FACTORS THAT INFLUENCE ADOLESCENTS CONDOM USE DECISION-MAKING IN THE WESTERN CAPE, SOUTH AFRICA

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PREAMBLE

Declaration

I, Eugene Lee Davids, hereby declare that the work on which this dissertation is based is my original work (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been, is being, or is to be submitted for another degree in this or any other university.

I empower the university to produce the purpose of researcher either the whole or any portion of the contents in any manner whatsoever.

Signed by candidate

Signature: Date:

14 August 2019

ABSTRACT

This study explores factors that influence condom use decision-making of adolescents from two schools in the Western Cape, South Africa. Thematic analysis was used to analyse the data generated from 16 individual semi-structured interviews. When exploring the factors that influence adolescent's condom use decision-making, sexual debut and the role that emotion plays in the decision-making process were frequently discussed. The themes which emerged for sexual debut included relationships were about displaying true love which was equated with having sex and respecting parents' expectations and rules informing decisions not to have sex at this age. When exploring the themes which emerged for condom use decision-making, the adolescents spoke about their concerns for the future and organising their lives. In addition, anticipated fear about falling pregnant, becoming parents and being infected with a disease emerged when exploring adolescent condom use decision-making. Understanding adolescent condom use can assist in aligning sexual and reproductive health (SRH) interventions and supporting healthy SRH decision-making and healthy relationships for adolescents.

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My family and friends

~

"The greatest thing is to give thanks for everything. He who has learned this knows what it means to live. He has penetrated the whole mystery of life: Giving thanks for everything."

Albert Schweitzer

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PART A: RESEARCH PROTOCOL

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Background

Adolescence is a developmental phase characterised by many changes – both physically and psychologically. These developmental changes lead young people, during adolescence, to have unique sexual and reproductive health needs (Salam et al., 2016). The sexual and reproductive health needs of adolescents are important to examine, as this developmental phase is synonymous with an increased engagement in making decisions which might put them at risk. These young people often make decisions about their sexual and reproductive health in environments that are constantly changing (Hindin & Fatusi, 2009). In South Africa, this environment is often shaped by the high burden of HIV, as well as the exploration of sexual identity and sexual debut (Smith et al., 2018). Part of the exploration of sexual identity and sexual debut finds young people engaging in unprotected sexual intercourse, even when being aware of some of the risks such as HIV infection (Patel, Gutnik, Yoskowitz, O'Sullivan, & Kaufman, 2006). During adolescence, understanding why individuals who are presented with the same choices, but make different decisions is a question central to the field of judgment and decision-making (Gutnik, Hakimzada, Yoskowitz & Patel, 2006), and even more relevant for the field of public health. In this background to the study, I will highlight why the developmental phase of adolescence becomes important to examine – from the perspective of public

health. I then focus specifically on why decision-making related to condom use is relevant, yet timely important to understand.

Why adolescence?

Young people who fall into the developmental phase of adolescence form part of one of the largest population groups, globally. This developmental phase of adolescence has been reported to be crucial for achieving human potential (Patton et al., 2016). Furthermore, investing in better understanding adolescents and promoting overall health has benefits for this stage of life, but also improved health and well-being into adulthood (Patton et al., 2016).

The factors that shape adolescent health need to be fully understood and need to be promoted on the research agenda (Lancet, 2017; Sheehan et al., 2017). There is a need to understand gender inequality when looking at sexual and reproductive health of adolescents, as both young men and women need to be considered (Lancet, 2017). Health and health risks during adolescence have been poorly covered in the existing body of knowledge (Azzopardi et al., 2019). So, why focus on the health of adolescents one might ask? It is important to invest in this developmental phase as investing in their health could bear an improved outcome not only economically but also on overall health and well-being in adulthood. In a recent multi-country study, it was estimated that among adolescents the total health burden was equivalent to 253 million disability adjusted life years in 2016 (Azzopardi et al., 2019).

Furthermore, the developmental period of adolescence has been considered as “a window of opportunity” to intervene into the lives of adolescents which would have a positive outcome on their health and well-being (Dahl, Allen, Wilbrecht, & Suleiman, 2018). Adolescents find themselves in a developmental period characterised by physical and sexual changes and an increased interest in sex (Oringanje et al., 2016). Along with the developmental changes is the possibility of the initiation of sexual activity, and the establishment of interpersonal and romantic relationships among adolescents (Warner, 2018). Globally, some have suggested that by age 19 many young people have engaged in sexual activity, with sexual debut usually established between ages 15 and 19 years (Golden, Furman & Collibee, 2016; Warner, 2018). Golden and colleagues (2016) have highlighted that first sex *or sexual debut*, in relation to healthy sexual experiences can be both appropriate developmentally and rewarding even though there are risks involved. Some of the rewards associated with sexual debut and healthy sexual experiences are an increase in romantic appeal as well as dating and sexual satisfaction (Golden et al., 2016). However, when exploring condom use to address the risks associated with sexual debut and intercourse understanding how decisions are made are needed.

Why should we understand condom use decision-making?

In low- and middle-income countries (LMICs), like South Africa, sexual and reproductive health problems constitute a large proportion of the burden of disease among adolescents and young persons (Deitch & Stark, 2019). The burden related to sexual and reproductive health is often due to the unmet needs related to contraceptive use, with the result being unintended pregnancies, unsafe abortions, sexually transmitted diseases, as well as

several (often related) outcomes detrimental to health and development such as poverty, school dropout and intimate partner violence (Deitch & Stark, 2019). Additionally, a recent review of adolescent contraceptive use found that adolescents often failed to use more common contraceptive methods such as condoms (Deitch & Stark, 2019). In South Africa, it was found that inconsistent condom use ranged between 46 and 55% among adolescents (Miller et al., 2017; Muchiri, Odimegwu & De Wet, 2017). The failure to use condoms, as a common contraceptive method, was due to incorrect use or limited access to and use of condoms (Deitch & Stark, 2019). However, for adolescents who use contraceptives, in developing settings, the most frequently used method are male condoms (Starrs et al., 2018). Condom use has been shaped by the adolescent's decision-making process (Protogerou, Johnson, & Hagger, 2018), of which this process has been thought to be influenced by socio-ecological factors (DiClemente et al., 2005). The socio-ecological or cultural factors which might shape adolescents' decisions related to sexual and reproductive health would include factors such as gender, power, cultural and religious views.

Decision-making is a task that many engage with on a daily basis, which is just as common for adolescents when having to negotiate condom use or not, and is shaped by adaptive and maladaptive forms of decision-making (Davids, Roman & Leach, 2016). The process of arriving at an alternative when a decision needs to be taken has often been termed decision-making style. The existing body of knowledge, suggests that there are a myriad of decision-making styles. Here I will briefly highlight some of the key decision-making styles within the field of judgment and decision-making. What cuts across all these

decision-making styles or processes, which will be briefly introduced, is the behavioural outcome and the characterisation of the decision-making process as being either adaptive or maladaptive in nature (Davids, Roman & Leach, 2016). Some of the decision-making styles which exist highlight the role of emotions and intuition as part of the decision-making process. Examples of these types of decision-making have been proposed by Harren (1979) who suggested that decision-making processes could be characterised as being rational (where an individual considers available information to inform which alternative would yield the best outcome when having to make a decision), intuitive (where an individual ignores available information but uses emotion and feelings to inform the decision-making process) or dependent (where an individual shifts the responsibility of making a decision to some external individual or event to inform the choice selected) in nature. To extend the decision-making styles proposed by Harren (1979), Scott and Bruce (1995) added avoidant and spontaneous decision-making as some of the processes which shape the behavioural outcome that an individual would choose (Riaz et al., 2012; Davids, 2016). Other theorists, such as Johnson (1978), in the field of judgment and decision-making characterised the decision-making processes as being informed by two factors: (i) how information was gathered which informs the decision taken and (ii) how the information which was gathered to inform the decision to be taken has been made sense of to inform the choice or alternative selected. Other forms of decision-making styles have been informed by what the choice of alternatives needs to satisfy or accomplish – an example of this form of decision-making process has been proposed by Simon (1956). Simon (1956) proposed decision-making styles as being either: satisficing or maximising. Satisficing has been defined as selecting an alternative

that would satisfy the decision-making situation at hand, while maximising would be a decision-making process in which an alternative is selected which goes beyond the mere satisfaction of the decision-making situation at hand but “yields an even greater outcome” (Davids, 2016; Davids, Roman & Leach, 2016).

The decision-making styles or processes that young people engage in, particularly around sexual and reproductive health, need to be understood more clearly. Understanding the role of decision-making in relation to sexual and reproductive health of adolescents, is becoming a growing public health concern. Adolescent sexual and reproductive health interventions are common, particularly in settings such as South Africa where the burden of HIV is ever increasing. In addition to the increased burden of HIV for young persons, many sexual and reproductive health interventions for young people have been implemented and have engaged young people yet the burden related to risky sexual behaviour and decision-making persists (Gutnik, Hakimzada, Yoskowitz & Patel, 2006). Added to this, there needs to be a better understanding of how choices are made by young persons related to consistent and correct condom use as it has implications on sexual and reproductive health in the future (Widman, Noar, Choukas-Bradley & Francis, 2014). To address the growing public health concern related to adolescent sexual and reproductive health needs and decision-making, there is a need to understand “how” and “why” adolescents engage in risky or maladaptive decision-making related to condom use. It is also important to acknowledge that many young people do not always have a choice when it comes to condom use decision-making as a result of the high prevalence of intimate partner violence and sexual violence. Therefore, understanding decision-

making related to sexual and reproductive health in the study would only focus on situations where there is a choice to use a condom or not. Kane, Lohan and Kelly (2019) suggested that a deeper understanding of attitudes and decision-making related to sexual and reproductive health is needed to inform practice, particularly related to adolescent sexual and reproductive health services.

Literature exploring taking decisions that might expose adolescents to health risks highlights that it is often characterised by sensation seeking and impulsive decision-making (Donohew et al., 2000). A better understanding of this sensation seeking, and impulsive decision-making could inform sexual and reproductive health interventions for adolescents (Donohew et al., 2000). However, health-related decision-making often brings about some form of stress when having to make an assessment about the available alternatives. Added to that, is having to deal with some of the emotions which emerge as part of this decision-making process as well as the physiological responses such as arousal and stress which might lead to impaired judgment and decision-making on the part of the adolescent (Carpenter & Niedenthal, 2018). However, understanding decision-making processes with regards to sexual and reproductive health, or more specifically condom use, is not the only gap which existing within the body of knowledge. Literature with regards to judgment and decision-making highlights a significant gap that has often been ignored as part of the decision-making process – which is that of emotion and affective states in health-related decision-making (Ferrer & Mendes, 2018). The role of emotion as part of the decision-making process has often been ignored within judgment and decision-making literature. This gap highlights an important area that needs to be

explored to inform sexual and reproductive health interventions and services for young persons, but an initial step would be trying to understand how adolescents make condom use decisions, and what shapes the decision-making process – and to further examine whether emotion emerges as a central component of adolescent condom use decision-making.

