Factors contributing to high HIV and AIDS prevalence: development of a multifaceted theoretical model

by

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Declaration

I declare that the thesis, which I hereby submit for the degree Philosophiae Doctor at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution.

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Kelechi Oluchi Ifekoya

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Dedication

I dedicate this research to my help in ages past and my hope for years to come.

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Abstract

South Africa is estimated to have about 7.06 million of the global HIV/AIDS infections of 36.7 million people in 2017 (UNAIDS, 2017a; Statistics South Africa, 2017). It is estimated that 19.2 percent of South Africans of ages 15 to 59 were infected with HIV/AIDS in 2015 (UNAIDS, 2015a). In South Africa, Gauteng province had the fifth highest HIV and AIDS prevalence in 2012 (Human Sciences Research Council, 2014). There is a need to reduce HIV infections amongst adolescents in Gauteng province of South Africa.

The study focused on developing a model of factors contributing to high HIV and AIDS prevalence amongst adolescents in Gauteng province of South Africa. To establish the specific model, the researcher elicited learners' perceptions of contributing factors to adolescents' high HIV and AIDS.

Various individual models used to design interventions in South Africa had been criticised. In this study, three of these models were explored; the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory. These three models were integrated into a new model to determine the applicability of interventions based on each model, as well as to find out other factors that contribute to HIV infection besides behaviour. This was done to fill the gap of the narrow perspectives and non-lasting effects of each model based intervention.

In this study a qualitative research method was used. The study was influenced by, but not exclusively based on Grounded Theory. Purposive and convenient sampling methods were used to identify Grade 11 learners (n=24) in three high schools in Gauteng province. However, 15 Grade 11 learners were the actual sample size that provided information that addressed the purpose of the study. Data was collected using semi structured interviews. The results were analysed using initial and focused coding and comparative analysis.

Results were situated in the context of these three existing models. Findings show that intentions, subjective norms, perceived behavioural control, knowledge and

social ecology settings were contributing factors to adolescents' high HIV and AIDS prevalence in Gauteng province. In addition, novel findings extended the existing definitions of intentions, subjective norms, perceived behavioural control, knowledge and social ecology settings. Consequently, the researcher developed a new multifaceted theoretical model to describe those factors that participants regarded as contributing factors to the high HIV and AIDS prevalence amongst adolescents. This model may describe HIV and AIDS behavioural studies and prevention more effectively than existing models, although the study did not include the development of interventions to test the model.

Policy makers, researchers, educators and adolescents may use findings of this study. It is hoped that the model would be useful for the scholarship pertaining to HIV and AIDS studies and prevention.

Key words: HIV/AIDS, Grade 11, adolescents, model, intentions, subjective norms, perceived behavioural control, knowledge and social ecology settings.

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List of abbreviations

Abbreviations	Full meaning
AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
GDE	Gauteng Department of Education
HIV	Human Immunodeficiency Virus
HIV and AIDS	Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome
HSRC	Human Sciences Research Council
IMB	Information Motivation Behaviour Skills Model
MEC	Members of the Executive Council
NGO's	Non-Governmental Organisations
NPO's	Non Profit Organisations
NSC	National Senior Certificate
PBC	Perceived Behavioural Control
SAPS	South African Police Service
SASSA	South African Social Security Agency
SET	Social Ecology Theory
TPB	Theory of Planned Behaviour
UNAIDS	Joint United Nations Programme on HIV/ AIDS
WHO	World Health Organisation

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CHAPTER ONE: INTRODUCTION

1.1 PROBLEM STATEMENT

The HIV pandemic is a global challenge that has affected millions of people worldwide. Africa has been particularly hard hit by the pandemic. The United Nations report of 2016 indicated that 36.7 million people globally live with HIV and AIDS (UNAIDS, 2017a). The United Nations estimated that 76.1 million people have been infected with HIV since the pandemic was discovered (UNAIDS, 2017a). However, researchers have not found any cure for HIV. Consequently, prevention of HIV transmission and or treatment of HIV infected persons remain the main focus globally. UNAIDS (2014a; 2014b) aims to scale up HIV treatment or to fast track the strategy of 90-90-90 to end HIV by 2030. To achieve this objective, UNAIDS proposed that by 2020, the 90-90-90 strategy would be employed. That is, ninety percent of persons infected with the virus will be aware of their HIV status. In addition, ninety percent of identified HIV infected individuals will be given antiretroviral therapy (ART) continually. Furthermore, ninety percent of all individuals receiving ART will achieve viral repression (UNAIDS, 2014a) in order to end the epidemic by 2030. In 2015, there was an increase from twenty four percent to forty six percent global coverage of ART (World Health Organisation, 2016a). Nevertheless, World Health Organisation (2016a) reported that more than fifty percent of infected persons do not know their status and that there is a near stagnant reduction in new HIV infections amongst adults. Subsequent to the above, the world's AIDS day in 2016 aimed at ending the transmission of the virus by the year 2030 (World Health Organisation, 2016b; UNAIDS, 2016b). However, UNAIDS (2017b; 2016c) indicated that with the low reduction rate of new HIV infections, the fast track target of less than 500,000 infections by 2020 may not be achieved.

In the light of the alarming global statistics of people infected with the virus in 2016, the researcher presented in ascending order the HIV world regional report according to UNAIDS (2017c). Middle East and North Africa have an estimated number of 230,000 thousand people infected with the virus. There were 1.6 million people living with HIV and AIDS in Eastern Europe and central Asia, 1.8 million people in Latin America and in Western and central Europe and North America, 2.1 million people

were infected with HIV or living with AIDS. Asia and the Pacific were estimated to have about 5.1 million people living with HIV and AIDS, Western and central Africa about 6.1 million people and about 19.1 million people in Eastern and Southern Africa (UNAIDS, 2017c). According to statistics, Eastern African and Southern Africa have the highest HIV and AIDS prevalence in the world (UNAIDS, 2017a).

It is evident that South Africa falls amongst one of the countries with very high HIV prevalence, of the 36.7 million people living with HIV globally, South African was estimated to have about 7.06 million people living with HIV in 2017 (UNAIDS, 2017a; Statistics South Africa, 2017). Furthermore, the HIV and AIDS prevalence in South Africa has increased from 6.41 million in 2012 to 7.06 million in 2017 (Statistics South Africa, 2017).

Although South Africa has made good progress in turning the tide of HIV incidence, it is well known that South Africa still has the highest number of people living with HIV and AIDS of any nation. In 2015, 19.2 percent of the population between ages of 15 and 59 was estimated to be infected with HIV and AIDS (UNAIDS, 2015a). Geographical differences are found in the prevalence of HIV infection, and of the nine provinces, Gauteng had the fifth highest prevalence in 2012 (Human Sciences Research Council, 2014). Reports from 2002-2017 showed that overall HIV and AIDS prevalence in the age group of 15-24 decreased by 2.67 percent (Statistics South Africa, 2017) although adolescent females still have a higher HIV and AIDS prevalence than adolescent males (UNAIDS, 2015a). In addition, in the period between 2002 and 2017, HIV and AIDS prevalence of female adolescents increased by 0.94 percent (Statistics South Africa, 2017). Adolescents fall under the age group that did not show a significant reduction in their HIV and AIDS prevalence. There is therefore a need for a significant reduction of the HIV and AIDS prevalence amongst adolescents in South Africa. It is hoped that a consideration of factors that are identified by the population most affected by the pandemic, contributed to the development of a framework to guide further research.

In South Africa, in the period between 2012 and 2017, antiretroviral therapy (ART) increased the life expectancy in males from 58.5 years to 61.2 years while that of

females increased from 63.6 years to 66.7 years (Statistics South Africa, 2017). However, the number of people living with HIV and AIDS increased between 2012 and 2017 (Statistics South Africa, 2017) despite the 2.67 percent decrease of the HIV prevalence as was aforementioned in this section. HIV and AIDS causes untimely death of many adolescents (Zuma, 2009). In Gauteng province, the second leading cause of mortality amongst ages 15 to 44 in 2013 was HIV and AIDS related (Statistics South Africa, 2014). There is a need to explore factors that contribute to high HIV and AIDS prevalence in order to develop a practical model that can inform the development of interventions to reduce HIV infection as well as HIV and AIDS related deaths.

HIV and AIDS interventions have previously been designed in South Africa, using different models. In this study, three of these models were discussed, including the problems experienced when these models were used to develop interventions. The three models are the Theory of Planned Behaviour (Ajzen & Sheikh, 2013; Ajzen, 2011), the Information Motivation Behaviour Skills Model (Fisher & Fisher, 1992) and the Social Ecology Theory (Bronfenbrenner, 1994). The Theory of Planned Behaviour is based on the intentions of the individual, the Information Motivation Behaviour Skills Model is based on the knowledge that the individual possesses and the Social Ecology Theory describes social ecology systems that influence behaviour that will modify the risk of the individual to contract HIV and AIDS.

The three models have been used separately as models to design interventions to reduce HIV and AIDS prevalence in South Africa (Kelly, Mkhwanazi, Nkwash, Rapiti & Mashale, 2012; Ndebele, Kasese-Hara & Greyling, 2012; Page, Ebersöhn & Rogan, 2006). Each individual model and the intervention strategies based on these models, had been criticised for being based on narrow viewpoints leading to short-lived results in the interventions. Kelly *et al.* (2012) and Ndebele *et al.* (2012) argued that researchers should investigate all determinants of HIV infection. Each of these models focus on a specific determinant of HIV infection to the exclusion of other factors that could be equally significant. The Theory of Planned Behaviour emphasises the individual's intentions to practice a specific behaviour, but intentions may change with time and circumstances. The Information Motivation Behaviour Skills Model acknowledges knowledge as a reason to practice a behaviour, but

knowledge may not be equivalent to behaviour and the Social Ecology Theory emphasises that behaviour is influenced by social norms, but perceived social norms may differ from actual social norms and behaviour.

That is not to say that relevant factors that encourage unsafe behaviour are not present in these three frameworks, but it is clear that no single existing framework encapsulates all the factors contributing to the pandemic. It is therefore hoped that a fresh look at the factors that the target population (adolescents) considers to be important in the transmission of the virus may lead to a more comprehensive model that may inform future interventions. It remains relevant to re-examine the factors previously identified in the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory, as these may remain contributing factors. It is hoped that the model developed during this study may provide a guiding, holistic framework in developing future interventions.

In this study, the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory were re-examined and integrated into a new framework (Ajzen, 2011; Fisher & Fisher, 1992; Bronfenbrenner, 1994). The motivation was to determine the applicability of each model as well as to find factors that have not previously been identified to contribute to HIV and AIDS. It is hoped that such a new model filled the gap left by the overly narrow perspective presented by these models, in order to improve the effects of interventions based on such theoretical models of HIV and AIDS behavioural prevention. While a number of studies have used the above mentioned models to understand HIV and AIDS behavioural prevention, no study has attempted to develop a framework that combines all three. More so, there are reported misgivings about each of these intervention models when used individually (e.g. Global HIV Prevention Working Group, 2008; Mnguni, 2012). It is hoped that the model developed during this study may provide a guiding framework for developing future HIV and AIDS interventions.

Knowledge, motivation and social, economic, cultural and environmental factors affect whether HIV and AIDS preventive behaviours are practiced (Bhana & Anderson, 2013; Global HIV Prevention Working Group, 2008; Reddi, 2007; Clark, Bruce & Dube, 2006). However, cognitive behavioural theories presuppose that

knowledge with sufficient motivation is the vital factor that may affect the practice of HIV and AIDS preventive behaviour (Global HIV Prevention Working Group, 2008). An intervention that includes knowledge, motivation, social, economic, cultural, and environmental factors that affects HIV and AIDS preventive behaviour is needed, *"although to date social and ethnographic research studies have not been adequately used to inform on behavioural interventions"* (Global HIV Prevention Working Group, 2008, p.6). In this study a new multifaceted theoretical model was developed that can be used to design interventions that may reduce HIV and AIDS prevalence amongst adolescents.

1.2 RATIONALE

The HIV pandemic is a global challenge that world nations have been investigating to find solutions to for over three decades. The focus of the 2016 international AIDS conference in Durban was to urge individuals and stakeholders to increase HIV and AIDS prevention programmes (UNAIDS, 2016a). The 2016 United Nations AIDS Durban conference (UNAIDS, 2016a) and the world AIDS day 2016 objectives were to reduce HIV and AIDS prevalence (World Health Organization, 2016b; UNAIDS, 2016b). The target of the world AIDS day is to end HIV and AIDS by 2030 (World Health Organisation, 2016b; UNAIDS, 2016b). This study aligned with the conferences' aim and aims to achieve this by increasing the knowledge base on factors contributing to HIV and AIDS amongst adolescents. In the light of the unacceptably high prevalence in South Africa, the researcher set out to develop a multifaceted theoretical model that may be used to design interventions to reduce HIV and AIDS prevalence of Gauteng province. In order to develop this new multifaceted theoretical model, the researcher found factors learners perceived that contribute to high HIV and AIDS prevalence in Gauteng province.

Behaviour intervention models, such as the Information Motivation Behaviour Skills Model, are individual-level models (DiClemente, Salazar, & Crosby, 2007). The Information Motivation Behaviour Skills Model states that knowledge, coupled with sufficient motivation and HIV and AIDS preventive behavioural skills, will encourage the practice of preventive HIV and AIDS behaviour (Fisher & Fisher, 1992). However, it was found that the behavioural changes that interventions based on this

model achieved, lasted only for a short time (Global HIV Prevention Working Group, 2008). This implies that there may be other criteria besides knowledge, motivation and behavioural skills that will enhance HIV and AIDS preventive behaviour amongst adolescents. Adolescents may lack the intent, motivation or the volitional control to carry out known HIV and AIDS preventive behaviour even after acquiring HIV and AIDS preventive behavioural skills.

Ndebele *et al*. (2012) carried out an intervention using the Information Motivation Behaviour Skills Model. These authors concluded that, apart from knowledge, motivation and behavioural skills, models should consider behavioural, structural, social and economic factors of the adolescents' life in order to be effective in reducing HIV infections (Ndebele *et al*., 2012). Kelly *et al*. (2012) claimed that research attributes the factors that contribute to high HIV and AIDS prevalence in South Africa mostly to behaviour and to a lesser extent, recognise the social ecology of HIV that influences HIV and AIDS. There are no programmes that combine individual, interpersonal and social factors that contribute to HIV prevalence (Kelly *et al*., 2012). In this study the researcher considered the individual, family, school, societal, cultural and economic factors that contribute to the exposure of adolescents to HIV and AIDS.

Behavioural interventions have been shown to reduce adolescents sexual risk behaviours for a short period e.g. in interventions based on the Theory of Planned Behaviour or the Information Motivation Behaviour Skills Model (Ajzen, 2011; DiClemente *et al.,* 2007). Ajzen (2011) argued that the performance of intended behaviour may not be achieved if the intended behaviour is delayed for a long time. Interventions that use multiple theoretical frameworks may have long lasting effects on sexual risk behaviours. Such interventions may also reduce social, economic, cultural and environmental factors that increase the incidence of HIV and AIDS infection in adolescents. Furthermore, the United Nations' goal of eradicating HIV and AIDS by 2030 (UNAIDS, 2016b) may be achieved if interventions could be based on a multifaceted theoretical models.

The Theory of Planned Behaviour states that intentions influence behaviour (Ajzen, 2011; 1991). Intentions are the desire to carry out a behaviour (Ajzen, 2011).

Armitage and Tlibudeen (2010) used a Theory of Planned Behaviour-based intervention to promote adolescents' safe sex intentions. They found that subjective norms were not significantly associated with safe sex intentions. Armitage and Talibudeen (2010) proposed that interventions that are designed to change the subjective norms may change behaviour. The Theory of Planned Behaviour was employed to find out what the extent of condom use amongst Xhosa speaking people of South Africa is (Jemmott, Heeren, Ngwane, Hewitt, Jemmott, Shell & O'Leary, 2007). Part of the sampled population had weak intentions, others had beliefs which prevented them from using condoms and some lacked skills to use condoms effectively (Jemmott *et al*., 2007). It was advocated by Jemmott and others that these adolescents should be taught that condom use does not prohibit sexual enjoyment, and adolescents should be taught how to use condoms effectively (Jemmott *et al*., 2007). The researcher confirmed that intentions alone are not enough reason why adolescents decide whether to adopt HIV preventive behaviour such as condom use.

The Social Ecology Theory postulates that the influences from social ecology environments may affect individuals' adoption or rejection of behaviour. In the Social Ecology Theory behavioural change is influenced by social norms (Perkins & Berowitz 1986). Social norms are built on the perceptions that people hold (Selikow, Ahmed, Flisher, Mathews & Mukoma, 2009). Perceptions of people may be unhealthy (Selikow *et al.,* 2009). Individuals who adopt behaviour based on misleading or harmful social norms may be influenced by myths, superstitions and ill-conceived perceptions. As a result, behaviours such individuals would adopt may undermine healthy social norms.

In the Social Ecology Theory the impact of personal intentions on behaviour is underestimated. The Social Ecology Theory states that behaviour is influenced by social ecological settings. The social ecological setting may influence behaviour but the impact of behavioural intentions cannot be overlooked.

In this study, the researcher explored whether the interventions designed using these three models were sufficient to change behaviour that reduced HIV infection. The study developed a multifaceted theoretical model using not only the Theory of

Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory but also identified factors that were omitted from these models to inform the existing HIV and AIDS knowledge base on factors contributing to high prevalence in Gauteng province of South Africa. The study developed a new multifaceted theoretical model that could be used to design effective HIV prevention interventions.

