study on teachers discourse on sex education, found that teachers who taught sex education to South African teens held stereotypic views of males as predatory and females as victims (DePalma & Francis, 2014). Consequently, well-meaning interventions may perpetuate gender-role stereotypes (Gibbons et al., 2017).

Another cultural aspect expected to influence interventions conducted in South Africa is that parent-child communication about SRH is often limited (Coetzee et al., 2014; Zuch et al., 2012)**.** Even though perceived to be a protective factor of adolescents SRH, traditional norms and culture prohibits parents to discuss issues of puberty and sexuality with their children (Bastien et al., 2011; DiClemente et al., 2001; Namisi et al., 2009; Wamoyi, Fenwick, Urassa, Zaba, & Stones, 2010). Therefore, parental involvement is suggested to be beneficial in interventions aiming to promote the SRH of adolescents (Biddlecom et al., 2009; Coetzee et al., 2014). Similarly, parental involvement was intended in the PREPARE Cape Town implementation (Aarø et al., 2014).

2.2 The PREPARE Cape Town intervention

The PREPARE Cape Town intervention was implemented in 40 Western Cape high schools, whereas 20 were intervention schools and 20 were control schools (Mathews et al., 2010). The intervention was administered during a period of 4 months. Students in their first year of high school, grade 8 (age 13-14) were included in the study. The project was intended to reach adolescents at an age when most of them were yet to establish habitual sexual behavior patterns. The included schools were chosen by Grade 12 pass rates as an indicator of the functioning of the school, which was hypothesized to be connected with the ability of the school to take up the intervention, as well as the ability of the students to benefit from the intervention (Aarø et al., 2014). Pass rates were associated with the amount of school fees charged, indicating also being a reflection of socioeconomic status. Using the database of public high schools in the Western Cape, schools with pass rates below 40% and above 97% were excluded (Mathews et al., 2016; Aarø et al., 2014).

PREPARE Cape Town was designed as a comprehensive community intervention, and aimed to develop and test comprehensive school-based community prevention approaches designed to influence sexual behavior and hypothesized mediators representing underlying change processes (Mathews et al., 2010; Aarø et al., 2014). It used elements of a whole school approach, which addresses environmental, behavioral and systemic programs that contribute to safe schools and involved partners beyond the school organization such as parents, health services, police departments and other stakeholders (Gevers & Flisher, 2012; Aarø et al., 2014). Principals where invited to participate in the study in ten of the intervention schools as the main contact in schools for the PREPARE research team (Mathews et al., 2010). The intervention aimed at changing cognitions and other person factors, as well as contextual factors (Aarø et al., 2014; Mathews et al., 2010). As a result of South Africa's high levels of violence against women, and the overwhelming evidence that IPV is a leading cause of reproductive health problems, including HIV, STI and unwanted pregnancies, the intervention focused on preventing IPV and sexual risk behavior leading to HIV in particular (Jewkes et al., 2010; Aarø et al., 2014).

PREPARE Cape Town aimed to move beyond previous interventions by;

- Including mobilization of support for the program from school authorities, school staff and the surrounding community.

- More comprehensive training of personnel (facilitators and nurses) responsible for delivering the program, and training of a large enough number in order to compensate for turn-over.
- Stronger emphasis on student involvement and classroom-based training of students in action planning, in order to promote more effective translation of intentions into behavior.
- Interventions to reduce intimate partner violence and change harmful gender stereotypes (Mathews et al., 2010; Aarø et al., 2014).

2.2.1 The theoretical framework incorporated in PREPARE Cape Town

Klepp et al. (2008) outlines that in order to be effective, behavioral interventions should be based on an understanding of mechanisms and processes as described by empirically tested theoretical frameworks. Equally, the PREPARE project mainly borrowed from the three following descriptions of psychological and behavioral change mechanisms (Mathews et al., 2010; Aarø et al., 2014);

1) Frameworks for intervention development: The Cape Town intervention was developed following the guidelines of Intervention Mapping, a framework for program design based on; a) Needs assessments and capacity analysis, b) theory about behavior and behavior change, and c) collaborative planning (Eldredge, Markham, Ruiter, Kok, & Parcel, 2016). The specific content was based on earlier research and focus interviews with representatives in each site, before theoretically based strategies and practical methods for change among the target group were identified. Subsequently, appropriate channels and resources were selected for each of the strategies. Students, teachers, parents, health workers and police officers in six different school communities participated in the design of the intervention, either as expert panel or in an advisory capacity. The application of such systematic approach for program development resulted in a clear identification of learning objectives, and resulted in different learning objectives, behavioral change strategies and practical methods across sites (Eldredge et al., 2016; Aarø et al., 2014).

2) Ecological and contextual models of health behaviors; Ecological and contextual models of health behavior emphasize the environmental and policy contexts of behavior, while incorporating social and psychological influences. Ecological models lead to the

explicit consideration of multiple levels of influence, thereby guiding the development of more comprehensive interventions. Ecological models of health behavior aim to inform the development of complex interventions that target mechanisms of change at several influence-levels. According to these models, behavior change is maximized when environments and policies support healthy choices, social norms and social support for healthy choices are strong, and individuals are motivated and educated to make such choices (Sallis, Owen, & Fisher, 2015).

3) Social cognition models, such as;

The Theory of Reasoned Action Framework

The theory of Reasoned Action is based on the assumption that intentions lead to behavior. Factors such as situational constraints and lack of skills may contribute to reducing the association between intentions and behavior. Furthermore, behaviors often tend to develop into habits that are conducted repeatedly and automatically. According to Fishbein and Ajzen (2011) intentions are influenced by three factors: a) Personal attitudes towards behavior, b) Subjective norms, and c) perceived behavioral control. Attitude refers to the overall feelings of favorableness or un-favorableness towards performing the behavior. Subjective norms refer to perceptions of what others think one should do. Perceived behavioral control refers to one´s beliefs that one can perform the behavior even under various difficult circumstances. The theory is restricted to behavior that is under at least some voluntarily control, and it is important to recognize that the relative importance of the three psychosocial variables as determinants of interventions will depend upon both the behavior and the population considered. Thus, while a specific behavior may be primarily determined by attitudes in one population, it may be normatively driven in another. This implies that, before being able to design adequate interventions to change intentions to a specific behavior in a specific population, one should know the relative importance of the relevant social determinants (Fishbein, 1975; Fishbein & Ajzen, 2011; Aarø et al., 2014).

Social Cognitive Theory

In the social cognitive theory of Bandura (1986), outcome expectancies (the expected outcome of a specific behavior) and self-efficacy (perceived ability to perform the behavior) are two of the most central concepts. Further, Bandura (1986) distinguishes between three important sets of factors that can all be cause and effect: behavioral, personal and

environmental factors, whereas change in one of the factors may lead to changes in the other two (Bandura, 1986; Aarø et al., 2014).

The Information-Motivation-Behavioral Skills (IMB) model

The IMB-model includes constructs emerged from the AIDS-risk-reduction literature. According to the model, AIDS-prevention information, motivation and behavioral skills are fundamental determinants of AIDS-preventive behavior. Information that is directly relevant to AIDS transmission and prevention is considered an obvious obligation to AIDS-preventive behavior. Further, motivation to practice the AIDS-preventive act is assumed to be a function of one´s attitudes toward the act, and of relevant subjective norms. Behavioral skills for performing specific AIDS-preventive acts are the final prerequisite of preventive behavior (Fisher, Fisher, & Harman, 2003).

The I–Change model

The I-Change model integrates concepts of various social-cognitive models. The model states that behavior is determined by intention, and that transition from the intention state to the behavior state is determined by the ability to perform the behavior and by barriers to do so. Three types of motivation factors determine the state of intention. These are attitude, social influence and self-efficacy. Further, the motivation factors are determined by various more distal factors, such as; “awareness factors”, including knowledge, cues to action and risk perceptions; “information factors”, including the quality of messages, channels and sources used and; “predisposing factors”, including behavioral-, psychological-, biological-, social- and cultural influences (Elfeddali, Bolman, Candel, Wiers, & De Vries, 2012; Aarø et al., 2014).

2.2.2 Intervention components

The PREPARE Cape Town intervention was multi-component, consisting of the following components;

1) The Educational program; A curriculum delivered by facilitators in the Life Orientation subject area.

2) The School health service; A school-based preventive reproductive health service.

3) The Safety program; The involvement of local police officers and a school safety committee in school safety, including a Photovoice project to involve a sample of students in

improving the safety of their school environment (Mathews et al., 2016; Mathews et al., 2010).

As this process evaluation only includes the educational program and the school health service, there will only be given a brief introduction to the safety program. An overview of what each of the components were planned to include is provided as attachment.

1) The Educational program

The educational program (EP) was held on the school premises once a week immediately after school ended, in groups of up to 25 participants (Mathews et al., 2016; Aarø et al., 2014). The program consisted of 21 sessions lasting for 1-1.5 hours, and was grounded in the Respect4U program, an IPV- and HIV-prevention intervention informed by social cognition models, with education methods being both interactive and skill-based (Aarø et al., 2014). The facilitators received a two-week training course provided by an experienced supervisor and subsequent weekly training, supervision and session preparation support. During the two-weeks training, each course session was reviewed and rehearsed one by one (Mathews et al., 2016; Aarø et al., 2014).

The EP aimed to decrease gender-inequity, such as ideologies of male superiority that legitimize control of women by men, which are considered motivating factors contributing to the IPV-prevalence and preventing women from negotiating safe sex practices (Mathews et al., 2016; SaMRC, 2017; Aarø et al., 2014). Consequently, lessons were designed for to modify gender power inequities and norms that legitimate male control in relationships, increase the agency of females in regard to relationships and sexuality, improve communication to prevent the use of violence in relationships, and increase skills and motivation to increase condom use and delay sexual debut (Aarø et al., 2014). Each participating student received a worksheet containing youth-friendly information about all topics covered and easy to follow instructions about interactive sessions (Koech et al., 2013). Relatedly, facilitators received manuals providing the specific and critical outcomes, as well as knowledge, skills, values, behavioral changes and attitudes that students would gain from each lesson. Both the learners' worksheets and the facilitators' manuals were provided in English and Afrikaans (Mathews et al., 2016; Aarø et al., 2014).

The program was originally designed and intended for implementation in the life orientation curriculum (LO), a compulsory life skills subject and learning area taught at all South African public high schools, as HIV/AIDS education form part of the focus areas of LO (Department of Education, 2002). In this event, parental consent would not be required for participation in the intervention (Mathews et al., 2010). As a result of changing education policies in the research location, however, the investigators were prohibited from implementation during school time. Therefore, parental consent became necessary for the whole intervention, as the National Health Act, number 61, mandates active written consent from a parent or legal guardian for all research conducted with research participants under 18 years of age (Mathews et al., 2015; Mathews et al., 2016).

The requirement of active consent raised concern among the PREPARE research team as to whether they would be able to reach adolescents who had already had their sexual debut or who were victims or perpetrators of IPV (Mathews et al., 2015). As the topic of PREPARE is considered to be sensitive, it is suggested that adolescents may not feel comfortable confronting a parent or guardian about participation (Zuch et al., 2012). Moreover, it has been demonstrated that some parents don't receive information letters and consent forms, and that several South African parents are unable to read information letters, causing them not to reply (Mathews et al., 2005). To encourage attendance, refreshments were offered at each session. In addition, each adolescent was given a "loyalty card" that was stamped each time they attended the EP or SHS. When attending 15 sessions, the adolescents were given a certificate and a supermarket gift voucher (Mathews et al., 2016; Aarø et al., 2014).

2) The School Health service

The school health service (SHS) was implemented in cooperation with the Western Cape Department of Health, the City of Cape Town Health Department, and the Desmond Tutu HIV Foundation. The service was designed following the new South African Integrated School Health Policy, which outlines the role of respective departments in addressing the health needs of learners, providing a comprehensive package of services addressing various conditions contributing to morbidity and mortality amongst adolescents (Health Basic Education, 2012).

Each participating adolescent was provided with a general health check. The SHS was free, and involved physical health, such as blood pressure measurements, vision and nutrition

screening, SRH education, identification of need for SRH services or commodities, and referral for additional essential services at the nearest community clinic, where they were provided free of charge (Mason-Jones & Beattie, 2013; Mathews et al., 2015; Mathews et al., 2016; Aarø et al., 2014). Further, the SHS aimed to increase adolescents' access to contraception, condoms, pregnancy tests and STI analysis and treatment (Mathews et al., 2016).

A nurse from the local clinic closest to the school implemented the service. The SHS was held in school premises once a week, directly after school (Aarø et al., 2014; Mathews et al., 2016). The role of the nurse was to provide information, support and advice, and to facilitate and help enhance positive attitudes toward the adolescent´s general health, relationships, emotional wellbeing and sexuality (Mason-Jones & Beattie, 2013). Correspondingly, the training provided to nurses prior to the intervention was "feeling based", including the nurses to reflect upon their own lives and choices, in order to become good role models. A PREPARE nurses manual was provided as a complement to the PREPARE training course. The manual covered main areas affecting the sexual health and emotional wellbeing of adolescents, the importance of self-reflection and role modeling, and principal topics such as how to prevent violence (Mason-Jones & Beattie, 2013). The importance of nurses' personal views or concerns not to be an obstacle to providing client-centered support is clearly outlined in the manual (Mason-Jones & Beattie, 2013). Although the manual consisted of important information, it was through participation in the training that the nurses were supposed to build on and develop skills, abilities and faculties needed to become the Clinic-in-Schools Nurse that was intended for the program (Mathews et al., 2016; Aarø et al., 2014).

3) The Safety program

The PREPARE safety program focused on school safety and reduction of all forms of violence, including sexual violence in schools. It comprised a partnership between schools, including a school safety committee, and police officers. The program aimed to improve school safety, teach students safety planning skills, provide mentoring to students and to raise awareness of the laws on violence (Koech, 2013; Mathews et al., 2016). In addition, a program named "Photovoice" was implemented with 20 randomly selected students at each school, facilitated by two PREPARE-investigators (Mathews et al., 2016). Through Photovoice students were given the opportunity to take photographs of, think critically about and raise awareness of community safety issues to teachers, parents, police officers, and

community stakeholders. The specific aim was to influence policy and to prompt concrete change (Aarø et al., 2014; Koech, 2013).

Photovoice is described in great detail elsewhere, and a process evaluation report from a Photovoice Pilot Project for School Safety in Cape town is previously conducted (Zuch et al., 2012).

2.2.3 Process evaluation data

The evaluation data conducted in PREPARE Cape Town relied on a combination of qualitative and quantitative approaches, whereas the different approaches would complement each other in various stages of the project. Process evaluation data was collected through observations of intervention sessions, interviews with the participating facilitators and nurses, interviews with principals from a selected 10 of the intervention schools, and focus groups with a selection of the facilitators and with grade 8 students (Aarø et al, 2014). The data were collected to improve the understanding of findings from the quantitative studies, which is one of the aims of this thesis. No specific theoretical framework for process evaluation was used in the collection of the data (Mathews et al., 2016).

2.2.4 Behavioral outcomes of the PREPARE Cape Town intervention

The hypothesis guiding the evaluation of the effectiveness of the PREPARE Cape Town intervention was that it would delay sexual debut, increase the use of condoms, decrease the number of sexual partners among adolescents, and affect IPV (Mathews et al., 2016).

The PREPARE Cape Town demonstrated the potential of interventions such as PREPARE to have beneficial effect on one of the factors that strongly affect adolescents' risk of STIs and HIV. High baseline rates of IPV victimization were found, with a reduction both in intervention and control arms over the course of the study. Significantly greater reduction was found in the intervention group, indicating that the intervention shaped intimate partnerships into more safe and appropriate ones. Greater impact on IPV victimization was observed among those with higher rates of education session attendance (Mathews et al., 2016).

In spite of the above, the evaluation did not indicate participating learners to be less likely to have their sexual debut, more likely to use condoms or have fewer sexual partners than those in the comparison group. Consequently, it provided no evidence of reduced sexual risk

behavior. In addition, the learners attending the most education sessions did not report less sexual risk behavior than those in the control group. Lastly, the "quality" of sexual debut was not improved among the intervention participants, defined by use of condoms and contraception at first sex, absence of pressure at first sex and absence of regret about first sex (Mathews et al., 2016).

2.3 Process evaluation in public health interventions

Process evaluation is suggested an important tool in examining reasons for lack of behavioral outcomes in interventions such as PREPARE Cape Town (Michielson et al., 2008; Sani et al., 2016). In contrast to impact or outcome evaluations, which describe program efficacy and the outcomes obtained, process evaluations aim to understand the functioning of an intervention by examining paths in the implementation, mechanisms of impact, and contextual factors (Moore et al., 2015). Process evaluations can be formative, which involves using the data to adjust the program while ongoing. Or summative, as in this thesis, where the process evaluation aims to examine the views of participants in the intervention, study how the intervention was implemented, investigate contextual factors that may have affected the intervention and assess whether the intervention reached the target group (Oakley, Strange, Stephenson, Forrest, & Monteiro, 2004; Steckler & Linnan, 2002).

Windsor (2007) defines process evaluation as an assessment designed to document how well and how much of the implementation procedures were provided, to whom, when and by whom. Additionally and as previously mentioned, Moore et al. (2015) explains a process evaluation as a study that aims to understand the functioning of an intervention by examining implementation, mechanisms of impact and contextual factors. Within the last definition, "implementation" refers to the process through which interventions are delivered, what is delivered in practice, and the quantity and quality of what is delivered. Further, "mechanisms of impact" refer to the intermediate mechanisms through which intervention activities produce intended or unintended effects. Such mechanisms include how intervention activities and participants´ interactions with them trigger change. Lastly, "contextual factors" refer to factors external to the intervention, such as the school environment and social constructs that may influence the implementation and functioning of interventions (Moore et al., 2015). Such information may in turn be used to interpret and explain intervention outcomes, and provide input for future planning (Nutbeam & Bauman, 2006; Steckler & Linnan, 2002).

In general, previous process evaluations have suggested five important areas challenging the ability to demonstrate significantly positive results in adolescent's SRH interventions; 1) Significant numbers of adolescents are not adequately reached by the interventions intended for them, 2) Interventions that have shown to be ineffective continue to be implemented, 3) Interventions that have been shown to be effective are delivered ineffectively, 4) Interventions have limited effects because they are delivered fragmentary, 5) Interventions are delivered with low intensity or short duration resulting in limited or transient effects (Chandra-Mouli et al., 2015; Saunders et al., 2005). These areas especially account for interventions containing of multiple components (Chandra-Mouli et al., 2015).

Evaluation is always incomplete, as it is considered impossible to assess every element of an intervention. Instead, decisions are made about which evaluation criteria and intervention objectives to prioritize (Moore et al., 2015; Naidoo & Wills, 2016). In this thesis, such decisions are brought forward in the methodology description, and by explaining delimitations in the introduction.

2.3.1 Structure and theoretical framework of process evaluation

Although practical frameworks and models are available to guide the development of process evaluation plans, the use of such frameworks is less common (Saunders et al., 2005). Similarly, though process evaluation data were collected in PREPARE, no particular theoretical framework was used in the collection of data (Mathews et al., 2016; Aarø et al., 2014).

Some general issues considered important to address when process-evaluation plans are developed include understanding how the SRH-intervention was supposed to work, describing the determination of the process evaluation, and to consider how program characteristics and context may affect implementation (Nutbeam & Bauman, 2006; Steckler & Linnan, 2002). Further, Saunders et al. (2005) and Steckler and Linnan (2002) present seven key process evaluation measures that may be used to structure process evaluations. These measures are called; Fidelity, Dose delivered, Dose received, Reach, Context, Recruitment and Implementation (Saunders et al., 2005; Steckler & Linnan, 2002).

The key process evaluation measures listed in table 1 were chosen to guide this master thesis. The table is self-constructed in word, based on key process evaluation measures as presented by Saunders, Evans, and Joshi (2005) and Steckler and Linnan (2002). An explanation of the remainder key process evaluation measures as presented by Saunders et al. (2005) is provided in appendence.

Component	**Definition**
Fidelity (Quality)	The extent to which the intervention was delivered as planned. Fidelity represents the quality and integrity of the intervention as conceived by the developers and implementers.
Reach	The proportion of intended target group that participates in an intervention. Reach is often measured by attendance, and includes documentation of potential barriers to participation, and a description of those who participated and those who did not.
Context	The aspects of the social, political and economic environment that may influence intervention implementation.