Adolescents' decision-making differs to that of adults as their decision-making is often riskier as a result of arousal and emotion. Adolescent decision-making is often shaped by excitement, arousal and an array of emotions which often brings about difference in their decision-making process due to peers and their social acceptance (Patton et al., 2016). An understanding of the role of emotions in relation to sexual and reproductive health along with interventions are needed to improve adolescent health and well-being (Patton et al., 2016). The need to further examine emotions and affective states in relation to sexual and reproductive health decision-making has been alluded to (Ellis, Rajagopal, & Kiviniemi, 2018). An important factor to improve the well-being of adolescents and young persons would be to enhance their ability to make decisions that inform their own sexual and reproductive health (Starrs et al., 2018). With the increased call for understanding adolescent health decision-making, and more specifically adolescent sexual and reproductive health in South Africa, like in other low- and middle-income settings, the current study aims to explore the factors that influence adolescent's condom use decision-making in the Western Cape, South Africa.

Purpose of the Study

The study aims to explore the factors that influence adolescent's condom use decision-making in the Western Cape, South Africa

Research Question

What are the factors that influence adolescent's condom use decision-making in the Western Cape, South Africa?

Methodology

Study design

The study will employ a qualitative descriptive approach to examine the factors that influence adolescent's condom use decision-making. A qualitative descriptive approach was selected as it would allow the "researcher to explore meaning, interpretations, and individual experiences" (Birchall, 2014) related to how adolescents navigate condom use decision-making processes. In addition, qualitative research has often been best suited when researchers aim to (i) describe participants actions related to the research question in greater detail, and to (ii) understand the actions of the participants in relation to their own beliefs and context to provide thick descriptions for the phenomenon being examined (Babbie, Mouton, Vorster & Prozesky, 2015), which in this case would be condom use decision-making among adolescents.

Characteristics of study population

The main study population for the intended study are adolescents in the Western Cape, South Africa. The developmental phase of adolescence has been selected as it is a developmental period in which a number of health-related behaviours are engaged in. The behaviours that these young people engage in have implications on health and well-being in later life. The current study forms part of a larger study titled “Developing and validating an instrument for the measurement of health-related decision-making styles among adolescents: The HEAlth-Related Decision-making Schedule (HEARDS) (UCT HREC Reference: 301/2017). As the larger study aims to develop and validate an instrument for the measurement of health-related decision-making among adolescents, the current study is focused primarily at trying to understand the decision-making processes that adolescents engage in when making decisions related to condom use specifically.

The current study would use individual interviews with between ten and sixteen adolescents to explore and understand how adolescents go about making decisions related to condom use. The inclusion criteria which would be considered for inclusion of participants in the current study would be: (i) learners should be registered at a secondary school in one of the eight educational districts of the Western Cape Education Department, (ii) the learner should either be in Grade 8 or 11 and (iii) should receive parental consent and student assent to participate in the study. The exclusion criteria for the study sample would be: (i) students registered at secondary schools outside of the Western Cape Education Department, are (ii) not in Grades 8 or 11 and (iii) students who

have not received parental consent to partake in the study. The study would take place at selected schools that are part of the Western Cape Education Department.

Recruitment, Enrollment, Research Procedures and Data Collection Methods

Three schools will be selected from the eight educational districts of the Western Cape, South Africa using stratified random sampling. A list of all public secondary schools in the Western Cape will be generated where schools will be stratified based on socio-economic status across the eight educational districts using school fees as an indicator. One school will then be randomly selected in each of the strata (namely; no school fees, R1 – R1500 per annum, and above R1500 per annum). To access secondary schools in the Western Cape, an application will be made to the Western Cape Education Department. Upon being granted permission, the school principals at the identified schools will be invited to partake in the study. If the principal agrees for the school to form part of the study a meeting will be arranged with the relevant teacher(s). The teacher(s) will be informed about the nature of the study, the aim and objectives and an outline of the proposed study. When principals and the relevant teachers have agreed to partake in the study, students in the eighth (early adolescents) and eleventh grade (late adolescents) will be provided with information packs (see Appendix A) informing them and their parents about the study as well as including a parental consent and student assent form. All students who return both the parental consent and student assent form will be enrolled into the study. If informed consent is granted by the parents and the student provides assent to partake in the study, a date and time will be agreed upon with the school principals and relevant teachers that has minimal disruptions on the day-to-day functions of the school day.

The research study will then take the form of in-depth, individual interviews using a semi-structured interview schedule (see Appendix B) that will be conducted in a classroom / office made available at the school, which would be away from other students to allow for confidentiality throughout the data collection process. In qualitative research, individual interviews allow the researcher to gather qualitative descriptions of the lived experiences and worldview of the participants by making sense of their interpretations of reality and the associated meanings (Kvale, 1996). Individual interviews will examine the condom use decision-making processes in which adolescents engage and will be audio-recorded. Participants would have the option of having the interviews conducted in Afrikaans, English and isiXhosa, which are the three official languages of the Western Cape, South Africa. All interviews conducted in Afrikaans and isiXhosa will be transcribed and translated into English. All English transcripts and those translated into English will be used for analysis. The information gathered from the interviews will then be analysed using thematic analysis.

Data Safety and Monitoring Plan

All data collected in the study will be saved on the Principal Researcher's password protected computer as well as an external data storage device that will be kept locked in the Adolescent Health Research Unit. The audio recordings and transcriptions used in the study will be coded and pseudonyms will be used to ensure anonymity of participants. All audio recordings and transcriptions will be kept on the researcher's (Dr Eugene Lee Davids) password protected computer as well as an external data storage device that will

be kept locked in the Adolescent Health Research Unit to ensure the safe keeping, confidentiality and anonymity of all participants.

Data Analysis

The data gathered will be analysed using thematic analysis. Thematic analysis is often use as it allows for the searching and identification of themes which emerges from the transcribed data (Ward, Comer & Stone, 2018).

The data analysis process will start with the audio recordings of the individual interviews being transcribed. The transcripts will then be analysed using thematic analysis. Braun and Clarke (2006) have defined thematic analysis as a method that involves 'identifying, analyzing and reporting [on] patterns (themes) within data'. The transcribed interviews will be analysed using the six steps of thematic analysis as outlined by Braun and Clarke (2006): (i) becoming familiar with the data, (ii) generate initial codes, (iii) search for and generate potential themes by collating codes, (iv) review the generated themes and double check the corresponding codes are correct, (v) define and name themes and (vi) finally report back taking into consideration the research question and relevant literature. The data analysis process will be followed by two researchers independently (the student researcher and a more senior qualitative researcher) to allow for dependability of the data in terms of the coding and checking of the data.

Description of Risks and Benefits

No significant risks are foreseen in the study, however the study can be classified as having minimal risk which are related to participants experiencing some challenging emotions when discussing some of their health choices made in the past. Participation is completely voluntary, and no associated risk are anticipated with participation or withdrawal from the study.

Potential risks and discomforts

Participation in the study will also ensure that all questions are (i) not intrusive and would be asked in a manner that reflects an appreciation of the fact that the questions may bring up particular memories or feelings for the participants, (ii) no threat of disclosure of information to a third party and (iii) no questioning that would elicit responses which are socially (un)desirable (Tourangeau & Yan, 2007).

Risk classification

Minimal risk.

Minimising risk

No more than minimal risks are foreseen in the research study. Should any participant, however, experience any emotional or psychological distress because of participation in the study, they will be referred to either the Principal Researcher of the bigger study (Dr Eugene Lee Davids) who is a registered Community Mental Health Counsellor with the Health Professions Council of South Africa (HPCSA) or the co-investigator (Prof Petrus J

de Vries) who is a registered Child and Adolescent Psychiatrist with the HPCSA for counseling / psychotherapeutic intervention. In addition to this, alternative referral mechanisms would include referral to the community health centre nearest to the school where the study is being conducted or the University of Cape Town Child Guidance Clinic (021 650 3900) for less severe cases. In the event that more severe cases might arise contact will be made with the Division of Child and Adolescent Psychiatry (DCAP), Red Cross Children's Hospital (021 685 4103 / 5116) or the G22 Clinic at Groote Schuur Hospital (021 404 3212) as an alternative referral mechanism. The participant also has the option of leaving the study at any point and without any explanation or implications.

Potential benefits

Participation in the current research study will not lead to any direct benefits to participants. Participation in the study will however inform the bigger study which aims to make an instrument available that would assist in measuring health-related decision-making of adolescents which would assist future health promotion, the academic community and public health practitioners. In addition, the current study would add to the existing body of knowledge related to adolescent condom use decision-making and could possibly inform future interventions focused on improving adolescent health and have other public health benefits. Understanding how health-related decisions are made by adolescents, or more specifically condom use decision-making, could help interventions that are primarily focused on the promotion of health behavioural outcomes to consider the process of making a decision before a behavioural outcome is selected.

Participation in the study does not yield any direct benefits for the individual participants, but at the end of the current study an information session will be held at the various schools addressing some of the key findings in the study and also providing materials (such as posters and flyers) that both promote positive health behaviour and address poor health concerns as identified in the study.

Informed Consent Process

Process

All participants will receive an information pack (see Appendix A). The information pack will contain information about the study along with a parental consent form and a student assent form. The information packs will be provided to students at their school, where they will be informed about the study and have the opportunity to ask the researcher any questions they might have. The students will be given the information packs to take home to their parents, where their parent will be provided with information about the study as well as provide parental consent should they want their child to participate in the study. The contact details of the Principal Investigator will also be made available should there be any additional questions that the parent might have. If the parent has provided informed consent and the student too has decided to provide assent to participate in the study – only then will they be considered to partake in the research study.

Capacity to consent

All students / participants under the age of 18 years will be required to obtain parental consent from a parent or guardian older than 18 year of age – giving them the capacity

to provide informed consent. Additionally, students / participants under the age of 18, would also need have to provide assent to partake in the study – which would be in addition to the parental consent provided. Should the participant under the age of 18, however, refuse to assent regardless of the parent / guardian's consent to participate in the study, the participant's decision will be respected and would not be included in the study.

Comprehension of information

All forms of written communication with participants and their parents will be made available in plain, non-technical language. All communication will also be available in the three official languages of the Western Cape Province, namely, Afrikaans, English and isiXhosa. When testing all English communication using the Flesch-Kincaid Grade and Age level, the participant communication was at the Grade level of 8, and the Age level was at 13.