1.3 ASSUMPTIONS ABOUT INTERVENTION APPROACHES AND BEHAVIOUR

This study utilised qualitative data and in line with the qualitative nature of the study, the following assumptions were made:

a. The Theory of Planned Behaviour has factors that contribute to high HIV and AIDS prevalence in Gauteng province, but it is insufficient to explain all contributing factors.
b. The Information Motivation Behaviour Skills Model has factors that contribute to high HIV and AIDS prevalence in Gauteng province, but it is insufficient to explain all contributing factors.
c. The Social Ecology Theory has factors that contribute to high HIV and AIDS prevalence in Gauteng province, but it is insufficient to explain all contributing factors.
d. A new multifaceted theoretical model will better account for a model designed from contributing factors to adolescents' high HIV and AIDS prevalence than a singular model.

Based on these assumptions, the researcher developed a multifaceted theoretical model that may inform the HIV and AIDS intervention on factors contributing to high prevalence in Gauteng province.

1.4 AIMS AND OBJECTIVES

The researcher developed a new multifaceted theoretical model using not only the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and

the Social Ecology Theory but also identified previously unknown factors in order to inform the existing HIV and AIDS intervention on factors contributing to high prevalence in the Gauteng province of South Africa. In order to establish the specific model, the researcher found factors that learners perceived that contribute to adolescent's high HIV and AIDS prevalence that helped to develop a new multifaceted theoretical model. The study developed a new multifaceted theoretical model that could be used to design effective interventions.

1.5 RESEARCH QUESTIONS AND SUB-QUESTIONS

The main research question is:

> How can factors that learners associate with contributing to high HIV and AIDS prevalence be used to develop a new multifaceted theoretical model that will inform effective interventions on HIV and AIDS?

In this study, adolescents was used interchangeably with learners.

The sub-questions that supported the main question are:

i) What factors, identified in the Theory of Planned Behaviour do learners recognise as contributing factors to HIV and AIDS prevalence in Gauteng?

ii) What factors, identified in the Information Motivation Behaviour Skills Model do learners recognise as contributing factors to HIV and AIDS prevalence in Gauteng?

iii) What factors, identified in the Social Ecology Theory do learners recognise as contributing factors to HIV and AIDS prevalence in Gauteng?

iv) What factors, omitted from the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory do learners recognise as contributing factors to HIV and AIDS prevalence in Gauteng?

1.6 THE RESEARCHER AS A RESEARCH INSTRUMENT

The researcher adopted an ontological approach that reality is relative and there is no absolute truth therefore there are multiple realities (Lincoln, Lynham & Guba, 2011; Nieuwenhuis, 2007a). In contrast, positivists believe that there is fixed reality

(Lincoln, Lynham & Guba, 2011) that may be discovered through scientific investigation. However, reality or truth may change when people are exposed to new situations. Positivists believe that human beings may be fully understood through experimentation (Nieuwenhuis, 2007a). The multiple realisms' perspective posits that human beings may be understood through their interrelationship with other human beings (Nieuwenhuis, 2007a). The researcher was motivated to adopt the multiple realisms' ontological approach because the researcher desired to interact with the participants to find out which factors may contribute to the high HIV and AIDS prevalence amongst adolescents. The researcher believes that the reasons for high HIV and AIDS prevalence amongst learners in the Gauteng province of South Africa may be understood by interviewing adolescents. This ontological stance implied that the results may be tested in another setting and found to be different. The research findings might therefore not be generalisable because there are multiple truths. Qualitative researchers depend on the participants' narrated, lived experiences (views, opinions and ideas) and by what meaning they ascribe to their experiences (Nieuwenhuis, 2007a). The challenge envisaged by the researcher is that during the interviews participants may have answers that are unrelated to the purpose of the study. However, the researcher has decided to view reality through the lens afforded by the research questions and sub-questions and to discard answers that do not relate to the purpose of the study.

A constructivist epistemological approach states that reality may be known through constructing reality during the interactions of the researcher with the participants (Lincoln, Lynham & Guba, 2011; Nieuwenhuis, 2007a). The researcher adopted a constructivist epistemological approach because the researcher is willing to construct truth from the interviews with participants on factors the learners acknowledge that contribute to the high HIV and AIDS prevalence amongst adolescents. The challenge with constructing reality is that the researcher believes that whatever the participants are saying is the truth. The researcher went back to the participants to clarify and verify data during data analysis to ensure that the research is free from the researcher's bias.

The qualitative research method that was used suited the ontological and epistemological stance of multiple realities and constructivism (Lincoln, Lynham &

Guba, 2011; Nieuwenhuis, 2007a). The problem envisaged in using a qualitative research method is that a large amount of data would be collected (Nieuwenhuis, 2007b). The researcher was willing to collect rich data and to verify data through simultaneous and sequential data collection and analysis (Glaser & Strauss, 1967; Charmaz, 2014). The qualitative research method was used mainly for descriptive and interpretative analysis but the purpose of this study was to develop a new multifaceted theoretical model.

The researcher allowed the study to be informed by Grounded Theory so that the objective of the study, that of developing a new model, would be achieved. Grounded Theory differs from other types of qualitative research because the major objective of Grounded Theory is to develop theory (Glaser & Strauss 1967; Glaser, 1978). In Grounded Theory the theory that is developed is derived from data systematically gathered from the participants (Charmaz, 2014; Glaser & Strauss 1967). Grounded Theory is distinguished from other quantitative research strategies because theory is developed from the data collected from the participants rather than using preconceived concepts that the participants should verify or contradict (Charmaz, 2014; Glaser & Strauss, 1967; Nieuwenhuis, 2007a; Strauss & Corbin, 1994).

Grounded Theory methods were partially integrated in the data collection and analysis. Three models, the Theory of Planned Behaviour, the Information Motivation Behavioural Skills Model and the Social Ecology Theory, were combined to form a new model. These existing models have preconceived codes or themes through which lenses the researcher developed the new model. An exclusively Grounded Theory approach would not be possible, as these preconceived codes or themes work against the canons of Grounded Theory. However, factors that were identified by participants to contribute to HIV and AIDS prevalence, but that were not included in three existing models had to be identified and included in the new model. The intent of the researcher was to develop a new model by integrating three existing models with newly identified factors, therefore this research was not full Grounded Theory research.

1.7 SCOPE OF THE STUDY

The study was carried out amongst adolescents in the Gauteng province of South Africa. For the purpose of data collection, the researcher selected 24 Grade 11 learners from three high schools in the Gauteng province of South Africa. However, the actual sample size was 15 Grade 11 learners. Grade 11 learners were chosen because they had more time than Grade 12 learners who were writing their National Senior Certificate (NSC) examination. Moreover, researchers are discouraged from conducting research on learners in Grade 12. In addition, Grade 11 learners are at a transition age of their adolescents to adulthood and they have a drive for independency (Arnett, 2001). It is expected that Grade 11 learners may have more experience than adolescent Grade 10 learners due to their longer years in high school.

The study investigated factors that contribute to HIV and AIDS as contributed by the learners who participated in the study. The research addressed the limitations of the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory model based HIV and AIDS interventions. The researcher integrated these three models with newly identified factors to develop a new multifaceted theoretical model to describe factors that contribute to high HIV and AIDS prevalence.

1.8 LIMITATIONS OF THE STUDY

This research was carried out only in Gauteng province of South Africa and not in all South African provinces. The researcher sampled only 3 high schools in Gauteng province. The limited period of time allocated for research by University of Pretoria prohibited the researcher from carrying out this study in all schools located in all provinces of South Africa.

The study used purposive and convenient sampling methods and not randomly selected sampling to select 24 adolescents out of the three high schools. However, the final sample size of 15 adolescents provided information that addressed the purpose of the study during interviews. By implication, this study may not be

generalised as the actual sample size is not a representative sample of the whole population of high schools in Gauteng province of South Africa. The researcher preferred purposive and convenient sampling methods because these adolescent Grade 11 learners are either infected or affected by the pandemic (see Section 3.2). Moreover, it was easy for the researcher to access the three high schools.

The study investigated only factors that contribute to high HIV and AIDS prevalence. The researcher used only interviews to collect data.

1.9 CONCEPT CLARIFICATION

The following are operational concepts defined in the context of this study:

- 'Adolescents' was used interchangeably with 'learners'.
- Risk related behaviours are some behaviours adolescents may engage in that could increase their susceptibility to HIV and AIDS.
- Unprotected sex may be described as the absence of use of protection during sex that may expose adolescent to HIV and AIDS.
- Health factors are some factors that may expose adolescent to HIV disease through blood contact and mother-to-child-transmission (MTCT).
- In this study, sexual abuse is an act in which the sexual abuser forces an adolescent into sexual intercourse without his or her consent.
- Knowledge factors comprise of adolescents' ability to know factors that contributes to HIV and AIDS and knowledge of how HIV and AIDS could be prevented.
- In this study, HIV behavioural intentions are desires to accept or reject HIV and AIDS preventive behaviour.
- Subjective norms are personal and social pressures that may influence adolescents to accept or reject HIV and AIDS preventive behaviours.
- Social ecology settings are some influences from adolescents' social environment that impact on their intentions, perceived behavioural control and knowledge.

1.10 CONCLUDING REMARKS

There is an unacceptably high HIV prevalence in South Africa. The researcher explored the factors that contribute to high HIV and AIDS prevalence amongst adolescents in the Gauteng province of South Africa. The great threat posed by the pandemic motivated the researcher to explore contributing factors to high HIV prevalence in Gauteng province South Africa in order to develop a new multifaceted theoretical model that could be used to design HIV and AIDS preventive interventions. It is hoped that the study contributed to the body of existing knowledge on factors that contribute to the unacceptably high HIV and AIDS prevalence.

The researcher's focus was to address the shortcomings of the three models when used to describe factors that affect HIV behaviour. It is hoped that a reconsideration of the three models built on the strengths of these three models, while exploring new factors that these three models were silent on. It is hoped that the integration of these three models, combined with newly described factors into a single model may provide a holistic description of determinants of HIV and AIDS.

This new multifaceted theoretical model could be an effective framework on which to base the development of HIV and AIDS interventions to reduce high HIV and AIDS prevalence amongst adolescents in South Africa. Furthermore, researchers, educators and policy makers might be able to use the framework to develop policies on HIV and AIDS interventions/prevention.

In the next chapter, the relevant literature was reviewed and the theoretical as well the conceptual frameworks that were used for the study was discussed.

CHAPTER TWO: LITERATURE REVIEW

2.1 INTRODUCTION

In the previous chapter, the researcher discussed the gap that exists in literature on HIV and AIDS interventions that were based on each of three existing models; the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Models and the Social Ecology Theory. In this chapter, the researcher reviewed the relevant literature, the theoretical framework as well as the conceptual framework that were employed to carry out this study.

2.2 CONTRIBUTING FACTORS TO ADOLESCENTS' HIGH HIV AND AIDS PREVALENCE

There are various factors that contribute to HIV infection including risk-related behaviours, biological, health as well as social factors. Causes of the HIV and AIDS epidemic may be attributed to multiple infections, lack of a cure for HIV and AIDS and poverty (Mnguni, 2012). Although antiretroviral therapy (ART) prolongs life expectancy, there was, between 2012 and 2017, an increase in the number of people living with HIV and AIDS in South Africa (UNAIDS, 2017a; Statistics South Africa, 2017). While ART addresses the life expectancy of infected persons, it does not prevent new HIV infections. The objectives of the 2016 United Nations conference in Durban (UNAIDS, 2016a) and the world AIDS day 2016 were to prevent HIV and AIDS prevalence (World Health Organisation, 2016b; UNAIDS, 2016b). The target of the world AIDS day is to end the transmission of HIV by 2030 (World Health Organisation, 2016b; UNAIDS, 2016b). This target can only be reached if effective programmes are put in place not only to treat individuals living with HIV and AIDS, but to prevent new infections. The researcher explored the contributing factors to adolescent's high HIV and AIDS prevalence as perceived by some learners in Gauteng province of South Africa. Consequently, this study developed a new multifaceted theoretical model from these identified factors that contribute to adolescents' high HIV and AIDS prevalence that may be used to design interventions to prevent HIV infection amongst adolescents.

As mentioned previously, there are presently no curative measure for HIV and AIDS. More so, despite numerous interventions there is an unacceptable increase in adolescents HIV and AIDS prevalence in Gauteng province of South Africa. It becomes imperative to prevent new HIV infections or reinfection of HIV amongst adolescents in Gauteng province of South Africa. In addition, each of the three models emphasises specific factors that contribute to adolescents' high prevalence of HIV and AIDS, but are silent on other important aspects. Consequently, the researcher explored all determinants of HIV infection amongst adolescents in order to develop a new model that could address HIV infection prevention. The researcher therefore reviewed relevant literature on factors contributing to adolescents' high HIV and AIDS prevalence using the following sub headings: risk related behaviour, health factors, social factors and knowledge factors.

2.2.1 Risk related behaviour

Risk related behaviours are behaviours adolescents may engage in that could increase their susceptibility to HIV and AIDS. Such behaviours include unprotected sex, more than one sexual partners, transactional sex and alcohol and drug use.

Unprotected sex

In this study, unprotected sex may be described as absence of use of protection during sex. It is worthy to note that some protected sex may only prevent pregnancy instead of HIV. In this study, the researcher focused on unprotected sex as it relates to prevention of HIV and AIDS that is, sex without the use of condoms amongst adolescents. Avert.org (2017) defined unprotected sex as engaging in vaginal, anal or oral sex without the use of a condom. Avert.org (2017) indicated that unprotected sex can expose adolescents to HIV infection but advocated that using condoms during sex is the best way to prevent HIV and AIDS. Consequently, the best way to prevent sexual transmission of the virus is for adolescents to use male and female condoms (UNAIDS, 2015b).

In spite of the free provision of male and female condoms, adolescents still engage in unprotected sex for various reasons. Firstly, lack of access to condoms may

inspire adolescents to engage in unprotected sex. In some countries, including South Africa, Nigeria, America and United Kingdom, adolescents can access condoms distributed by their governments (USAID.gov, 2016; Ratna, Nardone, Hadley & Brigstock-Barron, 2015; Charania, Crepaz, Guenther-Gray, Henny, Liau, Willis & Lyles, 2011; Ham & Bennish, 2009). However, the problem of networks for sustained distribution may pose a hindrance to adolescents accessing condoms in a country like Nigeria (USAID.gov, 2016). In effect, in Sub Saharan African countries where condom distribution networks are not reliable, adolescents who desire to engage in protected sex may need to purchase condoms. However, learners from poor socioeconomic backgrounds may lack the finances to purchase condoms. More so, adolescents from high economic backgrounds may not readily have the time to purchase condoms when they desire to have protected sex. Consequently, these adolescents who practise unprotected sex could be susceptible to HIV.

In addition, South African adolescent high school learners are expected to go to clinics to collect condoms to practise protected sex. However, Ham and Bennish (2009) recommended that condoms should be distributed at high schools if adolescents are expected to use condoms. In another study, Tanser (2006) reported that the cost of transportation coupled with the distance to condom distribution sites prohibit some adolescents from accessing free condoms at government clinics. These authors therefore advocated that the Department of Health should include schools as part of their distribution centres (Ham & Bennish, 2009). In essence, high school learners may easily access condoms from their schools. In this study therefore, the social and economic factors that influence adolescents accessing condoms were explored in order to propose how best adolescents could access condoms.

Secondly, lack of consistent and correct use of condoms prohibit some adolescents from practising protected sex. In this study, consistent use of condoms could be regarded as reliable use of condoms during sexual intercourse. Mondal and Shitan (2013), referred to the effective use of condoms as accurate use of condoms. In another study, these scholars found that approximately forty five percent of adolescents in rural communities in South African use condoms, however, they lack consistent and regular condom use (Awotidebe, Philips & Lens, 2014). In effect,

even some adolescents who live in countries were condoms are provided may lack skills to effectively use condoms while some may lack condom negotiation skills (Jemmott *et al.,* 2007). Furthermore, lack of regular use of condoms as well as the inability to negotiate for condom use may increase adolescents' susceptibility to HIV infection. This researcher therefore, investigated all factors that participants reported that may prevent adolescents from regularly and correctly using condoms. In addition, the researcher proposed a new multifaceted theoretical model that maybe be used to address consistent condom use, condoms use skills and condom negotiation skills during HIV preventive intervention.

Number of sexual partners

The number of sexual partners some adolescents have may influence their susceptibility to HIV and AIDS. Some adolescents may have one sexual partner while some may have more than one sexual partner. Adolescents who engage in sex with HIV negative single sexual partner is not exposed to the virus through sexual intercourse. However, adolescents who engage in sex with multiple sexual partners may be exposed to the virus (Johnston, O'Malley, Bachman, Schulenberg, Patrick & Miech, 2017). In their study, Awotidebe *et al.* (2014) established that forty-two percent of adolescents in two South African rural communities engage in sexual intercourse with more than one sexual partner. In another study, Singh and Patra (2012) found that in Tanzania, women aged between 15-49 years who have five or more sexual partners' have a higher risk of contracting the virus than women who have a single sexual partner. The researcher developed a new multifaceted theoretical model that may be used to design HIV preventive interventions that will encourage adolescents to reduce their sexual partners to a single sexual partner.