Table 1: Key process evaluation measures.

In this chapter the literature review and conceptual framework have been presented to introduce the field to be researched and to create a foundation that constitutes the context in which the intervention was situated, and that findings later will be discussed within. The remainder of the thesis will present and focus on the findings of the thesis, starting by providing a detailed description of the methodical process undergone in order to answer the research questions.

3.0 METHODOLOGY

Methodology concerns the path of how new information is gathered and how data is analyzed (Kristoffersen, Tufte, & Johannessen, 2010). This chapter will aim to provide a detailed description of the methodological process conducted in order to answer the research questions. It will start with an explanation of the choice of method, study design, and describe the analysis of data material undertaken. Ethical considerations will be presented in the end.

3.1 Choice of research method

A qualitative research the design was chosen for the process evaluation, as the research questions guiding this thesis aimed to understand the perceptions of the participating facilitators, nurses and principals involved in the PREPARE Cape Town implementation. In qualitative analysis, knowledge is developed from experiences by interpreting and summarizing empirical data (Kvale, Brinkmann, Anderssen, & Rygge, 2015; Malterud, 2001b). The thesis follows a qualitative inductive approach inspired by phenomenology (Kvale et al., 2015). Inductive approaches aim to capture the participants' perspective (Nilssen, 2012). Likewise, phenomenology is largely suitable for identifying how people experience different social phenomena as perceived by the informants (Giorgi, 1997; Kvale et al., 2015; Nilssen, 2012). In addition, phenomenological approaches perceive that behavior change may be promoted through multiple different processes and the relationship between them (Bourdieu, 2007). This was considered relevant to this thesis, as the process evaluation aimed to understand and explain how different factors may have influenced the implementation of PREPARE Cape Town, and further how this may have affected the behavioral outcomes. A widespread misconception is that qualitative method frees the researcher from the requirement of a research structure, as detailed documentation of the analysis is required in order for research to be able to be counted as scientific (Malterud, 2001a).

3.2 Study design

Data material was obtained through the principle investigator of the PREPARE Cape Town intervention; both interview data and PREPARE documents. A document analysis of a collection of PREPARE Cape Town documents and peer-reviewed publications, and a secondary data analysis of a total number of 32 interviews were conducted. To complement

the findings from document analysis and in order to clarify significant details about PREPARE Cape Town, an additional interview with one of the investigators of the PREPARE Cape Town team was conducted. The latter was mainly used to clarify and adjust details regarding the intervention. Therefore, no particular analysis was undergone with that particular interview. Accordingly, the mentioned investigator is not included in the study sample. The main aim of the document analysis of PREPARE documents was to identify the implementation plan of PREPARE Cape Town, evasions from the original plan, and to get an overview of the existing process evaluation data. Further, the secondary data analysis of interviews conducted with the facilitators, nurses and principals in PREPARE Cape Town aimed to understand the perceptions of the participants involved in the implementation of the study, and was perceived to be the main data material of the thesis.

3.3 Sample

The sample contained of the nurses, facilitators and principals participating in the delivery of the PREPARE Cape Town intervention. To recruit facilitators, the PREPARE research team advertised widely in all communities and in local newspapers. They then interviewed the facilitators, screened them for positive gender norms and assessed their competence and comfort with sexuality education and condom demonstrations. It was necessary that the facilitators had police clearance and that they got recommendations from people they had previously been working for (Mathews et al., 2016). Further, the participating nurses were employed by the local government´s health services. To select the nurses, the PREPARE team met with the clinic manager before the projects onset. The clinic manager told the team what nurses they assumed would be interested in working with adolescents, who they expected would be best for the task and who they would be able to release from the clinic (Mathews et al., 2015; Mathews et al., 2016; Aarø et al., 2014). Some clinics also provided a health-promoter to assist with health education (Mason-Jones & Beattie, 2013; Mathews et al., 2016). As the nurses and health workers had the same role in the project, they are both referred to as nurses in the thesis. Lastly, the participating principals were already employed as principals in the participating schools (Mathews et al., 2016; Aarø et al., 2014).

3.4 Interview data

The following description of the interview data analysis refers to the interviews conducted with the mentioned facilitators, nurses and principals. Individual face-to-face interviews were

held with all key implementers. In addition, focus group interviews were held with some of the facilitators (Aarø et al., 2014). Focus group interviews allow for exploring group consensus and variability in views on a specific phenomenon, and can be used for obtaining feedback in the developmental stages of survey design or as part of process evaluation data collection to inform the development on future interventions (Malterud, 2003; Steckler & Linnan, 2002; Thagaard, 2003). In this thesis, the same method for analysis was used for the individual face-to-face interviews and the focus group interviews. The table below shows an overview over the interviews included in the process evaluation.

Data source	**Number of interviews**
Nurse interviews	13
Facilitator interviews	10
Principal interviews	9
Total	32

Table 2: Intervention deliverer interview data

The data collection took place in schools and was performed by female PREPARE investigators trained to conduct interviews (Mathews et al., 2016). The interviews were conducted in English, with duration of 30-60 minutes. Each team followed a standard procedure designed to provide all participants with necessary background information and to constitute a neutral and open setting (Mathews et al., 2016). The participants were advised to respond to questions according to their own comfort level, and were informed prior to participation that they had the right to withdraw from the study or refuse to answer questions at any time (Aarø et al., 2014). The interviews utilized a narrative approach to draw out participants' perspectives and experiences (Aarø et al., 2014). Narrative interviewing typically involves an open-ended approach, whereas the interviewer encourages the respondent to let their story unfold (Kvale et al., 2015). Semi-structured interview guides were used to ensure that key topics were addressed in the interviews. All interviews were tape-recorded and transcribed by PREPARE investigators (Mathews et al., 2016; Mathews et al., 2010; Aarø et al., 2014).

3.4.1 Systematic text condensation

As the interview data contained of a total number of 112 pages of transcripts, it was important to find a suitable method to assist in keeping track of data, systemize and preserve the original meaning as perceived by participants throughout the analysis. As a result to not having

conducted the interviews and transcription, which are both considered to be part of the analysis in qualitative studies, it was preferable to find a method that required a detailed revision of data (Malterud, 2012; Malterud 2001b). Systematic text condensation (STC) was selected as a suitable tool for this purpose. The method is perceived sufficient for thematic cross-case analysis of various kinds of qualitative data, such as interviews, observations, and documents, and was therefore considered convenient in this thesis (Malterud, 2012).

STC is developed from traditions shared by most of the methods for qualitative data analysis. It is especially inspired by Giorgis´ phenomenological analysis (1985, 2009), and is modified by Malterud (2001a). Similarly to inductive phenomenological approaches, Giorgi aims to develop knowledge about the participant's experiences, with the principle objects described as accurately as possible, including the relationships between the principle and other phenomena. Connecting presumptions about the field may allow critical attention to the experience (Giorgi, 1985; Giorgi, 2009). STC is a descriptive approach, presenting the experience of the participants as expressed by themselves, rather than exploring possible underlying meaning of what was said (Malterud, 2012). Further, STC holds an explorative ambition to present vital examples presented by participants, instead of covering the full range of potential available phenomena (Malterud, 2012).

STC consists of the four following steps (Malterud, 2012):

1) Getting a total impression
2) Identifying and sorting meaning units
3) Condensation – from code to meaning
4) Synthesizing – from condensation to descriptions and concepts

1) Getting a total impression

The first step in analyzing the interview data was reading through the 112 pages of transcript in order to establish an overview and to get a general impression of the whole. All interviews were read through twice, encountering the data with an open mind and a sharp awareness of the participants' voices (Malterud, 2001b, 2012). The interviews conducted with the facilitators, nurses and principals were conducted with different interview guides, and were therefore read through separately in order to maintain particular aspects of the perceptions of each subgroup. Initial themes associated with the participant's experiences presented starting

points for organizing data (Malterud, 2012). Interviews were revised in the following order; facilitators, nurses and principals.

2) Identifying and sorting meaning units- from themes to codes.

After reading through all the pages of transcript in the first phase of analysis, the impression was that it would be difficult to manually keep track of such a large number of pages of transcript. Therefore, the software NVivo for Mac, version 11, was chosen as a tool to explore and organize the data in further analysis. NVivo is a widely used high quality computer program for managing qualitative data, and was helpful in keeping track of the data at all times. The particular tool was chosen both because it was noted in the PREPARE protocol for how the qualitative data would be managed, and because it could be used in analyzing both the interviews and the PREPARE documents, which were reviewed separately (Aarø et al., 2014).

In the second step of analysis, data elements that could elucidate the research questions were identified and organized. First, transcripts were reviewed line-by-line to identify meaning units, which are text fragments containing information about the research question. Due to the large number of transcript from interviews compared to the scope of the thesis, the parts of the interviews that did not contain significant matter regarding the research topic were removed, making the remaining data amount more manageable for further analysis. Further, it was reflected upon whether parts of the participant's statements appeared as questioning, wondering or eager, as well as breaks and expressions like "eh", "mm", "yes" and "no", as such words may indicate that the speaker hesitates, is uncertain or has to think something through. In all occasions when it was unclear what statements implied, they were removed in order to prevent that pieces of data that were inaccurately interpreted would influence the results of the process evaluation.

According to STC, only parts of the whole text are meaning units, as transcripts also contain text without relevance or contextual information (Malterud, 2012). In this step meaning units were not limited to sentences or remarks, and rather too much than too little text was included. The meaning units were then coded. Coding includes identifying, classifying and sorting meaning units potentially related to the previously identified themes, and involves temporarily separating fragments of text from their original context for a cross-case synthesis, using themes as road maps (Malterud, 2012). In NVivo, "code groups" are called nodes. The

codes were divided into three code groups/nodes, by separating the meaning units into groups that provided knowledge about each of the individual research questions. As some meaning units provided information about more than one of the research questions, some of the meaning units were initially coded several places. These were moved as the coding proceeded, as some seemed to belong under another node than originally perceived. Each of the sections contained a suggested list of themes and sub-themes with names constructed guided by the research questions and conceptual framework. As the understanding of the data increased during the process of evaluation, some of the themes originally chosen to describe the topic were found inadequate, and were consequently improved. After the meaning units had been sorted out, they were systematically read through to make sure that the code groups differed distinctively from one another, gathering the ones that were similar and splitting the ones that differed (Malterud, 2003).

Memos were written to keep track of all thoughts and decisions made during analysis, which included writing down all analytic thoughts that came up during coding. In addition, a decision trail was developed to document decisions along the way. This made it easier to make a swift return and enable fresh choices, as major paths were documented. Further, the memos and the decision trail enabled the researcher to report matters essential for a transparent process. Still, the process of analysis cannot be entirely articulated (Malterud, 2012; Nilssen, 2012).

3) Condensation – from code to meaning.

The third step of the analysis involved systematic abstraction of meaning units within each of the code groups established during the previous step. The empirical data was reduced into a selection of meaning units across individual participants perceptions, experiences and thoughts on the research topic (Malterud, 2012). Data no longer appeared as 112 pages of transcript, but were organized and reduced to a few code groups containing meaning units with the capability to reveal different aspects of the participants' perceptions. The meaning units from each theme were then reviewed and sorted into sub-themes by writing a summary containing of every single meaning unit within a theme and transforming them into a more abstract format. According to Malterud (2012) this summary is called a "condensate". A condensate is an artificial quotation maintaining, as far as possible, the original terminology applied by the participants (Malterud, 2012). While summarizing statements in the interviews, caution not to change the content into something different than what was originally expressed

was aimed for, both in respect of those interviewed and for the sake of the precision of the data. First-person format was applied as a reminder to represent every participant who provided information on the specific issues. Names and borderlines of the code groups were improved during the process, according to the progressing understanding. Relevant quotations were identified for each code group.

4) Synthesizing- from condensation to descriptions and concepts.
In the fourth step, data was re-conceptualized, returning to the full transcript, validating whether the synthesis was still representative of the original content. As the cross-case results were outcome of a synthesis of multiple meaning units, it was not expected to identify exact associations to each participant would be identified. Yet, concepts or expressions that were difficult to trace back to the original data, were reflected upon and a few were removed. Finally, the full transcript was searched systematically for data that challenged the conclusions. One of the benefits with using NVivo was that a full format of the original data material was kept in the software, so that the analyzed material easily could be compared with the original content. The condensates and quotations from every subgroup within a code group formed stories about the phenomenon grounded in the empirical data developing an analytic text, presenting the most significant content and meaning. These were written in third-person format as a reminder of the responsibility of interpretations (Malterud, 2012).

3.5 Document analysis

As mentioned, the interview data was supplemented with analysis of a selection of document material generated by the PREPARE research team. A document analysis is a qualitative research method in which the researcher collects data to be analyzed in order to identify important connections and relevant information about different conditions in the study population (Grønmo, 2004). As in this thesis, the most common situation is when document analysis is combined with interview data in that the interview material is the main source of data and that documents of various kinds are used as background information for the field one is studying (Fangen, 2010).

One of the benefits of combining interview data with analysis of documents is that you get the opportunity to a broader contextualization of the studied material or society (Fangen, 2010). In contrast, one of the weaknesses of qualitative content analysis is that the researcher's

background and perspective may affect the selection and interpretation of the texts. In the event that the researcher has a narrow perspective, this may lead to a weak selection of texts included. Similarly, texts that are relevant to the issue may be overlooked because they do not conform to the researcher's perspective (Grønmo, 2004; Kristoffersen et al., 2010). There is a possibility that this may also have been the case in this thesis. To prevent this, PREPARE information from several different sources of text was included, as well as clarified details that were perceived as unclear by interviewing one of the PREPARE investigators.

A document analysis can include all written sources relevant to the researcher during its analysis, ranging from project documents and descriptions relevant in this thesis to documents of private nature such as diaries and letters. Documents can be divided into primary, secondary and tertiary sources. Primary sources are the source closest to place and time. In the literature, the primary source is the original publication (Kjeldstadli, 1997). In this thesis, only primary sources of PREPARE data were included.

The analysis of documents may differ. The data can be used descriptively or one can do an in-depth analysis (Malterud, 2003). As the document analysis in this thesis was used as background information and to put interview data in context, the point was not to conduct an in-depth analysis where one quantifies concepts of the topic the municipality focuses on. Instead, a comprehensive review including coding of the material in NVivo was conducted. The analysis had to be detailed enough to understand how the PREPARE intervention was planned for implementation and any differences from the original plan, but not as detailed that it would overcome the scope of the thesis, as including too much data may cause a poor analysis process due to lack of time (Kristoffersen et al., 2010).

The table below explains what PREPARE documents were included in the analysis, and the aim of analyzing each type of document.

Type of document	**Aim of document analysis**
PREPARE project protocol	To identify: - Background information on PREPARE (Cape Town intervention) - Plans for intervention. - Project rationale, aims and objectives. - Note: the protocol contained limited information about the process evaluation plan.
Research Synopsis	- Identify how the Cape Town intervention was planned for

PREPARE	implementation, background information, and specific aims and objectives.
PREPARE facilitator manual	- Identify the facilitators role and how the particular sessions where planned for implementation. - Gain insight in the facilitator manual in general, as this is mentioned in the interviews with the participants.
Cape Town PREPARE nurses Manual	- Identify what exactly the nurses' role involved and how the nurses' intervention was planned for implementation. - Gain insight in the nurses' manual in general, as it is mentioned in the interviews with the participants.
Cape Town PREPARE school safety booklet	- Identify how the school safety program was planned for intervention.
PREPARE worksheets for learners	- To gain insight in how the intervention applied to learners, and in the learners' worksheets in general.
Activity table	- To gain insight in the specific components and how the activities were planned for implementation.
Peer reviewed PREPARE publications; (Mason-Jones et al., 2016; Mathews et al., 2015; Mathews et al., 2016; Zuch et al., 2012; Aarø et al., 2014)	- To gain information about sampling of schools and adolescents and what effect/impact or lack of effect/impact the project had. - To gain insight in the plan for implementation and in any implementation details differing from the original plan.

Table 3: Document analysis overview

3.6 Ethical considerations

As a researcher there are certain ethical responsibilities that must be kept in mind. These ethical responsibilities exist to protect people from being abused as a result of participation in research (Ruyter, 2003). The Helsinki declaration states that it is the researcher, and not the participants in the study, that holds the full responsibility to ensure that abuse does not take place in research studies (Ruyter, Førde, & Solbakk, 2014).

3.6.1 Ethical approvals

The PREPARE Cape Town intervention was part of the PREPARE project, which was approved by the Western Norway Regional Committee for Medical and Health Research Ethics before onset. Since the project consisted of different components across sites, each side applied for ethical clearance separately. Ethical approval for the Cape Town intervention was obtained by the Human Research Ethics Committee, Faculty of Health Sciences, University of Cape Town (Aarø et al., 2014). In addition, the Human Research Ethics Committee approved the student responsible for this process evaluation as study staff on September 09th 2016, providing ethical clearance for this particular master thesis. The individual master project was

also reported to the Norwegian Centre for Research Data (NSD) November 29th 2016. Lastly, a data sharing agreement securing that the data used in this study was kept in password-protected files at all times and deleted once the process evaluation was completed was signed with the Adolescent Health and Research Unit, Division of Child and Adolescent Psychiatry, University of Cape Town. All documents stating ethical approval are attached to the thesis.

3.6.2 Informed consent

Informed consent to participate in research relates to the fact that participants should be well informed about the study and its purposes before giving their approval of participation. It also states that the participants are welcome to withdraw from the study at any time. Active consent from parents and students was required for the Cape Town intervention (Mathews et al., 2016). All intervention participation was voluntary and all groups involved were carefully informed about intervention plans and research components. Likewise, the interviews conducted were designed to pose minimal risk to the participants, and all the participants were advised prior to participation in data collection that they had the right to withdraw from the study and to refuse to answer questions (Aarø et al., 2014).

3.6.3 Confidentiality

Confidentiality refers to the fact that the researcher(s) and the participants should agree on what sort of information will be published. Often, this includes that data that can be linked to a particular individual should be fully anonymized before publishing, or not be published at all (Fangen, 2010; Kvale et al., 2015). The PREPARE research staff were trained regarding data collection procedures, so that confidentiality was ensured. No names or other personal details were connected to the data and all transcripts were kept locked in secure locations (Mathews et al., 2010). During the interviews, the principals, facilitators and nurses were told that the data conducted from the interviews might be reported, but that nothing would be presented pointing to individuals, but rather as an overall report. To keep the promises made by the research team and in order to keep findings from the interviews as confidential as possible, the decision to guarantee anonymity was made in this study. Therefore, the findings are only marked by the occupation of the ones being interviewed and does not include information about names, sex of participant or what school data was collected in. To present findings this way was considered not to impact the outcomes significantly, as this process evaluation does not aim to compare the participating schools of participants, but to rather

create a holistic picture of how the intervention was implemented anchored in the participants' general experiences.

3.6.4 The researchers role

It is essential to be aware of ones own pre-conceptions prior to and throughout the analysis of data, so that prior knowledge and understanding affect the results as little as possible (Fangen, 2010; Gadamer, 1989). The researcher´s pre-conceptions include not only the selection of the conceptual framework, but also the language, background, experience, values, faith and beliefs, knowledge, research philosophy and attitudes to the field or area of study (Malterud, 2001b; Nilssen, 2012). The researcher role in incorporating and interpreting data influences the ability to discover a wide range of nuances of the same reality by seeing them from different perspectives. Therefore, different researchers may lead to different conclusions being drawn, even though analyzing the exact same field (Malterud, 2001b). It is considered important to be aware of and explain the researcher´s preconceptions in order for the reader to be able to understand the researcher´s choices made throughout the research process. Such documentation involves self-awareness and critical self-reflection by the researcher concerning his or her potential biases and predispositions, as these may affect the research process and the final conclusions (Johnson, 1997).

In qualitative interviews, ethical issues typically arise because of the unequal relation of authority between researcher and the informant. Such inequality often gets amplified where there are social differences, such as different social status between the researcher and the interviewee or differences in language or culture. These differences manifest in a multitude of ways, such as the words that the researcher uses, how the study is presented and in the researchers preconceptions (Bourdieu, 2007). In analyzing the data it was important to actively try to limit these differences as much as possible. This was done by presenting the findings in the same language and themes as presented in the interviews, instead of translating it into academic language. To present data according to original themes and language is also perceived to strengthen the descriptive validity in research, as will be explained later on (Malterud, 2001b; Maxwell, 1992). Although the themes presented in the discussion reflect process evaluation constucts, the original content of the data was further deliberately attempted preserved also in this chapter.