Consent and assent forms

All written communication (information letters, consent and assent forms; see Appendix A) used in the study will be translated into Afrikaans, English and isiXhosa. The intended sample for the study are Grade 8 and 11 students. The mean age of Grade 8 students are 14, while Grade 11 students are 17 years of age; therefore, the study will use both parental consent forms and adolescent assent forms.

Privacy and Confidentiality

All data (audio recordings and transcriptions) used in the study will be coded and pseudonyms will be used to ensure anonymity of all students / participants. The data will be kept on the researcher's (Dr Eugene Lee Davids) password protected computer as well as an external data storage device to be kept locked at the Adolescent Health Research Unit to ensure the safe keeping, confidentiality and anonymity of all participants and will be destroyed after a period of 10 years.

In addition, to ensure privacy and confidentiality the Principal Researcher will have the responsibility of ensuring that cases of child abuse, neglect or under-age sexual activity is reported to the relevant authorities where confidentiality will be broken. Guided by the Faculty of Health Sciences Human Research Ethics Committee Standard Operating Procedure for Research Involving Children, the Children's Act 38 of 2005 (later amended by Act 41 of 2007) and the Criminal Law (Sexual Offences and Related Matters) Amendment Act 32 of 2007 the following should be reported to the relevant authorities when conducting research with children when one can "conclude on reasonable grounds" that there has been: physical abuse causing injury, deliberate neglect, sexual abuse involving sexual offences, rape and sexual assault, statutory rape and sexual assault and consensual sexual penetration or other sexual activity.

Should the researcher "conclude on reasonable grounds" that there is evidence of abuse, neglect or under-age sexual activity the following authorities will be notified:

- Abuse / Neglect / Under-age Sexual Activity: The matter will be reported to ChildLine South Africa on 0800 055 555. ChildLine will assign a social worker in the area to investigate the matter and inform the South African Police Service (SAPS). ChildLine will provide a reference number that will be recorded as proof of reporting.
- Rape: The same procedure as above will be followed if reported by a child. If reported by an adult, they will be referred to the Rape Crisis Centre on 021 447 9762 (24 hour crisis line). If the rape has happened within 72 hours and reported by an adult, they will be referred to the Rape Crisis Centre and stress that they should not wash themselves or throw away the clothing as this can be used as evidence of the rape when reporting it to SAPS. If injured, they should visit a hospital, doctor or community health centre, and if they want to report the matter they should visit the nearest police station.

Reimbursement for Participation

Since participation in the study will be free, and voluntary, participants will not be reimbursed for participation. However, participants will receive a light refreshment or a voucher as a gesture of goodwill.

Emergency Care and Insurance for Research-related Injury

The study does not anticipate any research-related injuries.

What Happens at the End of a Study?

All findings generated from the study will be disseminated in the form of peer-reviewed publications and presentations at both local and international conferences. A brief summary of the findings will also be made to the Western Cape Education Department, and the key findings will be presented to the schools who partook in the study. Should any participant request a summary of the study findings it would be made available to them via sms / post. The findings will also be made available in a youth friendly format which will be made available on the Adolescent Health Research Unit's Youth Hub website (http://www.ahru.uct.ac.za/youth-hub-welcome). The information gathered in this sub-study forms part of a larger research study that aims to develop and validate an instrument to measure health-related decision-making of adolescents.

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PART B: LITERATURE REVIEW

Introduction

The study, as outlined in Part A, aimed to explore the factors that influence adolescent's condom use decision-making in the Western Cape, South Africa. In this chapter of the dissertation, the reader is introduced to the developmental phase of adolescence, the incidence of HIV and the association with incorrect and inconsistent condom use. The reader is then briefly introduced to two theoretical models to understanding condom use and is provided with key findings from the literature about how adolescents make decisions. The chapter then goes on to provide insight into health-related decision-making with a specific focus on the gaps within literature in terms of condom use decision-making among adolescents.

Adolescence

The developmental phase of adolescence has often been thought of as the period between childhood and adulthood (Galotti, 2001). There has been debate about what constitutes the beginning and completion of adolescence (Sawyer et al., 2018). Some have thought of this phase of development to be socially constructed, while other have viewed it as a phase of development defined by biological changes. Adolescence could therefore be defined, more accurately, as a phase of development synonymous with physical and neurobiological changes and psychological maturation, including cognitive and social capabilities (Somerville et al., 2018). The challenge in defining the developmental phase has led to many debates among colleagues and the proposition of defining a new age of adolescence (Sawyer, Azzopardi, Wickremarathne & Patton, 2018).

Between ages 11 to 19 years has been thought to be the phase of adolescence, which generally would be the ages when young people would both commence and complete high school (Defoe, Dubas & Romer, 2019). The developmental phase of adolescence typically has been grouped into three sub-phases, namely early – (ages 11 – 13 years), middle – (ages 15 – 17 years) and late adolescence (ages 14 – 19 years) (Defoe, Dubas, Figner & van Aken, 2015; Defoe, Dubas & Romer, 2019). During this developmental phase, young people often are afforded more autonomy which is associated with engaging in a number of behaviours which aids positive social development (such as making friends, developing competencies and skills, self-concept). On the contrary, autonomy during adolescence is also associated with a number of decisions that expose adolescents to health risks. Adolescents might engage in sex as part of the normal sexual development trajectory. Engaging in sex is sometime accompanied with condomless sex. Unprotected sex has been among the leading causes of HIV infection and transmission (Kirby, 2002; Levy et al., 2019).

Adolescents and HIV

Globally, 1.6 million adolescents are currently living with HIV (UNICEF, 2019). Young people account for the largest proportion of new HIV infections. In the past year, close to 510 000 new HIV infections were accounted for by adolescents and young persons between the ages of 10 to 24 (UNICEF, 2019). Of the 510 000 new HIV infections in 2018, 190 000 were adolescents between the ages of 10 and 19. It is estimated that should HIV incidence trends continue, new HIV infections for adolescents are expected to increase by 183 000 new infections by 2030 (UNICEF, 2019). Eighty-nine percent of all adolescents living with HIV globally are from sub-Saharan Africa (UNICEF, 2019). In

South Africa, more than 50% of all new infections are made up of young persons between the ages of 15 and 24 (Miller et al., 2017).

New HIV acquisition and transmission largely occur as a result of unprotected sex, suggesting condom use as an important strategy in the prevention of HIV. Among adolescents in South Africa, however, the rates of inconsistent condom use during sex ranges between 46% and 55% (Miller et al., 2017; Muchiri, Odimegwu & De Wet, 2017). The Centres for Disease Control and Prevention (CDC, 2012) suggests that among young persons who are sexually active, the failure to use condoms continuously and correctly increases young persons' risks for unintended pregnancies, sexually transmitted infections (STIs) as well as HIV.

Condom use

Condoms have been a common preventative method against the transmission of HIV and other sexually transmitted infections. However, inconsistent and incorrect condom use have been among the key drivers for new HIV infections (Ivey, Legall, Boisson & Hinds, 2008). The promotion of correct and consistent condom use through theory and evidence-based programmes has been flagged as a public health strategy to address the growing epidemic (Stutterheim, Bertens, Mevissen & Schaalma, 2013). Among young people in South Africa there is increased awareness about HIV and the benefits of condom use as well as consistent condom use, yet the number of HIV transmissions among young people continue to increase (Jama Shai et al., 2010).

Condom use therefore plays a central role in the prevention of HIV transmission, however there are a number of factors that shape decisions around use among adolescents. Some of these include perceived risk, knowledge about HIV status, as well as opinions concerning the use of condoms (Levy, Gidron & Olley, 2017). It is furthermore important to note that the decision to use a condom or not may not be afforded to all adolescents as they might not have the option to choose a condom or not due to coercion, intimate partner or sexual violence, and this is particularly true for adolescent girls and young women.

The risks of HIV infection have been thought by some, to shape attitudes, beliefs, norms and perceived behavioural control associated with condom use as a preventative behaviour (Albarracin, Johnson, Fishbein & Muellerleile, 2001). The understandings of the factors which shape condom use, similar to other health behaviours, are informed by a number of theoretical perspectives. Here, two widely used theoretical frameworks will be used as an example of conceptualisations of how different factors shape behaviour – more specifically condom use.

Theory of Reasoned Action

The Theory of Reasoned Action is one of the highly cited models in understanding and predicting human behaviour. The theory posits that when an individual decides to engage in a particular behaviour or not, that it is based on particular expectations and beliefs that the individual has about the associated outcome or consequences of the behaviour; as well as the norms which society ascribes to the behaviour. The expectations and beliefs that the individual holds shape the behavioural outcome or decision according to the

theory (Morrison, Baker & Gillmore, 1998). The Theory of Reasoned Action operates from the assumption that behaviour is shaped by behavioural intention. The behavioural intention which aids the behaviour or behavioural action (condom use) is as a result of the individual's attitudes toward executing the behaviour as well as the subjective norms (the views held by a group that the behaviour or actions are acceptable and supported) linked with the behaviour (Montaño & Kasprzyk, 2015). In summary, the theory therefore posits that for an individual to have the behavioural outcome of using a condom, there should be an intention to use condoms when engaging in sex, and that the intention is informed by the attitude and social norm the individual has about the behaviour (Morrison, Baker & Gillmore, 1998).

Theory of Planned Behaviour

The Theory of Planned Behaviour extends the Theory of Reasoned Action by providing an understanding that human behaviour or behavioural action is as a result of an intention which happens prior to the behaviour. And that the behaviour is predicted by the attitudes and norms which the individual has toward and about the behaviour as well as the perceived behavioural control (Conner, Graham & Moore, 1999; Michie, Dormandy, French & Marteau, 2004). Perceived behavioural control is the evaluation which the individual engages in about the issues or challenges which could hinder or facilitate the act or execution of the behaviour (Newton et al., 2013).

In addition to the assumption posited by the Theory of Reasoned Action, the Theory of Planned Behaviour suggests that perceived behaviour control over the behaviour or behavioural action too is important. There are studies which suggest the variables in

these models are important when examining condom use: The attitudes and subjective norms that an individual has toward condom use or intentions to use condoms have been thought of as important antecedents of condom use intentions, where attitudes are still thought to be more imperative than subjective norms in the decision-making process of using condoms or not (Bennett & Bozionelos, 2000). However, self-efficacy or the belief that the individual is able to execute the behaviour was deemed even more significant in predicting intention (Bennett & Bozionelos, 2000).