Transactional sex

In this study, the researcher defined transactional sex as sexual intercourse in exchange for money, material goods and support. In this study, transactional sex may be used interchangeably with economic sex. In their study, Bradburn, Wanje, Pfeiffer, Jaoko, Kurth and McClelland (2017) classified individuals who practise economic sex as sex workers. Although this researcher categorised sex workers

under risk related behavioural factors, in essence transactional sex is motivated by economic circumstances. Hence, economic sex may also be categorised under economic factors since it is always financially motivated. This further explains that certain determinants of HIV infections amongst adolescents may have dual or multiple reasons which could be neglected if models used to design HIV interventions focus on a singular model. However, in this study, the researcher explored risk behavioural as well as economic determinants of HIV infection amongst adolescents.

Alcohol and drug use

Alcohol and drugs use do not have a direct impact on adolescents' high HIV and AIDS prevalence but the behaviour adolescents engage in after using alcohol and drugs may increase their exposure to the virus. Ferreira-Borges, Rehm, Dias, Babor and Parry (2016) indicated that in Sub Saharan Africa, alcohol use influences diseases including HIV infection. More so, these researchers found that the use of alcohol is a risk factor that influences the desire to engage in unprotected sexual intercourse (Rehm, Shield, Joharchi & Shuper, 2012). In addition, Kiene, Simbayi, Abrams, Cloete, Tennen and Fisher (2008) established that average or high consumption of alcohol prior to sex may influence unprotected sex amongst HIV infected individuals in Cape Town, South Africa. Kiene *et al.* (2008) also found that these intoxicated HIV positive individuals may engage in sexual intercourse with HIV negative individuals or people they do not know their HIV status. Moreover, during their study, these researchers established that HIV infected persons transmitted the virus to their uninfected sexual partners (Kiene *et al.,* 2008). This implies that alcohol may influence the judgement of individuals to engage in unprotected sex. Consequently, alcohol may increase exposure to HIV and AIDS transmission.

Drug use may increase adolescents' risk related behaviour including their susceptibility to HIV infection. Akanle, Adesina and Adebayo (2015) indicated that teenagers are inspired by their peers to use drugs. In addition, Mayer, Colfax and Guzman (2006) established that drug use may contribute to incorrect use of condoms as well as unprotected sex exposing adolescents to the virus. This study aimed at finding all determinants of risk related behaviour that may expose

adolescents to HIV and AIDS in order to develop a combined theory that could be used for HIV preventive.

2.2.2 Health factors

The only health factor that was described is contact with HIV contaminated blood.

Contact with HIV contaminated blood

Some adolescents could intentionally or accidentally come into contact with HIV contaminated blood which exposes them to HIV infection. Adolescents who use drugs may share injection needles for drugs. Sharing of injection needles for drugs may expose some adolescents to HIV. Fisher, Misovich, Kimbel and Weinstein (1999) found that forty percent of their participants shared injection needles for drugs even though they were HIV positive.

Moreover, HIV contaminated blood could expose adolescents to the pandemic during blood transfusions, contact with blood without gloves and sharing of sharp objects (Center for Disease Control, 2018; UNAIDS, 2017d; Mbakwem-Aniebo, Ezekoye, & Okonko, 2012). UNAIDS (2017d) advised that blood that is used in transfusions should be properly screened for HIV infection to prevent transmission of the virus. More so, relief workers should protect themselves from contact with blood to avoid exposure to the pandemic (UNAIDS, 2017d). In addition, the use of unsterilised sharp objects may expose adolescents to the virus (Mbakwem-Aniebo *et al.,* 2012). In this study, the researcher, proposed a new multifaceted theoretical model that could be used to design HIV preventive interventions to discourage behaviour that could bring how adolescents come into contact with HIV and AIDS infected blood.

2.2.3 Social factors

The researcher discussed cultural circumcision under social factors.

Cultural circumcision

In South Africa, infant circumcision is carried out but in some cultures, male adolescents are circumcised as a cultural rite (Meissner & Buso, 2007). Prior to their circumcision, these adolescents are not culturally validated as men until after their circumcision initiation into manhood (Kalichman, 2010; Mogotlane, Ntlanqulela & Ogunbanjo, 2004). Furthermore, some of these adolescents who may not wish to be circumcised are kidnapped by other members of their communities for cultural circumcision (News24, 2008). In addition, other male adolescents willingly go to the mountains or other designated sites to be circumcised by traditional practitioners (Kalichman, 2010; Mogotlane *et al.,* 2004). The strong belief in the cultural circumcision motivated a white South African from the Eastern Cape province to be one of the culturally circumcised initiates despite the threat of HIV and AIDS in South Africa (BBC.com, 2013). Some of the traditional practitioners that perform male circumcision on these adolescents may not be medical health workers (Meissner & Buso, 2007). Therefore, male traditional circumcisers may not protect their adolescent clients from the virus because the procedures involved during cultural male circumcision is uncertain (Maffioli, 2017). In this study, the researcher explored cultural factors that contribute to adolescents' HIV prevalence and proposed a new multifaceted theoretical model that may be employed to design HIV preventive interventions.

2.2.4 Knowledge factors

Knowledge factors that are relevant to this study are adolescents' knowledge of contributing factors to high HIV disease including abstinence, testing for HIV and AIDS status and knowledge of HIV and AIDS statuses of both partners.

Testing for HIV status

In South Africa, there is free HIV testing in government clinics. Some adolescents may have tested for their HIV and AIDS status while some may be ignorant of their HIV status despite the provisions made for free HIV testing in government clinics. Scott-Sheldon, Carey, Carey, Cain, Simbayi, Mehlomakhulu and Kalichman (2013)

established that HIV positive men who tested for their status have knowledge that impact them to adopt anti-risk behaviour than men who have not tested for their HIV status. However, in Uganda, the stigmatisation discouraged some men and women from HIV counselling and testing (Ayiga, Nombooze, Nalugo, Kaye & Katamba, 2013). More so, Karim, Meyer-Weitz, Mboyi, Carrara, Mahlase, Frohlich and Abdool Karim (2008) found that in Kwa Zulu Natal province of South Africa, stigmatisation, discrimination and lack of cooperation from their society discourage voluntary HIV counseling and testing. As a result, Karim *et al.* (2013) added that there is hindrance in care, support and prevention of the HIV disease amongst infected members of this Kwa Zulu Natal community.

It is worthy to note that HIV testing may discourage mother-to-child transmission (PMTCT) of the virus. Pregnant adolescents who know their HIV status may access treatment during anti-natal clinics, after birth and during child care services (World Health Organisation, 2018). In line with the findings of Scott-Sheldon *et al.* (2013), adolescents who are knowledgeable about their HIV status may avert behaviours that could increase their exposure to HIV. More so, these adolescents who know their status may not transmit the virus to other adolescents.

Knowledge of HIV status of both partners

The National Education Policy Act (1996) on HIV and AIDS gives learners the right to either disclose their HIV and AIDS status or not. In other words, sexually active adolescents may not wish to disclose their HIV status to their sexual partners. Furthermore, Karim *et al.* (2013) found that the fear of rejection and low support from sexual partners prevent disclosure of HIV status. However, since there is yet no cure for the pandemic and if HIV prevalence level amongst adolescents is to decrease, it remains vital that such adolescents should disclose their HIV status to their sexual partners.

In this qualitative study, the researcher employed some aspects of the Grounded Theory method of coding and comparative analysis of incidents to identify initial and focused codes and conceptual categories of factors participants perceived were contributing to adolescents' high HIV and AIDS prevalence in Gauteng province of

South Africa (see Table 4.1). These identified conceptual categories could only be upgraded as theoretical categories for this study by situating them in the context of existing three theories that influenced the analysis of data (see Section 4.8). In the next section, the researcher presented the theoretical approach that was employed for this investigation.

2.3 THEORETICAL APPROACH TO THE STUDY

Previously, different theoretical models have informed the design of HIV and AIDS interventions in South Africa. These interventions have been criticised for various reasons. In this study, three of these theoretical models that were used to design HIV preventive interventions was discussed, including the Theory of Planned Behaviour (Ajzen, 2015; 2011; Ajzen & Sheikh, 2013), the Information Motivation Behaviour Skills Model (Fisher & Fisher, 1992) and the Social Ecology Theory (Bronfenbrenner, 1994).

Furthermore, Grant and Osanloo (2014) equated theoretical framework with the base for creating knowledge in a research. Theoretical framework provides backbone for the rationale for the study, the problem statement, the purpose of the study, the significance of the study and the research questions (Grant & Osanloo, 2014). Furthermore, Grant and Osanloo (2014, p.12) indicated that *"the theoretical framework provides a grounding base, or an anchor, for the literature review, and most importantly, the methods and analysis"*. Onwu (2018), in accord with Grant and Osanloo (2014) indicated that the theoretical framework must align with the statement of problem, aims and objectives of the research, the research questions and research analysis.

On the above premise, the researcher presented the theoretical frameworks that were employed for this investigation under the following theories: the Theory of Planned Behaviour, the Information Motivation Behavioural Skills Model, the Social Ecology Theory and Grounded Theory. However, for a detailed presentation of the Grounded Theory see Chapter 3.

2.3.1 The Theory of Planned Behaviour

Ajzen (1991) developed the Theory of Planned Behaviour. This theory extends the previously developed Theory of Reasoned Action (Ajzen & Fischbein, 1969), by incorporating behavioural control (actual behavioural control and perceived behavioural control). The Theory of Planned Behaviour describes intentions as a desire to practice a behaviour (Ajzen, 2011). Attitudes towards the behaviour, subjective norms and behavioural control influence intentions to carry out a behaviour (Ajzen & Sheikh, 2013; Ajzen, 2002; 1991). Attitudes, which can be described as the individual's assessment of intended behaviour, are shown in the pattern of expressing approval or disapproval of carrying out the intended behaviour (Ajzen, 1991; Ajzen & Madden, 1986). Subjective norms are the perceived societal pressures that may promote or prevent the individual from carrying out their behavioural intentions (Ajzen & Madden, 1986).

Perceived behavioural control (PBC) determines how simple or complicated it will be for the person to carry out the intended behaviour (Ajzen, 1991; 2002). Perceived behavioural control ascertains if resources and ability to perform the behaviour are present to perform the intended behaviour or not (Ajzen, 2002; 1991). Behavioural intentions can be actualised if the behaviour is under volitional control of a person to carry out the intended behaviour (Ajzen, 1991).

Furthermore, perceived behavioural control may be compared to Bandura's self-efficacy (Ajzen, 2002; Bandura, 2006). Perceived self-efficacy reflects beliefs about one's ability to have control over one's level of performance and the events that may influence one's life (Bandura, 1991). When the actual control cannot be determined, the perceived behavioural control may be substituted for actual control (Ajzen, 2006). Behavioural intentions may change with time. Attitudes, subjective norms and perceived behavioural control may be judged by the person observing the intended behaviour to be favourable but perceived self-efficacy may differ from actual self-efficacy consequently preventing behaviour. In the original model of the Theory of Planned Behaviour, Ajzen (2011) explained that events that may occur between the intended behaviour and the performance of the behaviour may change intentions

which may prevent the performance of the intended behaviour, but he did not incorporate the possibility that changes in intentions may occur over time. There is therefore a need to develop a model to incorporate both the original components associated with the Theory of Planned Behaviour, and the changes that occur in intention over time.

Moreover, beliefs affect behaviour (Ajzen, 2002), that is, beliefs about one's ability to perform the behaviour and beliefs about other people's feelings concerning the behaviour may affect behaviour. Behavioural beliefs are beliefs concerning the outcomes of the behaviour. Behavioural beliefs also influence attitudes towards the behaviour (Ajzen, 2002). In addition, normative beliefs are beliefs concerning the expected norms and control beliefs are beliefs that will compel or constrain one to carry out a behaviour (Ajzen, 2002). Normative beliefs impact on the subjective norms (Ajzen, 2002) while control beliefs impact on the perceived behavioural control. The Theory of Planned Behaviour rates information low and states that information is not a true determinant of behaviour. According to Fisher and Fisher (1992), information alone is not adequate to encourage HIV and AIDS preventive behaviour. However, lack of information may hinder the performance of HIV and AIDS preventive behaviour as information may enhance adolescents' HIV and AIDS preventive behaviours.

In their study, Ajzen, Czasch, and Flood (2009) stated that implementation intention means that intended behaviour could be achieved if there is an action plan to carry out the intended behaviour. That is, implementation intention is an indication of when the intended behaviour would be carried out, how the behaviour will be practised and where the behaviour will be practised (Gollwitzer, 1993). Ajzen *et al.* (2009) proposed that implementation intention will increase the performance of any behaviour.

On the contrary, Sniehotta, Presseau, and Araújo-Soares (2014) observed that, in the past, the Theory of Planned Behaviour has been used to study behavioural interventions in health psychology, but scholars now use extended versions of the Theory of Planned behaviour. Sniehotta *et al.* (2014) argued that the Theory of Planned Behaviour needs to be 'retired' or extended for the theory to be effective as

a model on which to base interventions for behavioural control. Conner (2015) reviewed this critique by Sniehotta *et al.* (2014) and agreed that the Theory of Planned Behaviour should be extended to improve its usefulness by health researchers. Ajzen (2015) responded to Sniehotta *et al.*'s critique and accepted that more variables may be incorporated to the Theory of Planned Behaviour to improve the prediction of intentions. Ajzen (2015; 2011) argued that although the Theory of Planned Behaviour is not a model for behavioural modification, but a model for the prediction of intentions and for the practise of intended behaviour, it could still be useful in designing behavioural change interventions. In this study, the researcher developed a behaviour change model by incorporating additional variables to the Theory of Planned Behaviour.

Figure 2.1 is a visual representation of the Theory of Planned Behaviour as adopted from Ajzen (2006).

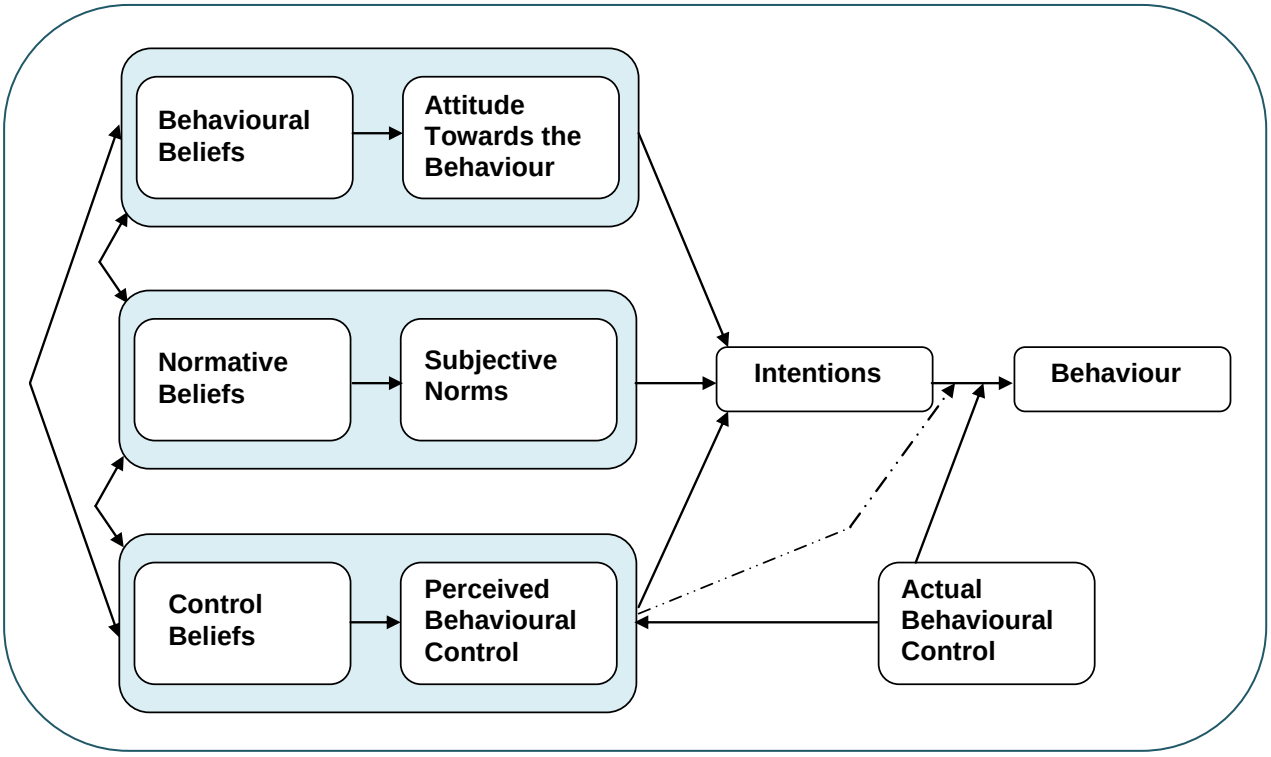

Figure 2.1: The Theory of Planned Behaviour (adopted from Ajzen, 2006).

Armitage and Tlibudeen (2010) investigated on Theory of Planned Behaviour-based intervention to promote adolescents' safe sex intentions. Armitage and Tlibudeeen

(2010) found that subjective norms were not significantly associated with safe sex intentions. Armitage and Tlibudeen (2010) proposed that interventions which change subjective norms may effectively modify behaviour. This researcher agrees that adolescents are vulnerable and may be grossly influenced by the subjective norms to practise behaviour that may expose them to HIV and AIDS.