It is vital as a researcher to acknowledge that the interpretation or explanation of an event or phenomenon in one society might be understood quite different in another (Brodtkorb & Rugkåsa, 2009). As every culture creates a tradition of knowledge and understanding, different sets of values and concepts are used to interpret and understand the world. Such values and concepts are not necessarily common or universal (Brodtkorb & Rugkåsa, 2009). To be a female growing up in a western country may have influenced the choice of what information was included in the thesis. In addition misinterpretations may have been made regarding issues rooted in the specific demographics, culture and history of Cape Town. As an attempt to mitigate the impact of such differences and to increase the understanding of the context of the study, a wide specter of information about South Africa's culture, demography, history and way of living was examined. In addition, attempts were made not to consider the importance of data based on own preconceptions. Being a nurse with a master's degree in Public Health, constant awareness was dedicated in order to avoid favoring of the nurses in the analysis of the interviews. Instead, a public health perspective was emphasized throughout, with all occupational groups equally accentuated.

3.6.5 Reflexivity

In addition to my role as the author of this thesis, it is also important to mention the role of the researchers that conducted and transcribed the interviews. Reflexivity refers to the researcher's understanding of how their presence may influence the situation and the behavior of the informants, what kind of relations the informant has with the researcher, and thus what information the researcher receives (Johnson, 1997). As complete objectivism is impossible in qualitative research, ensuring that the findings are anchored in the participant's experiences and ideas, instead of the researcher own preferences is necessary (Shenton, 2004).

Calnan (1987) outlines that interviewees may be influenced by something he calls "the surface view", meaning that people tend to answer questions based on what is generally accepted. In this study it is considered that findings may have been influenced by the fact that PREPARE investigators performed the interviews. As the investigators were present throughout the intervention, the informants were already familiar with the interviewers. This may have led to some of the interviewees having the feeling that there was one right answer and that they had to answer to please the researchers, due to the fact that they were already familiar with them (Kvale et al., 2015). Some of the interviewees did, however, outline

limitations in actions conducted by the PREPARE team, indicating that they were confident to express their thought correctly, even in the events where their answers did not please the researchers.

Saunders et al (2005) describe how the researcher never can be sure that respondents are telling the exact truth, and the researcher should therefore try to create some sort of trust between the researcher and respondent. Therefore, it may in fact be some beneficial effects with having team members conduct interviews, as they may have been able tend to engage with and understand the informants, the project and the context better than someone outside the project. Nilssen (2012) further outlines that it is often counted as an advantage that those who transcribe know the context, as in PREPARE. Not knowing the research area may lead to misinterpretations, as those who transcribe may then misinterpret what has been said due to lack of knowledge on the area (Nilssen, 2012).

In this chapter, the methodology used in this process evaluation has been described. In the following chapter, findings from the data analysis will be presented. Methodological strengths and limitations will be discussed in chapter 5.

4.0 FINDINGS

The primary objectives of the process evaluation were to assess how the PREPARE Cape Town intervention was intended to be implemented compared to how it was actually implemented, and to gain understanding of implementer´s perceptions and experiences of the factors influencing the implementation of PREPARE. This was in turn targeted to complement previous publications made by the PREPARE research team, and to assist in the interpretation of behavioral outcomes of the intervention.

The empirical findings presented in this chapter are mainly drawn from the interviews conducted with the facilitators, nurses and principals in PREPARE Cape Town in order to identify factors of possible influence to the implementation. In addition, parts of the findings evolved from the document analysis of PREPARE publications and documents, and from the interview conducted with the PREPARE investigator. As mentioned in the methodology, findings will be presented according to the original themes and expressions mentioned during interviews with the aim to maintain the original content. An overview of these themes is provided in the table below:

Category	**Identified factors of influence**
Structural factors	*Time, Staff limitations, Communication, Learners´ attendance, Learners´ interaction, Parental involvement.*
Contextual factors	*Assessment of social issues, Intervention providers' characteristics and preconceptions, Preconceptions among learners.*

Table 4: Factors influencing program implementation

4.1 The PREPARE Cape Town implementation

The document analysis revealed that EP was implemented in all 20 of the intervention schools, however not completed in two. In one, the intervention was interfered by a religious fast. This is consistent with one of the principals reporting that 80% of the learners were Muslims, and that they attended Madressa, an institution where they study Islamic theology, after school. In the other, the school could no longer find a free afternoon for sessions (Mathews et al., 2016). Further, the SHS operated in 17 schools. In two schools, the public health services were not able to provide school health nurses and in one the school was not able to allocate an afternoon for the SHS (Mathews et al., 2015; Mathews et al., 2016). The

interviews conducted with the implementers did not contain information about how many of the components were delivered in each particular school. Therefore, the rest of this chapter represents factors perceived to influence the implementation of PREPARE Cape Town, regardless of the number of components included in each school.

4.2 Factors influencing the implementation

A range of important information evolved from the research data, thereby providing an opportunity to study many different aspects of the intervention and a range of opportunities to structure the findings in different ways. In this thesis, findings are categorized into the mentioned structural and contextual factors influencing implementation. Structural factors refer to how the intervention was structured by the PREPARE team and deviations from the plan, including organizational factors and physical limitations such as time limitations. Further, contextual factors refer to factors that can be linked to the wider social, cultural, political and environmental aspect of PREPARE, both locally and distally.

How to categorize each factor was a matter of choice by the author, as some of the factors shaping implementation were in fact influenced by both program structure and context. As an example, learner's attendance is placed under structural factors, as elements such as PREPARE being situated after school was perceived to somehow influence the attendance rate. However, learner's attendance is also expected rooted in underlying contextual factors such as obligations to housework due to the economic condition in Cape Town (Mathews et al., 2016; Globalis, 2016). The contextual factors are considered to be less in the control of the PREPARE research team than structural factors. However, both the contextual and the structural factors are considered possible to influence through interventions such as PREPARE.

4.2.1 Structural factors

Time

Limitation in time occurred to be one of the most essential factors identified to interfere with intervention implementation according to the identified plan. Both facilitators and nurses agreed that time allocated was too short, both in regard of time allocated for each session and the duration of the total intervention period.

Some of the facilitators reported that limited time caused them not to be able to do all that was planned for each session, particularly leading some to leave out interactive parts such as games. As an example, two of the facilitators particularly mentioned not having done the session about how many partners were too many, a session whereas students would critically analyze the risks of multiple partnerships and transactional sex. Further, one of the sessions included a condom line-up whereas the facilitator or nurse was intended to do a practical condom-demonstration in order for the adolescents to develop motivation and skills to use condoms. Several of the facilitators reported that adolescents were experienced to be in high need of such demonstrations and that adolescents were experienced to be both interested in and collaborative during the condom-line ups. Still, some of the facilitators reported leaving the line-up out due to lack of time. In addition, some reported that in the events when the condom line-up was implemented, some had to rush through sessions, without the opportunity to answer questions or to clarify any misinterpretations that the adolescents´ had.

> *"Many of the learners didn't know how to use a condom. They asked me if they could ask more questions about the practical about condoms, but there was no time."* (Facilitator)

The initial plan was that the each educational session would be implemented separately, with separate aims and activities allocated for each session. However, due to time limitations and drop in attendance throughout the intervention period, the PREPARE investigator reported that the research team realized that they would have to combine sessions in EP in order to be able to get through all sessions, causing the importance of implementing the intervention as planned being stressed. In addition the learners' attendance was starting to drop, reportedly due to difficulties such as homework and house chores. The team members would tell the facilitators which sessions to combine and how to do so. The time for each session was supposed to remain the same; while the difference was that the facilitators had to go through two sessions in the same amount of time originally allocated for one. However, some facilitators reported having to do sessions in 45 minutes instead of the 1-1,5 hours allocated according to PREPARE publications (Mathews et al., 2016; Aarø et al, 2014).

Although the PREPARE investigator reported that facilitators received directions on how to combine sessions, the facilitators explained that when sessions were combined, important parts were left out due to time limitations and the experience to receive unclear directions on

what aspects to include and exclude. Consequently, a number of the facilitators reported feeling that they had to leave aside important parts of the project, as well as parts that learners enjoyed.

> *"The project was working very well, but as time went on and time became short we had to combine sessions, and mistakes were being done. Doing two sessions in 45 minutes. Some of the things you leave aside are the very exciting things for them. With time limits I sacrificed the meat of the program."* (Facilitator)

Some also reported that the learners seemed to disengage when classes were combined, causing them not to attend any more sessions.

> *"That whole class didn't come back. None of them came back. They told us: if you're going to combine sessions, we're not coming back."* (Facilitator)

Hence, it is suggested that similarly to the original lack of time, both the drop in attendance and the lack of fidelity to interactive parts of sessions may in fact have been reinforced instead of debilitated by sessions being combined.

Consistently with facilitators, the nurses outlined that the lack of time did not only lead to difficulty to address the adolescents misconceptions and myths regarding the use of condoms, but also in regard of other´ social issues such as gender inequality, violence, housing and alcohol abuse. They outline that in order for adolescents to open up regarding such issues, the intervention will require more time in order for the nurse to be able to hear the adolescents out once they do open up and for adolescents to get the opportunity to establish the confidence necessary to collaborate with the nurse.

> *"Time was not enough. The learners always wanted to talk longer and we had to cut them short. I was given 10 minutes to see each child. You cannot figure out what is wrong with the child in 10 minutes, especially for the social issues." (Nurse)*

Furthermore, the nurses reasoned the need for more time by the ability to properly fill out project paperwork in order to reach more learners. As mentioned, each participant received a "loyalty card" which was stamped at each session or nurse consultation, and was given a supermarket gift voucher and a certificate when attending at least 15 sessions (Mathews et al., 2016; Aarø et al., 2014). However, several of the nurses reported forgetting to fill out the loyalty cards that were meant to encourage learners attendance as a result of rushed

consultations. They outline that this may have diminished the learners attendance throughout the intervention.

Although the majority of the nurses reported experiencing that the service carried on for too little time, they outline that now at least the learners know where to seek advice.

> *"Now that the nurses have been to the school, they know there is a nurse at the clinic that they can go to. In fact some of the learners have already been here. They come and ask for me as they are familiar with me."* (Nurse)

The nurses experienced it as beneficial to have nurses from local clinics in such interventions, as the learners then got familiar with someone in the local community. They outline that to be able to ask for that particular person in the event of coming to the local health clinic may make it easier for adolescents to search such services. In the same regard, both facilitators and nurses suggest that the intervention staff should be consistent throughout the intervention.

Staff limitations

Coherent with the suggestions from the facilitators and nurses, the original plan was that nurses and facilitators would be consistent throughout PREPARE. In the interview with the PREPARE investigator it was however revealed that some schools experienced change in facilitators and nurses along the way. Even though being a facilitator was a paid job, the research team was only able to provide the facilitators work part-time, causing some facilitators having to quit and work somewhere else along the line. Consequently, new facilitators were trained throughout the intervention.

Further, some of the nurses involved in the study reported having staffing difficulties at the clinics where they worked. This caused some of the local clinics being unable to release the staff originally allocated for the intervention, leading to some nurses being prevented from getting to the schools to carry out the project according to plans. The nurses suggest that in order to be able to see more learners, it may be more sufficient for the nurses to visit the at schools fewer times, and instead stay for longer once they are there.

> *"We were short of staff so we could not always go there. Longer times would have been useful so that we could get to see many learners at one go and we would have had to be away from the clinic fewer times." (Nurse)*

Further, the nurses suggest that there should be permanent SHS located at all schools, with staff dedicated and trained particularly for the purpose of working with adolescents. In this event, they outline that health workers should be employed by schools especially for the interventions, instead of being taken out of the clinics on expense on the clinics work. In the event that having particular staff to deliver the service is not an option, nurses suggest that if they are to be taken out of clinics, more people from each clinic should be trained. In that case there would always be someone else available to carry out the service, in the event that certain staff is away or is needed in clinics.

> *"We had logistical problems here at the clinic. Initially I had 2 people who were trained to provide services to adolescents, but then we had a staff change and the staff we got were not trained in this so I could not send them to go and handle adolescents. In order to carry out this service one should make sure they have staff at the clinic that can be trained." (Nurse)*

The nurses reported that having leaders supportive in them taking part in the program made it easier to carry out the health service in schools, in spite of the identified staffing problems. They outline that clear communication between the PREPARE team, clinic leaders and nurses, is important in order to be able to collaborate to reach targets in such interventions. In the events when the nurses experienced lack of communication, this led to issues such as coming to the school before the students were ready and having to wait, which was inconvenient due to the limited staff in clinics. In order to make communication and working together go more smoothly throughout the intervention period, the nurses suggest that the whole team involved in PREPARE should have gathered frequently throughout the intervention.

Communication

Similar to the nurses, both facilitators and principals considered smooth communication as an important tool for accurate implementation. Although most of the implementers, both in regard to nurses, facilitators and principals experienced that the staff communicated well and were always on time, others mentioned some difficulty perceived important to address.

A selection of the facilitators perceived that communication differed a lot from team to team, and that logistics were limited in some teams. They suggest that facilitators should be included in decisions to a greater extent, as they are the ones being "on the ground". They

especially outline having the feeling that some team leaders were more interested in getting particular study outcomes, instead of the quality of the intervention implementation and that some team leaders were experienced not to recognize that the intervention implementation was important in order to receive particular outcomes.

> *"I felt that the team leaders were more interested in numbers than the quality of what we were doing. If you weren't paid, you felt you were not being looked after. To us as recipient, it felt as if nobody cared about us; all they cared about was the gold."* (Facilitator)

Some of the facilitators further outline that communication issues with team members were sometimes addressed in front of the learners, and that this may have removed some of the project´s effect. One of the sessions in EP focused on developing assertive communication skills, and to identify different styles of communication and their consequences. Some of the facilitators however outlined that some team leaders were performing the opposite of what they were teaching the learners about communication when communicating with the facilitators in class.

> *"We are teaching learners assertiveness, but we were not assertive when we were communicating with each other. People felt that their team leader shouted at them in front of the class, and they felt very humiliated. It would have been helpful to have been given input on how to improve, instead of being shouted at in front of everybody else."* (Facilitator)

Opposite to the above, other facilitators reported the PREPARE team to be very supportive, and that if issues were addressed they were immediately dealt with. Further, some reported that if they were uncertain about how to conduct a lesson, their team leader would explain it to them until they felt confident enough to do it.

> *"I was supported a lot. The team leaders were important for communication. If the team leader doesn't communicate with us frequently, some of the things will lack. They make sure we understand the sessions. " (Facilitator)*

Principals too, reported some difficulty in regard of communicating with the PREPARE team. Though principals where invited to participate in the study in ten of the intervention schools as to be PREPAREs main contact in schools, some principals reported not feeling directly involved in the project.

> *"I didn't know what the program was about and that there would be a health service in school. There should be greater preparedness. Preparedness in terms of communication with the school with respect of what is it that they are going to do and how are they going to do it. There was very little feedback to the school." (Principal)*

The principals suggest that schools should get more information about the project before onset and that the researchers should communicate with the school management during the intervention. Consistent with the nurses, the principals too outline that meetings should be held regularly with all key role players. Such meetings are predicted to help principals follow up the project both during and after the intervention, and will enable the implementers to update each other about how the project is going and how one may support each other in the work ahead. Hence, such communication may in turn enable the implementers to collaborate in order to trigger learners' attendance to a greater extent.

Learners attendance

In the document analysis it was revealed that out of 6244 Grade 8 students invited to participate in the PREPARE intervention, 3451 (55, 3%) obtained parental consent and agreed to participate. 69 students and 281 parents declined attendance. The remaining 2443 did not return the parental consent forms (Mathews et al., 2016).

The mean (M) attendance of the EP was 8,02 sessions. This is less than half of the sessions provided. Attendance was higher among females (M: 8,8), than males (M: 6,9). The PREPARE school nurse was visited by 17.3 % of the learners in intervention schools. Among these, 14.9 % were males and 18.7 % were females (Mathews et al., 2015). Both facilitators and nurses reported poor attendance from learners, both in SHS and in EP. Nurses reported attendance to differ between schools, as to some reporting that adolescents were very enthusiastic and in line to come see them, while others reported hardly seeing any learners.

As previously mentioned, the intervention was denied to be implemented in LO classes, causing it to be delivered in school premises after school hours with the requirement of parental consent. Both nurses and facilitators outline that the variation of attendance between schools may have been caused by the fact that PREPARE was situated after school hours, as the participating adolescents came from very different homes and had different amounts of duties preventing them from participating. According to Mathews et al. (2015), the

unavailability to safe transport and domestic responsibilities such as housework, childcare and looking after sick family members were the most common barriers to attendance in PREPARE Cape Town. Further, nearly all of the implementers suggested that having the service be part of LO would be sufficient.

> *"I would change the time, PREPARE is about life orientation so I think it should be part of the life orientation school time. If the Department of Education can allow at least an hour in normal school time, learners who have a genuine problem will stay and seek the service. If it is after school, you will never get the sick ones."* (Principal)

They outline that in voluntary after-school interventions the ones in highest need of the service do not attend. Consistently, facilitators, nurses and principals experienced that most attending learners came from so-called "steady homes".

> *"At first I thought they choose the best children to come to the project until I realized it was voluntary. Basically the children that came weren't the children I wanted to see. The children that we know needed the program were not there. It wasn't the social concerns I saw in the children, it was just physical concerns." (Nurse)*

This was somewhat confirmed in Mathews et al. (2015), where it was found that adolescents who had been victims of IPV or had their sexual debut before baseline had a lower attendance rate in PREPARE compared with those who had not.

Further, some of the nurses reported that most learners were unaware that PREPARE offered free health care, and that some learners were concerned about paying for the service.

> *"A lot of them did not know that the service was free. In addition, they did not know that the community gives free health care."* (Nurse)

The fact that the learners thought they had to pay for the service may be one of the reasons to why few learners attended the health clinics in some of the intervention schools, and may also have prevented the adolescents in most need of the service attendance, due to lack of resources to do so.

The attendance reportedly dropped along the way in some schools, while remaining consistent in others. In one of the schools, facilitators blamed themselves for learners stopping to attend EP, as the facilitators didn't show up at the school the first week.

> *"Attendance dropped as we went through the program. We didn't go the first week. Learners went but we didn't go, although they were expecting us. So we contributed to the drop in attendance and enthusiasm."* (Facilitator)

During the last sessions the learners reportedly became detached, but some stayed for the last session as to receive their presents. In this event, the implementers suggest that the reward system should be changed. They outline that the learners did not know how to spend their vouchers wisely and that instead of giving out vouchers, it would have been sufficient to buy something that the adolescents needed.

> *"They were very happy about the R50, but it doesn't make sense to give them that value. They don't have monetary sense to spend it sensibly. Where I went to the parents are struggling to put food on the table. Learners bought sweets. It would be better to buy something they will need at that age, like a toothbrush, deodorant or soap. It will come to R50."* (Facilitator)

Even though preventing some adolescents from leaving the intervention, the facilitators suggest that the reward system should also be improved as to encourage the adolescents' interaction in sessions throughout the intervention, in addition to making them stay.

Learners interaction

As mentioned, the educational sessions were built upon the Respect4U program, an IPV and HIV prevention intervention informed by social cognition models, with education methods being both interactive and skill-based (Mathews et al., 2016; SaMRC, 2017; Aarø et al., 2014). The facilitators acknowledged that the program being designed for learners to actively participate and to present their ideas was appropriate and necessary. They outline that activity based explanations appeared to be easier for the adolescents to grasp, and that it seemed as if the adolescents enjoyed the sessions they were involved in most. In contrast, the facilitators reported that the learners tended not to pay attention when sessions became too theoretical, and subsequently suggest making the project even more interactive.

> *"The sessions where they could discuss and speak to us had a bigger impact as we could then facilitate and not teach. They would discuss and speak to people their age, while we were able to give advice."* (Facilitator)

Further, the facilitators outline that the level of activity was not only dependent on the program, but also on the facilitator conducting the sessions. They explain that the way a lesson was conducted influenced how learners responded. In this regard, it was suggested that facilitators and nurses should be able to get to know their learners in order to be able to make examples that are relevant to them and hence be able to influence them to participate to a greater extent.