The factors thought to shape health risk and the associated decision-making

Abraham and colleagues (2011) have reviewed a number of studies and have found that some of the factors that inform sexual and reproductive health risk perception associated with condom use or non-use and decision-making include: the relationship type that the young person(s) are involved in, whether it is a serious or casual relationship; the length of the relationship; familiarity of the partner; level of attachment with the partner; and how often the young person(s) engage in sexual intercourse. Added to the factors that inform risk perception associated with condom use decision-making, Ballester-Arnal and colleagues (2017) found that among Spanish adolescents the decision-making process of using a condom or not was often informed by an evaluation of the short-term benefit of pleasure over the long-term cost of contracting a disease – greater importance was placed on the short-term benefit in the decision-making process. Valente et al (2019) found that the choice to use a condom use or not was informed by perceived wealth, appearance and beauty. Reflecting on the factors which inform the risk perception and decision-making process of young people as outlined by Abraham and colleagues (2011), Ballester-Arnal et al (2017) and Valente et al (2019) there are differences in what exactly

shapes and informs how condom use decision-making happens and the factors which inform selecting a particular behavioural outcome over the other. The differences highlighted in condom use decision-making is due to the different populations which were included in the studies by Abraham and colleagues (2011), Ballester-Arnal et al (2017) and Valente et al (2019). This creates uncertainty in our understanding of the factors which inform condom use decision-making of adolescents and how they engage in this decision-making process. Understanding the decision-making process and the associated factors which inform the selection of one particular behavioural outcome over another would have implications for interventions aimed at promoting positive sexual and reproductive health outcomes of adolescents both in South Africa and in setting where HIV infection is a growing concern among young people. But why exactly would one need to understand the condom use decision-making process and the associated factors that adolescents engage in in a setting like South Africa? South Africa like many countries in sub-Saharan Africa has a growing incidence rate of HIV infections among adolescents, particularly young girls and women. Knowing the psychosocial factors which inform condom use can inform preventative interventions – although this knowledge alone is not sufficient and needs to be supplemented by an understanding of the relational, social and structural settings which inform and shape the context in which condom use choices are made (Closson et al., 2018). All these factors shape the decision-making process, yet very little is known about how adolescents make decisions related to condom use. These decisions often take place within the context of risks and uncertainty (Hartley & Somerville, 2015).

Risk-taking and decision-making

Adolescents decision-making often exposes them to more risks than adults (Gardner & Steinberg, 2005; Rosenbaum, Venkatraman, Steinberg & Chein, 2018; Defoe, Dubas & Romer, 2019). The outcome of poor decision-making is risk behaviour, which impacts on health and well-being of adolescents in later life. As young people transition from childhood into adolescence there is increased autonomy in their decision-making. Added to the increased autonomous decision-making that adolescents are afforded they also are exposed to new situations that are risk-conductive (such as parties where engaging in substance use and sex could occur) where they have no prior experience of, as they transition through adolescence (Defoe, Dubas & Romer, 2019). Risk taking in adolescences is age-dependant, as adolescents move toward later adolescence there are increased exposure to risk conductive situations than at the start of early adolescence (Defoe, Dubas, Figner & van Aken, 2015; Defoe, Dubas & Romer, 2019). Decisions which are riskier in nature during adolescence are often believed to be as a result of exploration. Reyna and Farley (2006) also believe that risk-taking and risky decision-making by adolescents is as a result of peers, instantaneous decisions, ignoring long term benefits for instant gratification, and impulsivity.

Decision-making

During adolescence there is increased autonomy which is associated with greater opportunities to make decisions. Adolescents, like most individuals, engage in decision-making on a daily basis where they need to navigate which alternative would yield the best outcome when a situation arises where a decision needs to be taken (Byrnes, 2002). During the developmental phase of adolescence, young people have an increased sense

of decision-making autonomy which increases until late adolescence (Wray-Lake, Crouter & McHale, 2010).

As adolescents become more autonomous, they are constantly navigating situations in which decisions need to be taken. The decision-making process that adolescents engage in often differs from individual to individual (Davids, 2016). The process of selecting an alternative when a decisional situation arises has often been defined as a decision-making style (Davids, Roman & Leach, 2016). Decision-making styles are often concerned with how the individual goes about selecting an alternative.

In the context of the study, it would be about how adolescents go about choosing to use a condom or not when engaging in sexual intercourse. The decision-making process of selecting condom use or not is shaped by a number of factors – as outlining previously by Abraham et al (2011), Ballester-Arnal et al (2017) and Valente et al (2019) where the decision-making process could be shaped by perceived appearance all the way to the type of relationship or frequency of sex that the two persons engage in. In addition to the various factors which might shape condom use, there is the role of context-specific factors which would add a further layer of complexity to understanding how adolescents make condom use decisions. The decision-making process for adolescents is further complicated by developmental changes, synonymous with this developmental phase. During this developmental phase, cognitive changes shape and colours the decision-making process or styles that the adolescent uses to engage in decisional situations. The cognitive change which occur during adolescence includes the increase in white matter

that is associated with improved executive functioning (such as impulse control and allowing for complex decision-making) (Gouws, 2015). A stronger link is also formed between the prefrontal cortex and the limbic system which aids emotional regulation (Gouws, 2015). Having to strike a balance between wanting instant reward or postponing the reward until a later stage adds to the complexity of adolescent decision-making which is part of their psychosocial developmental pathway (Passanisi, Craparo & Pace, 2017).

Decision-making is the cognitive process where individuals engage in gathering information about a decisional situation which arises and where they need to make sense of the information gathered. Making sense of the information gathered is often informed by previous problem-solving encounters (which adolescents are less likely than adult to have had), memory and learning as well as making judgments (Baiocco, Laghi & D'Alessio, 2009). There have been many researchers who have been interested in understanding decision-making and decision-making competence, but few have been concerned with decision-making during adolescence where there is increased autonomy and risk-taking behaviour often associated with this developmental phase (Baiocco, Laghi & D'Alessio, 2009). Within the literature a number of decision-making styles have been described (e.g.: Driver, 1979, Harren, 1979, Mann et al., 1989; Mau & Jepsen, 1992; Scott & Bruce, 1995; Loo, 2000; Franken & Muris, 2005), some have focused on decision-making as being a rational process of evaluating all possible alternatives where others have viewed it as being a process informed by intuition and emotion (Davids, Roman & Leach, 2016). However, even with the myriad of decision-making styles which have been described – we are still able to learn about the decision-making process that the individual

engages in when a choice needs to be made as well as the decision-maker or adolescent (within the context of the current study) (Nutt, 1990).

Recently, there has been a drive to understand decision-making with a move away from understanding normative approaches followed by individuals when faced with a decisional situation (Thunholm, 2004). Rather the focus has shifted to understanding how individuals engage with decisional problems at hand and how the decisional situation shapes the decision-making process followed (Thunholm, 2004). Whether the decisional process is the same across all situations isn't always clear. It was thought that when engaging in behaviour which might be detrimental to the health and well-being of the adolescent that there would be a thorough evaluation of all the possible alternatives and selecting an alternative which would yield the best possible outcome (Byrnes, 2005). When reflecting on HIV incidence among adolescents as well as correct and consistent condom use one is able to identify that adolescents do not always evaluate all the possible alternatives – and if this is so – that there might be factors which shape the decisions taken that lead to negative health outcomes. Therefore, health decisions made by adolescents might take place within the context of limited time or where the health outcome is not the most important in the process, where evaluating all alternatives might not necessarily be possible and leading to instantaneous decisions being made that might put their health at risk (Klaczynski 2005). Wolff and Crockett (2011) have alluded to the associations between decision-making processes in adolescence and the association with risk behaviour – but have highlighted that research has seldomly unpacked the associations between decision-making processes and risk behaviour alternatives.

Health-related decision-making and condom use

Does health decision-making differ from other forms of decision-making? Choices related to health almost always have consequences (whether good or ill-health, as well as an evaluation of risks or trade-offs) and are often difficult (evaluating difficult trade-offs could bring out stress in the decision-making process) (Carpenter & Niedenthal, 2018).

Health-related decision-making is often thought of as being difficult. These decisions are thought to be difficult as it often is associated with emotional responses (Carpenter & Niedenthal, 2018). When choices are made which have implications on the health and well-being of the individual, emotion often emerges during the evaluation process. The emotions which emerge often guide decision taken by the individual (Ellis et al., 2018). A gap exists in the understanding of health-related decision-making within the field of judgment and decision-making. The gap is as a result of our lack of understanding of affective forecasting errors (predictions or assumptions made due to emotions and affective states), the role of emotion on the decision-making styles or processes as well as difficulty in determining costs and benefits associated with various outcomes (Carpenter & Niedenthal, 2018). Attempts to understand health-related decision-making has ignored the role of affective states and emotion (Ferrer & Mendes, 2018), which are important to understanding health decisions (Loewenstein & Lerner, 2003; Stevens et al., 2019). A scarcity of knowledge about the role of affective states and emotion in health decision-making and behaviour remains an important and understudied gap in the body of knowledge (Cameron, Bertenshaw & Sheeran, 2017; Ferrer & Mendes, 2018; Kiviniemi et al., 2018).

The identification and understanding of the key predictors of condom use and condom use decision-making is important in addressing the HIV epidemic among young people (Mustanski et al., 2014). Shedding light on the condom use decision-making process that adolescents engage in would be vital in informing public health interventions aimed at reducing the incidence of HIV and increase condom use among adolescents. Many interventions have played a role in increasing adolescents' knowledge about HIV and risky behaviour, but few have been successful in behaviour change such as delaying sexual debut and increase condom use (Appiah-Agyekum & Suapim, 2013; Kirby, 2002; Teye-Kwadjo, Kagee & Swart, 2017; Levy et al., 2019).

Gaps in our understanding

When reflecting on the theoretical models used to understand behaviour or more specifically condom use among adolescents within the context of the current study – one of the gaps which exists in the Theory of Planned Behaviour has often been that it has ignored or neglected to pay attention to the role of affect and emotion in the factors which predicts human behaviour (Rapaport & Orbell, 2000; Ajzen, 2011; Wolff, Nordin, Brun, Berglund & Kvale, 2011). Some researchers believe that operating from the perspective of the Theory of Planned Behaviour alone does not provide a full account of the decision-making process that is engaged in when considering health-related behaviours and decisions (Newton et al., 2013).

When focusing on condom use decision-making of adolescence a gap exists in understanding the process that is engaged in. The gap in understanding condom use

decision-making often stems from the complexity of the decision-making process. The complexity is informed by when using a condom or not is deemed appropriate or required as part of the decision-making process (Abraham et al., 2011). This decision-making process also is further influenced by wanting to foster trust, and emotional connection as the decision-making process of using a condom involves two people as opposed to other health decisions where the individual is concerned only about their health.