Two studies that used the Theory of Planned Behaviour as a framework for the study of HIV and AIDS were discussed. Jemmott *et al.* (2007) used the Theory of Planned Behaviour as a framework to study intentions for condom use amongst Xhosa speaking adolescents in South Africa. They found that attitudes and perceived behavioural control influenced the intention to use condoms but subjective norms did not (Jemmott *et al*., 2007). Adolescents with a positive attitude towards condom use and self-efficacy had firmer intentions to use condoms than those with weak attitudes (Jemmott *et al*., 2007). These authors found that some adolescents with weak safe sex intentions were concerned about consequences of condom use on sexual pleasure (Jemmott *et al*., 2007). More so, these adolescents were apprehensive on their skills to effectively use condoms as well as their abilities to negotiate for condom use during sex (Jemmott *et al*., 2007). Consequently, these adolescents with weak safe sex intentions may need to acquire knowledge to change their behavioural beliefs that condom use may reduce sexual pleasure (Jemmott *et al*., 2007). In addition, these adolescents with weak safe sex intentions may need practical skills on how to effectively use condoms and abilities to negotiate for condoms use during sex (Jemmott *et al*., 2007).

In addition, the Theory of Planned Behaviour was employed by Mausbach, Semple, Strathdee and Patterson (2009), to predict safer sex intentions amongst heterosexual, HIV-negative drug users. Their participants showed positive attitudes towards condom use, and a desire to negotiate for safe sex and to use condoms. The sampled group showed safe sex intentions (Mausbach *et al*., 2009). The researcher argues that safe sex behavioural intentions may not be actualised to safe sex behaviour. The researcher further argues that, safe sex behavioural intentions may change with time thereby preventing the practise of safe sex. As stated previously, the change that occurs in intentions with time was not incorporated in the Theory of Planned Behaviour.

2.3.2 The Information Motivation Behaviour Skills Model

The Information Motivation Behaviour Skills Model, developed by Fisher and Fisher (1992), is a model that focuses on motivating HIV/AIDS preventive behaviour amongst different populations through information and behavioural skills. The authors developed this model after reviewing HIV and AIDS risk reduction literature on interventions designed to reduce unsafe sexual behaviour and the use of intravenous drugs. According to the Information Motivation Behaviour Skills Model, three factors determine the reduction of exposure to HIV and AIDS: information, motivation and behavioural skills (Fisher & Fisher, 1992). Empirically, information alone showed little impact on behaviour and information may not be sufficient to motivate HIV and AIDS preventive behaviour, hence the inclusion of motivation and behavioural skills (Fisher & Fisher, 1992; Mnguni, 2012). Furthermore, it has been argued that different populations need specific HIV and AIDS prevention information and specific motivation to perform specific behavioural skills to reduce HIV and AIDS prevalence (Fisher & Fisher, 1992).

Interventions based on the Information Motivation Behaviour Skills Model incorporate three steps. The first step involves preliminary research to sample the target population. The second step involves experiential intervention on the population that has been identified. The third stage is to assess the efficacy of the intervention to reduce HIV and AIDS prevalence on the selected population (Fisher & Fisher, 1992).

The Information Motivation Behaviour Skills Model has been used to study health related risk behaviours among different populations (Fisher & Smith, 2009; Ndebele *et al.,* 2012). The Information Motivation Behaviour Skills Model has been used to develop a classroom based intervention of HIV risk behaviour (Fisher, Fisher, Bryan & Misovich, 2002), a peer-based intervention (Fisher *et al.,* 2002; Ybarra, Korchmaros, Prescott & Birungi, 2015) and a combination of the two (Fisher *et al*., 2002; Ndebele *et al.,* 2012).

The Information Motivation Behaviour Skills Model was used by Fisher *et al.* (2002), to investigate HIV risk behaviour in inner city high school youth. The intervention was

performed in three different groups. The groups were classroom based, peer based and a combination of classroom based and peer based. The authors found that a classroom based intervention did sustain HIV prevention behavioural changes but that a peer based intervention did not. The classroom based intervention was taught by the class teachers. Although adolescents are influenced by peer pressure, the study of Fisher *et al.,* (2002) showed that an intervention taught by peers was ineffective in sustaining HIV preventive behaviour. Therefore, these researchers argued that peer led interventions should be used with caution.

In Figure 2.2 the Information Motivation Behavioural Skills Model is illustrated (adopted from Fisher & Fisher, 1992).

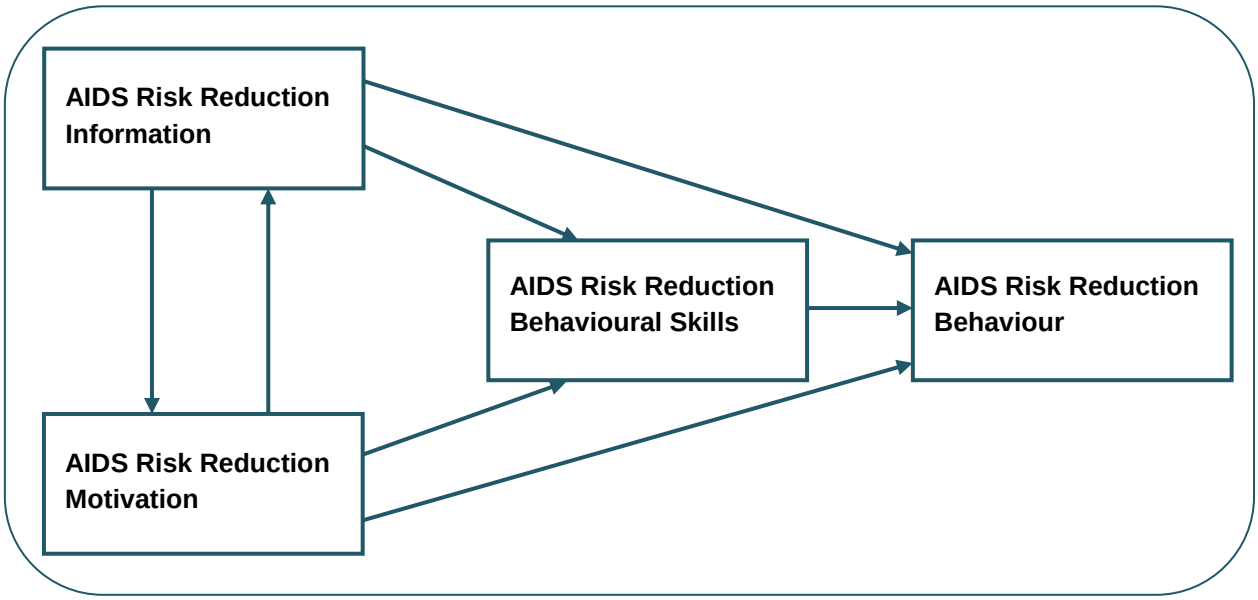

Figure 2.2: Illustration of the Information Motivation Behavioural Skills (IMB) Model (adopted from Fisher and Fisher, 1992).

According to the diagram, the arrows depict that AIDS risk reduction information and AIDS risk reduction motivation influence AIDS risk reduction behaviour mainly through AIDS risk reduction behavioural skills (Fisher & Fisher, 1992). In addition, AIDS risk reduction information may also directly influence uncomplicated AIDS risk reduction behaviours (Fisher & Fisher, 1992). Finally, individuals who may be well informed may not be adequately motivated to practise behaviours that may reduce

AIDS and motivated individuals may not be well informed to practise AIDS preventive behaviours (Fisher & Fisher, 1992).

Furthermore, Fisher and Smith (2009) reviewed secondary prevention of HIV for HIV positive patients. They concluded that the place, reason and circumstances in which people living with HIV and AIDS practise risky behaviours ought to be investigated to reduce further transmission of the virus. Consequently, Fisher and Smith, (2009) suggested that HIV and AIDS positive patients should practise safer behaviours. The researcher argues that the current study may provide lenses to identify some of the reasons and circumstances that influence adolescents to accept or reject HIV preventive behaviour. The researcher further argues that the knowledge of the reasons as well as situations that encourage transmission of HIV and AIDS may motivate adolescents to modify their behaviours. Consequently, adolescents may avoid those reasons and circumstances that expose them to HIV and AIDS.

In addition, Ybarra et al. (2015) studied the impact of an internet-based HIV prevention program on Information Motivation Behaviour Skills Model amongst adolescents in Uganda. Ybarra *et al*. (2015) found that HIV and AIDS preventive information and HIV and AIDS behavioural skills increased for the intervention group. It is imperative to say that an increase in HIV and AIDS preventive information and behavioural skills may increase HIV and AIDS preventive behaviour. However, this researcher argues that an increase in adolescents' HIV and AIDS preventive information and behavioural skills may not positively impact on their HIV and AIDS preventive behaviour if they do not intend to practise such behaviours and if they change their intentions.

Moreover, Ndebele *et al*. (2012) used the Information Motivation Behaviour Skills Model as a framework for the study of HIV-risk behaviour among Grade 11 learners in high schools in South Africa. These researchers explored the effects of an Information Motivation Behaviour Skills Model based intervention on the behaviour of Grade 11 learners. They observed that the intervention facilitated behavioural change although the change was partially due to the effect of size and proximity of schools. In this study, the behaviour of learners was influenced by social, economic and cultural factors, which were not incorporated in the Information Motivation

Behaviour Skills Model (Ndebele *et al*., 2012). This was echoed by Kelly *et al*. (2012), who claimed that models used to determine HIV and AIDS epidemiology in South Africa do not design programmes that focus on the socio ecology of HIV and AIDS. The socio ecology of HIV and AIDS refers to individual, interpersonal, community and social factors that contribute to HIV and AIDS.

2.3.3 The Social Ecology Theory

Bronfenbrenner (1977) developed the Social Ecology Theory. He argued that human development may be understood by observing individuals in their different environments and assessing interactions between the individual and these environments (Bronfenbrenner, 1977).

The Social Ecology Theory emphases the interrelationship between the individual's different social environments and the individual's behaviour (Bronfenbrenner, 1977)**.** The five social ecosystems that may influence an individual are identified as the microsystem, mesosystem, exosystem, macrosystem and the chronosystem (Bronfenbrenner, 1994). Firstly, the microsystem refers to the interaction of the individual with their immediate environment such as the home, classroom and testing room (Bronfenbrenner, 1977). Secondly, the mesosystem is a system which comprises interactions between two or more of the individual's microsystems, that is for example the interface amongst the adolescent's family, school and peer group. Thirdly, the exosystem extends the mesosystem to include formal and informal social structures such as work, neighbourhood and government agencies. Fourthly, the macrosystem embraces influences from microsystems, mesosystems and exosystems *"with particular reference to their belief systems, bodies of knowledge, material resources, customs and life styles, opportunity structures, hazards and life course options that are embedded in each of these broader systems*" (Bronfenbrenner, 1994, p. 1646). Finally, the chronosystem are the changes that occur with time that affects the individual's life and their environments, for example changes in social or economic status, changes of employment, divorce and death (Bronfenbrenner, 1994).

In Figure 2.3, Bronfenbrenner's Social Ecological Model is shown as it may be applied to the systems that will have an impact on a school learner (adopted from Page, Ebersöhn & Rogan, 2006).

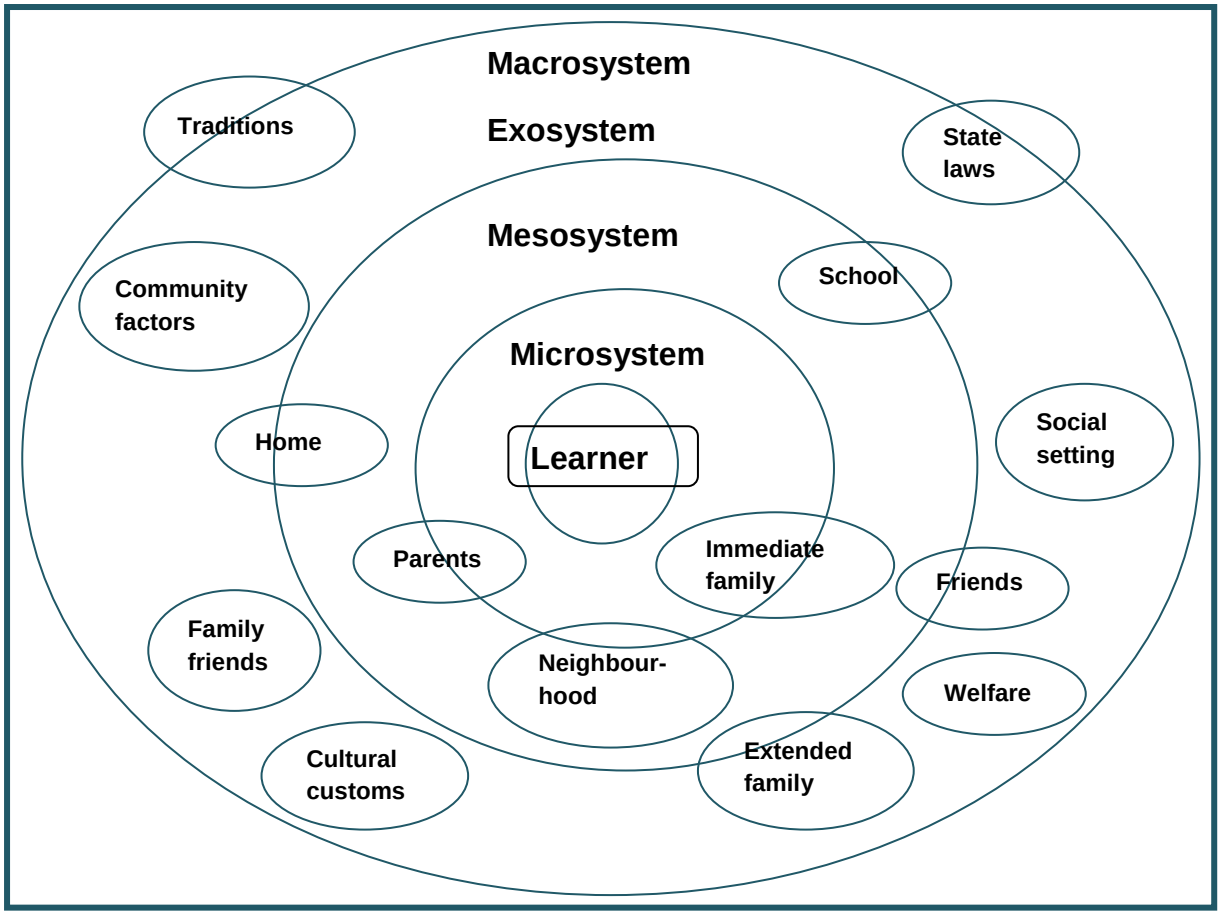

Figure 2.3: Application of the Social Ecology Theory to school learners (adopted from Page, Ebersöhn and Rogan, 2006).

Furthermore, the Social Ecology Theory incorporated time into the interaction of individuals with the environment (Renn & Arnold 2003). The context of time and changes that occur with time in the life of individuals was incorporated in the new model that was developed in this study.

Bronfenbrenner's Social Ecology Theory can be used to study human development (Bronfenbrenner, 2009; 1977), human behaviour (Keyon, 2013) and to evaluate interventions (Page, Ebersöhn & Rogan, 2006)**.** This theory was adapted to form a framework to evaluate the effects of a school based HIV and AIDS intervention on the knowledge and attitudes of Grade 11 Biology learners (Page *et al.,* 2006). The

researchers found that there was considerable improvement in learners' HIV knowledge and HIV behavioural beliefs (Page *et al.,* 2006). It should be noted that while this study evaluated the effects of the Biology intervention on learners' knowledge and behavioural beliefs, it did not measure the changes in their behaviour.

2.3.4 The three models in relation to HIV and AIDS

In this study, the three models were used to explain behaviours related to HIV infection amongst adolescents. In the Theory of Planned Behaviour, attitudes, subjective norms and perceived behavioural control could predict intentions to practise HIV and AIDS preventive behaviour. In the abovementioned theory, behavioural beliefs may influence adolescents' attitudes towards their intended HIV and AIDS preventive behaviour while their normative beliefs may influence their subjective norms as described in Section 2.3.1. Furthermore, adolescents' control beliefs may influence their perceived behavioural control (see Section 2.3.1). In addition, adolescents' perceived behavioural control may be judged by the person observing the intended behaviour to be favourable to perform HIV and AIDS preventive intentions. However, adolescents' perceived self-efficacy may differ from their actual self-efficacy consequently preventing them from adopting behaviours to reduce HIV and AIDS.

Adolescents' behavioural intentions to practise HIV and AIDS preventive behaviour may change with time (see Section 2.3.1). The researcher incorporated the concepts of time and modifications in adolescents' HIV and AIDS preventive behavioural intentions over time into the new multifaceted theoretical model developed from this study (see Sections 2.3.1; 2.3.3 & 5.7.1).

Ajzen *et al*. (2009) stated that an action plan to carry out HIV and AIDS preventive intended behaviour will enhance the implementation of their intentions. It remains salient that having an action plan on how to implement intended behaviours to prevent HIV and AIDS is not a guarantee that adolescents would practise such behaviour as they may lack knowledge on how to practise such behaviours. As was

aforementioned in this section their intentions may change with time thereby preventing them from performing such behaviours.

In Ajzen's reaction to the critique of Sniehotta *et al.* (2014), proposed that the variables in his model should be extended to enable it to be used as a behaviour modification model (see Section 2.3.1). This study extended some categories from the Theory of Planned Behaviour as well as incorporated the three existing models that were previously used for HIV intervention into a new multifaceted theoretical model to enable this new model to be used to design HIV and AIDS behavioural change interventions.

The Information Motivation Behaviour Skills Model did not consider the social ecological determinants of HIV and AIDS amongst adolescents. The researcher addressed behavioural, social, economic and environmental factors that influence HIV and AIDS prevalence amongst adolescents in the context of the new model.