The facilitators experienced the learners' worksheets to be a useful tool to promote learners' interaction. The concepts and games in the worksheets were perceived clearly formulated and easy to follow for the learners. Although the concepts were easy to grasp, some reported having language difficulty, due to the language in the Afrikaans worksheets being to advance for the age of the targeted adolescents.

> *"The biggest challenge was the language it was set in. It was too high for the level. The words stunned them. We had to change part of the language." (Facilitator)*

In the events when learners were unable to complete the worksheets at school, some of the facilitators sent the worksheets home with the students. They do, however, outline that the adolescents already have homework to do and that this too may interfere with the completion of the worksheets.

Some facilitators reported that learners did not want to bring the worksheets home to their parents. Particularly, learners did not want to complete the section about STIs at home.

> *"60% of the learners worksheets were useless. You would not use all of the stuff because of time. They did not take the one around STIs home. They said they can't take it home to my parents." (Facilitator)*

The facilitators suggest that in order for the learners to be able to complete the worksheets, the worksheets should be shortened down or more time will be required. Further, they suggest improving the local parent-adolescent communication, in order to enable the adolescents the opportunity to complete worksheets at home when needed.

Parental involvement

Although PREPARE Cape Town originally intended to involve of parents to some extent, both the nurses, facilitators and principals reported not to perceive that parents were involved

much in the project. Consistently, the PREPARE investigator outlines that the plan was to involve parents, but that they were unable to do so due to limited resources.

Consistent with previous research (Coetzee et al., 2014; DiClemente et al., 2001), both facilitators and nurses outline that parental communication is generally rather limited in Cape Town. Further, some of the nurses reported that only two of the learners that came to see them said that their parents had ever spoken to them about sex. The implementers outline that adolescents should receive information about SRH from adults. In this event, they outline parental-involvement as important means to interventions such as PREPARE Cape Town.

> *"I got the impression that learners are not very open to their parents, because parents think they are too young and don't really know how to go about this. These learners need adults who can guide them and speak to them about life. PREPARE did this all the time."* (Nurse)

The nurses especially outline that similar to the adolescents, the parents should also be educated. They particularly suggest that parents should be taught about STIs, ways to guide their children to be responsible and self-worthy and about how to talk to adolescents about sex. In addition, it is recommended that parents should be better informed about both the context, importance and benefits of such services, and about the PREPARE project specifically, so that they can support such services and allow their children to attend. It is assumed that more parents would allow their children to participate if they were aware of the benefits that came from it.

> *"I really felt that the parents needed to be spoken to, but I did not want to get too involved as I am not sure how they would perceive this. I think maybe the school should have a program where they invite parents and talk to them about the pressures that their children experience and how they can be supportive. We really think it is the parents that need to be educated and not the child."(Nurse)*

In addition to the previous identified barriers with PREPARE being an out of school service, facilitators and nurses believe that the requirement of active consent may have affected the core attendance negatively as a result of the lack of parent-adolescent communication. This is reasoned by the perception that some of the adolescents may not have the courage to ask their parents for parental consent to participate in projects dealing with sensitive issues, such as SRH.

”Nobody said they wanted family planning or anything like that, as the girls said no they must ask their mom first. But very few of the learners talk to their parents about sex. If they get pregnant, they will hide for their parents, and need emotional support from someone else.” (Nurse)

Some of the nurses reported that several students came to the SHS and wanted to participate, but were refused participation as they did not have the parental consent required for participation. They suggest that having a health care service permanently situated in schools is expected to increase the attendance in such services, both because it would not require parental consent to go, and because this would provide the adolescents a service where they would not run into neighbors, family or friends that may tell their parents that they were there.

4.2.2 Contextual factors

Assessment of social issues

As previously mentioned, the facilitators and nurses experienced difficulty to address the adolescents´ social issues due to factors such as limitations in time and attendance. In this regard, the implementers especially outlined particular reasons to why they perceive that it is important to assess social issues in interventions such as PREPARE.

The nurses reported that having a health care service in addition to EP was necessary in order for the nurses to be able to individualize conversations. Consequently, the SHS was perceived the opportunity to address social issues to a greater extent than the EP, and to provide the learners an opportunity to gain more knowledge about health related issues and to clarify issues that they had misconceptions about. Most nurses experienced that the learners looked forward to coming and that they felt empowered by conversations with the nurses, and that learners would ask more and different questions than in classroom settings.

”The school provides that neutral place where one feels they can ask questions and will not be judged or get in trouble if someone who knows them sees them at the clinic.” (Nurse)

The nurses also suggest that a permanent nurse should be placed in school, as they believe that the adolescents would open up more regarding personal issues such as sexual relationships in the event of knowing the nurse. In addition, such services would enable the school nurses to do follow-ups. They do, however, outline that the Department of Basic

Education does not want the Department of Health situated in schools, and that as for now they are not allowed to give contraception or to do HIV-testing in schools. As most learners reported not having someone neutral to talk to outside school, and the fact that most learners were experienced to be interested in such services, the implementers strongly suggest that the government should provide resources to provide permanent in-school health clinics.

> *"What Department of Health can do at school is limited by regulations from the Department of Education. They prevent us from giving contraception, but it is ok when a 14 year old is pregnant and when a 16yr old is HIV positive. That's not ok! How are we going to prevent this? If we have a clinic at school where a child can come and say sister I am pregnant then you can guide her. Not just for her but also for the unborn child to be taken care of properly. In a primary school here we had six learners who were HIV positive. Only 2 of them got it from their parents. The Department of education needs to get the health system in the schools if we are going to take care of our community."* (Nurse)

As the many of the nurses experienced difficulty to address social issues due to limited time to see each learner, the referral system was mentioned as a helpful tool, as it was perceived that someone else would then be able to address the social issues that the nurses were unable to. They do, however, mention not knowing whether the students were seen once referred. Therefore, they suggest that the referral lines should be improved, to prevent learners from getting lost in the system.

> *"We did not have any feedback from referrals so we don't know if they were seen to. I don't know if the learners got the help they needed"* (Nurse)

Further, the nurses mention that due to learners' age, they had to be taken to follow-ups by their parents. They outline that this may have caused learners not to go once referred somewhere else, as some learners may not have the courage to ask their parents to take them to services addressing sensitive issues. In addition, nurses outline that due to the economic condition in the local community; many families may not afford to take a day off from work to follow their child.

> *"You know the wage at the farm is like a 100 rand a day for them to take the day to bring the child is a big loss for them. I think they miss the referrals because of this." (Nurse)*

Even though an identified tool to assess social issues, the main things referred to as reported by the nurses included diabetic problems or malnutrition, dental issues, vision problems, skin problems, vaccinations, cardiology issues and blocked ears. Very few of the nurses mentioned having referred students to SRH-services, like contraception. Only two of the nurses mentioned having made referrals for students in want of an HIV-test. Some also reported not having made any referrals during the project.

The adolescents were overall experienced to be very open when interacting with the nurses, though less willing to talk about relationships and sexual partners. However, in the events of being given the opportunity to get the help and time requited for learners to become comfortable in talking about SRH and social issues, learners were starting to ask questions and were experienced interested to learn more. Such questions were mostly related to contraceptives, HIV and reproductive health in general. The nurses also reported that most learners indicated that they were not sexually active. When talking to the adolescents' about contraception, the nurses reported perceiving that such information was new to the learners. The social issues addressed involved parents separating, sibling problems, verbal violence, such as bullying and passing bad remarks and physical violence. It seemed as if many learners were exposed to violence, and some opened up about and talked about the violence they experienced at home. Such issues very usually reported to be addressed in the events of learners getting the opportunity to get comfortable with the nurse.

> *"They were comfortable to seek the service but when I asked if there are problems at home they would deny but when they have relaxed they start to open up and you find that there are problems."* (Nurse)

Both facilitators and nurses reported to experience that the adolescents experiencing the most psychosocial problems often came from so-called "difficult" homes.

> *"Alcohol abuse is a challenge in our community and many children who have problems come from such homes. Some parents still need to be taught how to be a parent."* (Nurse)

Some of the adolescents brought up social issues such as their parents having drinking problems or parents being violent towards each other. Some of the adolescents reported being worried that they would not be able to have healthy relationships based on the relationships of their parents. Hence, the facilitators and nurses suggest that interventions should include both

parental education and mediations to change the local community. In this regard, facilitators, nurses and principals reported it as beneficial for schools to get an opportunity to establish a relationship to the health clinics and the police, in order to be able to work together towards a better community.

Similar to the nurses, two of the principals outline that interventions like PREPARE would benefit from taking social problems into account to an even greater extent. They outline the importance of taking care of the social and emotional well being of the learners, and suggest that in addition to the nurse, there should be a social worker situated in schools.

> *"The social problems that our learners are struggling with. I deal with those cases in my office, and obviously you can't do that on a full time basis. There are so many social problems – we have to find houses for learners to stay. At the beginning of the year I had to find a mattress and blanket for a child, so to have a counselor or a social worker who is there to deal with these issues, in addition and to the sexual health issues and violence."* (Principal)

The principals suggest that the school should be able to address both psychosocial issues such as violence and sexual abuse, and contextual issues regarding providing adolescents with a place to stay. They further outline the importance of having suitable staff to work with social issues, and particularly emphasize that staff should be friendly and non-judgmental when approaching such issues.

Intervention providers' characteristics and preconceptions

The facilitators and nurses in PREPARE acknowledge the importance of participants being dedicated in working with adolescents and to able not to anchor their work in inconvenient pre-conceptions to intervention effectiveness. They do however outline some events where implementers´ characteristics and preconceptions interfered with implementation according to the original intervention plans.

Both facilitators and nurses reported that the learners were interested in the participants' point of view, especially on issues such as alcohol and sex. Even though most of the participants reported being careful with instilling their morals, a few described implementing their personal values and preconceptions in sessions. For example, one of the facilitators reported substituting the violence session with a video about violence. Another where teaching adolescents that practicing early sex could lead to difficulties with conceiving children. This

was not originally part of the PREPARE program, and the adaption was not discussed with the project team beforehand.

> *"I told them that if you engage in sex, there will be some changes in your body. You might not be able to have children in the long run as a male. In terms of a male if you have sex at an early age, your sperm count could run out and affect having children. There was a SABC program about a couple that couldn't conceive. This a danger in having sex at a very young age."* (Facilitator)

Another facilitator stated;

> *"The nurse was judgmental. She opened up with a prayer. I don't think it was quite appropriate. You can't do a condom lineup after a prayer. The learners will not open up. The nurse said holding hands is no-go. She was instilling her morals."* (Facilitator)

One of the facilitators outlined that IPV could be prevented by teaching the females how not to send the wrong signals to males, indicating that it is the females responsibility to prevent abuse and violence.

> *"A lot about violence and how we respond and where does violence come from came out from the story about John and Janine: how Janine could have prevented sending the wrong signals to John."* (Facilitator)

Further, some of the facilitators mentioned that some of the nurses' pre-conceptions interfered with proper implementation of the session about correct condom use. The session was completed by the nurses, and included doing a condom demonstration with a dildo. Many facilitators reported that the nurses were uncomfortable about doing the condom demonstrations, which subsequently lead some of them to leaving the condom demonstration and HIV sessions out, siting that it went against their values or religious beliefs. As a result, the facilitators reported having to do condom demonstrations in some schools.

> *"The nurse did the dildo, but there were some parts she left out because she was uncomfortable."* (Facilitator)

Unlike the facilitators, the nurses were not screened for positive gender-norms before the intervention´s onset. However, the training provided to nurses prior to the intervention was "feeling based", including the nurses to reflect upon their own lives and choices, in order to

become good role models (Mason-Jones & Beattie, 2013). Although the nurses manual consisted of important information, it was through participation in the training that the nurses were supposed to built on and develop skills, abilities and faculties needed to become the Clinic-in-Schools Nurse that was intended for the program (Mathews et al., 2016; Aarø et al., 2014). However, a couple of the nurses mentioned that they were absent during training.

> *"I was not there at the training that was given to nurses who were going to provide this service." (Nurse)*

A couple of the facilitators outline that they too could have done some things differently in order to make the project more successful, and that they may not have given their best effort in conducting sessions. They do, however, not mention specific examples on how they could have done so.

Preconceptions among learners

As mentioned, several of the implementers reported not being able to influence hypothesized mediators representing underlying change processes, such as social issues, attitudes and behavioral norms. This was mostly due to lack of time. They did however outline to believe that to address social issues, as well as changing social norms, was important to intervention effectiveness. The facilitators mentioned that learners' preconceptions about SRH, Gender and Violence were very well implemented both in learners mindsets and in the Cape Town culture, making it particularly difficult to influence the learners way of thought about such topics.

Sexual Reproductive Health

Many facilitators mentioned sessions about SRH as particularly difficult to conduct, as it is not common to speak to adolescents about such themes according to the South African culture. In some schools the adolescents would tell the facilitators that they were felt uncomfortable in discussing sex.

> *"When you talk of sex issues, there is always a culture. You don't speak with the young about that. They would tell me every week that we are not ready to discuss these things."* (Facilitator)

The facilitators mention that it was particularly difficult to get learners to open up about SRH in the classroom setting, as it is a sensitive topic and learners are afraid of what other

adolescents might think of them. In this event, the SHS was considered convenient, as the nurses could conduct private conversations with the adolescents. The facilitators did, however, experience that the learners were in need of and absorbed the information that was provided to them. Hence, it was considered important that facilitators and nurses had the right amount of background information and had the right personal values needed to guide them. Several facilitators however experienced that they did not have the background information needed in order to conduct sessions about SRH. In such occasions, the sessions about the mentioned topics were experienced confusing, complicated and containing of too many facts.

Gender inequities

Further, facilitators reported that the learners had certain ideas and various misinterpretations about gender and power, which made it difficult for them to understand the concept of parts of the intervention. They suggest that more time should be allocated to discuss such issues, as it takes a long time to change misconceptions rooted in the adolescents ´culture, and in their way of understanding the world.

> *"They have certain ideas about gender. Most of them couldn't understand why women wouldn't want to clean and cook for their husband. I tried to get them to see a different point of view. At the beginning I thought they wouldn't get it. Then you realize it's about making a shift in their minds, planting a seed. As the lessons progress you bring the thread through and bring it up again and again."* (Facilitator)

The facilitators and nurses suggest that learners' stereotypical views on gender may in fact influence their degree of acceptance towards IPV.

Violence

Similar to learners' perceptions and understanding of gender inequities, some of the facilitators reported sessions about violence as particularly challenging. The learners´ views about violence occurred to be very well implemented in their mindsets, which made some of the facilitators believe that they would not be able to change their views. For example, the facilitators reported that the learners´ perceptions included that "violence should be the response to violence", and that "if someone hits you, you are to hit them harder".

> *"It seemed as if for them violence was the only way that you can show others that you are strong. When we did the session about violence, most of them were quiet and you could see that they are deep in thoughts and I was worried that we triggered*

> *something there which they were not willing to talk about or don't want to change their mind-set."* (Facilitator)

On questions about how learners would respond in the occasion of others being abused, the answered varied across sites. Some learners said that it was not their business, especially in the events that abuse happened within marriage, while in other schools the learners said that it would be their desire to act as a citizen and do something. The facilitators outline that many of the learners experience violence on a daily basis, and that many of the adolescents referred to their parents' relationships when talking about violence. Therefore, it was the facilitators experience that the sessions were helpful in order for the learners knowing what to do in the event of violence, and how to report such issues.

This chapter has aimed to present the empirical findings that evolved from the analysis of the data material as explained in the methodology. In the next chapter the findings will be discussed and situated within the conceptual framework presented in the thesis, aiming to systematically answer the research questions set for the thesis.

5.0 DISCUSSION

In the previous chapter, findings were presented according to the original themes as mentioned by the intervention implementers in order to preserve the original content. Further, the factors were categorized into structural and contextual factors, highlighting factors of impediment to curriculum delivery according to plans both in and outside the control of the PREPARE research team. In this chapter findings will be incorporated with the presented conceptual framework and literature review, with the aim to discuss the research questions presented in the introduction. As the research questions are closely connected, they will be discussed together. The discussion will be guided by the previously presented process evaluation measures fidelity, reach and context, and will be linked to the behavioral outcomes identified in the PREPARE Cape Town outcome evaluation. A discussion of the methodological strengths and limitations will be provided in the end.

5.1 The implementation of PREPARE Cape Town

PREPARE Cape Town was carefully planned according to recommendations from previous research, literature, theoretical framework and context. Still, the participating learners were not less likely to have their sexual debut, more likely to use condoms or to have fewer sexual partners. However, a reduction of IPV victimization was found in the intervention group, indicating that the intervention shaped intimate partnerships into more safe and appropriate ones (Mathews et al., 2016). As process evaluations are suggested to have the opportunity to provide a link between factors thought to be essential for intervention effectiveness and final behavioral outcomes (Steckler & Linnan, 2002), it is likewise considered that the factors identified by the PREPARE Cape Town implementers may provide a link to the mentioned behavioral outcomes and therefore possibly inform future generations of SRH-interventions.

As mentioned, the EP was originally designed and intended for implementation in life orientation classes, a compulsory life skills subject and learning area taught at all South African public high schools (SaMRC, 2017; Mathews et al., 2016; Aarø et al., 2014; Department of Education, 2002). Instead, PREPARE Cape Town was implemented after school, with parental consent required for the whole intervention, as a result of changing education policies in the Western Cape (SaMRC, 2017; Mathews et al., 2016; Aarø et al., 2014). According to the perceptions of the PREPARE Cape Town implementers, several of

the barriers identified to fidelity and reach would not have been sufficient in the event of PREPARE being implemented in LO-sessions. This was reasoned by the expectation that the facilitators would then not have been limited by factors such as time and attendance, as the sessions conducted in the EP were originally designed for implementation in LO. In addition, the EP was not completed in two schools and the SHS in one, due to issues caused by the program being situated after school (Mathews et al., 2016). Therefore, it is also likely that implementation in LO would have caused the intervention to be implemented in a higher number of the intervention schools. Mathews et al. (2016), suggest that the exposure necessary to affect behavioral outcomes may be difficult to achieve when sessions are delivered after school hours. Similarly, the decline to deliver the intervention in LO-sessions may have caused several aspects of the implementation of PREPARE Cape Town to be challenged already before the intervention´s onset, which may have contributed to the difficulties to achieve anticipated behavioral outcomes.

According to Dahlgren and Whiteheads (1991) ecological model, all levels in society may affect determinants of SRH, with the different layers having the potential to threaten, protect and promote health. Similarly, the PREPARE Cape Town implementers reported that the identified factors of influence to implementation were perceived to have the ability to both reinforce and prevent intervention fidelity and reach, based on the extend to which they were deliberated by the investigators and implementers. According to the implementers, the most central factors challenging implementation and effectiveness included; A) Limitations in time, B) Preconceptions and characteristics in intervention providers interfering with central intervention aims, C) Limited proportion and consistency of staff, D) Organizational factors, such as limited communication and information, and E) The ability to reach the adolescents in most need of PREPARE. In comparison, the same factors were considered to have the ability to reinforce implementation in the event of A) Being provided more; time and staff, B) Strengthened communication, C) Superior mapping of each of the intervention providers´ preconceptions prior to intervention onset, and D) Advanced attention to factors influencing adolescents´ ability to attend SRH-interventions. In addition to the mentioned, the implementation was also perceived influenced by limitations set by the government, culturally anchored preconceptions among learners and implementers, and the socioeconomic status of the region of conduction. In SATZ, the prelude of PREPARE, it was suggested that the behavioral outcomes were influenced by contextual factors rather than content and delivery (Mathews et al., 2012; Mukoma et al., 2009). However, the findings of this thesis indicate

contextual factors, content and delivery equally important to the effectiveness of PREPARE Cape Town. Although reported to be highly needed and well received by both implementers and learners, this process evaluation revealed that the quality of delivery and the extent to which the students were reached by the intervention varied considerably between intervention schools.

5.1.1 Fidelity

As mentioned, the measure fidelity refers to the extent to which an intervention is delivered as planned, representing the quality and integrity of the intervention (Saunders et al, 2005; Steckler & Linnan, 2002). The interview data conducted with the PREPARE Cape Town implementers indicated that even though components were implemented in a high number of the intervention schools, few of the intervention providers delivered the intervention precisely as intended.

Limitations in time

Limitation in time occurred to be among the most essential barriers identified to interfere with fidelity. The time originally allocated for the intervention was perceived too short, both in regard of time allocated for each session and the total duration of PREPARE.