Interventions aimed at promoting condom use as a preventative measure has often failed to consider the decision-making process that adolescents and young people engage in, which is complex due to context-specific factors which inform the condom use decision-making process and risk perception (Abraham et al., 2011).

The role of emotion and affect in condom use decision-making emerges in the study, as outlined in Part C of the dissertation. The themes which emerged highlighted the role of emotion as part of condom use decision-making of adolescents which adds to a gap which has previously been highlighted by Sarno, Mohr and Rosenberger (2017) that affect has not been explored in decision-making and risk-taking associated with sexual and reproductive health and that emotion and affect has the potential of reducing unprotected sex.

Conclusion

The developmental phase of adolescence is often associated with risk taking and risky behaviour. Many interventions exist to address HIV incidence among adolescents, yet these interventions often only increase knowledge about the risk but not behavioural

change. In trying to reduce HIV incidence among adolescents, condom use has often been thought of a preventative measure. The decision-making process that adolescents engage in when considering using a condom or not, remains unclear. The literature outlined in the current chapter provided an introduction to the field of study and highlighted the gaps which exist in the understanding of adolescent condom use decision-making. The next chapter in the dissertation, Part C, aims to address the gap highlighted by exploring the factors that influence adolescent's condom use decision-making in the Western Cape, South Africa.

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Title

Exploring how adolescents make condom use decisions: The role of emotions and expectancies

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Abstract

Objective: This study explores factors that influence condom use decision-making of adolescents from two schools in the Western Cape, South Africa.

Design: Thematic analysis was used to analyse the data generated from 16 individual semi-structured interviews.

Results: When exploring the factors that influence adolescent's condom use decision-making, sexual debut and the role that emotion plays in the decision-making process were frequently discussed. The themes which emerged for sexual debut included relationships were about displaying true love which was equated with having sex and respecting parents' expectations and rules informing decisions not to have sex at this age. When exploring the themes which emerged for condom use decision-making, the adolescents spoke about their concerns for the future and organising their lives. In addition, anticipated fear about falling pregnant, becoming parents and being infected with a disease emerged when exploring adolescent condom use decision-making.

Conclusion: Understanding adolescent condom use can assist in aligning sexual and reproductive health (SRH) interventions and supporting healthy SRH decision-making and healthy relationships for adolescents.

Keywords

Adolescence, condom use, decision-making, sexual debut, sexual and reproductive health.

Introduction

Globally, 1.6 million adolescents are currently living with HIV (UNICEF, 2019). In sub-Saharan Africa, young people account for more than two-thirds of those living with HIV (Hindin & Fatusi, 2009), and where adolescent girls between ages 15 and 19 account for most of the new HIV infections in the region (UNAIDS, 2018b). The prevalence of condom non-use among this group, in sub-Saharan Africa, is estimated to be 59.8% (Ssewanyana, Mwangala, van Baar, Newton & Abubakar, 2018). In South Africa, many young people are sexually active by the age of 16 and condom use remains inconsistent (Eaton, Flisher & Aarø, 2003), with reported inconsistency being between 46 and 55% (Miller et al., 2017; Muchiri, Odimegwu & De Wet, 2017).

Adolescents are at risk of poor sexual and reproductive health outcomes often due to early-, unprotected-, or coerced sex, as well as the lack of adolescent-friendly sexual and reproductive health services (Finer & Philbin, 2013; Mathews et al., 2009; Santa Maria et al., 2017). These outcomes include unintended pregnancies, abortion, as well as sexually transmitted infections (STIs) and HIV (Hindin & Fatusi, 2009). HIV acquisition and transmission among adolescents often occur due to unprotected sex and inconsistent condom use (Miller et al., 2017). What informs the choice to engage in unprotected sex or inconsistent condom use among adolescents remains unclear. What is known about the decisions adolescents make about their sexual and reproductive health is that the choices are happening in an environment that is changing rapidly (Hindin & Fatusi, 2009). These changes include the increase in technology and social media, diverse perspectives on childbearing and marriage, as well as the onset of puberty and changing social roles. Adolescents' decision-making processes have been examined from two theoretical

perspectives – (i) the affective and the (ii) rational perspective (Delaney, Strough, Parker & Bruine de Bruin, 2015). The affective perspective on decision-making is concerned with the role of emotions and intuition in the decision-making process, while the rational perspective examines the role of negotiation and reasoning in coming to a decision (Davids, 2016; Delaney, Strough, Parker & Bruine de Bruin, 2015). Ferrer and Mendes (2018) have highlighted that we have yet to fully understand the role affective states play in making and shaping decisions, particularly related to health and behaviour. The process of making decisions, whether informed by affective states or available information, differs from individual to individual. The decision-making process which individuals follow has been termed the decision-making style (Appelt, Milch, Handgraaf & Weber, 2011). An adolescent's decision-making process or style could be protective against adverse health-related consequences. However, it is important to acknowledge that there may be situations in which they might not have sufficient agency to make choices (choices related to condom use due to coerced sex, intimate partner and sexual violence). There may be situations where adolescents' choices might be shaped by sociocultural views which would impact their decisions related to sexual and reproductive health – such as gender, power, cultural and religious views. Empowering adolescents to make good decisions to promote sexual and reproductive health is important but might only be part of the solution for young people given the social and structural factors which constrain their agency.

Exploring condom use decision-making processes might provide information that would assist in preventing many challenges related to poor sexual and reproductive health

outcomes of adolescents. The process of knowing when to 'start, stop or change' condoms and other contraceptive methods is complex for adolescents – and understanding this process would assist in informing sexual and reproductive health interventions related to behavioural change (Hoopes, Akers, Jimenez-Zambrano, Cain & Sheeder, 2018). The complexity which emerges in these decisions are as a result of interpersonal, community and macro-social influences (Challa et al., 2018).

Interventions leading to favourable behavioural outcomes that promote sexual and reproductive health are needed, particularly as young people make up a large proportion of the global population (Hindin & Fatusi, 2009). Many sexual and reproductive health interventions have focused on increasing knowledge about sexual and reproductive health risks. These interventions are still important as there was an urgent need to inform young people, but it won't be sufficient. Sexual and reproductive health interventions have focused on the increase of knowledge and changing attitudes, but few have qualitatively examined what drives their decision-making process, in specific settings, that is engaged in before a behavioural outcome is selected. Examining the decision-making process and it influences on sexual behaviour could inform health-related interventions.

Health-related decision-making has been ignored for a long time within the field of judgment and decision-making (Ferrer & Mendes, 2018). The gap which this has created has left many unanswered questions about the role of errors in forecasting outcomes related to decisions, the role of emotion in decision-making and the factors that are considered as part of evaluating which alternatives would yield the most beneficial

outcome (Carpenter & Niedenthal, 2018). Furthermore, extending the understanding of health-related decision-making to adolescent's condom use choices would inform health interventions as the study aims to consider both affective and rational perspectives to understanding decision-making which might aid behavioural change. Taking the following into consideration, the current study aims to explore the factors that influence adolescent's condom use decision-making in the Western Cape, South Africa, with a particular focus on the emotional and cognitive factors.

Materials and Methods

The study employed a qualitative descriptive approach to examine the factors that influence adolescent's condom use decision-making, focusing on the perspective of adolescents in their decision-making (Lincoln & Guba,1985; Sandelowski, 2000; Colorafi & Evans, 2016).

Participants

The participants in the study were recruited from two public schools in the Western Cape province. An initial list of all public schools was generated and stratified on the basis of socio-economic status, using school fees as a proxy. Three schools were randomly selected in each of the strata (no school fees, ZAR 1 – ZAR 1500 per annum and above ZAR 1500 per annum), of which one school in each stratum formed part of the study. Of the nine schools invited to participate in the study, three initially agreed, but ultimately only two schools agreed to participate.

The final sample was made up of sixteen participants from two public schools. One school was categorised as being in a low socio-economic setting, while the other was categorised as being in a high socio-economic setting. The participants were purposively selected to include an equal split between gender, socio-economic status and developmental phases (summarised in Table 1 below). The sample included 16 adolescents with a mean age of 15 years, ranging from 13 – 18 years. There was an equal split in terms of gender (Males = 8 participants; Females = 8), socio-economic status (Low socio-economic setting = 8 participants; High socio-economic setting = 8) and developmental phase (Early adolescence = 8 participants; Late adolescence = 8). The developmental phase was categorised into early and late adolescence using both age and educational level / grade as an indicator. Participants who were in the eighth grade in secondary school were categorised as being in the developmental phase of early adolescence, and those in the eleventh grade as late adolescence. The rationale behind this selection of participants was to see if there were differences in responses about condom use decision-making on the basis of these demographic descriptors.

Table 1: Study sample demographic details (n= 16)

Demographic descriptor(s)	Frequency
Age (Mean)	15.38 years old
Age range	13 – 18 years old
Gender	
Male	8
Female	8
Developmental phase	
Early adolescence (8th Grade; Ages 13 -14)	8
Late adolescence (11th Grade; Ages 16 -18)	8
Socio-economic status	
Low socio-economic setting	8
High socio-economic setting	8

Procedures

The study protocol was submitted to the University of Cape Town Faculty of Health Sciences Human Research Ethics Committee (HREC) for ethical clearance (HREC Reference: 301/2017 & 356/2019). Upon being granted ethical clearance, permission was sought from the Western Cape Education Department (WCED) to access schools within the Western Cape (WCED Reference: 20170706-2719). After approval and permission was granted by both the University's HREC and the WCED, the first author (ELD) made contact with the principals at the selected schools and setup initial meetings with both the principal and the relevant teaching staff at the selected schools to invite them to partake

in the study. Upon voluntary agreement to partake in the study, students were informed about the study and provided with an information sheet for both themselves and their parents as well as a written informed consent form to be completed by their parents should they be granted permission to partake in the study as well as written informed participant assent forms as many of the participants were under the age of 18. Upon the return of the consent and assent forms, a data and time was selected by the school where data collection would take place which would have minimal disruptions to the normal running of the school day.