The Social Ecology Theory states that behaviour of individuals may be influenced by social norms. Adolescents' perceived social norms may differ from their actual norms, thereby impeding them from performing their HIV and AIDS preventive behaviours. The Social Ecology Theory excluded the influence of intentions on behaviour. Consequently, according to the Social Ecology Theory, adolescents may not have personal intentions to adopt HIV and AIDS preventive behaviour. In addition, the Social Ecology Theory did not explicitly indicate how knowledge influences adolescents' HIV and AIDS preventive behaviour.

2.3.5 How these three models are used during HIV interventions

Researchers that employed the Theory of Planned behaviour or the Information Motivation Behaviour Skills Model for their study used surveys to gather data during investigation. However, the Theory of Planned Behaviour questionnaire and the Information Motivation Behaviour Skills Model's Teen survey do not give researchers the opportunity to ask participants additional questions. Moreover, researchers may not be able to verify and or clarify areas of their concerns when using questionnaires unlike the interviews (Charmaz, 2014; Nieuwenhuis, 2007a). More so, participants

are restricted to answering questions that are in these questionnaires employed to carry out such studies. Studies carried out using the Social Ecology Theory employed mixed method research to carry out their intervention. Mixed methods research may be effective in carrying out an HIV intervention but in order to identify contributing factors to adolescents' HIV infection as well as strategy for prevention of adolescents' high HIV, qualitative research may be more appropriate.

2.3.6 Grounded Theory

In this study, the Grounded Theory method was used as a research methodology as presented in the Chapter. 3. However, this study is not a full Grounded Theory study because of the presence of the three models that influenced the analysis of this qualitative study. More so, the motive of using the Grounded Theory method was to identify factors that contribute to adolescents' high HIV prevalence as perceived by participants to develop a new multifaceted theoretical model. Hence, the researcher integrated some aspects of the Constructive Grounded Theory (Charmaz, 2014) coding method and comparative analysis of incidents to identify conceptual categories for this study (see Table 4.1). To identify theoretical categories to develop the new multifaceted theoretical model, these identified conceptual categories were situated in the context of the existing three models (see Section 4.8). In addition, the researcher identified new factors that were not accounted for in these three models in order to develop the new multifaceted theoretical model.

2.4 CONCEPTUAL FRAMEWORK OF THE STUDY

2.4.1 Introduction

In this section, the researcher discussed how the these three theories, the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory were used to form the conceptual framework for the study. More so, this study filled the gap of creating a multifaceted theoretical model from these three models that was mentioned previously.

2.4.2 The overlap of the three models

These three models, the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory are predictive behavioural models. Although the three models differ in their approaches, there is some overlap amongst these models. The positive or negative influences of social norms were expressed in all three of these frameworks, although the terminology used in each model differed. The Theory of Planned Behaviour refers to social norms as social values that influence adolescents' volitional control to carry out intended HIV and AIDS preventive behaviours. The Information Motivation Behaviour Skills Model describes social norms as motivation (personal and social influences) that may encourage or discourage any adolescent from adopting HIV and AIDS preventive behaviour. The Social Ecology Theory on the other hand regards social norms as socially interactive influences on adolescents that support or hinder their adoption of HIV and AIDS preventive behaviour.

Both the Theory of Planned Behaviour and the Information Motivation Behaviour Skills Model indicate skills required to practise HIV and AIDS preventive behaviours. The Theory of Planned Behaviour refers to perceived behaviour control as skills, abilities or resources that may promote or prevent adolescents from practising their intended HIV and AIDS preventive behaviour as described in Section 2.3.1. The Information Motivation Behaviour Skills Model indicates that the skills adolescents require to practise their HIV and AIDS preventive behaviour are behavioural skills.

Both the Information Motivation Behaviour Skills Model and the Social Ecology Theory refer to knowledge as a factor that influences behaviour. The Information Motivation Behaviour Skills Model expresses knowledge of what causes HIV and AIDS as well as knowledge of prevention of HIV infection amongst adolescents. The Social Ecology Theory inexplicitly regarded influences of knowledge adolescents' acquired from their social ecology environments on their behaviours to prevent or reduce HIV and AIDS.

The conceptual framework of this study is graphically represented in Figure 2.4

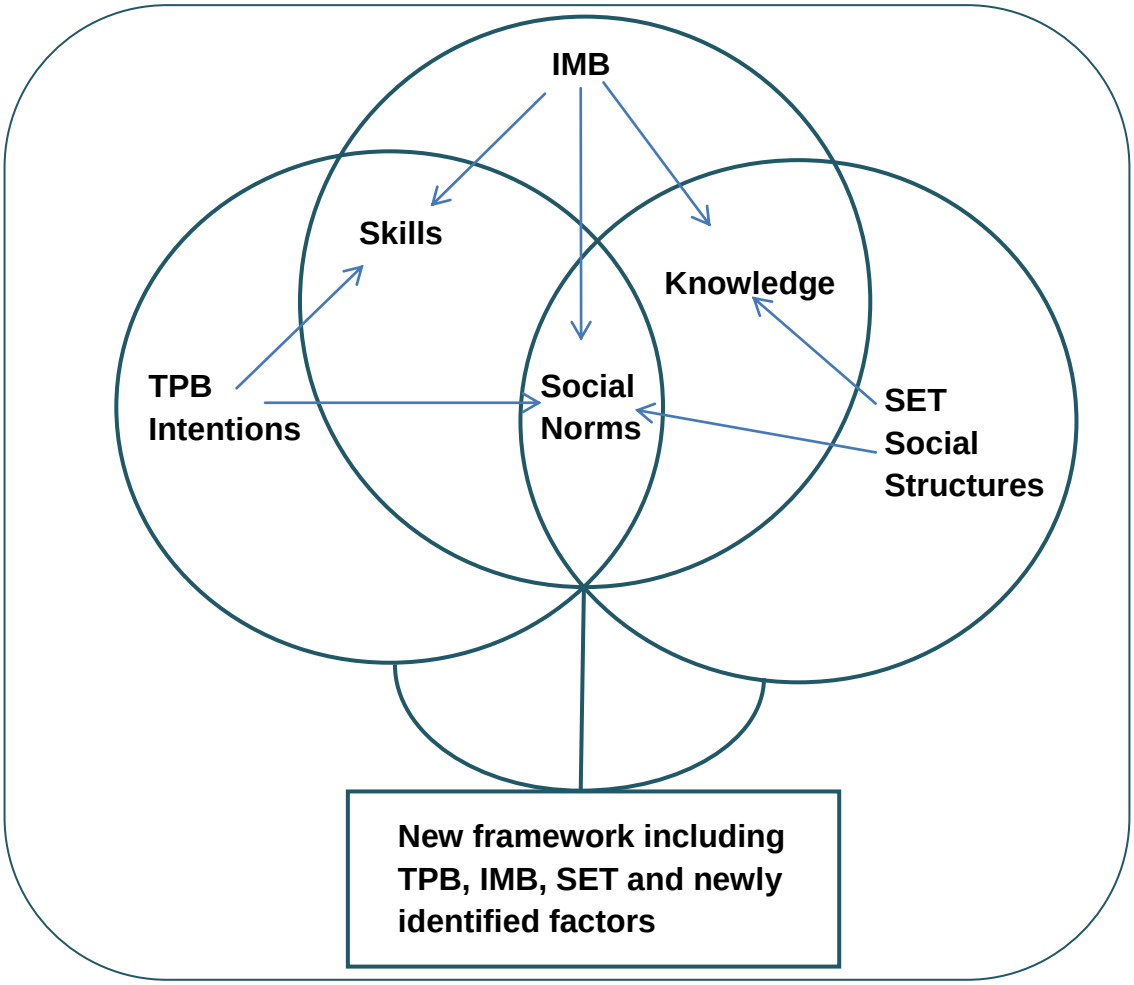

Figure 2.4: The conceptual framework of this study as represented by the researcher. (TPB: The Theory of Planned Behaviour; IMB: The Information Motivation Behaviour Skills Model; SET: The Social Ecology Theory).

2.5 CONCLUDING REMARKS

The HIV pandemic is a threat to world nations. More so, determinants of HIV infection may be attributed to diverse reasons. Therefore, factors contributing to the spread of the pandemic need to be identified in order to prevent further transmission of the pandemic.

The Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and Social Ecology Theory have previously been used as singular models to carry out interventions used on their own, each of these interventions has limitations.

These limitations may be found in their narrow viewpoints and in the short-lived results of interventions based on each of the models.

In this study therefore, a new multifaceted theoretical model was developed that integrated the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory models and new factors participants identified. The model developed from this study would be broader in perspective. The new model may have more lasting results when used to design HIV and AIDS interventions. The new model identified factors contributing to HIV and AIDS prevalence amongst adolescents in Gauteng. Although no remedy has been identified to tackle the HIV and AIDS epidemic, a new multifaceted theoretical model may provide solution to prevent further transmission of the pandemic. In the next chapter the researcher discussed the methodology that was used for the study.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 INTRODUCTION

The researcher reviewed relevant literature, discussed the theoretical approach to the study and conceptual framework that were used for the study in the previous chapter. In this chapter, the researcher discussed the research methodology that was used for this study.

The researcher acknowledges that, despite numerous interventions that were developed based on the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory, high HIV and AIDS prevalence remains a problem amongst adolescents in South Africa. Despite previous research, the need to determine which factors contribute to the unacceptably high HIV and AIDS prevalence in Gauteng remains a prerequisite for the development of effective interventions.

The researcher's objective was to develop a new multifaceted theoretical model that explains the factors contributing to high HIV and AIDS prevalence amongst adolescents in Gauteng province of South Africa. The main research question for this study is:

> *How can factors that learners associate with contributing to high HIV and AIDS prevalence be used to develop a model that will inform effective interventions on HIV and AIDS?*

3.2 RESEARCH METHODOLOGY AND PARADIGMS

This study developed a multifaceted theoretical model that may inform the HIV and AIDS intervention from factors that contribute to the high prevalence in Gauteng province from an interpretative worldview and a qualitative research method. The study was influenced by, but not exclusively based on Grounded Theory. Interpretatives view the world through the understanding and life experiences of the participants (Thanh & Thanh, 2015). Interpretatives focus on the perceptions, views or reality of experience and deals with how to give meaning to these experiences

and may use a single or multiple approaches to collect data (Thanh & Thanh, 2015). The study identified the factors that adolescents perceive are determinants of HIV and AIDS amongst their peers and used it to develop a new multifaceted theoretical model that could be used to design effective interventions. This means the model should be effective for reducing the incidence of HIV infection amongst adolescents. The researcher used semi-structured interviews with adolescents to collect data. Semi structured interviews is a qualitative inquiry method that give room for further interrogation by the interviewer. Further questions based on the participants' responses were used to clarify and verify information obtained in the first round of interviews. The researcher re-interviewed four of the participants. The interviews focused on the determinants of HIV and AIDS.

Qualitative research is a method of doing research that will yield thick descriptive data (Nieuwenhuis, 2007a). The motivation for choosing a qualitative research method instead of using other research methods was to collect views, opinions and ideas of what the learners think contribute to HIV infection amongst adolescents. The researcher preferred using a qualitative research method because it does not require the participants to respond to prefixed categories for verification (Nieuwenhuis, 2007a). Rather, participants' responses explain their life experiences of what they think influenced Grade 11 learners to become infected with HIV and AIDS. Adolescent Grade 11 learners may have been infected or affected by HIV and AIDS themselves and their family members. In addition, their friends or their neighbours may have contracted HIV and AIDS or even died of a HIV and AIDS related death.

The topic of HIV and AIDS has been part of the social discourse throughout their lives. Therefore, it may be assumed that Grade 11 adolescents have rich experiences of what may have contributed to HIV and AIDS prevalence amongst adolescents (Nieuwenhuis, 2007a). The researcher explored the views, opinions and ideas of the participants about HIV and AIDS related behaviour and explored why adolescents think HIV and AIDS prevalence is high amongst their peers. The researcher desired to obtain quality and rich descriptive data from adolescent Grade 11 learners to enhance the development of a new multifaceted theoretical model as described in Chapter 2. The researcher's approach to use qualitative research strategy offers new insight into the variety of experiences of different learners who

were selected from three different high schools and from diverse socioeconomic settings. The challenges envisaged in using a qualitative research method is that voluminous data, including irrelevant data was collected but the researcher focused only on data that was relevant to the purpose of the study. The Grounded Theory approach informed part of the study during data collections and analysis, although the presence of the factors that are present in the three models described in Chapter 2 precluded a full Grounded Theory study. The benefit of the Grounded Theory in data collection and analysis in this study was to enable the researcher to get access to factors that are identified by participants, but that do not currently form part of the existing literature.

The ontological background of this study aligns with the qualitative research strategy that truth or reality is multiple and subjective rather than singular and objective (Nieuwenhuis, 2007a). The epistemological background of the study is that reality can be constructed. Constructivists' belief is that truth can be constructed through analysis of the participants' narratives obtained during interviews (Lincoln, Lynham & Guba, 2011; Nieuwenhuis, 2007a). Since multiple realities exist, multiple realities may be constructed by the researcher with data collected from the participants during the study.

The approach used in this study cannot be described as pure Grounded Theory, because the interview schedule was constructed using the preconceived codes from the three original models (the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory) that the researcher was integrating into a new model. Therefore, it would be a misnomer to claim that pure Grounded Theory was used.

Grounded Theory is a strategy or open ended method of investigation of developing theory through an interaction with the data collected from the participants (Charmaz, 2014; Strauss & Corbin, 1994). The early pioneers of Grounded Theory were Glaser and Strauss (1967) who developed the Classic Grounded Theory (Glaser, 2014) or Glaserian Grounded Theory (Glaser 1978). Strauss later collaborated with Corbin to develop the post-modernist Grounded Theory or Straussian Grounded Theory

(Strauss and Corbin 1990 as cited in Thornberg & Charmaz 2014) and Charmaz developed the Constructivist Grounded Theory (Charmaz, 2014).

The diverse versions of the Grounded Theory promotes that theory should be grounded in data (Flick, 2014). Different authors disagree with terminology on how the coding should be performed during data analysis (Flick, 2014). Each of the authors has their own version, own name and own way of conducting Grounded Theory research. Charmaz's Constructivist Grounded Theory method was used in this study.

According to Charmaz (2014), Constructivist Grounded Theory coding occurs in two phases. These are initial coding and focused coding. Coding is simply the process of identifying and grouping related pieces of data with a name in order to explain the data (Charmaz, 2014). Initial coding is sorting out data to identify different categories that are present in the data (Charmaz, 2014). This is followed by focused coding which provides more descriptive codes and involves the identification of categories to describe the data. Thornberg and Charmaz, (2014, p. 158) stated that *"focused codes are more direct, selective and conceptual than initial codes".*

Beyond focused coding, a conceptual category allows the researcher to upgrade significant focused codes to identify categories that are conceptual (Glaser & Strauss, 1967). The researcher identifies the properties of tentative conceptual categories to explain what is going on in the study (Glaser & Strauss, 1967). The concepts of these categories do *"not change but their meaning is respecified at times because other theoretical and research purposes have evolved"* (Glaser & Strauss, 1967, p. 23).

The next step is theoretical sampling. Theoretical sampling in Grounded Theory study should not be confused with sampling in a qualitative study which involves selecting of participants that will be used in the study. Theoretical sampling in Grounded Theory is performed to explain and improve those categories or codes that will be upgraded by the researcher to formulate theory (Charmaz, 2014). Theoretical sampling helps the researcher to analyse data to find out whether further interviews are required (Glaser & Strauss, 1967). Theoretical sampling assists the

researcher to identify participants who will contribute to a collection of successive data (Glaser & Strauss, 1967). Theoretical saturation is achieved when no more new categories are found.

The final stage in Grounded Theory is the generation of theoretical categories. This helps the researcher to identify theoretical categories that will be used in developing the theory. Theoretical codes are more abstract codes that would be used to develop the theory. Constant comparison analysis encourages the comparison of the results of the analysis of existing data to new data collected. Comparative analysis enables elimination of data that is irrelevant. Constant comparison analysis may eradicate bias in Grounded Theory (Charmaz, 2014).

Consequently, the researcher employed Constructivist Grounded Theory during data collection and analysis because it is flexible to collect and analyse data. In line with Grounded Theory (Charmaz, 2014), the researcher used open ended, intensive interviews to collect data. Intensive interviews enhanced the open ended, in depth investigation of factors that contribute to HIV infection amongst adolescents who possess relevant experiences. This is because adolescent Grade 11 learners are either affected or infected with HIV and AIDS as has earlier been mentioned in this section. Constructivist Grounded Theory selects more than one core category from the focused codes without neglecting any relevant category (Thornberg & Charmaz, 2014). As a result, the researcher did not want to neglect any relevant factor that may contribute to high HIV and AIDS prevalence amongst adolescents.

The challenges encountered by incorporating aspects of the Grounded Theory method during data collection and analysis were that voluminous data had to be collected and analysed. The researcher was willing to spend time to collect thick descriptive data in order to develop new multifaceted theoretical model that would increase the knowledge base on factors contributing to high HIV and AIDS prevalence.

The researcher performed concurrent data collection and analysis to come up with categories using an inductive process rather than a deductive process (Glaser & Strauss, 1967). Inductive processes derive general principles from individual facts

while conclusions follow from stated ideas in deductive processes (Dictionary.com, 2016). In Grounded Theory, the participants' views are of great importance. Grounded Theory considers all views and opinions of participants as data that may be used inductively to develop general principles or theory. Glaser refers to all information gathered from interviews as well as information of what is happening during the interviews, including the non-verbal communication of the interviewee as data (Glaser, 2007). This means that everything the participants say or what the participants are doing during interviews is important and regarded as crucial data that will be considered when generating Grounded Theory. Consequently, the researcher had a research journal to take note of what is happening during interviews.