According to Klepp et al. (2008), behavioral interventions should be based on empirically tested theoretical frameworks in order to be effective. Consistently, PREPARE Cape Town was imbedded in various acknowledged theoretical framework expected to reinforce behavioral change (Mathews et al., 2010; Aarø et al., 2014). Accordingly, the EP originally aimed to include strong emphasis on student involvement and action planning, which was expected to promote translation of intentions into behavior (Mathews et al., 2010; Aarø et al., 2014). However, the limited time was experienced to prevent fidelity to the allocated theoretical framework, especially due to interactive parts of the sessions being left out as a result of rushed sessions. In particular, the condom-demonstration and the session about how many partners were too many, a session where learners critically analyze the risks of multiple partnerships and transactional sex, were mentioned as sessions implemented with lack of fidelity or left out due to lack of time. This was in spite of multiple of the learners being reported not to know how to use a condom. As several of the implementers reported that the limited time left them without the opportunity to answer questions or to clarify misinterpretations about condoms, learners were left with questions and myths about condom-

use that were not sorted out. Hence, the facilitators reported that the learners may not have been provided with the guidance and information they needed in order to achieve change in behavior.

The EP originally consisted of 21 sessions lasting for 1-1.5 hours (Mathews et al., 2016; Aarø et al., 2014). The initial plan was that each educational session would be implemented separately, with separate aims and activities allocated for each session (Aarø et al, 2014). However, due to time limitations and drop in attendance throughout the intervention period, reportedly due to difficulties such as homework and house chores, the PREPARE research team realized that they would have to combine sessions in the EP in order to be able to get through all sessions. This subsequently caused the importance of implementing the intervention as planned to be stressed. For example, the facilitators reported that when combined, sessions were implemented in 45 minutes, instead of the 1-1,5 hours originally allocated for each session (Aarø et al, 2014). In spite of the PREPARE investigator reporting that facilitators received directions on how to combine sessions, the facilitators experienced to receive unclear directions on what aspects to include and exclude. This was reported to reinforce that interactive parts of the project to be excluded, which subsequently lead learners to disengage and drop out of sessions. This was in spite of activity-based explanations appearing more enjoyable and easier for the adolescents to grasp. In addition to learners tending not to pay attention when sessions became too theoretical. Hence, it was suggested that both the drop in attendance and the lack of fidelity to the interactive parts might in fact have been reinforced instead of debilitated by sessions being combined.

In addition to the interactive parts being left out, the time limitations also lead to difficulty to use the study material provided. Each participating student received a worksheet containing youth-friendly information about all topics covered and easy to follow instructions about interactive sessions (Koech et al., 2013). In spite of some reporting that the language in the Afrikaans worksheets too advanced for the age of the targeted adolescents, most facilitators experienced the learners' worksheets to be a useful tool to promote learners' interaction, as the concepts and games in the worksheets were perceived clearly formulated and easy to follow for the learners. The facilitators suggest that in order for the learners to be able to complete the worksheets, the worksheets should be shortened down or more time will be required. In order to enable behavior change, it is suggested that public health interventions should not only be providing information, but also tools for change (Dahlgren & Whitehead,

1991). In addition to interactive sessions being excluded, the fact that the manuals were not used, may have reinforced the interactive parts of the intervention to be implemented without fidelity. This may have contributed to PREPARE Cape Town not to reach the expected change in risky sexual behavior, as the adolescents may therefore mainly have been provided with information, and less with the tools needed in order to enable change. To address this issue, it was suggested that the reward system should encourage the adolescents' interaction in sessions throughout the intervention, in addition to making them stay. The attendance reportedly dropped along the way in some schools, with learners reportedly becoming detached during the last sessions. As a result of the limited time, the nurses reported not having the ability to properly fill out project paperwork or loyalty cards in order to reach more learners. The nurses suggested that this might have diminished the learners' attendance and interaction throughout the intervention.

Similar to the EP, the limited time was reported to cause the SHS to be implemented with lack of fidelity. The SHS involved both physical health, such as blood pressure measurements, vision and nutrition screening and SRH education, identification of need for SRH services or commodities, and referral for additional essential services at the nearest community clinic (Mason-Jones & Beattie, 2013; Mathews et al., 2015; Mathews et al., 2016; Aarø et al., 2014). The nurse would provide information, support and advice, and facilitate positive attitudes toward the adolescent´s health, relationships, emotional wellbeing and sexuality (Mason-Jones & Beattie, 2013). As the nurses were perceived the ability of providing individualized conversations, the implementers suggested that the nurses had the opportunity to address social issues to a greater extent than the EP, and to provide the learners an opportunity to gain more knowledge about health related issues and to clarify issues that they had misconceptions about. In the events of being given the time requited to become comfortable in talking about SRH and social issues, learners were starting to ask questions related to contraceptives, HIV and reproductive health. Similar to the facilitators, the nurses too had the impression that such information was new to the learners.

To provide adolescents with social support has previously been outlines as an important factor to intervention effectiveness (Klepp et al., 2008; Salam et al., 2016). Similarly, the implementers mentioned that interventions like PREPARE should be taking social issues into account to an even greater extent than was addressed in PREPARE, in order to protect the social and emotional well being of the learners. However, the implementers outlined that the

lack of time did not only lead to difficulty to address the adolescents misconceptions and myths regarding condoms, but also regarding gender inequality, violence, sex and alcohol abuse. Still, it occurred as if many learners were exposed to violence. The referral system was mentioned as a helpful tool in order to address the social issues that the nurses were unable to. However, in spite of the SHS aiming to increase the adolescents´ access to SRH- services, such as contraception, condoms, STI management and treatment and pregnancy tests, the main things referred to as reported by the nurses included physical issues such as diabetic problems or malnutrition, dental issues, vision problems, skin problems, vaccinations, cardiology issues and blocked ears. Only two of the nurses mentioned having made referrals for students in want of an HIV-test and very few of the nurses mentioned having referred students to SRH-services, like contraception. Some also reported not having made any referrals during the project. Further, there was not provided feedback regarding if students went to the referred services. Therefore, it is suggested that referral lines should be improved, in order to prevent learners from getting lost in the system.

Limited proportion and consistency of staff

Consistent with the limited time, the limited proportion and consistency of staff was also identified to interfere with the ability to assess social issues. In the events of social issues being addressed, this was usually reported in the events when learners got the opportunity to get comfortable with the nurse. Therefore, it was suggested that the intervention effectiveness would benefit from being allocated increased time in order for the nurse to be able to hear the adolescents out once they do open up and for adolescents to get the opportunity to establish the confidence necessary to collaborate with the nurse. In this event, it was suggested that the staff should have been consistent throughout the intervention. Although PREPARE originally aimed to deliver comprehensive training of facilitators and nurses responsible for delivering the program and to train a large enough number in order to compensate for turnover, in order for facilitators and nurses to be consistent throughout PREPARE, some schools experienced change in facilitators and nurses along the way (Aarø et al., 2014; Mathews et al., 2010).

As the research team was only able to provide the facilitators work part-time, some had to quit along the way. Therefore, new facilitators were trained throughout the intervention. In two of the intervention schools the SHS was not delivered, as the local health clinics did not have capacity to provide nurses for the SHS (Mathews et al., 2015; Mathews et al., 2016).

Similarly, in the schools where the SHS was implemented, some of the nurses reported that staffing problems at the local clinics caused some to be unable to release the staff originally allocated for the intervention, leading to some nurses being prevented from getting to the schools to carry out the project according to plans. The nurses suggest that if staff is taken out of clinics, more people from each clinic should be trained so that there is always someone available to carry out the service. The nurses reported that having leaders supportive in them taking part in the program made it easier to carry out the health service in schools, in spite of the identified staffing problems. Both facilitators and nurses suggested that the intervention staff should be consistent throughout the intervention in order to provide learners with the opportunity to get comfortable enough with staff, get familiar with someone in the local community to make it easier to search the services, and to be able to individualize the sessions to an extent.

Limited communication and information

The facilitators considered smooth communication between the investigators and implementers as an important tool to fidelity, as the team leaders made sure that the facilitators understood the sessions enough to conduct them accurately. In particular, some reported that when uncertain about how to conduct a lesson, their team leader would explain it to them until they felt confident enough to do it. Although most of the implementers, both in regard to nurses, facilitators and principals experienced that the staff communicated well and were always on time, other facilitators experienced team leaders to be more interested in getting particular study outcomes, instead of the quality of the intervention implementation and that some team leaders were experienced not to recognize that the intervention implementation was important in order to receive particular outcomes. Further, some facilitators outline that communication issues with team members were sometimes addressed in front of the learners, and that this may have removed some of the projects effect. For example, one of the sessions in the EP focused on developing assertive communication skills, and to identify different styles of communication and their consequences (Aarø et al., 2014). However, some of the facilitators outlined that team leaders were performing the opposite of what they were teaching the learners about assertiveness when communicating with the facilitators in class, and that this may have caused the part about assertiveness lack effectiveness.

Although PREPARE Cape Town aimed to include mobilization of support for the program from school authorities, school staff and the surrounding community, some implementers reported not feeling directly involved in the intervention. The facilitators suggest that some of the barriers to fidelity could have been sorted out along the way and that facilitators should have been included in decisions to a greater extent, as they were the ones ”on the ground”. Further, a couple of the principals suggest that schools should get more information about the project before onset, that the researchers should provide feedback to the school management during intervention and that meetings should be held regularly with all key role players. This was proposed to provide the opportunity to support each other in the work ahead, and in turn enable the implementers to collaborate in order to trigger learners' attendance. The nurses too, outline clear communication between the PREPARE team, clinic leaders and nurses to be important in order to be able to collaborate to reach targets in such interventions.

Preconceptions and characteristics in intervention providers interfering with central intervention aims

Attitudes of health professionals have previously been identified to pose a barrier to adolescents' SRH-services (Ahmed et al., 2006; Helleve et al., 2009; Shaw, 2009). Similarly, the facilitators and nurses acknowledged the importance of participants being dedicated in working with adolescents and not to anchor their work in inconvenient pre-conceptions. Still, it occurred as though the fidelity of PREPARE Cape Town was threatened by preconceptions and characteristics of some of the implementers. In particular, some of the facilitators mentioned that some of the nurses' pre-conceptions interfered with proper implementation of the session that included doing a condom demonstration with a dildo. Although the original role of the nurse was to provide information, support and advice, and to facilitate and help enhance positive attitudes toward the adolescent´s sexuality (Mason-Jones & Beattie, 2013), some nurses were reported to be uncomfortable with the condom demonstrations, siting that it went against their values or religious beliefs. Consequently, some of them left the condom demonstration and HIV sessions out. It is suggested that investigators in interventions like PREPARE should ensure and promote providers comfort in teaching sex education, determining their resistances and establishing a deep understanding of the providers' values and ideologies (Ahmed et al., 2006; Helleve et al., 2009; Shaw, 2009).

Unlike the facilitators, the nurses were not screened for positive gender-norms before the intervention´s onset. Instead, the nurses training provided including nurses to reflect upon their own lives and choices, in order to become good role models (Mason-Jones & Beattie, 2013; Mathews et al., 2016). The nurses' manual outlined that it was essential that personal views or concerns were not an obstacle to providing client-centered support to all service-users (Mason-Jones & Beattie, 2013). Although the manual consisted of important information, it was through participation in the training that the nurses were supposed to build on and develop skills, abilities and faculties needed to become the Clinic-in-Schools Nurse that was intended for the program (Mathews et al., 2016; Aarø et al., 2014). Similarly, Ahmed et al. (2006) suggest that the facilitators and nurses providing the interventions are key to the effectivess of school-based sex education programs, and that it is important to equip them with the knowledge and skills needed prior to the intervention. However, a couple of the nurses mentioned that they were absent during training. The interview data did not include information about whether the nurses that omitted the condom demonstrations were the same as those who did not participate in the training before onset.

It is suggested that adolescent SRH requires a positive and respectful approach to sexuality and intimate relationships, and the ability to have pleasant and secure sexual experiences, free of pressure, discrimination and violence (Edwards & Coleman, 2004; WHO, 2002). Still, DePalma & Francis (2014) state that implementers of sex education in South African typically hold stereotypic views of males as predatory and females as victims (DePalma & Francis, 2014). Similarly, one of the facilitators outlined that IPV could be prevented by teaching the females how not to send the wrong signals to males, indicating that it is the females responsibility to prevent abuse and violence. Such views may cause well-meaning interventions to perpetuate gender-role stereotypes (Gibbons et al., 2017). Both facilitators and nurses reported that the learners were interested in the participants' point of view, especially on issues such as alcohol and sex. Even though most of the participants reported being careful with instilling their morals, a few described implementing their personal values and preconceptions in sessions. For example, one of the facilitators reported substituting the violence session with a video about violence. Another was teaching adolescents that practicing early sex could lead to difficulties with conceiving children. This was not originally part of the PREPARE program, and the adaption was not discussed with the project team beforehand. It is suggested that effective programs provide adolescents with consistent, accurate messages and information (Klepp et al., 2008).

Parental involvement

According to Dahlgren & Whitehead (1991), the network that surround and give support to individuals, such as family, friends and the local community play an important part in influencing behavior change. It is therefore suggested that interventions should include social support to individuals and families (Dahlgren & Whitehead, 2017; Biddlecom et al., 2009; Coetzee et al., 2014). PREPARE Cape Town used elements of a whole school approach, and involved partners beyond the school organization such as parents (Gevers & Flisher, 2012; Aarø et al., 2014). In spite of involvement of parents being intended in PREPARE Cape Town, both nurses, facilitators and principals reported not to perceive that parents were involved much in the project. Consistently, the PREPARE investigator outlined that the plan was to involve parents, but that they were unable to do so due to limited resources.

Consistent with previous research (Coetzee et al., 2014; DiClemente et al., 2001), the implementers confirmed parental communication as generally rather limited in Cape Town as few of the learners reported to have spoken to parents about sex. Even though perceived to be a protective factor of adolescents SRH, traditional norms and culture prohibits parents to discuss issues of puberty and sexuality with their children (Bastien et al., 2011; DiClemente et al., 2001; Namisi et al., 2009). The PREPARE Cape Town implementers outlined parental-involvement as important means to interventions such as PREPARE Cape Town, as adolescents should receive information about SRH from adults. Therefore, it was suggested that similar to the adolescents, the parents should also have been educated about STIs, ways to guide their children to be responsible and self-worthy and about how to talk to adolescents about sex. This is consistent with Coetzee et al. (2014), who suggest that programs should target parents' knowledge, skills and comfort regarding effective parent-adolescent communication, as parental involvement is considered important to interventions that aim to reduce rates of adolescent sexual risk behavior and change social norms.

5.1.2 Reach

Reach accounts for the proportion of the intended target group that participates in an intervention. It is often measured by attendance, and includes documentation of potential barriers to participation, and a description of those who participated and those who did not (Steckler & Linnan, 2002; Saunders et al, 2005). Additional to fidelity, Saunders et al. (2005) suggest that a programs lack of effectiveness may be attributed to failure to reach sufficient

numbers of the target audience (Saunders et al., 2005).

Reaching the hard to reach

Poor attendance was reported by the PREPARE Cape Town implementers, both in the SHS and in the EP. Further, the attendance was reported to differ between schools, as to some reporting adolescents as very enthusiastic to attend the intervention, while other implementers reported hardly seeing any learners. According to Mathews et al. (2015), the unavailability to safe transport and domestic responsibilities such as housework, childcare and looking after sick family members were the most common barriers to attendance. Consistent with the investigators, the implementers also outlined house duties as a barrier to attendance. Both nurses and facilitators outline that the variation in attendance between schools may have been caused by the fact that PREPARE was situated after school hours, as the participating adolescents came from very different homes with different amounts of duties preventing them from participating, indicating that differences in health status and economic condition may have influenced the attendance (Globalis, 2016; Gibbons, Poelker, & Moletsane-Kekae, 2017; Stats SA, 2016).

In order to distinguish the influence of the mentioned differences on the effectiveness of SRH-interventions, Sani et al. (2016) suggest that SRH-interventions should be embedded in the school curriculum, as interventions situated after school tend to attract participants less vulnerable to adverse outcomes and often do not obtain high attendance rates (Botvin, Schinke, & Orlandi, 1995; Government, 2017). However, as adolescents infected or affected by HIV are more likely to drop out of or underperform at school due to psychosocial factors including financial pressures, grief, mental health problems, discrimination and stigma, interventions may not reach the most vulnerable even when imbedded in the school curriculum (Health Basic Education, 2012).

In addition to the general identified barriers with PREPARE being an out of school service, the implementers reported that the requirement of active consent may have affected the core attendance and ability to reach the higher-risk adolescents negatively. Correspondingly with Mathews et.al. (2016) suggesting that the learners who received parental consent and participated in the study might not have been those most in need of interventions such as PREPARE, the implementers reported that the adolescents in highest need of PREPARE did

not attend, and that it occurred as if the best adolescents where chosen to participate. Likewise, Mathews et al. (2015) found that adolescents who had been victims of IPV or had their sexual debut before baseline had a lower attendance rate in PREPARE Cape Town compared with those who had not. In general, the attenders were reported to come from "steady homes", which may indicate that the ones with consent to participate also come from homes where the parents were already educated and orientated about such interventions. It was recommended that parents should have been better informed about both the context, importance and benefits of such services, and about the PREPARE project specifically, so that they could support such services and allow their children to attend. The involvement and education of parents in such interventions was reportedly expected to reinforce attendance, both because the parents may be more likely to provide their adolescents with consent to participate, and because the involvement of parents may strengthen the parent-adolescent communication, which may in turn increase the adolescent´s courage to ask for parental consent. Further, the learners that were prevented from participation due to house chores etc. may have been released from such duties in the event of parents perceiving PREPARE to be important to their child´s health. The implementers reported to experience that the adolescents experiencing the most psychosocial problems came from so-called "difficult" homes, especially outlining alcohol abuse among parents as a great community challenge. The fact that learners interacted about issues such as violence and alcohol abuse, in addition to being in need of the condom demonstration, indicates that some of the adolescents in need of the intervention were still reached.

The non-responders included 69 students and 281 parents who declined participation. In comparison, the remaining 2443 non-attenders were students who did not bring back signed parental consent forms (Mathews et al., 2016). The high number of adolescents that did not bring back parental consent was reasoned by the perception that some of the adolescents may not have the courage to ask their parents for parental consent to participate in projects dealing with sensitive issues, as a result of the lack of parent-adolescent communication in the local community (Coetzee et al., 2014; DiClemente et al., 2001). Further, it has been demonstrated that some parents don't receive information letters and consent forms, and that several South African parents are unable to read information letters, causing them not to reply (Mathews et al., 2005). Although the requirement of active consent includes that the responders should be well informed before declining or submitting (Malterud, 2001), the interview data and the document analysis did not contain information about weather parents were able to read the

information letters. Several of the learners that were not granted parental consent came to the SHS, but were refused participation, as they did not have the parental consent required.

5.1.3 Context

In process evaluations context refers to aspects of the social, political and economic environment that may influence the intervention implementation (Saunders et al., 2005; Steckler & Linnan, 2002). Mathews et al. (2016) suggest that in Western Cape, the contextual restrictions on safe sexual behavior may in fact mitigate against positive impacts of the PREPARE Cape Town intervention. Further, contextual aspects often result in the fidelity with which interventions are implemented to differ across sites and within intervention schools (Mukoma et al., 2009).

The adolescents in PREPARE Cape Town are expected to make behavioral choices within the context of their relationships, families, communities, economic circumstances, social norms and traditions (Svanemyr et al., 2015; Shaw, 2009; Skovdal, 2014). Hence, the extent to which different social determinants of health were considered in the development and implementation of the intervention is expectedly related to the behavioral outcomes (Chandra-Mouli et al., 2015; Kamangu et.al., 2017; Sani et al., 2016). As a result of previous research having demonstrated SRH-interventions to be limited when neglecting the wider societal, organizational, physical and cultural contexts (Campbell et.al., 2005; Chandra-Mouli et al., 2015; Mukoma et al., 2009), PREPAPE Cape Town was grounded in ecological and contextual models (Mathews et al., 2016; Aarø et al., 2014). In ecological models behavior change is expected maximized when environments and policies support healthy choices and when the social norms and support for healthy choices are strong (Sallis, Owen, & Fisher, 2015).