Materials (Interview)

In-depth, semi-structured interviews were conducted by two researchers. The first author conducted all interviews in English (n= 10), and an independent second researcher (SM) conducted all interviews in isiXhosa (n= 6). All interviews were audio-recorded, and the length of the interviews ranged between 45 minutes to one hour. The semi-structured interviews were guided using vignettes about adolescents facing in various health-related decisions. This article focusses specifically on decisions related to sexual debut and condom use. Vignettes were purposively selected to illicit participants' experiences of engaging in condom use decision-making, in the current paper. The use of a vignette afforded participants the opportunity to consider potential alternatives even if they have never engaged in sexual intercourse, condom use negotiation and other health-related decisions. Examples of questions included: 'How about Ntombi (a character in the vignette) wanting to use a condom and Craig (another character in the vignette) not? What would you or your friends do in a situation like this?', 'What would make you decide to choose that option?', 'How would you go about selecting that option?', 'What if you

chose the other option; what would have played a role in you selecting that?', and 'Tell me about the process that you would go through if you were to choose that option?'. Throughout the data collection process both researchers conducting the interviews kept brief notes about the interviews and some of their feelings experienced during the interview(s). Both researchers met for a debriefing meeting at the end of the interviews, where they reflected on the interviews and the interview process as well as their thoughts and feelings which emerged. The debriefing meeting also led to the researchers discussing some of the key themes which emerged throughout the process, which re-emerged in many of the interviews conducted.

Ethical procedures

Participants and their parents / guardians completed written informed consent and assent forms which explicitly informed them of the study, its aims and the associated data collection procedures. Anonymity and confidentiality were ensured and observed throughout the study. Withdrawal from the study could happen at any time without any explanation or consequence to the participant or his/her parent / guardian. Ethical clearance was obtained from the University of Cape Town's HREC and permission to access schools from the WCED.

Analysis of data

English interviews were transcribed verbatim by an independent transcriber and checked by the first author. Interviews conducted in isiXhosa was translated and transcribed into English by an independent bilingual transcriber. All translated and transcribed interviews were checked by the interviewer conducting the interviews in isiXhosa.

The transcribed interviews were analysed by the first author, using a combination of manual coding and NVivo 11 using the steps as outlined by Braun and Clark (2006) to conduct thematic analysis. The transcribed interviews were coded using a combination of deductive and inductive coding, allowing codes and themes to emerge from the data guided by the process of thematic analysis as outlined by Braun and Clark (2006). Twenty-eight percent (n= 5) of the transcribed interviews were coded and checked by a senior qualitative researcher (YZ). The codes and themes emerged through the analyses by the first author and the senior qualitative researcher were then compared and discussed. The themes which emerged and the substantiated quotations from the transcribed interviews were also discussed and refined among peers in a structured, peer-reviewed plenary as well as among the fourth and fifth author (AS; CM).

Results

When exploring the factors that influence adolescent's condom use decision-making, adolescents often spoke about sexual debut in relation to condom use decision-making. The results, therefore, were grouped according to themes which emerged for (i) sexual debut and (ii) condom use decision-making, respectively. The themes which emerged showed no evidence of differences for condom use decision-making among adolescents in terms of the demographic descriptors of gender, socio-economic status and developmental phases.

(i) Sexual debut decision-making

When speaking about condom use decision-making, adolescents often made reference to sexual debut and how they navigated the thought processes about this. The factors that emerged related to adolescent sexual debut were: (i) the belief that relationships were about showing true love for each other which was equated with having sex, or for some (ii) sex was not being considered at this age often as a sign of respect for parents' expectations and rules.

Relationships were about showing true love for each other which was equated with having sex.

Adolescence has often been considered as a developmental period where there is exploration and discovery, of which sexual development has often been highlighted. The adolescents referred to relationships and the act of showing true love to one another as being part of the decision-making related to sexual debut. They would often say things like 'I think a lot of people would say, it's in the way to show like their true love for each other …' (Female, Age 17, High SES).

The understanding of being in a relationship and demonstrating true love for each other was equated to having sex with a condom. One participant said 'they are in a relationship *mos* (filler word for: right?!) … If she is honest that she loves me and if I can also see that she loves me then I was going to say so … Yes, you were going to take it (referring to a condom) because the day you [are] taking your relationship to the next level …' (Male, Age 15, Low SES).

When examining the decision-making style or process that the adolescents engaged in when exploring sexual debut, it became evident that there were expressed emotions of hope and being hopeful. The adolescents displayed hope and expectation that because they were in a relationship, they had to show love and affection to their partner. Often the idea of love and affection was equated to having sex, which was considered as part of the relationship expectation. One participant justified the expectation that love equated to sex within the relationship when stating that they should engage in sex because 'they are in a relationship' (Male, Age 14, Low SES).

Sex was not being considered at this age often as a sign of respect to parents' expectations and rules.

Some participants viewed sexual debut as not being an option for them at this point due to their age, or as one participant put it, 'it is dangerous to have sex …' (Female, Age 14, Low SES), or as another simply put it 'because it's just … it's not on the table at the moment' (Female, Age 17, High SES). Some of the adolescents viewed the decision-making process to be about the hope and the expectation of showing of true love within their relationship. Showing true love was viewed as a gateway to sex within the relationship. On the contrary, other adolescents highlighted their decision not to have sex as it was not an option for them at this point. Despite this, some of the adolescents explained sex as not being an option for them '… because the way I'm raised, my parents taught me that it is for after marriage …' (Female, Age 17, High SES) which one participant highlighted. The consideration of respecting parent's rules and the perceptions of what is right and wrong according to the adolescents were considered as part of their

sexual debut decision-making. This theme saw hints of the emotion of regret emerging when adolescents considered sex and the choices around it in relation to their upbringing and parenting. A few participants expressed thoughts which are captured by the following quote: ‘what is my parents going to do if they found out?’ (Female, Age 13, High SES). Considering what their parents might do if they engaged in sex often emerged in the decision-making process which was filled with feelings about anticipated regret.

(ii) Condom use decision-making

The themes which emerged related to sexual debut decision-making saw an examination of some behavioural alternatives (or options) but also the emergence of anticipated emotions or attitudes such as hope and regret. When exploring adolescent condom use decision-making there was evidence of: (i) organising their lives and concerns about their future as well as (ii) fear as a result of the anticipation about becoming pregnant, having children or being infected by a disease which emerging as key themes for condom use decision-making.

Organising their lives and concerns about their future.

When considering condom use, adolescents expressed their concerns about their future and the need to have stability emerged. Stability to these participants took the form of access to financial resources and pursuing further education and securing a job. Many of the participants would say things like: ‘… I also don’t want to put myself in that kind of situation, because I still want to study more and there’s no need to rush, there’s still time. First, I finish my studying, have my own money, … first I have to sort out my life, then I can start doing whatever I want …’ (Female, Age 14, Low SES). Again, there is some

evidence that when discussing decision-making about condom use, the thought of sexual debut emerged again. There is some anxiety which emerges in the decision-making process for the participants about having life sorted because of the concerns about the future. Another adolescent made it clear that the anxiety or concerns of the future drove condom use when she said: 'you don't want that [referring to becoming a parent or contracting HIV] for yourself … so you will use the best thing, a condom …' (Female, Age 13, High SES). The evidence of how emotion emerges as part of the examination of the best alternatives available to address the situation at hand was seen when the adolescents explored their condom use decision-making which was shaped by anxiety and concern about their future and having their lives 'sorted out'.

Fear as a result of the anticipation about becoming pregnant, having children or being infected by a disease.

The concerns which emerged among the adolescents related to their futures and stability in life, also led to fear emerging when deciding to use a condom or not. Another theme which emerged when condom use was explored was how fear, as an anticipated emotion, informed their decisions to use a condom or not. One adolescent highlighted how fear of contracting a disease and uncertainty related to partner fidelity informed the condom use decision-making process when she said: 'I was going to say [yes to the] condom because you were friends *mos* [filler word for: you know] at first and you don't know how many girls did he sleep with. And even now that you are together you don't know how many girls he has outside, so I was going to say condom because I don't want to get infected. Because he is the only one that knows whom he sleeps with and there are diseases out there. So,

I was going to say condom always.' (Female; Age 17; Low SES). The rational examination of the available alternatives was also driven by some emotion – in this case fear. The role of fear as part of the condom use decision-making process was shared by many participants in the study, as they would say things like: '[I] wouldn't have agreed to have sex without a condom because that's dangerous, maybe you can fall pregnant or be infected with HIV so I wouldn't have agreed without a condom.' (Female; Age 14; Low SES), and another said: 'they are not like, grown up enough to raise a child, when they are still children. That is a lot of the thinking of teens… I would always also say, we should use a condom rather, because it will increase the chance of [not] falling pregnant' (Female; Age 17; High SES).

Discussion

When exploring the factors that shaped condom use decision-making of adolescents it became clear that examining sexual debut was central to conversations about condom use. In addition, there was evidence of the role of emotion which emerged as part of the process of rationally examining the alternatives when a situation arose in which a decision needed to be taken related to using a condom or not.

Numerous scholars have called attention to the importance of understanding and exploring adolescent sexual decision-making (Guilamo-Ramos et al., 2013), particularly related to condom use, to inform interventions aimed at unintended pregnancy, sexually transmitted infection and HIV prevention among adolescents. In an attempt to understand adolescent condom use decision-making and the associated processes, the current study aimed to explore the factors that influence adolescent's condom use decision-making in

the Western Cape, South Africa. Understanding the reasons that adolescents engage in unprotected sex and associated risk behaviours are needed for effective prevention interventions and promote positive sexual and reproductive health outcomes (Michielsen et al., 2010; Bekker et al., 2018). Through exploring the data, it became clear that the role of expectancies, anticipated future outcomes and emotions were integral to adolescent condom use decision-making.

Values, expectancies and emotions are key when examining adolescent risk behaviour (Guilamo-Ramos et al., 2013). Evaluating positive and negative outcomes of a behaviour during the decision-making process, called expectancies, is important to explore as adolescents' exhibit agency in the choices around health-related decision-making (Guilamo-Ramos et al., 2013). Findings in this study confirm what has been written in the literature about the assumption that negative expectancies, such as becoming pregnant, becoming a parent or contracting HIV or other related sexual transmitted infections (Guilamo-Ramos et al., 2013) are often shaped by the values held by the adolescent as examined in the results.

In addition to the values and expectancies, the findings suggest that emotions and affective states (the emotions and affective states which emerged in the decision-making process from the findings included: hope, hopeful, anticipated regret, anxious, concerned, and fear) were important factors in adolescent decision-making. Affective states are often ignored in health-related decision-making and thus are not always incorporated into the theoretical frameworks that underpin many health-related interventions (Ferrer &

Mendes, 2018). Some of these theoretical frameworks include the Theory of Planned Behaviour and the Health Belief Model (Michie et al., 2014). Affective states such as motivation, emotion, and stress, to name but a few are important when making decisions about health (Ferrer & Mendes, 2018). Health-related decisions are often made in situations which are 'emotionally-laden' (Ferrer & Mendes, 2018), this is evident in the themes which emerged. The themes suggest the important role of an evaluation of the alternatives but also the role of affective states which are often ignored in many health promotion and prevention interventions. The themes related to condom use decision-making also highlighted the role of fear in the decision-making process. Fear has often been cited as influencing information processing as part of the decision-making process resulting in a loss of attention to risk related information, but on the contrary others have alluded to the awareness of fear to risk perceptions, for the decision that needs to be taken with regards to health (Ellis, Klein, Orehek, & Ferrer, 2018).