Grounded Theory coding is more extensive than the coding that is usually performed in a qualitative research study (Charmaz, 2014). The researcher did initial coding of factors the participants identified that contributed to adolescents' high HIV and AIDS prevalence (see Appendix 8.6). The researcher regrouped all related themes during focused coding (see Appendix 8.7). The researcher theoretically sampled and re-interviewed four participants to verify and clarify data. The researcher identified five conceptual categories during comparative analysis of incidents from the responses of participants (see Appendix 8.8). Incidents are events or episodes that some adolescents narrated during interviews. The researcher situated the data in the context of three existing models of the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory (see Section 4.8). The researcher constructed five theoretical categories which were adopted to formulate the new model (see Section 5.7).

3.3 SAMPLING AND SAMPLING DESCRIPTION

Non probability purposive and convenience sampling (Morgan & Skylar, 2012; Maree & Pietersen, 2007) were used to identify adolescents to participate in the study. Non probability sampling means that the researcher did not use a random sampling method to select the sample for the study. The reason for choosing adolescents is because adolescents are exposed to influences from a number of avenues which make them more vulnerable to HIV and AIDS (DiClemente *et al.,* 2007). More so, the

Global AIDS response progress report (2012) indicated that adolescents fall in the age group that was identified to be severely affected by the HIV and AIDS epidemic.

The researcher selected schools in the Johannesburg East district that fall under the control of the Gauteng Department of Education. In 2012, the Gauteng province had the fifth highest HIV and AIDS prevalence in South Africa (Human Sciences Research Council, 2014). Moreover, statistics showed that adolescents fall in the age group that had an insignificant reduction in HIV and AIDS prevalence from 2002 to 2015 (Statistics South Africa, 2015). In addition, statistics reveal that female adolescents have higher HIV and AIDS prevalence in 2016 (Statistics South Africa, 2017). The district includes high, middle and low socioeconomic environments. It was convenient for the researcher to access schools in the Johannesburg East district.

The researcher selected three gender mixed government high schools, one from a high, one from a middle and one from a low socioeconomic environment. Two of the schools were located in a suburban area and one school was located in an urban township. The challenges faced by using purposive and convenient sampling methods were that participants were not chosen randomly. It is acknowledged that the judgment of the researcher may interfere with the sample selection process when convenience sampling is used. The researcher initially selected the first 24 learners who returned their written assent and their parent's written consent to become participants in the study.

The researcher selected eight learners to be interviewed from each of the three gender mixed high schools (n=24). The research initially chose eight learners to be interviewed from each of the three schools to enable each school have an equal chance of the same number of participants to sum up to the total number of the originally selected 24. However, the actual sample size that provided relevant information for the purpose of the study during the interviews was 15 Grade 11 learners. All the learners were in Grade 11 and were between sixteen and nineteen years of age. The average age of the participants was seventeen.

3.3.1 Demographic information

The fifteen learners responded to the request to participate in interviews during the study from schools A, B and C. Eight male and seven female adolescent Grade 11 learners were interviewed. Five of the participants were selected from school A which is located in an urban township. Six of the participants were selected from school B which is located in a high income suburb and four of the participants were selected from school C which is located in a middle income suburb. All the schools are based in the Johannesburg East Education District. A brief description of each of the fifteen learners who were interviewed is presented below for better understanding of each of their narratives. Pseudonyms were given to each of the participants during interviews and in the report of this study in order to conceal the identity of the participants.

Tshepo is sixteen years of age. He lives and attends school in an urban township. Although Tshepo showed his willingness to be interviewed by returning his informed assent and his parent's consent forms, his friends influenced him to run out of the class when I arrived for the interview. Tshepo later returned to the class where I was supposed to interview him and agreed to be interviewed.

Katlego is seventeen years of age. She lives and attends school in an urban township. She boldly answered the questions that were posed and she answered all the interview questions.

Sbonga is an eighteen year old boy who lives and attends school in an urban township. He was relaxed, freely answered the questions and did not come across as defensive. He occasionally laughed during the interview sessions. He absconded on the day that was scheduled for the second interview and explained later that he did this because he was hungry. I re-interviewed him on a subsequent visit to his school.

Mosa is a seventeen year old girl. Mosa was very outspoken and answered all the interview questions. She expressed her willingness to be re-interviewed. During both interviews she seemed remorseful of incidents that may have happened in her life as

a result of peer pressure. She answered questions in a way that I interpreted as self-pity. She mentioned that teenagers should appreciate their parents' efforts and avoid comparing themselves with their peers.

Nana is a seventeen year old girl who lives in a middle income suburb, but attends school in an urban township. According to her, this school is the only school in her neighbourhood where her home language is taught. Originally, she is from a pastoral home. Her aunt has conducted a virginity test on her to confirm her virginity. She was proud to inform me that the result of the virginity test confirmed she was still a virgin. She seemed angry at learners who discuss sexual intercourse at the school on a daily basis.

Nhlanhla is a girl of seventeen years who attends school in a middle class area. She described a previous incident where a HIV and AIDS researcher took learners away from the school premises to interview them. One of the learners who was infected with HIV and AIDS returned to their school crying after the interview with this researcher. However, this incident did not appear to influence the interview.

Sbusiso is a seventeen year old boy who goes to school in a middle class area. He was reluctant to explicitly talk about sexual behaviours except with some careful probing. Sbusiso expressed his discomfort by laughing whenever he was discussing sex related factors that contribute to adolescents' HIV and AIDS status.

Andile is an eighteen year old girl who goes to school in a middle class area. She gave precise answers to the questions she answered, but did not waste time with two questions she did not want to answer by saying *"I don't know*".

Lebogang is a sixteen year old girl who goes to school in a middle class area. She answered questions in a comfortable and relaxed manner. She occasionally gave a confidential laugh while answering the interview questions.

Mpho is a boy of eighteen years of age who goes to school in a high income suburb. Mpho was very outspoken. During the interview there was an interruption by an administrative member of staff who came in to make photocopies, but I had to signal

to Mpho to stop answering my questions until the person left the interview room. Mpho admitted that he was influenced by peer pressure at a younger age when, according to him, he was not mature.

The demographic information is tabulated below.

Table 3.1: Demographic information

Name	Age	Respond to questions	Demeanor	Where from	School
Tshepo	16	He was willing to be interviewed.	He was influenced by friends to run away from being interviewed but later returned to be interviewed	He lives in an urban township.	He schools in an urban township.
Katlego	17	She answered all the questions.	She was bold.	She lives in an urban township.	She schools in an urban township.
Sbonga	18	He was not defensive but relaxed and freely answered all question.	He absconded from an interview section due to hunger but was interviewed on my subsequent visit.	He lives in an urban township.	He schools in an urban township.
Mosa	17	She was outspoken and answered all questions. She showed her willingness to be re-interviewed. She answered questions in a way that I interpreted as self-pity.	She seemed remorseful of incidents that may have happened in her life as a result of peer pressure.	She lives in an urban township.	She schools in an urban township.
Nana	17	She answered all the questions.	Originally, she is from a pastoral home. Her aunt has conducted a virginity test on her to confirm her virginity. She was proud to inform me that the result of the virginity test confirmed she was still a virgin. She seemed angry at learners who discuss sexual intercourse at the school on a daily basis.	She lives in a middle income suburb.	She schools in an urban township.

Nhlanhla	17	She answered all the questions.	She described a previous incident where a HIV and AIDS researcher took learners away from the school premises to interview them. One of the learners who was infected with HIV and AIDS returned to their school crying after the interview with this researcher. The incident she described did not appear to influence the interview.	She did not disclose.	She schools in a middle class area.
Sbusiso	17	He was reluctant to explicitly talk about sexual behaviours except with some careful probing. He expressed his discomfort by laughing whenever he was discussing sex related factors that contribute to adolescents' HIV and AIDS status.	He was reluctant to talk about sex related factors.	He did not disclose.	He schools in a middle class area.
Andile	18	She gave precise answers to the questions she answered, but did not waste time with two questions she did not want to answer by saying *"I don't know*".	She was precise.	She did not disclose.	She schools in a middle class area.
Lebogang	16	She answered questions in a comfortable and relaxed manner. She occasionally gave a confidential laugh while answering the interview questions.	She was confident.		She schools in a middle class area.
Mpho	18	He admitted that he was influenced by peer pressure at a younger age when, according to	He was very outspoken.	He did not disclose.	He schools in a high income area.

		him, he was not mature.			
Motheo	18	He answered all the interview questions.	He was quiet in nature	He did not disclose.	He schools in a high income area.
Eminhle	17	She answered all the interview questions.	She was outspoken.	She did not disclose.	She schools in a high income area.
Nkanyezi	19	He confidently answered the questions.	He was confident.	He did not disclose.	He schools in a high income area.
Nkosi	18	He answered all the questions.	Nkosi reported that he associated with only one good friend at school. Nkosi explained that he was taught by his teachers, parents and sisters. Nkosi also explained that good friends influenced him to practise behaviour that would not expose him to the pandemic.	He lives in an urban township.	He schools in a high income area.
Tebogo	17	Although he was quite, he answered all the questions.	He was quiet.	He did not disclose.	He schools in a high income area.

Motheo is an eighteen year old boy who goes to school in a high income suburb. Motheo was quiet but answered all the interview questions.

Eminhle is a girl of seventeen years who goes to school in a high income area. She was outspoken.

Nkanyezi is a nineteen year old boy who goes to school in a high income suburb. He confidently answered questions.

Nkosi is an eighteen year old boy who goes to school in a high income area but lives in a less affluent urban township. Nkosi reported that he associated with only one good friend at school. Nkosi explained that he was taught by his teachers, parents and sisters. Nkosi also explained that good friends influenced him to practise behaviour that would not expose him to the pandemic.

Tebogo is a seventeen year old boy who goes to school in a high income area. Although he was quiet, he answered all the questions.

3.4 SUMMARY OF PARTICIPANTS IN THE STUDY

Of the selected sample, sixteen Grade 11 learners were available for interviews. One of the interviewed participants provided little information so his data was discarded, leaving fifteen participants who responded to the interview questions. The ages of these participants ranged from sixteen years to nineteen years. There were nine boys and six girls (n= 15).

3.5 METHODOLOGY FOR RESEARCH SUB QUESTIONS

As stated previously, the main research question was formulated as:

> How can factors that learners associate with contributing to high HIV and AIDS prevalence be used to develop a new multifaceted theoretical model that will inform effective interventions on HIV and AIDS?

Four sub-questions were framed to support the main question:

i) What factors, identified in the Theory of Planned Behaviour do learners recognise as contributing factors to HIV and AIDS prevalence in Gauteng?
ii) What factors, identified in the Information Motivation Behaviour Skills Model do learners recognise as contributing factors to HIV and AIDS prevalence in Gauteng?
iii) What factors, identified in the Social Ecology Theory do learners recognise as contributing factors to HIV and AIDS prevalence in Gauteng?

iv) What factors, omitted from the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory do learners recognise as contributing factors to HIV and AIDS prevalence in Gauteng?

The researcher used semi structured interviews to collect data for all the research sub questions. Semi structured interviews have open ended questions that participants respond to (Nieuwenhuis, 2007b). The purposes of the interviews were:

- to investigate the factors learners identified that were not present in the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory that explain HIV and AIDS prevalence amongst adolescents;
- to confirm whether factors that were described in the models were identified by the learners and
- to develop a new multifaceted theoretical model using factors participants identified that contribute to high HIV and AIDS prevalence amongst adolescents.

The eight initial interview questions that were used to answer the sub questions are provided in Appendix A. The researcher asked learners additional questions based on their initial responses to verify their answers. The researcher theoretically sampled as well as re-interviewed four of the participants to verify and clarify data that were collected during the initial interviews (see Section 3.2). The motivation for theoretically sampling these four participants (see Section 3.2) after the focused coding was their different backgrounds and orientations. Moreover, these participants were chosen to cover all the eleven categories represented in the focused codes.

3.6 INSTRUMENT DESIGN AND TRUSTWORTHINESS

The questions for the interview protocol went through different stages of preparation. Open ended interview questions were drafted by the researcher. The interview protocol was guided by semi structured interview questions and assessed by the

researcher's supervisor. There were eight interview questions (see Appendix A). The interview was semi-structured leaving the opportunity for follow up.

Trustworthiness shows how honestly data is "collected, sorted and classified" (Peräkylä 1993 as cited in Di Fabio & Maree, 2012, p. 140). Trustworthiness also reveals how the researcher can prove that the findings of the study is worthy of consideration (Lincoln & Guba, 1985). Lincoln and Guba (1985) used four criteria to assess trustworthiness of a research study, that is truth value, applicability, consistency and neutrality. These indicated the true value of the results, the applicability of the findings in similar or other contexts, how the findings may be replicated and how the findings are determined by other participants. All collected, paper based interview data was kept securely locked in a cupboard and electronic data was stored in a password protected file. In order to ensure how true the findings and interpretations are (Creswell, 2012), the researcher used the Grounded Theory method. The influence of the Grounded Theory research strategy during interviews, coding and comparative analysis may enhance validity of data (Charmaz, 2014). The back and forth data collection method helped identify inconsistencies that may be attributed to external influences on the results of the data. Credibility of data explains whether results are realistic to participants and readers (Miles & Huberman 1994 as cited in Di Fabio & Maree, 2012). Credibility of data also depicts the integrity of the research findings and interpretation (Lincoln & Guba, 1985).

3.7 DATA COLLECTION AND ANALYSIS

Interviews were held with participants within a period of two months from August to September 2015. The learners were informed about the ethics and the reason why participation was voluntary. The researcher interviewed the learners individually. During the interviews, educators who served as gate keepers (Creswell, 2012) for the researcher were not present. The absence of the educators during interviews with learners was to ensure the participants' openness and that participants did not conceal vital information for fear of educators' judgments. The presence of educators would have constituted a captive audience because these educators were teaching the participants and have authority over them.

The interviews were conducted in the school library, Life Orientation Head of Department's office, interviewing room and class room as the different schools recommended. The schools provided tables and chairs for interviews. The interviewer provided bottled water for the participants. A computer and cell phone were used to record the interviews. The researcher asked questions and tape recorded all interviews to ensure that data collected during interviews may be listened to thoroughly to retain original and salient data. Fifteen learners were available to be interviewed from the three sampled schools. The researcher transcribed all the interviews because it was easier for the researcher who interviewed participants to capture all information during the transcription of the interview data.

Coding of the transcribed interviews was influenced by Constructivist Grounded Theory (Charmaz, 2014). The researcher used initial and focused coding to identify the theme of each piece of data. In the initial coding, the researcher did line by line coding as described by Charmaz (2014), to select themes from the responses of the participants on determinants of HIV and AIDS disease amongst adolescents. The researcher used coding and comparative analysis of incidents to analyse the data. Subsequently, the researcher situated the data in the context of three existing models of the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory. In October 2015, the researcher re-interviewed four of the participants to confirm and verify data (see Section 3.2). The researcher performed a comparative analysis of incidents as described previously. This was motivated by the fact that no relevant data should be excluded. The incident comparison was analysed by the researcher and assessed by the supervisor.

3.8 ETHICS

The researcher obtained permission to conduct the research from the Ethics Committee of the Faculty of Education of the University of Pretoria (Ethics reference number SM15/05/01) and from the Gauteng Department of Education (GDE reference number D2016/159), in Appendix B. Permission was also obtained from the schools where the data collection was performed. Consent forms were

distributed to principals, learners and parents or guardians. Principals, learners and their parents agreed to the conditions for participation and signed written assent (in the case of minors) or consent for participation (Appendices C, D and E).

Participation was voluntary. However, learners whose parents or legal guardians did not consent were not allowed to participate in their interview. Participants were informed that they could leave if they did not wish to continue with the interview (Byrne, 2001). In addition, HIV infected participants that felt uncomfortable with the interview questions could withdraw. More so, participants could withdraw if they were traumatised by the interview questions due to any unpleasant memory of someone who died as a result of HIV related death. Participants were not given any incentives, financial or otherwise, but their involvement in the interviews may have encouraged them to reflect on their own attitudes. All data was treated in a confidential way and although the identities of the participants are known to the researcher, they remain anonymous for the purposes of dissemination of the research findings. To achieve confidentiality and anonymity, all electronic data was stored in password protected files while all paper based information were securely locked in a box. In addition, the researcher used pseudonyms to conceal participants' identities in the research report.

3.9 CONCLUDING REMARKS

The study developed a new multifaceted theoretical model that informs the HIV and AIDS knowledge base on factors contributing to high prevalence in Gauteng province from an interpretative worldview and using a qualitative research method. In this study, Constructivist Grounded Theory influenced data collection and data analysis, but the study was not exclusively based on Grounded Theory. The ontological belief of the researcher was the existence of multiple realities and the epistemological background was constructivist. The ontological stance as well as the epistemological belief supported a qualitative research method influenced by Constructivist Grounded Theory.

The researcher employed non-probability purposive and convenient sampling to identify adolescent Grade 11 learners from three high schools in the Johannesburg

East district of Gauteng province of South Africa. Adolescents fall in the age group that had an insignificant reduction in HIV and AIDS prevalence (Statistics South Africa, 2015), creating a need for a significant reduction in the HIV and AIDS prevalence amongst adolescent South Africans. It is hoped therefore that a consideration of factors that are identified by the population most affected by the pandemic contributed to the development of a new multifaceted theoretical model to guide further research. In the next chapter, the results of data on factors participants think contribute to high HIV and AIDS prevalence amongst adolescents were presented.