According to Dahlgren & Whitehead (1991), the major macro structures of the nation, the region and the world, including general socioeconomic, cultural and environmental conditions should be considered in SRH-interventions (Dahlgren & Whitehead, 1991). In relation to the macro structures influencing the effectiveness of PREPARE Cape Town, the implementers especially mentioned limitations set by the government, culturally anchored norms and preconceptions and the socioeconomic status in the area where PREPARE was conducted as important.

Contextually anchored assumptions among learners and the ability to address them

An important lesson learned from SATZ was that educational interventions in South Africa should be supplemented with broader school- and community-wide interventions. This was in order to address environmental and structural issues in which adolescents make decisions about their relationships and sexuality (Mathews et al., 2012; Mukoma et al., 2009; Aarø et al., 2014). Further, it has been highlighted that interventions should seek to alter culture-specific norms, attitudes and beliefs that discourage behavior change (Ahmed et al., 2006; Belton & Skovdal, 2014). As mentioned, several of the implementers reported not being able to influence hypothesized mediators representing underlying change processes, such as social issues, attitudes and behavioral norms. Still, implementers suggested that such factors were important to intervention effectiveness, as South Africa still recognizes discrimination on the basis of race, gender and sex as an ongoing issue (Government of South Africa, 2016; Government of South Africa, 1996).

Accordingly to the mentioned, the learners' preconceptions about SRH, gender and violence were reported to be well implemented in learners mindsets and in the local culture, making it particularly difficult to influence the learners way of thought about such topics. Previous research on sexuality and romance in South Africa has revealed that adolescents' conceptions and behavior are often rooted in gender-role stereotypes, with South African adolescents describing male dominance when defining romance and intimacy (Lesch & Furphy, 2013). Likewise, the facilitators reported that the learners had certain ideas and various misinterpretations about gender roles, which made it difficult for them to understand the concept of parts of the intervention. For example, most of the adolescents were reported not to understand why women wouldn't want to clean and cook for their husband. Similar to learners' perceptions and understanding of gender inequities, some of the facilitators reported sessions about violence as particularly challenging. On questions about how learners would respond in the occasion of others being abused, the answers varied across sites. Some said that it was not their business, especially in the events that abuse happened within marriage, while in other schools the learners said that it would be their desire to act as a citizen and do something. For example, the facilitators reported that the learners´ perceptions included that "if someone hits you, you are to hit them harder". Therefore, it was perceived beneficial that the learners were provided with information regarding how to react in the event of violence, and where to report such issues. Several of the adolescents referred to their parents'

relationships when talking about violence, and the facilitators outlined that many of the learners experienced violence on a daily basis.

It was suggested that more time should be allocated to discuss issues regarding gender, violence and sex, as it takes a long time to change misconceptions rooted in the adolescents' culture, and in their way of understanding the world. This is consistent with Chandra-Mouli et al. (2015), stating that longer interventions allow more time for in-depth discussion of social structures that may affect the capacity to change behaviors (Chandra-Mouli et al., 2015). However, the implementers did experienced to make a shift in the adolescents' minds. Lastly, the sessions about SRH were reported particularly difficult to conduct, as it is not common to speak to adolescents about such themes according to the South African culture, and adolescents reportedly felt uncomfortable discussing sex. In addition, it was perceived difficult to get learners to open up about SRH in the classroom setting, as they were afraid of what other adolescents thought of them. Still, the learners occurred to absorb the information provided to them. Therefore, it was considered important that facilitators and nurses had the right amount of background information and the right personal values needed to provide the adolescents with correct information. However, several facilitators reported not to have the background information needed to conduct sessions about SRH.

Socioeconomic status

According to the third layer in Dahlgren & Whiteheads (2001) ecological model, the material and social conditions people live in, such as housing, education and health care highly impacts adolescents´ SRH. Although the PREPARE program did aim to take local conditions into account, it did ´not ensure that the participating learners had safe and supportive homes, secure livelihoods, and social protection (Mathews et al., 2016). Hence, numerous social and environmental factors that undermine adolescent SRH were not addressed in PREPARE Cape Town, but that still may be particularly relevant in the study setting. The implementers reported social issues, such as adolescent housing, to be a frequent community problem in PREPARE Cape Town. The principals suggest that the interventions should address both psychosocial issues such as violence and sexual abuse, and contextual issues regarding providing adolescents with a place to stay. Although some principals reported to address such issues in their office, it was also reported that they were unable to provide support to all

learners. In this event, it was suggested that there should be a social worker situated in schools as a supplement to the already allocated components.

As previously mentioned, the schools included in the study were chosen by Grade 12 pass rates as an indicator of the functioning of the school and the socioeconomic status with the amount of school fees charged. As schools with pass rates below 40% were excluded, it is expected that schools in communities with especially low socioeconomic status were not included in the intervention (Mathews et al., 2016; Mathews et al., 2010). The fact that schools in communities with especially low socioeconomic status were not included may have reinforced that adolescents in most need of the intervention were not reached. However, In South Africa, the Gini coefficient, a measure of economic disparity, is one of the highest in the world (Bhorat, 2015; Group, 2016). Therefore, the socioeconomic condition of participants and between schools may still have differed considerably, in spite of the schools being chosen by pass rates. One of the facilitators reported that the parents in some of the schools were struggling to provide food for their learners, indicating that the socioeconomic status may have been rather low for some of the learners. It was further reported that most learners were unaware that PREPARE offered free health care, that some learners were concerned about paying for the service, and that the adolescents were generally unaware that the community provided free health care. This indicates that the information and communication in PREPARE Cape Town may not only have been limited between the investigators and implementers, but also in regard to the participating learners. The fact that the learners thought they had to pay for the service may be one of the reasons to why few learners attended the health clinics in some of the intervention schools, and may also have prevented the adolescents in most need of the service attendance, due to the belief that lack of resources would prevent them to do so. Further, the fact that the parents had to take their children to follow-ups, may have caused the ones in highest need not to go, as a result of the economic condition of the adolescents´ caretakers. It was reported that due to the economic condition in the local community; many families might not afford to take a day off from work to follow their child. This may have caused learners not to go once referred somewhere else, as a result of learners not having the courage to ask their parents to take a day off from work knowing that the economical resources of their family is limited.

Limitations set by the government

The PREPARE Cape Town implementers especially outlined two important limitations set by the government that challenged the implementation. The nurses outlined that the Department of Health is limited by regulations from the Department of Education in concern of being able to provide contraception in school, and perceived it as challenging to prevent HIV without the opportunity to provide contraception. Further and accordingly to Dahlgren & Whiteheads (1991) ecological model, it was suggested that the fact that the PREPARE team was refused to conduct the intervention by the Department of Education, designated the importance to include macro structures such as the government in order to be able to provide adolescents the services they need during school time. As many of the social determinants are also articulated as rights, such as the rights to education, equality, information, housing and social security, links between health and human rights are considered crucial when relating to adolescents (Koech, 2013; Shaw, 2009). Although information about SRH is imbedded in the rights of adolescents, barriers are still encountered as to provide such information as part of the school curriculum. The UN (2011) advocates that protection and promotion of adolescents' rights to SRH is essential in preventing the spread of HIV. However, though adolescent's rights have been enshrined in multiple documents, there are still struggles to implement their rights to SRH, partly due to limitations set by the government as identified in PREPARE Cape Town (Shaw, 2009).

5.2 Interpretation of behavioral outcomes

Process evaluations are considered to have the opportunity to provide a link between factors thought to be essential for intervention success and the final study outcomes (Steckler & Linnan, 2002). Likewise, it is considered that this process evaluation may contribute to the understanding of why PREPARE Cape Town lead to significantly reduction of IPV victimization, but not in sexual behavior.

One of the main concerns of the PREPARE research team was that the requirement of active consent would avoid the intervention from reaching the higher-risk adolescents. Likewise, Mathews et al. (2015) found that adolescents who had been victims of IPV or had their sexual debut before baseline had a lower attendance rate in PREPARE Cape Town compared with those who had not. Several of the learners that were not granted parental consent came to the SHS, but were refused participation, as they did not have the parental consent required. In

general, the attenders were reported to come from “steady homes”, which may indicate that the ones with consent to participate also come from homes where the parents were already educated and orientated about SRH-interventions. The fact that schools in communities with especially low socioeconomic status were not included may have reinforced those adolescents in most need of the intervention not to be reached. It was further reported that some learners were unaware that PREPARE offered free health care, which may have prevented the adolescents in most need of the service attendance, due to the belief that lack of resources would prevent them to do so. Additionally, the fact that the parents had to take their children to follow-ups, may have caused the ones in highest need not to go, as a result of the economic condition of the adolescents´ caretakers. Not being able to reach adolescents in most need of SRH-interventions, may pose a barrier to achieve behavioral outcomes, as the risk behavior may then be rather low at the intervention onset (Klepp et al., 2008; Mathews et al., 2015). However, the fact that learners interacted about issues such as violence and alcohol abuse, in addition to being perceived in need of the condom demonstration, indicates that some of the adolescents in need of the intervention were still reached.

The participants experienced that PREPARE did succeed in reaching the adolescents at an age when most of them were yet to establish habitual sexual patterns, as most of the learners stated that they were yet to have their sexual debut during intervention. Although it is expected that interventions reaching adolescents at an age when they are yet to establish habitual sexual patterns are more effective, the process evaluation suggests that fidelity of implementation also plays an important role for this to be fulfilled. According to the IMB-model, information directly relevant to AIDS-transmission and prevention is considered an obvious obligation to AIDS- preventive behavior (Fisher et al., 2003). Further, the I-Change model states that transition from intention to behavior is determined by the ability to perform the behavior and barriers to do so (Elfeddali et al., 2012; Aarø et al., 2014). Although PREPARE Cape Town aimed to provide accurate information and tools for behavior change, the participants experienced that the intervention was not implanted with fidelity to the interactive parts of the intervention. In addition, it was outlined that some of the participants provided the learners with inaccurate information that was not initially part of the intervention, such as telling the adolescents that early sex could lead to sterility. Further, while none of the implementers reported to leave out sessions about IPV, a selection of the educational sessions addressing sexual risk behavior were reportedly implemented with lack of fidelity or left out as a result of limited time and because of the implementers´

preconceptions. The lack of fidelity to the mentioned respects, and especially with concern of condom line-ups, may have left inexperienced learners not to feel confident in regards to sexual risk behaviors and how to prevent them. This was somewhat confirmed by adolescents with higher rates of education session attendance achieving greater impact on IPV victimization, compared to no indication that students who attended a greater number of education sessions reported less sexual risk behavior than those in the control group (Mathews et al., 2016). It is suggested that effective interventions typically provide adolescents with consistent, accurate information and the life-skills needed to protect their health (Klepp et al., 2008; Salam et al., 2016). In contrast, the provision of inaccurate information possibly caused confusion and provision of inaccurate myths regarding SRH, and may contribute to the understanding of why the intervention was ineffective in reducing sexual risk behavior (Klepp et al., 2008).

As mentioned, some of the nurses' pre-conceptions post barrier to proper implementation of the condom demonstration. Unlike the facilitators, the nurses were not screened for positive gender-norms before the intervention´s onset. Similarly, Ahmed et al. (2006) suggest that the facilitators and nurses providing the interventions are key to the effectives of school-based sex education programs, and that it is important to equip them with the knowledge and skills needed prior to the intervention. However, a couple of the nurses mentioned that they were absent during training. The interview data did not include information about whether the nurses that omitted the condom demonstrations were the same as those who did not participate in the training before onset. One of the facilitators outlined that IPV could be prevented by teaching the females how not to send the wrong signals to males, indicating that it is the females responsibility to prevent abuse and violence. Such views may perpetuate gender-role stereotypes (Gibbons et al., 2017).

Another possible explanation to the behavioral outcomes may be that while both the EP and the SHS focused both on reducing sexual risk behavior and IPV, the PREPARE safely program focused directly on school safety and reduction of all forms of violence, including sexual violence in schools (Koech, 2013; Mathews et al., 2016). Although the nurse in the SHS was supposed to clarify misconceptions and facilitate positive attitudes toward the adolescent´s health, relationships, emotional wellbeing and sexuality (Mason-Jones & Beattie, 2013), more physical issues were reported addressed and referred to. The nurses outlined that the Department of Health is limited by regulations from the Department of Education in

concern of being able to provide contraception in school, and perceived it as challenging to prevent HIV without the opportunity to provide contraception. Still, only two of the nurses mentioned having made referrals for students in want of an HIV-test and very few of the nurses mentioned having referred students to SRH-services, like contraception. This was in spite of multiple of the learners being reported not to know how to use a condom. As physical issues were reported emphasized, SRH may not have been granted the attendance required in order to provide behavior change. The learners' preconceptions about SRH, gender and violence were reported to be well implemented in learners mindsets and in the local culture, making it particularly difficult to influence the learners way of thought about such topics. In the events of being given the time requited to become comfortable in talking about SRH and social issues, learners were starting to ask questions related to contraceptives, HIV and reproductive health indicating them to be in need of such information. Previous research has highlighted that interventions should alter culture-specific norms, attitudes and beliefs that discourage behavior change (Ahmed et al., 2006; Belton & Skovdal, 2014). Consistently, implementers suggested that such factors were important to intervention effectiveness, as South Africa still recognizes discrimination on the basis of race, gender and sex as an ongoing issue. However, the implementers outlined that the lack of time left them without the opportunity to answer questions or to clarify misinterpretations regarding the mentioned topics. The implementers suggested that the learners' stereotypical views on gender and the lack of ability to adjust such views might reinforce the adolescents' degree of acceptance towards IPV.

Although the sex of the adolescents is readily modifiable, the sex of the participating adolescents were still considered to affect the PREPARE behavioral outcomes in some ways (Dahlgren and Whitehead, 1991). PREPARE Cape Town focused on changing the unequal position of women and men in relationships and in society, and ideologies of male superiority that legitimize control of women by men, which are seen as underlying factors contributing to the prevalence of IPV. However, traditional societies still leave many women suffering from discrimination (Mathews et al., 2016; SaMRC, 2017; Aarø et al., 2014). The document analysis revealed that more females than males participated both in the EP and the SHS. As most traditional cultural groups in South Africa are patriarchal and males are seen as the unquestioned authority, positive effects of woman participating in PREPARE may be prevented by such cultural norms (Bower, 2014; Gibbons et al., 2017; Park et.al., 2000). South Africa's has a high prevalence of violence against females, and IPV is expected to

contribute to an earlier sexual debut, experience of forced sex and increased risk for HIV infection (Jewkes et al., 2010; UNAIDS, 2014; Aarø et al., 2014). In spite of women being guaranteed equal rights as men, cultural rights are also recognized (Bower, 2014; Gibbons et al., 2017). Therefore, although the sessions included teaching the girls how to say no and communicate to boys, these skills may be ousted by the wider cultural acceptance of the woman being dominated by men. This is consistent with Mathews et al. (2016), suggesting that in Western Cape, the contextual restrictions on safe sexual behavior may in fact mitigate against positive impacts of the PREPARE Cape Town intervention. Interventions like PREPARE Cape Town may therefore require high attendance both from females and males in order to be effective. On the other hand, it is important to point out that the male learners in the intervention are not necessary the males that the intervention females have sex with. In this case, equal attendance by females and males may not influence the intervention effectiveness.

According to Dahlgren & Whitehead (1991), the network that surround and give support to individuals, such as family, friends and the local community play an important part in influencing behavior change (Dahlgren & Whitehead, 2017; Biddlecom et al., 2009; Coetzee et al., 2014). The PREPARE Cape Town implementers outlined parental-involvement as important means to interventions such as PREPARE Cape Town. In spite of involvement of parents being intended in PREPARE Cape Town, the implementers reported that parents were involved much in the project. As Photovoice was identified as the only part of PREPARE Cape Town to actively involve parents (Mathews et al., 2016), this may have contributed to the fact that IPV was reduced by PREPARE, and may hence outline the importance of parental involvement. However, data regarding the number of parents attending the Photovoice presentation was not considered in this thesis. Further, sexual behavior is far from an individual decision-making process, but rather shaped by social relations and institutions at the local level, such as kinship groups, informal social networks, local political institutions, and religious and spiritual advisors, which are influenced by the wider social, political, economic and historical processes (Belton & Skovdal, 2014; Shaw, 2009). For example, adolescents are unlikely to be receptive to information about the importance of safer sex practices in the event of being homeless and dependent on income derived from commercial sex (Pillay & Flisher, 2008). However, such conditions are often seldom directly addressed in adolescents' SRH interventions. Similarly, in spite of the implementers reporting social issues such as adolescent housing to be a frequent community problem in PREPARE Cape Town,

the PREPARE program did not ensure that the participating learners had safe and supportive homes, secure livelihoods, and social protection (Mathews et al., 2016). As material and social conditions, such as housing, education and health care is suggested to impact adolescents´ SRH (Dahlgren & Whiteheads, 2001), it is assumed that the lack of assessment of such factors may have reinforced limited effectiveness of PREPARE Cape Town.

5.3 Final amplifications

As a result of the unlimited ranges of factors influencing the implementation of PREPARE Cape Town emerging from the data material, difficulties were encountered with respect to structure and delimitate the thesis. As mentioned, evaluation is always incomplete, as it is considered impossible to assess every element of an intervention (Moore et al., 2015; Naidoo & Wills, 2016). This process evaluation confirms what previous process evaluations of comprehensive SRH-interventions such as PREPARE have suggested in regards to significant number of adolescents not being reached by the interventions intended for them, that interventions shown to be effective are delivered ineffectively, and that interventions are delivered with short duration resulting in limited or transient effects (Chandra-Mouli et al., 2015; Saunders et al., 2005). Although this thesis suggest a number of factors that may have influenced the implementation and effectiveness of PREPARE Cape Town, it is important to outline that these factors were also affected by elements that were not addressed in PREPARE or in this thesis. Further, as PREPARE Cape Town was not implemented with fidelity to all parts of the implantation, this process evaluation is also incapable of indicating the potential effectiveness of PREPARE in the event of being implemented as originally implemented. Still, the process evaluation discovered possible factors of influence to the PREPARE Cape Town behavioral outcomes that outcome evaluations are considered incapable to reveal. Hence, it is considered that the findings confirm the importance of conducting process evaluations to complement outcome evaluations, in order to identify factors that may inform the development of future interventions similar to PREPARE and to put an end to the vicious cycle of ineffective SRH-interventions.

5.4 Methodological strengths and limitations

Due to the design, time and scope of this thesis, the following important limitations should be addressed.

First of all, it would have been valuable to conduct a process evaluation using all the process evaluation data collected during PREPARE, including the interview data, document analysis and the observational data conducted with both participants and learners, as such process evaluation could have given a more holistic picture of the project implementation. The original plan for this process evaluation was to include observation data. This was, however, declined against due to the scope of the thesis. Even though the document analysis and the interview data consisted of rich material, it is widely accepted that people´s perceptions and what they tell you about what they do, compared to what they are actually doing may differ significantly (Fangen, 2010; Nilssen, 2012). Such bias could have been addressed by including observation data.

In this process evaluation the EP and the SHS were evaluated together. As the evaluation did not include the School Safety service, the researcher may have lost some important aspects of the intervention that could have been captured if one had been looking at the intervention as a whole. On the other side, looking at a selection of the components may instead cause the researcher to pick up on other connections important for implementation that would not have been found otherwise. Moore et al. (2015) outline that it is better to identify and effectively address some questions than to try to answer every question in process evaluations, as being over-ambitious runs the risk of stretching resources too thinly.

Further, both in qualitative and quantitative research, it should be reflected on whether the research is conducted in a way that is trustworthy (Thagaard, 2003). The literature uses different terms for methodological frameworks in qualitative studies. In this thesis descriptive validity, interpretative validity, theoretically validity, internal and external validity will be used in explaining the validity of the study (Maxwell, 1992).

5.4.1 Descriptive validity

Descriptive validity refers to the accuracy in reporting descriptive information, such as descriptions of events, objects, behaviors, people, settings, times and places, and concerns the factual accuracy of the account as reported by the researchers (Johnson, 1997; Maxwell, 1992). Descriptive validity concerns to what extent data was reported according to what actually happened, and the extent to which the researchers accurately reported what they saw

and heard (Johnson, 1997). It is considered important that the researcher does not change what has been said or done, in order to protect the validity of the data (Maxwell, 1992).