Guilamo-Ramos and colleagues (2007; 2008) found that adolescents were concerned about the implications and consequences that engaging in risky sexual behaviour would have on those they interact with socially, like peers, parents and neighbours. The concern about the implications and consequences of sexual behaviour which Guilamo-Ramos and colleagues (2007; 2008) have highlight also informed the decisions made by adolescents in the current study. Regret as an affective state which points to concerns about the social implications and consequences of sexual behaviour, which emerged as a result of not considering the socially appropriate rules of right and wrong by parents. The importance is placed on values as part of sexual debut and condom use decision-making, but also

how these values inform some of the expectancies or outcomes regarding condom use or non-use.

Public health interventions aimed at promoting sexual and reproductive health of adolescents should not only consider adolescents as being rational young people who evaluate the available alternatives based on the knowledge shared in many sexual and reproductive health interventions. It is evident that when faced with a situation in which a choice needs to be taken around condom use or non-use decisions are guided by various emotions. Many sexual and reproductive health interventions that have focused on cognitive and behavioural models have seen an increase in knowledge related to sexual risk (Salam et al., 2016), but have not seen a change in behavioural outcomes. Perhaps by taking affect into account when thinking about adolescent sexual decision-making, this could be shifted. There is a need for interventions that are based on both the 'rational information-based strategies' as well as the emotions and affective states which are central to the decision-making styles used by adolescents when making decisions around condom use and risky sexual behaviour (Ferrer and Mendes (2018), Guilamo-Ramos et al. (2008; 2013) and Steinberg (2003)). Interventions which consider the 'rational information-based strategies' and emotions would be categorised as behavioural change interventions stemming from motivation (Michie, van Stralen & West, 2011). Sexual and reproductive health interventions aimed at improving condom use decision-making should therefore be multi-faceted with a combination of education (information to facilitate behaviour change), persuasive (apply communication strategies to prompt emotions or spark action), incentivisation (provide an anticipated reward), coercion (bringing about

anticipated punishment or cost for actions against targeted behaviour change), environmental restructuring (foster change within the social or physical environment), modelling (have individuals to emulate or aspire to be) and enablement (provide support to increase the targeted behaviour change) components as adapted from Michie, van Stalen and West's (2011) Behaviour Change Wheel. Understanding of role of emotions and affective states in the decision-making process addresses a gap in literature. Emotions and affective states have been shown to play an important role in the condom use decision-making process addressing the gap, as highlighted by Ferrer and Mendes (2018), for better understanding emotions and affective states in health decision-making to inform intervention development and implementation (Ferrer & Mendes, 2018).

In addition, interventions should consider the social ecology of adolescents as the opinions of parents have emerged as being considered when making decisions but also considering what other might think about them. DiClemente, Salazar and Crosby (2007) have supported the notion of interventions that are ecological – considering the various levels of causation or influence in sexual debut and condom use choices – suggesting that these are effective and promote the adoption of less risky outcomes. Therefore, complex interventions that consider adolescents, relationships with others, peers, family and the community are needed which inform decision-making processes around condom use decision-making. These complex interventions would also address the different levels of causation or influence in the decision-making process which is furthermore shaped by society, culture, values, economic and other social factors (DiClemente, Salazar & Crosby, 2007). Interventions might also consider role-playing situations or behavioural

rehearsal in which sex and condom use negotiations take place which might inform adolescent decision-making but also decision-making competence and self-efficacy. Decision-making competence and self-efficacy have been associated with better decisional outcomes (Blacksmith, Behrend, Dalal, & Hayes, 2019, Bruine de Bruin, Parker & Fischhoff, 2007; Parker & Fischhoff, 2005).

Understanding how adolescents make decisions about health-related behavioural outcomes should be further examined to identify and understand whether values, expectancies, anticipated future outcomes and emotions are central to the decision-making process that is engaged in. Being able to understand and identify whether these cognitive and affective appraisals are part of the decision-making processes across all health-related decisions, could inform future public health interventions which are aimed at primary and secondary prevention.

Limitations

One of the limitations of the study related to the limitations inherent in the vignettes used to elicit information from the participants about their condom use decision-making: (i) the characters in the vignettes had heterosexual relationships and and thus did not portray condom use among adolescents in same-sex relationships, (ii) the vignettes also failed to consider the use of other contraceptives which might have played a role in the perceptions towards condom use and impact on the adolescent's decision-making around condom use, (iii) the estimated control associated with understanding the hypothetical

versus the real experience of adolescent agency in making condom use decisions might be difficult to ascertain through the use of vignettes.

Conclusion

When examining the factors that shaped condom use decision-making among adolescents it became evident that sexual debut is central to the conversations about condom use. The study furthermore has highlighted the role of emotion as part of the process of examining the alternatives when making a decision about condom use or non-use. Interventions are needed that examine the role of emotion as part of the decision-making process to inform adolescent sexual and reproductive health outcomes. The factors which shape adolescent condom use decision-making as highlighted in the study could inform sexual and reproductive health interventions to promote behaviour change and reduce HIV incidence among adolescents.

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Declaration of interests

All authors declare no conflict of interest.

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PART D: APPENDICES

Appendix Material

- Appendix A: Information pack (from bigger research project)
- Appendix B: Semi-structured interview schedule (from bigger research project)
- Appendix C: Manuscript submission guidelines
- Appendix D: HREC Ethics Approval

Appendix A: Information Pack

Information Pack

Information Letter, Parental Consent & Learner Assent

Study Title: Developing and validating an instrument for the measurement of health-related decision-making styles among adolescents: The HEAlth-Related Decision-making Schedule (HEARDS)

Dear Parents and Learners,

The Adolescent Health Research Unit at the University of Cape Town would like to invite Grade 8 and 11 learners to participate in a research project conducted by Dr Eugene Davids. The goal of the study is to understand how young people make decisions about their health. The information gathered will help develop a tool to measure how young people make health decisions. Attached is a brief outline of the study, and a parental consent form and learner assent form that should be completed if you (the learner) are interested in participating in this study.

Yours faithfully,

Eugene Lee Davids

Postdoctoral Research Fellow: Adolescent Health Research Unit

Information Letter & Parental Consent

Study Title: Developing and validating an instrument for the measurement of health-related decision-making styles among adolescents: The HEAlth-Related Decision-making Schedule (HEARDS)

Background

During adolescence, the ages between 10 and 19, many health behaviours are established. Some of these behaviours are continued into adulthood, and affect health in later life. How healthy an individual is often is dependent on the health behaviours that are selected. Health-risk behaviours are commonly engaged in during adolescence, which continue to increase and are maintained throughout until adulthood. These health-risk include behaviours related to eating habits, physical activity, self-harm, sexual and reproductive health, substance use, and intimate partner violence. Understanding adolescent health decision-making therefore becomes important, as how healthy an adolescent is comes from the behaviours chosen which is linked to the decision-making process that adolescents engage in. One of the main goals of this study therefore is to develop a tool that measures how adolescents make health decisions.

What do we want to know?

The goal of the study is to develop a tool that measures how adolescents make health decisions. To do this, we would like to know about how young people make decisions about different health-risk behaviours.

What would your son / daughter need to do?

[Phase I]: In this phase of the study, your son / daughter will be invited to an individual interview to talk about how he / she as well as other young people make decisions about health-related behaviour. Questions will be asked about different health-risk behaviours. All interviews, in this phase of the study, will be audio-recorded using an audio-recorder.

Are there any risks or benefits for me?

The study does not have any known risks. However, should your son / daughter feel that participation in the study might cause any emotional or psychological distress you may contact the Principal Investigator (Dr Eugene Davids, Registered Community Mental Health Counsellor) on 021 685 4103 or eugene.davids@uct.ac.za.

The goal of the study is to develop a tool that measures how adolescents make health decisions. By being able to measure and understand how young people make health decisions will help future research studies aiming to improve health of young people. Taking part in the study is completely free and voluntary. As a gesture of goodwill, participants will be given either a light refreshment or movie voucher for their time. The study therefore does not have any direct benefits for your son / daughter but it would help future research studies.

Who will know what your son / daughter says? (Confidentiality)

All information gathered in the study will be shared in the form of presentations and publications. However, any information shared about the study will not include any names or identifying information. All audio-recordings and transcriptions will be coded using pseudonyms. No personal information will be shared. All information gathered will be used by the Principal Investigator for research purposes only. All audio-recordings and transcriptions will be securely stored on the researcher's password protected computer and an external storage device to be kept locked at the Adolescent Health Research Unit, and destroyed after 10 years.

Please note, the researcher(s) in the study may not be able to maintain confidential information about known or reasonably suspected incidents of deliberate neglect or physical, sexual or emotional abuse of a child. If a researcher is given such information, he or she may report it to the relevant authorities.

Can your son / daughter refuse to take part or withdraw?

Yes, as participation in the study is completely voluntary, your son / daughter can refuse to partake or withdraw from the study at any point without any explanation or consequence.

Ethical approval

The study has received ethical approval from the University of Cape Town, Faculty of Health Sciences Human Research Ethics Committee (Protocol Number _____).

Questions

If you would like to know more about the study, please contact the Principal Investigator Eugene Davids on 021 685 4103 or eugene.davids@uct.ac.za. The University of Cape Town Faculty of Health Sciences Human Research Ethics Committee can be contacted on 021 406 6338 in case you have any ethical concerns or questions about your rights or welfare as a participant in this research study.

Parental Consent

I, _____ (parent name), agree that by ticking the box below I indicate that I:

(i) have been told about the study.

(ii) know the goal of the study.

(iii) I know that my child's identity will not be disclosed and my child can leave the study at any time without any reason.

☐ I give permission for my son / daughter's interview to be audio-recorded.

☐ I provide informed consent / permission for my child to partake in the study titled *Developing and validating an instrument for the measurement of health-related decision-making styles among adolescents: The HEAlth-Related Decision-making Schedule (HEARDS)*

_____ _____

Parent Signature Date

Information Letter & Learner Assent

Study Title: Developing and validating an instrument for the measurement of health-related decision-making styles among adolescents: The HEAlth-Related Decision-making Schedule (HEARDS)

Background

Young people engage in many health behaviours. Some of these behaviours continue into adulthood; affecting health in later life. How healthy young people are depend on the behaviours they choose. Often, young people engage in health-risk behaviours. These behaviours often continue into adulthood. Health-risk behaviors range from unhealthy eating to poor sexual health. Understanding health decision-making is important, as the behaviours chosen often are linked to the decision-making process used. The goal of the current study is to develop a tool that measures how adolescents make health decisions.