CHAPTER FOUR: RESULTS, ANALYSIS AND DISCUSSION

4.1 INTRODUCTION

In the previous chapter the researcher discussed the methodology that was used for this study. In this chapter, results from the data collected from the learners from the three high schools that were sampled were presented. The contributions of fifteen learners who were interviewed are presented and analysed in this chapter. The researcher asked further questions based on participants' responses to clarify and verify information, transcribed the interviews and then re-interviewed four of the participants. Themes were constructed and data was discussed in relation to the themes constructed from the interview data. The researcher situated the data in the context of three existing theories. The data confirmed that participants recognised and confirmed that many of the contributory factors to the prevalence of HIV and AIDS that have been described in the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory explained prevalence amongst adolescents in the Gauteng province. Participants also contributed factors that have not been part of these existing models. In next section, codes identified from the interview data are presented.

4.2 INITIAL CODES, FOCUSED CODES AND CONCEPTUAL CATEGORIES DERIVED FROM COMPARATIVE ANALYSIS OF INCIDENTS

These categories were established according to the tenets of Constructivist Grounded Theory (Charmaz, 2014). Eighty six initial codes were derived from line by line coding of the interview data (Appendix F). The researcher identified and named related pieces of data to describe the data (Charmaz, 2014). More so, the researcher identified different codes that are present in the data during initial coding (Charmaz, 2014). These initial codes were reduced to eleven focused codes (Appendix G). During the focused codes, all interrelated themes were regrouped. These focused codes are according to Thornberg and Charmaz, (2014) more conceptual codes than initial codes. More so, in focused coding, the researcher identified more descriptive categories from the initial codes. The researcher theoretically sampled four participants to confirm the data (see Section 3.2).

Table 4.1: Initial and focused codes and conceptual categories derived from comparative analysis of incident from interviews

Initial codes	Focused codes	Sub categories	Conceptual categories
Unprotected sex	Sexual risk behaviour	Sexual risk behaviour	Risk related behaviour
Transactional sex			
Early sexual debut			
Peer pressure	Peer pressure	Peer pressure	
Alcohol and drugs			
Pornography			
Lack of parental involvement	Lack of parental guidance and supervision	Lack of parental guidance and supervision	
Lack of parental advise			
Lack of parental availability			
Parental guidance and supervision			
Death of parents	Death of parents	orphanhood	
Driving under the influence of alcohol	Driving under the influence of alcohol and untrained drivers	Driving under the influence of alcohol and untrained drivers	
Untrained drivers			
Incest	Rape	Sexual abuse	Sexual abuse
Rape of virgins			
Spiking of drinks to rape			
Intimate partner violence			
Health practices	Contact with blood	Health factors	Health factors
Cultural incisions			
Violence			
Lack of safety equipment and health personnel			
Sharing of injection needle and toothbrushes			
Mother-to-child transmission (MTCT)	MTCT		
Cultural circumcision	Traditional practices	Social factors	Social factors
Early marriages			
Imitating celebrities and role models	Role models		
Abstinence or delayed sex	Knowledge of HIV and AIDS preventive measures	Knowledge factors	Knowledge factors
Use of condoms			
Testing for status			
Avoiding blood contact			
Number of sexual partners			

The researcher proceeded to do comparative analysis of incidents and further reduced these codes to five categories. The reduction of the initial number of themes to five aligns with Creswell's (2007) and Tesch's (1990) explanations that during analysis of a qualitative study, codes or themes could be reduced to few categories. In addition, Creswell (2012) re-emphasised that for the purpose of analysis coding of themes could be reduced to between five to seven themes. Furthermore, the researcher constantly compared the results of the analysis of existing data to new data collected. In addition, some focused codes were no longer relevant to the purpose of the study as more analytical categories either overruled or subsumed them. Moreover, the researcher compared incidents that were described as codes from the data with incidents that were described by the same participant or similar incidents that were described by another participant to arrive at their relevance and to upgrade such categories to best describe those incidents. More so, the researcher chose five core categories to incorporate all relevant conceptual categories. These five core categories are abstract codes that may be used to develop the theory in a full Grounded Theory. However, the influence of theoretical categories of factors contributing to adolescents' high HIV and AIDS prevalence described in the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory in Chapter 2, prevented the use of these five categories as theoretical categories (see Section 4.8). In table 4.1 below, the initial codes, focused codes and comparative analysis of incidents were presented.

The core conceptual categories identified by the researcher were risk behaviour, sexual abuse, health factors, social factors and knowledge factors. These five categories with their subcategories are depicted above in Table 4.1. These categories were discussed in percentages as identified by the participants in no specific order.

4.3 CONCEPTUAL CATEGORY 1: RISK BEHAVIOURAL FACTORS

The first conceptual category that was identified from the data collected included risk behavioural factors that contribute to adolescents contracting HIV and AIDS. The sub factors that contributed to this category included sexual risk behaviours, peer

pressure, lack of parental supervision, orphanhood, driving under the influence of alcohol and untrained drivers.

Sexual risk behaviours

Sexual risk behaviours was discussed under unprotected sex, transactional sex and early sexual debut.

Unprotected sex

Ninety three percent (93%) of the participants indicated that they were aware that unprotected sex is a factor that increases HIV and AIDS prevalence amongst adolescents. Tshepo narrated that some peers deceive some adolescents by claiming that unprotected sex is more pleasurable than protected sex, *"there is a notion that having sex without a condom is better than having sex with a condom".* Tshepo further narrated how some adolescents engaged in unprotected sexual intercourse:

> *Maybe your peer had sex without a condom, then, he tells you that, I will respect you when you have sex without a condom. Then you are under pressure from this peer, and you end up engaging in unprotected sexual activities. Meanwhile, you don't know whether the person you are having sex with is infected with HIV or not, and you end up getting infected with HIV.*

Tshepo further explained that some adolescents engage in unprotected sex deliberately, despite their knowledge of HIV and AIDS and HIV and AIDS preventive measures:

> *…because we do have the knowledge that we must protect ourselves from HIV and AIDS, but mistakes happen, sometimes it happens on purpose that we don't use protection or certain precautions to prevent ourselves from getting infected with HIV and AIDS. But we still do not use protection even though we know that having sex without a condom …is not good. More so, adolescent boys were considered men if they have unprotected sex since past generations practised unprotected sex.*

Nana's response to unprotected sex was similar with Tshepo's narrative that some adolescents may not use protected during sexual intercourse. However, Nana further indicated the effect of the use of condoms for protection as a measure to prevent HIV and AIDS as against other forms of protection that may only prevent pregnancy. Nana reported that:

> *when they* (adolescents) *have sexual intercourse, they don't make use of protection such as condoms. They don't necessarily use condoms, specifically condoms because you can use contraceptive needles but it won't prevent you from getting HIV, it can only prevent pregnancy.*

Tebogo and Mpho did not indicate any reason why adolescents engage in unprotected sex but agreed that unprotected sex expose adolescents to the virus. Tebogo said, *"…you engage in unprotected sex and you end up having it* (HIV)*".* Furthermore, Mpho's narrative that, *"Mmm, I think its unprotected sex. People just go around having sex without protection".* Mpho reported that some adolescents may engage in indiscriminate unprotected sex.

In addition, Motheo said that some adolescents *"think irrationally 'cos some kids don't like buying condoms and they will just go in for the mission, thinking that it won't be bad. For instance, they wouldn't think of mistakes, they just go in and out and then they're done".* Motheo's narrative reveals that some adolescents' likes and dislikes influence their choice of buying and using condoms.

Eminhle narrated that some female school drop-out adolescents who wanted access to child support grants as a means of financial support, may engage in unprotected sex and multiple partnerships. She further explained that, in her opinion, these young girls are exposed to HIV and AIDS because accesses to grants motivate them to engage in unprotected sex and multiple sexual partners.

> *They practise risky behaviours, so they have sexual intercourse and then they contract HIV. More so, when they do engage in sexual intercourse they don't use protection. I think poverty, some of them are very desperate to get welfare money from the government. So what they do is, they sleep around so that they can have a child and that child can be a means of bringing in income. When they have a child, then they will receive welfare money, grant from the*

government. That's why they end up contracting HIV because they will sleep with multiple partners trying to get pregnant so that that child can become their means of income.

Cluver, Orkin, Yakubovich and Sherr (2016) found that female adolescents with children had greater chances of receiving child support grants. Cluver *et al*. (2016) argued that a combination of social protection, including child support grants, will reduce HIV and AIDS risk behaviour among adolescents. Although Cluver *et al.* (2016) did not refer to the desire of adolescent mothers to qualify for child support grants, they argued that economic sex was an HIV and AIDS risk behaviour. Multiple sexual partners and unprotected sex were among risk behaviours identified by these authors that could expose adolescents to HIV and AIDS (Cluver *et al*., 2016). Therefore, adolescents who desire to qualify for child support grants may engage in unprotected sex and multiple sexual partners in order to become pregnant.

Nana narrated that condoms may burst during sexual intercourse.

You use the condom, it bursts and one of you is HIV positive. Obviously there will be contact (of bodily fluid) *between the two of you. One of you might get the virus from the other partner unknowingly. Meanwhile, you thought you were safe.*

The bursting of condoms during sex could be an indicator that these adolescents lack condom use skills. If condoms burst during sex, it would be equivalent to unprotected sex. World Health Organisation (2017) indicated that HIV and AIDS could be transmitted through unprotected sex. Bradburn *et al.* (2017) indicated that some female sex workers in Kenya acknowledged that condoms may rupture during sex. These female sex workers believe that men intentionally rupture condoms during sex. The following are opinions of three female sex workers who in their interviews explained some motives of their male sexual partners for bursting condoms during sex (Bradburn *et al.,* 2017). The first female sex worker reported that some men may not desire to use condoms during sex (Maureen, 30 years old, HIV positive). The second female sex worker stated that some men may wish to spread HIV and AIDS (Caroline, 26 years old, HIV positive). The third one indicated that their reasons may be drunkenness (Mercy, 36 years old, HIV positive). As a

result, these female sex workers have learnt to provide and fit condoms on their male sexual partners.

Sbusiso reported how one of his schoolmates contracted HIV and AIDS by engaging in unprotected sex at the toilet of a club house.

> *One of my friends actually, he is not a friend but a person that I know that contracted the virus… honestly he was just at a club, you know, saw this nice girl, thought she was nice and she thought he was nice. They did it* (engaged in sex) *right there like mmm in a club toilet. I felt it's very stupid because what was wrong was that he didn't have any protection.*

This is in line with previous research of Charles and Blum (2008) who posit that adolescents' risk of contracting HIV infection is high because they engage in peer motivated unprotected sex. In their study, Mayer *et al.* (2006) associated the drugs used in dance clubs as a factor that may contribute to rupture of condoms. In order words, condom failures or unprotected sex subsequently could lead to adolescents' high HIV and AIDS prevalence. Similarly, in their research on private college students in Ethiopia, Alamrew, Bedimo and Azage (2013) found that unprotected sex is associated with visits to night clubs.

Transactional sex

Sixty percent (60%) of the participants identified parental poverty and parental unemployment as factors that encourage adolescents to engage in transactional sex contributing to their high HIV and AIDS prevalence. Van der Heijden and Swartz (2014) define trading sex for material goods or financial support as transactional sex. Adolescents from poor financial backgrounds or adolescents with unemployed parents may decide to engage in transactional sex. Some of the participants shared a common opinion that low socio-economic status influence high HIV and AIDS prevalence amongst adolescents. The World Bank (2015) found that South Africa's wealth distribution is grossly unequal and that this has an impact on the high HIV and AIDS prevalence, as the disease is more prevalent amongst individuals of low socio-economic status (Probst, Parry & Rehm, 2016).

Katlego explained that some adolescents engage in sexual intercourse at school because

> *Sometimes they do not have lunch* (at school) *or proper school uniform. People* (learners) *don't really like the food that is cooked in school. They try to get money* (to buy snacks at school) *by sleeping* (having sex) *with boys at school that is peer pressure influence.*

Although Katlego described this as peer pressure, the sexual activity is in fact driven by poverty.

Eminhle, Katlego and Nkanyezi narrated that the need for financial and material support compel some poor adolescent boys and girls to date *"sugar daddies"* or *"sugar mommies"*. Sugar daddies are significantly older sexual partners of young female adolescents while sugar mommies are the significantly older sexual partners of young adolescent boys. Andile maintained that adolescent "*girls living in poverty have sex for money in order to provide for their families. They try to be cool and to provide for their families. They don't want to do it, but they have to do it".* Some young girls from poor families may not want to engage in transactional sex, but they are forced by their parents' financial situation. Eminhle narrated that: *"I think poverty is one of the main causes of HIV and AIDS in our society today…. That's one of the main causes. …sugar mamas usually pay money for their time or for sexual intercourse with young boys".*

Mosa agreed that some adolescents whose parents are unemployed may have sex for financial and material support:

> *... when your parents are not working, you ask them for things and they don't have the money to buy you those things. Then somebody comes along and promises you all those material things, and actually buys you those things, those nice things your parents can't afford. In exchange you give them sex.*

Mosa further added that then, "*you will be able to buy similar shoes and other peronal belongings like your friends whose parents are working".* Some adolescents engage in sex for financial support in order to compete with their friends from wealthy homes. In addition, Katlego reported that *"sugar daddies"* dominate decisions on condom use during sex with young girls, *"sugar daddy has more power,*

so he won't allow the child to use condom when they have sex". Sex for financial benefits exposes some adolescents to unprotected sex and multiple partners which increase their susceptibility to HIV and AIDS.

In their study, Bhana and Anderson (2013, p. 29) described the association of monetary or material gifts and sex within sugar daddies' relationships with young girls *"The privileged economic position of particularly older men* (sugar daddies) *in relation to young girls living in the context of poverty fuels sexual inequalities through which gender inequalities are forged".*

Bhana and Anderson (2013) found that girls were unable to negotiate for condom use during sex because some men attributed the use of condoms as a mark of infidelity and sexual dissatisfaction. Harrison, Cleland and Frohlich (2008) found that large age differences between sexual partners and overlapping partners contribute to high HIV and AIDS prevalence amongst adolescents in South Africa.

The risk of contracting HIV and AIDS is not only related to the employment status of parents, but also to the employment status and employability of the adolescents themselves. Mosa explained that some adolescents who are out of school may be vulnerable to HIV and AIDS due to poverty and lack of employment opportunities. She added that some unemployed young girls who dropped out of school may indulge in transactional sex due to lack of qualifications to become gainfully employed. She said:

> *… I think it's lack of education, maybe you dropped out of school at Grade 8. You are not working because you don't have a required skill or required certificate to qualify for the specific job you desire. So, yeah! I think as you are not working, you also go to older guys, sugar daddies yeah, who will buy things for you. Basically, a sugar daddy is someone older than you, in most cases, he is married but you are somebody he dates, like a side chick, somebody on the side. His wife doesn't know about you. He just supports you financially yeah.*

Unemployment may motivate some adolescent school drop-outs to engage in transactional sex that, in turn, expose them to unprotected sex and multiple partners

increasing their exposure to the HIV infection. Previous studies identified that some out of school adolescents are vulnerable due to poverty and lack of employment opportunities (Francis & Rimmensberger, 2008). Similarly, Mutinta, Govender, Gow and George (2012) found that sex for university students was likely to be motivated by access to material support, exposing them to HIV and AIDS. Harrison *et al.'s* (2008) findings correlate with the abovementioned findings that young women who were not in school had older sexual partners for financial support.

Early sexual debut

Twenty seven percent (27%) of the participants identified early sexual debut as a factor that exposes adolescents to HIV and AIDS. Early sexual debut means engaging in first sexual intercourse at an early age. Nkosi and Tebogo described age of first sexual intercourse the same as Erinosho, Isiugo-Abanihe, Joseph & Dike, (2012) did. Nkosi explained that *"bad friends are gonna make you do things like partying, early dating and being involved in sexual intercourse".* Tebogo said that *"I believe that most of us are not given the talk at home, so we end up experimenting sexual behaviours at a very young age. Consequently, we contract all sorts of STI's and HIV".* One of the participants, Nana, indicated that adolescents should delay sex until they are able to handle its consequences. Although this is not South African data, Pettifor, Van Der Straten, Dunbar, Shiboski and Padian (2004) found that the age of first coital contact was fifteen years and below in Zimbabwe. Pettifor *et al.* (2004) found that early sexual debut may significantly predict incidence of HIV and AIDS. The findings of Nattrass, Maughan-Brown, Seekings and Whiteside (2012) indicated that boys have higher risk levels of sexual behaviour including early sexual intercourse. Although these authors reported this, the participants in this study did not confirm this.

Peer pressure

Peer pressure, alcohol and drug use as well as pornography were discussed under this sub category.