Apart from the interview with the PREPARE investigator, the interview data were already collected and transcribed. As mentioned, one of the characteristics of qualitative studies is that the analysis begins immediately and continues throughout the entire research process (Nilssen, 2012). With interview data, the conduction and transcription of interviews are therefore parts of the analysis itself (Malterud, 2001b). Consequently, important information and details relevant to the process evaluation may have been lost during these steps of analysis (Kvale et al., 2015). Some expressions were documented in the transcriptions, such as laughter and hesitating, and some interviewers added comments on how the interview went. Such documentation can be considered to strengthen the descriptive validity of the study. However, many of the interviews did not contain any information about the area where interviews were conducted, the non-verbal behavior during interviews or the mood of informants, making it difficult to understand the setting and to engage with the data in order to capture the participant´s perceptions correctly. The parts of the interviews where the meaning was considered unclear due to lack of such descriptions were removed, though potentially causing important pieces of information to vanish.

Additionally, linguistic challenges may have affected the descriptive validity. All interviews were conducted in English, which was only the native language of a selection of the interviewees. Informants speaking of phenomena in other than their native language, may cause descriptions of the phenomena to be explained less accurately (Kvale et al., 2015). Such bias could have been prevented with the use of local interpreters. The interpretation was that some informants had difficulty in formulating things in English, causing the interviewers to help the participants complete their sentences. In some events the informants outlined important issues, but were unable to clarify. In such occasions, the ability to ask informants to specify and reason their views was preferred, but not possible.

In order to prevent additional modification of the original data material, the thesis was written in English, the same language as interview transcripts. However, to write a thesis in a different language than my mother tongue may have lead to parts of the data material being misinterpreted. In addition, difficulties were especially encountered when attempting to

explain and discuss complicated phenomena in English, which may have caused important perspectives not to be clearly elucidated.

5.4.2 Interpretive validity

Interpretive validity relates to how the researcher interprets the participants' statements, and refers to the degree to which the research participant´s viewpoints, thoughts, feelings, intentions, and experiences are accurately understood by the qualitative researcher and portrayed in the research report (Maxwell, 1992). As the researcher, based on their representations, design the informants' opinions, researchers never have direct access to what informants think about different phenomena (Maxwell, 1992).

It is argued that interpretive validity may be strengthened in the event of interviews being conducted, transcribed and analyzed by different researchers. This is reasoned by the fact that the researcher analyzing the interviews may then be perceived more objective, as one does not carry any personal emotions towards any of the participants and is unable to shape the entire study based on their preconceptions (Kvale et al., 2015). In comparison, others argue that transcriptions will then be shaped by the perceptions of the researchers conducting and transcribing the interviews (Kristoffersen et al., 2010; Kvale et al., 2015). Similarly, though I was unable to influence the transcripts analyzed in this thesis, they may instead have been shaped by the perceptions of the PREPARE investigators that performed and transcribed the interviews.

One way to maintain interpretive validity is to use low inference descriptions so that the reader can experience the participant´s actual language, dialect, and personal meanings (Maxwell, 1992). Most of the transcriptions were reported in quotations according to the participants' response. In some transcriptions the content was however written in a more explaining manner, such as; "the nurses felt that.." or "the facilitators acknowledge that..". In such written texts there is considered that it has already been an interpretation, as to the researcher having determined what is important to mention (Nilssen, 2012). Therefore, such transcriptions may lead to bias based on the interpreter's transcriptional interpretations, making it difficult for others to evaluate what was actually said as to prevent and control potential bias in further analysis. As interviews were recorded with an audio device and transcribed shortly after the interviews took place, listening to the recordings could have

helped to promote the interpretive validity of the study, as this would have made me more able to hear the expressions, tone of voice and hesitations. Due to the scope of the thesis, this was not utilized in this study.

Another strategy to ensure interpretive validity is called “member checking”, which includes sharing interpretations of participant´s viewpoints with the participants in order to clarify areas of miscommunication. When not conducting the interviews, the opportunity to clarify parts of the interviews was not possible. The participants sometimes mention matters in the interviews that are interesting and important for the understanding of the findings, but that are experienced unclear to me. As interview data is largely studied in collaboration with the research participants, the quality of the material largely depends on the researcher's communicative skills. In interviews, this means that the researcher must know when to ask for extensions, change the direction of the interview, awareness of how one may influence the situation must be utilized. The researcher have the ability to respond to the situation and adapt the collection of data material to the circumstances and thus maximize the ability to collect and produce meaningful information (Nilssen, 2012). As the transcripts very rarely contain clarifying questions such as “Do I understand you correctly if…?” or “So what your saying is…?”, it was sometimes difficult to judge weather the interviewers´ understanding overruns those of the interviewees (Johnson, 1997). As mentioned above, parts of the interviews where the content was considered unclear were removed in order to reduce the amount of findings presented that was inconsistent with the actual perceptions of participants. In order for the excluded data not to lead to major knowledge gaps in the thesis, the process evaluation focused on areas where the data material provided broad and clear knowledge.

5.4.3 Theoretical validity

Theoretical validity includes to what degree the researcher has managed to explain the phenomenon adequately. It refers to the application of conceptual framework, and to what extent this framework is connected and “makes sense” to the studied phenomena. As a general rule, the final general explanation should accurately reflect the majority in the research study (Maxwell, 1992). Although this study follows a phenomenological approach, aiming to understand social phenomena and describe the world as the informants experience the phenomena and the world (Kvale et al., 2015), the understanding of such descriptions were also influenced by the conceptual framework included in the study.

As the process evaluations have the opportunity to assess a wide specter of influencing factors, a range of different conceptual framework could have been included in the thesis. For example, adolescents' rights to SRH are articulated in multiple rights, declarations and laws. Therefore, as adolescents rights to SRH is an important determinant of SRH and hence may influence the outcomes of SRH-interventions, one could have extensively discussed to what extent the adolescents rights were fulfilled in the area of the intervention and how this may have influenced the effectiveness of PREPARE Cape Town. In order to delimitate the conceptual framework, the included framework is instead primarily grounded in what the participants mentioned in the interviews. Therefore, some factors that are important to consider in the development of adolescent SRH-interventions may only be briefly mentioned in this particular thesis. It is important to outline that this does not indicate them less important.

Different from research aiming to study a particular phenomenon, process evaluations aim to study the intervention itself, as well as the processes forming the implementation of the intervention (Moore et al. 2015). Therefore the conceptual framework in process evaluations typically includes a detailed description of the intervention itself (Steckler & Linnan, 2002). Consistently, a detailed description of how the PREPARE Cape Town intervention was intended to be implemented forms part of the conceptual framework in this thesis.

As previously mentioned, practical frameworks and models are available to guide the development of process evaluation plans, though the use of such frameworks is less common (Saunders et al., 2005). It was preferred to follow such framework in order to assure that the thesis corresponded with how process evaluations optimally should be conducted and organized. However, as the data was conducted by the researchers in PREPARE it was unable to influence how and what type of process evaluation data was gathered. Due to the fact that no practical framework was used in the collection of process evaluation data in PREPARE, it was difficult to find one that suited the available data material. When finding models that suited the data somehow, these required both interview and observational data to be included. Therefore, the fact that including observational data was refused due to the scope of the thesis made it even more difficult to find a model that suited this particular thesis. In order to solve this, key process evaluation measures were used to guide the study. In addition, the social determinants of health, previous assumptions about similar SRH-interventions and the

demographics, history and culture of the study area were used to guide the reasoning of the possible causes for PREPARE Cape Town´s lack of behavioral outcomes. As mentioned, Steckler and Linnan (2002) states seven different key process evaluations. It is fairly rare that all seven are explained in process evaluations (Steckler & Linnan, 2002). Only the key process evaluation measures that could be grounded in rich data material, preferably based on multiple sources were included. This was in order to prevent making casual assumptions based on the perceptions of individuals that were considered unlikely to be representative for the whole population.

5.4.4 Internal validity

Internal validity refers to the degree to which a researcher is justified in concluding that an observed relationship is causal. In the events when qualitative research aim to identify potential causes and effects, the comparison might be to a hypothetical control group. Although a control group is rarely used in qualitative research, the researcher can think about what would have happened if the causal factor had not occurred. In such reflections, the researcher may sometimes rely on his or her expert opinion, as well as published research available in deciding what would have happened (Johnson, 1997; Maxwell, 1992).

In addition to understanding the experiences of the participants, this process evaluation aims to identify possible causes for the lack of significant behavioral effects of the intervention. Though the study suggests some possible causes and factors in the next two chapters, no conclusion is made about causal relationships in this thesis as the data are not appropriate for establishing causality.

Data triangulation is a tool used to strengthen the internal validity in research. In data triangulation the researcher uses multiple data sources in one single research study. Data sources do not refer to different methods, but to the use of multiple data sources using a single method. For example, the use of multiple interviews provided multiple data sources even though using one single method. Data triangulation involves collecting data at different times, at different places, and with different people (Johnson, 1997). In this thesis both the document analysis and the interviews included data from different sources. The documents included both peer-reviewed publications and a specter of different project documents. As for the interviews, they were conducted with four different groups of people, including facilitators,

nurses, principals and the PREPARE investigator. In addition, different interview guides were used for each group. The factors considered to influence the implementation identified in all of the data sources were perceived as more likely to cause effects than the ones only mentioned by one individual.

5.4.5 External validity

External validity refers to the ability to generalize from a set of research findings to other people, settings and times (Maxwell, 1992). Different from quantitative studies, generalizability is not the major purpose of qualitative research, as the people and settings examined in qualitative research are rarely randomly selected and therefore may not generalize from the sample to a population (Johnson, 1997). Similarly external validity is not always intended in process evaluations, as such evaluations aim to understand characteristics of particular interventions and the context of conduction (Saunders et al., 2005).

As explained previously, a range of factors may influence if and when interventions are effective. The findings in this study are specific to the PREAPARE Cape Town intervention, the Cape Town context and the participants involved. As cultural differences are relative and hard to generalize, the external validity of this study is limited to the specific context of South Africa, with its special history of apartheid and the violence entrenched in society. However, Denscombe (2014) suggest that although each case may be unique, examples or parts of the results may be transferable. Thus, it is considered that the results in this thesis may still contribute to the broader evidence base regarding the development and implementation of school-based HIV/AIDS-prevention programs similar to PREPARE.

This chapter has aimed to discuss the research questions set for the thesis, by incorporating the findings with the previously presented conceptual framework and literature review. The next will present the concluding remarks, before presenting recommendations for future research.

6.0 CONCLUDING REMARKS

As the HIV-prevalence among South African adolescents is high, the development of effective HIV-prevention interventions is a top public health and policy priority (UNAIDS, 2016). Still, behavioral outcomes of previous interventions have been generally rather limited (Chandra-Mouli et al., 2015; Sani et al., 2016). It has therefore been called for rigorous evaluations in order to document how and why interventions are or are not effective, and to understand the implementation processes and the social contexts in which interventions occur (Chandra-Mouli et al., 2015; Harrison et al., 2010; Mukoma et al., 2009). As a respond, this thesis conducted a process evaluation of the PREPARE Cape Town intervention, with the aim to assist in the interpretation of the intervention´s behavioral outcomes and to contribute to the broader evidence base regarding implementation of school-based STI and HIV/AIDS-prevention programs.

As many interventions before it, PREPARE Cape Town did not lead to the expected behavioral outcomes, although carefully planned according to recommendations from previous research, literature, theoretical framework and context (Mathews et al., 2016). In SATZ, the prelude of PREPARE, it was suggested that outcomes were influenced by contextual factors rather than content and delivery (Mathews et al., 2012; Mukoma et al., 2009). In addition, this process evaluation suggests that the fidelity of intervention components may be equally important to intervention effectiveness. The process evaluation revealed several structural and contextual factors expected to influence the delivery and behavioral outcomes of PREPARE Cape Town, with the impediments to curriculum implementation according to plans including factors both in and outside the control of the PREPARE research team. The most central barriers to implementation and effectiveness of PREPARE Cape Town included; A) Limitations in time, B) Preconceptions and characteristics in intervention providers interfering with central intervention aims, C) Limited proportion and consistency of staff, D) Organizational factors, such as limited communication, instruction and information, and E) The ability to reach the adolescents in most need of PREPARE. Consistently with the results from SATZ, several of these factors were influenced by limitations set by the government, cultural factors and the socioeconomic status of the region. In comparison, the same factors were considered to have the ability to reinforce implementation in the event of A) Being provided more; time and staff, B) Strengthened communication, C) Advanced attention to factors influencing adolescents´

ability to attend SRH-interventions, such as involvement of parents, and D) Superior mapping of the preconceptions of intervention providers prior to intervention onset. In addition, the implementers mentioned that interventions like PREPARE Cape Town to a greater extent should include collaboration with- and education of parents and a more comprehensive assessment of social issues. The process evaluation discovered possible factors of influence to the PREPARE Cape Town behavioral outcomes that outcome evaluations are considered incapable to reveal, and hence confirms the importance of conducting process evaluations in order to complement outcome evaluations and to inform the development of future interventions similar to PREPARE Cape Town.

Although the thesis suggest a number of factors that may have influenced the implementation and effectiveness of PREPARE Cape Town, it is important to outline that these factors were also affected by elements that were not addressed in PREPARE or in this thesis. As PREPARE Cape Town was not implemented with fidelity to all parts of the implantation, this process evaluation is also incapable of indicating the potential effectiveness of PREPARE in the event of being implemented as originally implemented.

7.0 Recommendations for future research

This thesis only scrapes in the surface of the studied field and recommends that further research in the field is needed, both in regard of further process evaluation of PREPARE Cape Town and in regard of future research on future interventions addressing adolescents´ SRH.

7.1 Recommendations for further process evaluation of PREPARE Cape Town

The scope of this thesis sets limitations for how much of the excising process evaluation data material could be incorporated. Therefore, recommendations for further process evaluation of PREPARE Cape Town include to conduct a process evaluation incorporating all the process evaluation data; including the interview data conducted both with participants and learners, as well as the observational data. This may provide a more accurate picture of how the intervention was implemented, as systematic observations can help with getting a clearer understanding of a phenomenon, by partaking in the experiences of the people studied (Malterud, 2001). Further, the data material provided information that can be used to look into each of the PREPARE Cape Town components separately, and hence to investigate each component more deeply.

Despite the fact that studies indicate that adequate training and preparation of those delivering an intervention is essential to the effectiveness of interventions (Ahmed et al., 2006), none of the questions in the interview guides probed directly to this. Therefore, training was not specifically mentioned or throughout described in the interviews. The training of the PREPARE Cape Town providers is therefore only mentioned briefly in the thesis. To look into the training provided is however recommended, as it is expected to increase the understanding of possible causes for lack of fidelity as a result of intervention providers' features.

7.2 Recommendations for future research relevant to adolescent sexual and reproductive health interventions

As previously mentioned, Steckler and Linnan (2002) mention seven different key process evaluation measures. It is extensively rare is it that all seven are explained in process evaluations (Steckler & Linnan, 2002). However, assessing all seven measures both during

the collection of process evaluation data, as well as in formative and summative process evaluations may provide a more holistic view of intervention implementations and therefore capture factors of implementation influence yet to be discovered. As outlined in this thesis, such evaluation does however require time and resources that are not always available in interventions similar to PREPARE. Further, this thesis recommended that future interventions should use specific theoretical framework in the collection of process evaluation data, in order to ensure that not only the intervention, but also the process evaluation is completed with fidelity.

Due to the fact that the characteristics and pre-conceptions of the implementers in PREPARE Cape Town were discovered to influence the intervention implementation to a great extent, it is suggested that intervention implementers´ preconceptions should be mapped expansively before intervention onset. This has previously been outlined by Ahmed et al. (2006), Helleve et al. (2009) and Shaw (2009).

This process evaluation agrees with the SATZ study in that interventions should be tailor-made in order to meet specific local needs in each site (Mukoma et al., 2009). As a result of the participants in PREPARE Cape Town outlining that the interventions schools differed in multiple respects, this process evaluation further recommends that such individualization may need to be taken a step further as to tailor-made interventions to particularly target the community surrounding each individual school. In addition, the findings of this thesis implicate that factors in the network that surround and give support to individuals, such as parents and caregivers, assessment of social issues and misinterpretations among leaners, and the major macro structures of the nation should be included in the aims of interventions such as PREPARE. Such efforts, however, require great resources and cooperation between several agencies. Therefore, it is important to outline that in the event of making intervention even more comprehensive, resources and cooperating-plans should be in place. This is because lack of resources may reinforce interventions to be implemented with lack of fidelity, as has been illustrated in the thesis.

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Appendix

Appendix 1: Overview of key process evaluation measures (Saunders et al., 2005)

Component	Purpose	Formative uses	Summative uses
Fidelity (quality)	Extent to which intervention was implemented as planned.	Monitor and adjust program implementation as needed to ensure theoretical integrity and program quality.	Describe and/or quantify fidelity of intervention implementation.
Dose delivered (completeness)	Amount or number of intended units of each intervention or component delivered or provided by interventionists.	Monitor and adjust program implementation to ensure all components of intervention are delivered.	Describe and/or quantify the dose of the intervention delivered.
Dose received (exposure)	Extents to which participants actively engage with, interact with, are receptive to, and/or use materials or recommended resources; can include "initial use" and "continued use."	Monitor and take corrective action to ensure participants are receiving and/or using materials/resources.	Describe and/or quantify how much of the intervention was received.
Dose received (satisfaction)	Participant (primary and secondary audiences) satisfaction with program, interactions with staff and/or investigators.	Obtain regular feedback from primary and secondary targets and use feedback as needed for corrective action.	Describe and/or rate participant satisfaction and how feedback was used.
Reach (Participation rate)	Proportion of the intended priority audience that participates in the intervention; often measured by attendance; includes documentation of barriers to participation.	Monitor numbers and characteristics of participants; ensure sufficient numbers of target population are being reached.	Quantify how much of the intended target audience participated in the intervention; describe those who participated and those who did not.
Recruitment	Procedures used to approach and attract participants at individual or organizational levels; includes maintenance of participant involvement in intervention and measurement components of study.	Monitor and document recruitment procedures to ensure protocol are followed; adjust as needed to ensure reach.	Describe recruitment procedures.
Context	Aspects of the environment that may influence intervention implementation or study outcomes; includes contamination or the extent to which the control group was exposed to the program.	Monitor aspects of the physical, social, and political environment and how they impact implementation and needed corrective action.	Describe and/or quantify aspects of the environment that affected program implementation and/or program impacts or outcomes.

Appendix 2: Cape Town intervention; Topics, objectives and sample activities.

The table below presents an overview of the topics covered, objectives and sample activities in the Cape Town intervention as presented in Aarø et al. (2014).

Educational programme		
Topic (number of sessions)	**Objectives**	**Sample activity**
Values and aspirations related in intimate relationships(1)	- Meet the facilitator and learn about the programme. - Identify personal values and aspirations including how they want to treat people and be treated.	Students complete a worksheet involving the design of their own "roadmap" to direct their lives towards their chosen goals and participate in a group discussion about relationships and their place in the roadmap.
Assertive communication (2)	- Identify four styles of communication and their consequences. - Develop assertive communication skills for sexual decision-making.	Students practice assertive communication to convey their wish to a sexual partner.
Gender power inequities (2)	- To critically analyze the dominant social ideas about gender power and roles. - Explore the kind of man or woman they want to be.	Group discussion of experiences of gender norms and gender inequality in home life/intimate relationships
Relationships (6)	- To identify the characteristics of a caring relationship. - To identify qualities they value in an intimate partner. - To identify and develop skills to respond to relationship problems. - To develop skills to end relationships respectfully and	Read custom-made photo-novella and discuss in a group the relationship problems experiences by the adolescent characters: alcohol, poor communication, pressure to have sex, IPV. Enact resolutions to the problems through role-plays

	safely.	
Sexual decision making (4)	- To develop motivations and skills to delay sex, use condoms and reduce sex partners: - Learn about positive and negative consequences of having sex. - Develop action plans to prevent having sex when they are not ready. - Identify the behaviors that put them at risk of HIV, STIs and unwanted pregnancy. - Critically analyze the risks of multiple partnerships, intergenerational partnerships, and transactional sex. - Develop skills to use a condom.	Students complete a worksheet to develop a set of personal criteria for assessing their own readiness to have sex. Play a game to learn the steps in using a condom.
IPV and sexual violence (4)	- Recognize types of relationship violence and warning signs. - Understand the reasons people use violence and leading to intimate partner violence control to manipulate others. - Reflect on their own values and aspirations in relation to violence. - Understand the laws related to violence and	Students read a story depicting a scenario in which a girl is forced by her boyfriend to have sex. They identify the underlying factors, the triggers and the opportunity factors leading to intimate partner violence.

	sexual violence, and the legal support services. - Demonstrate risk monitoring and safety planning skills.	
Support for victims of IPV and sexual violence (1)	- Develop empathy toward victims of violence and learn how to support them. - Understand the importance of seeking help if a victim of violence, and to learn how to seek help.	Students read a story depicting a scenario in which a girl is forced by her boyfriend to have sex. Students discuss issues of power, blame, responsibility and human rights violations.
Creating lasting change. Consolidating lessons learned (1)	- Consolidate and share what they have gained from the program. - Reflect on their ability to act as agents of change within their schools and communities.	Students complete and discuss a worksheet focusing on "What am I going to do to be more respected and respectful?"