What do we want to know?

We would like to know how young people make decisions about different health behaviours.

What would I need to do?

You will be invited to an individual interview. In the interview, you will talk about how you and other young people make decisions about health. Questions will be asked about

different health-risk behaviours. All interviews will be audio-recorded using an audio-recorder.

Are there any risks or benefits for me?

The study does not have any known risks. Should you feel that being part of the study might cause any emotional or psychological concern you may contact Dr Eugene Davids on 021 685 4103 or eugene.davids@uct.ac.za.

When we are able to measure and understand how young people make health decisions; we will be able to help other studies trying to improve health of young people. Taking part in the study is free and completely voluntary. For your time given, you will be given a light refreshment or movie voucher. The study will not benefit you directly, but it would help future research studies. We also will have a school information session to help other young people at your school to make healthy choices.

Who will know what I say? (Confidentiality)

All information will be shared in the form of presentations and publications. The information shared about the study will not include any names or identifying information. No personal information will be shared. All information will be used by the Principal Investigator for research purposes only. All recordings and transcriptions will be safely stored on the researcher's password protected computer and an external storage device. The recordings will be kept locked at the Adolescent Health Research Unit, and destroyed after 10 years.

Remember, we will not tell anyone what you tell us without your permission unless there is something that could cause harm to you or someone else. If you tell us that someone is or has been hurting you, we may have to tell that to people who are responsible for protecting children so they can make sure you are safe.

Can I refuse to take part or withdraw?

Yes, taking part is completely voluntary. You can refuse to partake or withdraw from the study at any point without any explanation or consequence.

Ethical approval

The study has received ethical approval from the University of Cape Town, Faculty of Health Sciences Human Research Ethics Committee (HREC).

Questions

If you would like to know more about the study, please contact the Principal Investigator Eugene Davids on 021 685 4103 or eugene.davids@uct.ac.za. The University of Cape Town Faculty of Health Sciences HREC can be contacted on 021 406 6338 in case you have any ethical concerns or questions about your rights or welfare as a participant in this research study.

Learner Assent

I, _____ (learner name), agree that by ticking the box below I:

I have been told about the study.

I know the goal of the study.

I know that my identity will not be revealed and I can leave the study at any time without any reason.

I know my parent or guardian has given permission for me to be part of the study, but it is entirely my decision to take part or not.

☐ I give permission for my interview to be audio-recorded.

☐ I provide informed assent / permission to take part in the study.

_____ _____

Learner Signature Date

Appendix B: Semi-structured Interview Schedule

- What does “health” mean to you?
- Tell me about a decision that you made recently and how you made it
    - What process do you follow when deciding on something?
    - What does it involve? What do you take into account? What determines the manner in which you go about making a decision?
    - How is this process for other people that you know?
    - How similar or different is it to your process of making decisions?
    - Who in your life (friends or family) do you know to have a different way of going about making decisions?
    - What other processes of making a decision do you use?
    - How different are they to the process you described earlier?
    - What causes you to make decisions differently?

- We have spoken a bit about decision-making, and decision-making processes. These are sometimes referred to as decision-making styles. Different ways in which you make decisions. If you think about decision-making styles that you apply to different situations in your life, what would you say is the style that you or your friends follow when you have to make decisions about health?
    - How is this process similar or different to generally making decisions as we briefly discussed before?
    - How do these decision-making processes work?
    - How do you or your friends make decisions regarding your health?

- How is this process affected if the decision you are making concerns good health choices? How is this process affected if you are thinking of making bad health choices or behaviours?
- How similar or different is the decision-making process for these good or bad choices or behaviours?

- When using your definition of “health”, how would you say you go about making choices regarding your health?
- What role do _____ ever play a role in the choices that you make about your health?
    - Parents
    - Friends
    - Previous experiences
    - Regret

- I am going to give you a few scenarios, and I would like you to think about what you would do if you were the person in the scenario and what you think your friends would do in each situation:

    - Craig and Ntombi have been friends for a long time. They have decided to take their relationship to the next level. One night at a party Ntombi is offered vodka and beers to drink. She sees all the other friends at the party drinking vodka, and decides to drink the vodka instead of the beer. After having several rounds

of vodka she decides to go outside at the party and get some fresh air. When Ntombi gets outside she is offered a smoke – she isn't exactly sure what it is but takes it and takes a few puffs. Later she realises that it is dagga that she was smoking. As the party goes on – she starts feeling a bit funny. She tells Craig and he decides to take her to his place. His parents are away for the weekend. Later Craig and Ntombi decides to engage in sex. Craig does not want to use a condom but Ntombi insists that he should use one. While the two decide on what to do, they start arguing Craig starts beating Ntombi.

- If you were Ntombi what would you have done when deciding on choosing vodka or beer? What would have made you decide on that? And how would you go about making that choice?
- Have you ever been faced with a situation where you had to decide to use alcohol or any drugs? If so, how did you choose to make the decision that you made? What factors / things played a role in you making that choice?
- Ntombi was also offered dagga when she went out to get some fresh air – if you were Ntombi at the party, what would you do? How did you arrive at that choice? What if you had to choose the other option? How do you think you would have gone about deciding that or what was the process that you would have gone through to come to that decision?
- Craig wants to have sex with Ntombi – similar to many teenagers who are in a relationship. What would you or your friends do if you were in

Ntombi and Craig's place? How would you go about deciding what to do? What would make you choose that? What would influence you to choose that? What process do you think you would engage in or are you currently engaging in to choose an option? What would you do if you had to choose the other option? How different would it be?

- Have you ever been in a situation like this? If yes, what did you decide to do? How did you arrive at that choice? How did you feel about the choice that you made? How about Ntombi wanting to use a condom and Craig not? What would you or your friends do in a situation like this? What would make you decide to choose that option? How would you go about selecting that option? What if you chose the other option; what would have played a role in you selecting that? Tell me about the process that you would go through if you were to choose that option.
- Craig and Ntombi started getting into an argument and Craig started beating Ntombi. What would you do if you were Craig? What would you do if you were Ntombi? What would your friend(s) do if they were in Craig or Ntombi's shoes? What do you think about the beating of Ntombi by Craig? What informs your particular thinking on this? How do you think your friends would have gone about making this type of choice?

- Sizwe and Nikita have been friends since primary school and they both enjoy sweet treats. Sizwe has started consuming lots of chips, cool drinks and has started having lots of take outs. Both Nikita and Sizwe have tried to start being

more healthy. Sizwe has started attending gym and Nikita has started walking more in her community and generally being more active.

- Sizwe has started eating / consuming a number of sweet treats. How do you think Sizwe came about the decision to start consuming a lot of treats? What would you have done in the same situation if you were Sizwe and you were confronted with the decision to either consume a lot of treats or not ? What would you think about or consider? How would you make your decision? What process do you usually engage in when choosing whether to consume sweet treats? What about your friends? How similar or different are their choices to yours? What do you think would make them decide on that? What thinking process would they engage in to choose that option?
- After a long time of consuming sugary treats Sizwe has started gaining lots of weight and his mood has been very low. He has started feeling sad for a very long time. Sizwe has started cutting himself as a way to let go of his sad and lonely feelings. If you were in Sizwe's situation what would you do? How would you go about making the decision to respond in the way you have just described? What if you chose the alternative or the opposite of what you have said you would have done if you were in Sizwe's shoes? What would influence your thinking about it and how would you go about selecting an alternative?

- After Sizwe's feelings of low mood and self-harming he has decided to take action and attend a gym. What would you do in a situation like this? Would your friends decide on a similar or different alternative? How do you think you or your friends would think through choosing this option? How do you think you have come to decide on this option? And what might influence or shape your choice of options?

- [Summarising of the conversation] We have talked about decisions that you make in your life in general, and also those related to health; what health choices you would make if faced with certain situations, how you would arrive at those decisions. You have provided me with good examples of how you make decisions about your health. I would now like to ask you a few questions about your experience of the interview and about your thinking around your health decision-making.

- How has discussing the processes that you engage in when looking at health-related decision-making made you feel?

- To what extent did you feel comfortable about discussing how you and your friends go about making decisions with regards to your health? If you felt comfortable, why? To what extent did you feel uncomfortable or awkward when you were discussing your decision-making.

Appendix C: Manuscript Submission Guidelines: Psychology & Health

About the Journal

Psychology & Health is an international, peer-reviewed journal publishing high-quality, original research. Please see the journal's Aims & Scope for information about its focus and peer-review policy.

Please note that this journal only publishes manuscripts in English.

Psychology & Health accepts the following types of article: Article, Editorial, Commentary, Registered Reports.

Registered Reports differ from conventional empirical articles by performing part of the review process before the researchers collect and analyse data. Unlike more conventional process where a full report of empirical research is submitted for peer review, RRs can be considered as proposals for empirical research, which are evaluated on their merit prior to the data being collected. For information on how to prepare Registered Reports (RR) submissions please see here.

Peer Review and Ethics

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Updated 4-06-2019

Appendix D: HREC Ethics Approval

UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Human Research Ethics Committee

Room E53-46 Old Main Building
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Telephone [021] 406 6626
Email: shuretta.thomas@uct.ac.za
Website: www.health.uct.ac.za/fhs/research/humanethics/forms

24 July 2019

HREC REF: 356/2019

Dr Alison Swartz
Public Health & Family Medicine
Falmouth Building

Dear Dr Swartz

PROJECT TITLE: FACTORS THAT INFLUENCE ADOLESCENT'S CONDOM USE DECISION-MAKING IN THE WESTERN CAPE, SOUTH AFRICA (SUB-STUDY LINKED TO 301/2017) MMED CANDIDATE - DR E DAVIDS

Thank you for submitting your study to the Faculty of Health Sciences Human Research Ethics Committee.

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

Approval is granted for one year until 30 July 2020.

Please submit a progress form, using the standardised Annual Report Form if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period.
(Forms can be found on our website: www.health.uct.ac.za/fhs/research/humanethics/forms)

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

Please note that for all studies approved by the HREC, the principal investigator **must** obtain appropriate institutional approval, where necessary, before the research may occur.

The HREC acknowledge that the student, Dr Eugene Davids will also be involved in this study.

Please quote the HREC REF in all your correspondence.

Yours sincerely

Signature Removed

PROFESSOR M BLOCKMAN
CHAIRPERSON, FHS HUMAN RESEARCH ETHICS COMMITTEE

HREC 356/2019