School safety program (1)		
Activity and participants	**Objectives**	**Sample activities**
School safety training. School teams from each intervention school, comprising principal, facilitators, school safety officer, parent representatives, local police officer	- To reduce acceptability and prevalence of IPV and sexual violence in the school. - To raise awereness of the relevant laws concerning sexual violence. - To develop skills to implement a participatory school safety audit and safety plan.	-Presentation of the laws regarding sexual violence. - Presentation of concepts of participatory safety audit and plan. - Small group-work to plan school safety audit.

School safety program (2)		
Activity and participants	**Objectives**	**Sample activities**
- Photovoice (five 2-h sessions) with 20 randomly selected PREPARE participant valunteers.	- To empower students to be the driving force in improving physical, emotional and sexual safety at school. - To influence school safety policy and prompt changes to address violence in schools.	- Risk mapping of unsafe situations and places in school. - Take photographs to portray safe and unsafe situations and places. - Present to forum of principals, teachers, parents, police officers and community stakeholders.

School health service		
Activity and participants	**Objectives**	**Sample activities**
"Health check" offered to each PREPARE participant	To increase adolescent access to sexual and reproductive health (SRH) education, services and social support.	- SRH education, screening and referral for SRH problems. - Screening and referral for psychosocial problems. - Follow-up consultation.

Appendix 3: Interview guide for facilitators

INTERVIEW GUIDE FOR FACILITATORS

1. Tell us about a session that you conducted where you were most comfortable with the content
2. Tell us about a session where you felt you had the most difficulty with the content
3. As session where you had the most impact on the learners
4. A session where you had least impact
5. Which sessions do you think the learners enjoyed the most and why?
6. Which did they enjoy the least and why?
7. Tell us how the session “When is the right time” went? “How many partners is too many?”
8. What did you think about learner worksheets: how could they be improved
9. What did you think about the facilitator’s manual?
10. Do you feel you were supported by the PREPARE team during intervention implementation?
11. What do you think we could have done differently

Appendix 4: Interview guide for health workers

INTERVIEW GUIDE FOR HEALTH WORKERS

1. What are your views about the PREPARE project?
2. What are your views about having school health services at schools?
3. What difficulties did you encounter while carrying out your work? How did you deal with those difficulties? What changes to the program (if any) would you suggest that might help to avoid those difficulties?
4. What sorts of things made it easy for you to carry out your work?
5. What do you think about the time allocated each afternoon for you to see students? Not enough time? Too much time?
6. What are your thoughts about having a health service permanently situated at the schools?
7. How do you think the students felt about seeking your services or accessing the health center? Were there certain types of problems that they were more likely to seek help with than others? Were there barriers to students seeking your services? If so, what were they and how might they be overcome?
8. Where you able to ask the learners about their relationship with their friends, any sexual partners, people at home? If so, what other problems did they share regarding these topics? (Prompt for all topics). In what ways were you able to help with these problems (prompt for their responses to all the topics)
9. In what ways, if any, do you think the health service impacted the students?
10. In what ways, if any do you think the health service impacted the school community?
11. Please tell us about consultation/s in which you felt you made a difference in a student's life.
12. Please tell us about consultation/s where you felt powerless to help a student/s. What, if anything could have been different about the program that may have helped you to feel more impactful?
13. Did you make referrals to outside clinics for specialized services? If so, what kinds of problems did you recommend referrals for specialized services? Were you able to identify places for students to receive these servies? Do you know if students were able to access these services? What barriers, if any, do you believe there were for students to obtain

specialized services? In what way do you think these referrals to specialized services was helpful / not helpful for students?

14. What comments or suggestions do you have that could help improve this service?
15. If the project is recommended for adoption, would you be willing to be a school service provider? If not, why not?

Appendix 5: Interview guide for principals

INTERVIEW GUIDE FOR PRINCIPALS

1) What are your views about PREPARE?
2) What observations did you make of the school health intervention?
3) What observations did you make of the school safety intervention?
4) How do you think the program made a difference in students lives?
5) In what way do you think the project made a difference in the school environment?
6) Do you have any suggestions or comments that you think can make the project better meet its objectives?
7) What aspects of PREPARE would you like to adapt in your school and why?
8) If you were to change anything in the project, what would it be?

Appendix 6: Interview guide for member of the principal investigator of PREPARE Cape Town

INTERVIEW GUIDE

1) How exactly were the facilitators recruited?

2) How exactly were the nurses recruited?

3) Did the nurses and health workers have the same role? Is it right that health workers assisted the nurses in a few schools, but not all of them? Or was the health care service provided by nurses in some places and by health workers in others?

4) What exactly did the training of facilitators contain of? Who provided/facilitated the training?

5) What exactly did the training of nurses contain of? Who provided/facilitated the training?

6) Did the police workers and the principals receive any kind of preparation/training?

7) The facilitators were screened for positive gender norms and comfort with teaching. How exactly was this done?

8) Were nurses screened for positive gender norms as well?

9) Did the principals have any particular role in the project? If they did, what exactly was their role?

10) It is written in the study protocol that PREPARE would provide high quality training of those who were responsible for delivering the programs and involving students, teachers and parents actively; In what way were teachers and parents involved?

11) Were other people from the local community involved in some way?

12) How was parent-child communication on sexuality, improvement of parenting practices, and mobilization of parental support for healthy sexual behavior promoted?

13) When the facilitators combined sessions, did they do more than one session at the time or were sessions combined with nurses or the police?

14) Is it correct that the process evaluation data contained of interviews with the facilitators, principals, nurses and learners, and observations of the facilitators and nurses? Was any additional process evaluation data to the prior conducted?

15) What was the original plan for the process evaluation? Were any theoretical framework or models for process evaluation used while planning the process evaluation prior to the interventions onset?

16) It is written in some of the interviews that they will be held in English, so that people can understand. Were all interviews with the nurses, facilitators and principals conducted in English?

Appendix 7: Form FHS007: Approval of the student added to ethics

UNIVERSITY OF CAPE TOWN

FACULTY OF HEALTH SCIENCES
Human Research Ethics Committee

Form FHS007: Amendment – study staff

HREC office use only (FWA00001637; IRB00001938)			
☐ Approved			
This serves as notification that all changes to the study staff and documentation described below are approved.			
Chairperson of the HREC signature		Date	9/9/2016

HUMAN RESEARCH ETHICS COMMITTEE
09 SEP 2016
HEALTH SCIENCES FACULTY
UNIVERSITY OF CAPE TOWN

Principal Investigator to complete the following:

1. Protocol information

Date (when submitting this form)	09 September 2016
HREC REF Number	268/2010
Protocol title	Promoting sexual and reproductive health among adolescents in southern and eastern Africa – Mobilising schools, parents and communities Preventing sexual risk behavior and intimate partner violence among adolescents in Cape Town
Protocol number (if applicable)	
Principal Investigator	Prof. C Mathews
Department / Office Internal Mail Address	Psychiatry & Mental Health

1.1 Does this protocol receive US Federal funding?	☐ Yes	☐√ No

2.1 Staff changes (tick ✓)

Are new personnel being added to this research?	☐ √ Yes	☐ No
Are current personnel being removed from this research?	☐ Yes	☐ √ No
Is the principal investigator for this research being changed? If yes, please attach revised conflict of interest and PI declaration statements. (Refer: sections 7 and 8.4 in the New Protocol Application Form)	☐ Yes	☐ √ No
Do the consent and assent forms need modification to reflect these staff changes? If yes, please attach copies of the revised forms, with all changes highlighted or tracked and listed in the documents for approval.	☐ Yes	☐ √ No

2.2 Amended study staff details

Title, first name, surname	Department/Division	E-mail	Role of new staff member
Dr. Eugene Davids	Psychiatry & Mental Health	Eugene.Davids@uct.ac.za	Conduct data analysis and write a paper
Ms. Katri Pollanen	Psychiatry & Mental Health	k.pollanen@student.maastrichtuniversity.nl	Conduct data analysis and write a paper
Ms. Suzanne Borgelin	Psychiatry & Mental Health	suzanne.borgelin@nmbu.no	Conduct data analysis and write a paper
Ms. Zara Trafford	Psychiatry & Mental Health	ztrafford@gmail.com	Conduct data analysis and write a paper
Ms. Kathryn Harvey	Psychiatry & Mental Health	kh719@york.ac.uk	Conduct data analysis and write a paper
Ms. Darshini Govindasmy	Psychiatry & Mental Health	Darshini.govindasamy@mrc.ac.za	Conduct data analysis and write a paper
Dr. Petrus De Vries	Psychiatry & Mental Health	petrus.devries@uct.ac.za	Conduct data analysis and write a paper
Ms. Stephanie Pons	Psychiatry & Mental Health	stephanie_pons@brown.edu	Conduct data analysis and write a paper
Ms. Elise Fonn	Psychiatry & Mental Health	elise-utdanning@hotmail.com	Conduct data analysis and write a paper

3. List of documentation for approval

Please list below all staff documentation such as CVs, declarations, GCP certificates and revised consent forms which need approval. This information must correspond to all 'yes' answers in 2.1 above. This form will be signed and returned to the PI as notification of approval. Please add extra pages if necessary.

n/a

4. Signature

My signature certifies that I will maintain the anonymity and/ or confidentiality of information collected in this research. If at any time I want to share or re-use the information for purposes other than those disclosed in the original approval, I will seek further approval from the HREC.

Signature of PI	Mathews	Date	09-09-2016

Student's Name	Degree, University	Title of Paper/s
Dr. Eugene Davids	N/A	Early sexual debut? Parental norms and condom use attitudes as predictors among adolescents in Cape Town, South Africa
Ms. Katri Pollanen	Master of Science Health Education and Promotion, Maatricht University	Beliefs About Sexual Intimate Partner Violence Perpetration Among Adolescents in Western Cape, South Africa
Ms. Suzanne Borgelin	Masters in Public Health, the Norwegian University of Life Sciences	Young people's access to sexual and reproductive health services in Western Cape, South Africa
Ms. Zara Trafford	N/A	Responding to the sexual, reproductive and mental health care needs of school-going adolescents: Results from an experimental school health service in South Africa
Ms. Kathryn Harvey	Masters in Public Health, University of York	Predictors of contraceptive use in adolescents
Ms. Darshini Govindasmy	N/A	Utilisation of social services among learners exposed to intimate partner violence: Findings from a school-based HIV prevention programme in Western Cape, South Africa
Dr. Petrus De Vries	N/A	Measuring adolescent mental health around the globe
Ms. Stephanie Pons	Masters in Public Health, Brown University	School Violence and Attempted Suicide Among Students Aged 12 to 16 Years in the Western Cape of South Africa
Ms. Elise Fonn	Masters of Public Health, the Norwegian University of Life Sciences	A process evaluation of the Cape Town PREPARE intervention

Appendix 8: Ethics approval for PREPARE

UNIVERSITY OF CAPE TOWN

Health Sciences Faculty
Research Ethics Committee
Room E52-24 Groote Schuur Hospital Old Main Building
Observatory 7925
Telephone [021] 406 6626 • **Facsimile** [021] 406 6411
e-mail: lamees.emjedi@uct.ac.za

05 August 2010

HREC REF: 268/2010

A/Prof C Mathews
Child & Adolescent Psychiatry
Red Cross Hospital

Dear A/Prof Mathews

PROJECT TITLE: PREVENTING SEXUAL RISK BEHAVIOUR AND INTIMATE PARTNER VIOLENCE AMONG ADOLESCENTS IN CAPE TOWN

Thank you for your ethics response to the Faculty of Health Sciences Human Research Ethics Committee dated 09 June 2010.

It is a pleasure to inform you that the FHS HREC has **formally approved** the above-mentioned study.

Approval is granted for one year until 15 August 2011.

Please send us an annual progress report (website form FHS 016) if your research continues beyond the approval period. Alternatively, please send us a brief summary of your findings so that we can close the research file.

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Please quote the REC. REF in all your correspondence.

Yours sincerely

PROFESSOR M BLOCKMAN
CHAIRPERSON, HSF HUMAN ETHICS

lemjedi

Federal Wide Assurance Number: FWA00001637.
Institutional Review Board (IRB) number: IRB00001938

This serves to confirm that the University of Cape Town Research Ethics Committee complies to the Ethics Standards for Clinical Research with a new drug in patients, based on the Medical Research Council (MRC-SA), Food and Drug Administration (FDA-USA), International Convention on Harmonisation Good Clinical Practice (ICH GCP) and Declaration of Helsinki guidelines.

The Research Ethics Committee granting this approval is in compliance with the ICH Harmonised Tripartite Guidelines E6: Note for Guidance on Good Clinical Practice (CPMP/ICH/135/95) and FDA Code Federal Regulation Part 50, 56 and 312.

lemjedi

Appendix 9: Ethics approval for the Cape Town intervention

UNIVERSITY OF CAPE TOWN

Faculty of Health Sciences
Human Research Ethics Committee
Room E52-24 Groote Schuur Hospital Old Main Building
Observatory 7925
Telephone [021] 406 6626 • Facsimile [021] 406 6411
e-mail: shuretta.thomas@uct.ac.za

29 July 2011

HREC REF: 268/2010

A/Prof C Mathews
Adolescent Health Research Unit
Department of Psychiatry

Dear A/Prof Mathews

PROJECT TITLE: PREVENTING SEXUAL RISK BEHAVIOUR AND INTIMATE PARTNER VIOLENCE AMONG ADOLESCENTS IN CAPE TOWN.

Thank you for your letter to the Faculty of Health Sciences Human Research Ethics Committee dated 4th July 2011.

The HREC has **approved** phase 3 of this study. Approval of this study is extended to 15 August 2012.

Please note the following comments:

1. All informed consent forms for students for the Photovoice project should also be signed by the researcher and dated as witness to the student's signature.
2. In respect of culture as mentioned on page 4, paragraph 1, vii, we see no need to include this point on culture-specific norms for the following reasons: the researchers produce no evidence that culture was a significant variable in the PREPARE study; no justification is made for the inclusion of a particular cultural group and finally no expert anthropologist has been included on the research team. We would therefore suggest that more harm than good might be done from this aim.

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Please quote the HREC. REF in all your correspondence.

Yours sincerely

Wesley Kenery

PP **PROFESSOR M BLOCKMAN**
CHAIRPERSON, HSF HUMAN ETHICS

S Thomas

Appendix 10: Data sharing agreement

Adolescent Health Research Unit

Division of Child & Adolescent Psychiatry

Professor Petrus J de Vries

Sue Struengmann Professor of Child & Adolescent Psychiatry

Data Access and Sharing Agreement

This agreement is to ensure that faculty and students who have access to PREPARE data understand their obligations.

Project Title: A process evaluation of the PREPARE intervention to promote healthy sexual practices among adolescents in Cape Town, South Africa.

Ethical Approval Number: [add here]

You are hereby granted permission for a study entitled 'A process evaluation of the PREPARE intervention to promote healthy sexual practices among adolescents in Cape Town, South Africa ', for the specific purposes as outlined in your application to us. Access to data is obtained only when this agreement is filled out by all parties.

As a user of PREPARE data you are obliged to:

1. only use the data for the specific purposes laid out in the project described in the application
2. not share the data with any third parties
3. share drafts and final versions of the study proposal and thesis/article/report with the Principal Investigator of PREPARE and to include relevant PREPARE researchers on any publications as agreed upon in advance
4. share drafts and final versions of proposed presentations with the Principal Investigator of PREPARE and to include relevant PREPARE researchers on these proposed presentations as agreed upon in advance
5. acknowledge the investigators who collected the data, the institutions involved, and the funding sources in dissertations, presentations and publications
6. confirm via email to the Principal Investigator of PREPARE that the data files have been destroyed at the end of the thesis/study or at the latest by 30 September 2017.
7. provide an electronic copy of the thesis/article/report that is the basis for use of PREPARE data, to the principal investigator

Unless otherwise specified, this acknowledgement spans the period <September 29th, 2016> to <September 29th, 2017>.

Adolescent Health Research Unit

Division of Child & Adolescent Psychiatry

Professor Petrus J de Vries

Sue Struengmann Professor of Child & Adolescent Psychiatry

Supervisor Name: Sheri Bastien

Title: Associate Professor of Public Health, Norwegian University of Life Sciences, Norway

Supervisor Signature: SBastien

Student Signature: Elise Fonn

AHRU Approval: 10 October 2016

Appendix 11: NSD Approval

Sheri Bastien
Institutt for landskapsplanlegging Norges miljø- og biovitenskapelige universitet

1430 ÅS

Vår dato: 29.11.2016 Vår ref: 50639 / 3 / MSS Deres dato: Deres ref:

TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 19.10.2016. Meldingen gjelder prosjektet:

50639	*A process evaluation of the PREPARE intervention to promote healthy sexual practices among adolescents in Cape Town, South Africa.*
Behandlingsansvarlig	*Norges miljø- og biovitenskapelige universitet, ved institusjonens øverste leder*
Daglig ansvarlig	*Sheri Bastien*
Student	*Elise Fonn*

Etter gjennomgang av opplysninger gitt i meldeskjemaet og øvrig dokumentasjon, finner vi at prosjektet ikke medfører meldeplikt eller konsesjonsplikt etter personopplysningslovens §§ 31 og 33.

Dersom prosjektopplegget endres i forhold til de opplysninger som ligger til grunn for vår vurdering, skal prosjektet meldes på nytt. Endringsmeldinger gis via et eget skjema, http://www.nsd.uib.no/personvern/meldeplikt/skjema.html.

Vedlagt følger vår begrunnelse for hvorfor prosjektet ikke er meldepliktig.

Vennlig hilsen

Kjersti Haugstvedt

Marie Strand Schildmann

Kontaktperson: Marie Strand Schildmann tlf: 55 58 31 52
Vedlegg: Prosjektvurdering
Kopi: Elise Fonn elise-utdanning@hotmail.com

Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.

Personvernombudet for forskning

Prosjektvurdering - Kommentar

Prosjektnr: 50639

Vi kan ikke se at det behandles personopplysninger med elektroniske hjelpemidler, eller at det opprettes manuelt personregister som inneholder sensitive personopplysninger. Prosjektet vil dermed ikke omfattes av meldeplikten etter personopplysningsloven. Vi viser her til telefonsamtale med student Elise Fonn den 29.11.2016 hvor hun bekrefter at det ikke skal innhentes egne data i forbindelse med prosjektet, og at materialet hun vil ha tilgang til består av anonyme opplysninger fra andre studier på feltet.

Det ligger til grunn for vår vurdering at alle opplysninger som behandles elektronisk i forbindelse med prosjektet er anonyme.

Med anonyme opplysninger forstås opplysninger som ikke på noe vis kan identifisere enkeltpersoner i et datamateriale, verken:
-direkte via personentydige kjennetegn (som navn, personnummer, epostadresse el.)
-indirekte via kombinasjon av bakgrunnsvariabler (som bosted/institusjon, kjønn, alder osv.)
-via kode og koblingsnøkkel som viser til personopplysninger (f.eks. en navneliste)
-eller via gjenkjennelige ansikter e.l. på bilde eller videoopptak.

Anonyme opplysninger som benyttes må være innhentet på en lovlig og forsvarlig måte, og NMBU må forsikre seg om at det er anledning til å få de anonyme opplysningene utlevert.

Norges miljø- og biovitenskapelig universitet
Noregs miljø- og biovitskapelege universitet
Norwegian University of Life Sciences

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Norway