Peer pressure

Sixty seven percent (67%) of the participants in this study identified peer pressure as a factor that contributes to high HIV and AIDS prevalence amongst adolescents. Peer pressure can take several forms and manifests in several distinct ways. Sbusiso explained that *"peer pressure basically forces you to do something you are not 100% sure you want to do"*. In addition, Nkanyezi explained that, in his opinion, *"peer pressure is number one reason why kids are involved in sexual activity in school which leads to HIV and AIDS".* Some of the participants agreed that some adolescents are unable to resist peer pressure, because their peers regarded adolescents who were sexually inactive as immature and uncool. Consequently, these adolescents engage in early sexual debut, sexual intercourse, unprotected sex and alcohol and drug use in order to be regarded as *"mature"* and *"cool".* Selikow *et al.* (2009) similarly found that sexual risk behaviour amongst adolescents could be influenced by their peers. It is relevant to note that Calvó-Armengol and Jackson (2010) specified that the two types of peer pressure are positive peer pressure and negative peer pressure. It is relevant to note that some adolescents are influenced by negative peer pressure to practise behaviour that could predispose them to HIV and AIDS. Nkosi described "*bad friends*" influence on other adolescents' sexual behaviour as negative peer pressure "*so bad friends are gonna make you do things like being involved in sexual intercourse and yeah, that's the main one sexual intercourse".*

Low self-esteem may predispose some adolescents to unsafe behaviour when they bow to peer-pressure. Eminhle reported that some adolescents with low self-esteem desire to boost their self-image:

> *They want to be popular. They want to be known and when they start participating in risky behaviours they are popular, they are well known. Some of them have low self-esteem. So, once they are popular, they start participating in risky behaviours.*

Mosa and Nana described how boasting about sexual exploits in class can influence sexual behaviours of some adolescents. Mosa explained that their peers discuss in class how they practised sexual intercourse. Some of these adolescents deliberately

fabricate stories of their sexual exploits and mislead other adolescents in the class to engage in sexual intercourse:

> *… its peer pressure because friends talk about how they slept with* (had sex) *somebody. So because your friend told you he or she slept with somebody, you tend to think it's a great thing. It's a good thing to sleep with somebody, so you try it. Afterwards, you find out that the person was actually not telling you the truth. He or she didn't sleep with anyone. He or she was only saying that just for fun".*

Nana supported Mosa's assertion that adolescents take impulsive decisions to engage in sexual intercourse after listening to their peers' discussions on sexual intercourse at school. Nana reported that:

> *My friend comes in in the morning and said, Oh Nana, "I had sex with this guy it was so nice you should go try it". And then I start contemplating, should I do it, should I not do it? Ok I decided not to have sex. Next time she comes, ah you remember that guy I told you about, we did it again. Then I said, let me just go do it, let me just see what she's been feeling that she keeps on telling me every day. Eventually, I surrendered, I actually fell for that pressure to go and have sex.*

In some instances, boys used deceit to gain access to otherwise reluctant girls. Sbusiso explained that some adolescent boys could make deceitful promises to their girlfriends to coerce them to have sexual intercourse with them. The boys use this strategy to convince reluctant girlfriends to change their minds about abstinence. Sbusiso narrated that:

> *I think it's just the kind of relationships they have with themselves at school. For example, there's a guy and a girl who like each other, then the guy wants to be in a sexual relationship but the girl is not ready. He then promises her the world, she falls for it and they become sexually active.*

Alcohol and drug use

Alcohol and drug use were identified by forty percent (40%) of the participants as factors that contribute to high HIV and AIDS prevalence amongst adolescents.

Alcohol and drugs may contribute to increase in exposure to HIV and AIDS if adolescents practise behaviours that may expose them to the virus when they are intoxicated. Nkosi explained how some adolescents were lured to alcohol and drug use which may expose them to HIV and AIDS:

> *Peer pressure, because friends can persuade or lead you to a very wide variety of negative things for example drugs. Let me talk about the common one marijuana. It can be highly intoxicating if you consume a large quantity. Even alcohol is intoxicating. When you drink alcohol your mind can't be focused, nothing is working well. …so if this girl* (his matric date) *decides to draw me to the bedroom, she can do whatever she likes with my body without my being in control. If she feels she does not have to be designated with this infection and if she is cruel enough, she can pass HIV on to me intentionally while I do not have control over myself.*

Eminhle associated risky behaviours with alcohol and drugs use amongst adolescents "*most of the times when you are under the influence of any substance abuse including alcohol and drugs, you engage in unprotected sex and you end up having it* (HIV and AIDS).*"* Akanle *et al.* (2015) found that marijuana smoking may start at young age and is motivated by peer pressure*.* In previous studies, it was shown that female adolescents who use alcohol have their first sexual encounters at ten to twelve years, while males who use alcohol have their first sexual encounters at age fifteen (Erinosho *et al.,* 2012). The use of alcohol may also encourage some adolescents' sexual risk behaviours (Erinosho *et al.,* 2012). It is important to note that alcohol may not be the only factor that may influence some adolescents to adopt behaviours that may increase their susceptibility to the virus.

Pornography

Thirty three percent (33%) of the participants identified pornography as a factor that exposes adolescents to HIV and AIDS. Nkosi and Tshepo expressed that some adolescents access pornography through social media, which includes internet browsing, phones with internet connections, Wechat, Facebook and Skype. Charles and Blum (2008) also found that adolescents' sexual risk is motivated by sexual images in the media. Nana, Tshepo and Motheo agreed that access to pornography

increased due to social media (Facebook and Skype among others) and that cell phones with internet connection increased the availability of these types of media. Tshepo reported that "*we now have cell phones which have internet"* connections "*which sometimes, let me actually say most of the times"* show films "*which are sexually based. So, I think that also motivate people at my age to engage in sexual activities"*. Nkosi narrated that internet provides access to any content that some adolescents may want to access and that internet does not have an age restriction. Nkosi further mentioned that *"adolescents exchange pornography"* through their phones and therefore may practise what they see in such pornography. O'Keeffe and Clarke-Pearson (2011) indicated that phones with internet connections could contribute to the social and emotional development of the adolescent. In this study, participants expressed that phones with internet connection contribute to negative social and emotional development of adolescents

Nkosi raised the issue of pornography and the role parents play in guiding their adolescent children.

> *… if your parents do not search you, your parents do not inspect whatever you do or kind of inspect your phone, because I think your friends exchange pornography, that can also lead you to wanting to experience what you should not* (experience) *and you would not know the precautions*.

It is interesting that this participant does not see this as a violation of privacy, but Nkosi seems to want such overt intrusion. Erinosho *et al.* (2012) found that in some parts of three communities located in two states in Nigeria, some children with no parental supervision spend their time at internet cafés watching pornographic films. O'Keeffe and Clarke-Pearson (2011) encouraged parents to ask their adolescents about their online search activities to facilitate discovery and discussion of inappropriate searches.

Pornography could be intentionally or accidentally accessed from the internet by minors (Flood, 2007). Flood (2007) maintained that exposure to pornography may contribute to some adolescents engaging in sexual intercourse. O'Keeffe and Clarke-Pearson (2011, p. 801) explained the importance of social media in gaining access to health information and improving learning opportunities, but maintained that social

media may have risks of *"peer-to-peer"* and *"inappropriate content".* It is suffice to say that some adolescents could access age inappropriate information during their search on social media which may increase their sexual risk and enhance their exposure to HIV and AIDS. The risk factor associated with social media could be attributed to negative peer influence. Pornographic content may influence some adolescents' unprotected sexual practices and their engagement in multiple partners.

Lack of parental guidance and supervision

Lack of parental supervision and guidance was the only theme discussed under this subcategory.

Twenty seven percent (27%) of the participants identified lack of parental guidance and supervision as factors that increase sexual behaviours that expose adolescents to HIV and AIDS. Unsupervised adolescents may be particularly vulnerable to contracting HIV and AIDS. Tebogo's quote earlier in this section did not only refer to early sexual debut, but explicitly blamed the lack of home training as a key factor that contributes to HIV infection amongst adolescents *"I believe that most of us are not given the talk at home, so we end up experimenting sexual behaviours at a very young age. Consequently, we contract all sorts of STI's and HIV".* Motheo explained that *"because kids are not taught* (at home)*, they can be easily influenced by peer pressure*".

Motheo described parental guidance as parents teaching their adolescents especially:

> *… during puberty teenagers like to experience growth by drinking alcohol and using all kinds of drugs. Their parents will come in to teach them that they must not try those behaviours. That's when teenagers will listen to their parents' advice by not practising those behaviours.*

Motheo indicated that unavailability of parents to teach their children create *"too much freedom when parents are not around to tell the kids what to do. Then kids would just find their ways of having fun. Doing what they think is right 'cos they think that's gonna satisfy their loneliness".* Andile explained that *"some parents are busy*

that they don't take care of children". Erinosho *et al.'s* (2012, p. 118) findings correlate with the participants' views that some parents were unavailable at home because they had to work to support their families hence such parents may be unable to *"exercise supervisory control over their children"*. Alleyne-Green, Grinnell-Davis, Clark, Quinn and Cryer-Coupet (2016) found that fathers' involvement in the lives of their adolescent girls motivated positive sexual behaviour. In other words lack of parental involvement in the lives of their children may encourage negative sexual behaviours which may expose teenagers to HIV and AIDS.

Orphanhood

The researcher presented orphahood under this subcategory.

Thirteen percent (13%) of the participants identified orphanhood as a factor that motivate adolescents to engage in transactional sex contributing to high HIV and AIDS prevalence amongst adolescents. Mpho narrated the situation of orphaned adolescents:

> *Some children* (some adolescents) *have no parents and have little siblings to take care of the completion of their schooling but they can't because there's no money. More so, there's no one else who's supporting them* (financially). *Girls tend to prostitute just to get money to help their families. Boys can sell drugs to get their money. The little money they* (boys) *get they get excited and they also get involved with drugs, go to where prostitutes are and have sex with them*.

Torubeli (2012) maintained that sex for material or financial benefits is common in Africa. Operario, Pettifor, Cluver, MacPhail and Rees (2007) found that orphanhood in South Africa has affected 3.0% of adolescents. Operario *et al.* (2007) found that parental death is associated especially with female adolescents' HIV and AIDS prevalence and sexual behaviours.

Driving under the influence of alcohol and untrained drivers

Driving under the influence of alcohol and untrained drivers was discussed under this subcategory.

Thirteen percent (13%) of the participants identified driving under the influence of alcohol and untrained drivers as factors that contribute to high HIV and AIDS prevalence amongst adolescents. Eminhle explained that unlicensed and intoxicated adolescent drivers may cause road accidents during which HIV infected passengers may transmit the virus to other passengers through blood contact *"driving without a driver's license, some of them start driving their parent's cars even though they don't have a driver's license. They could cause road accident whilst driving under the influence of alcohol".* Sbonga elucidated that car accidents may cause accident victims to touch blood of other injured victims "*a car accident … can definitely transmit HIV. For example, when all the passengers are injured, they are definitely going to touch each other because there will have no control* (accident victims are unable to control themselves)*. Yeah! They will all get HIV"* if any of the accident victims is HIV and AIDS positive*.*

Jiménez-Mejías, Martínez-Ruiz, Amezcua-Prieto, Olmedo-Requena, de Dios Luna-del-Castillo, and Lardelli-Claret (2016) peer reviewed literature on pedestrian factors associated with risk of causing crashes between drivers and pedestrians in Spain. They found that drivers associated with high risk behaviours were under the influence of alcohol and had no valid drivers' licenses that is, their drivers' licences either expired or they had no drivers' licenses. Similarly, Blackman, Cheffins, Veitch and O'Connor (2008) investigated licensing restrictions on young drivers between ages 16 to 24. Blackman *et al.* (2008) found that young drivers in Australia who were driving without drivers' license and under the influence of alcohol could cause road accidents. Some untrained adolescent drivers may be ignorant of driving rules and road signs which may increase their possibilities of causing road accidents. More so, some untrained adolescent drivers may increase the risk of causing road accidents when they drive under the influence of alcohol.

4.4 CONCEPTUAL CATEGORY 2: SEXUAL ABUSE

The researcher identified sexual abuse from interviews data as the second conceptual category contributing to adolescents' high HIV infection. In this study, sexual abuse, as was earlier mentioned, means engaging in non-consensual sex with an adolescent for example, all kinds of rape. Forty seven percent (47%) of the participants identified rape as a factor that contributes to HIV and AIDS prevalence amongst adolescents. Participants' ideas on how rape contributes to HIV and AIDS was discussed under the following themes: incest, raping of virgins, the contribution of spiking of drinks to rape and intimate partner violence.

Incest

Twenty percent (20%) of the participants indicated that they thought that incest is a contributing factor to high HIV and AIDS prevalence amongst adolescents. Tshepo explained that *"some fathers sexually abuse their daughters"* while Mpho said that step fathers may engage in unprotected sex with their step daughters *"step dad wanna have unprotected sex with their step child".* Some fathers or stepfathers who may sexually abuse some of their daughters or stepdaughters may expose them to multiple sexual partners. These adolescents may contract HIV and AIDS if their fathers or stepfathers were infected with HIV and AIDS.

In their study, Peters and Olowa (2010) found that some fathers may rape their daughters. The South African Police Service adopted a new definition of rape to include sexual violence against males and females (2016). This definition of rape was adopted after the Amendment Act 32 of 2007 (South African Police Service, 2016). From this new definition of rape, it is pertinent to say that male adolescents may also be sexually abused although this phenomenon seems to be underreported. Rape is forced sex therefore the perpetrators may not use protection. Consequently, HIV and AIDS may be transmitted through contact with vaginal fluid or semen during forced sex (World Health Organisation, 2017).

Raping of virgins

Twenty percent (20%) of the participants identified raping of virgins as cure for HIV and AIDS as a factor that exposes some adolescents to HIV infection. According to Tshepo, Mosa and Sbonga, men rape because of their belief that engaging in sexual intercourse with a virgin cures HIV and AIDS or because they were enticed by some cultural clothes that expose parts of the girls' body. Tshepo narrated that:

> *They believe that if you have sex with a virgin, you will be cured* (of HIV and AIDS). *Therefore, if a person desires to have sex with a virgin, you find out that in most cases he rapes, he spreads the virus to girls he raped.*

One may infer from Tshepo's narrative that some men may rape female adolescents if they are unable to find some virgins as their sexual partners. As a result of their superstition, these men may increase the exposure of some of their victims to the virus.

Mosa reporting on rape of virgins by HIV infected man said that, *"He has seen that he is HIV positive. He assumes like there was a myth about guys believing that girls who are virgins are not mmm infected with HIV and AIDS yeah! As he has seen that you are a virgin… s*o he forces you to sleep with you… you *end up pregnant and HIV positive".* Mosa's narrative on myths about rape of virgins is unrelated to cure for HIV and AIDS positive men. Rather she explains that the myth is that girls who are virgins are not infected with the virus.

Sbonga expressed the issue of rape of virgins by men who are enticed by cultural clothes that expose their body parts. Sbonga's narrative revealed that such men do not rape as a result of myth of sex with virgins as a cure for HIV:

> *I mean* (some South African tribes), *they have this tendency of leaving the breast outside if you are a virgin. We… don't leave the breast outside. Then the next thing is, I see a girl with breast outside, it's a kind of temptation in a way. What if I rape her? In a way, it's also an influence.*

Myths or lay theories about HIV and AIDS are legendary stories of people's beliefs about the existence, causes and cure of HIV and AIDS (Dickinson, 2011) maintained that auxiliary theories are offshoot of specific myths or legends from folk or lay

theories that originates from central idea or a collection of ideas. Consequently, auxiliary theories about HIV and AIDS myths are beliefs that originate from folk or lay theories.

The assumption of this researcher is supported that some adolescents who may adopt behaviours based on misleading or harmful social norms may be influenced by myths, superstition or ill-conceived perception and may contract HIV and AIDS. Earlier studies in South Africa validated the myth of raping a virgin as a cure for HIV and AIDS (Meel, 2003; Meier, 2002). On the contrary, Van Staden and Badenhorst (2009) found that rape is not associated with the belief that sex with virgin cures HIV and AIDS. The myth of virgin rape may be debatable in South Africa. Men may rape virgins in South Africa for varied reasons. Moreover, participants could have heard about this, but may not have come across it personally. In other words, the reported "myth" that virgin rape is a cure for HIV and AIDS may be a myth.

Spiking of drinks to rape

Thirteen percent (13%) of the participants suggested that adolescents who visit club houses or parties may have their drinks spiked, exposing them to rape and subsequent infection with HIV. Mosa described this scenario in detail and related that female adolescents go to club houses for drinks where they accept free drinks from strangers. When these girls become intoxicated, these strangers *"spike their drinks"* (put drugs in their drinks) and rape them. Nhlanhla narrated how they were warned at school to be vigilant at parties, "*The most important thing to look after* (at parties) *is your drink. This is because it's when people find the opportunity to just drop* (intoxicating) *pills into it* (your drink)*".* Some adolescents could be drugged and raped at club houses or parties. Consequently, they may become infected with HIV if they were raped by HIV and AIDS positive persons.

Watt, Sikkema, Abler, Velloza, Eaton, Kalichman, , …., and Pieterse (2015) found that rape in South Africa is associated with alcohol and alcohol serving venues. These researchers also found that rape could occur when female alcoholics are travelling home alone from drinking venues (Watt *et al.,* 2015). Although Watt *et al.* (2015) found that 5.6 percent of women claimed that they were sexually abused after

their drinks were spiked, they indicated that rape was not significantly associated with spiking of drinks. These scholars maintained that women who claim their drinks were spiked all have history of high alcohol consumption (Burgess, Donovan & Moore, 2009; Watt *et al.,* 2015). Burgess *et al.* (2009) explained that spiking of drinks could be associated with females' public drinking. More so, these researchers indicated that spiking of drinks to rape can be classified as *"drug facilitated sexual assault"* (Burgess *et al.,* 2009, p. 848).

Intimate partner violence

Seven percent (7%) of participants indicated intimate partner violence as a factor that exposes adolescents to contract HIV and AIDS. Mpho narrated how boyfriends rape their girlfriends "… *so he'll probably influence a girl* (silence) *yeah, he'll probably wanna influence a girl to have sex with her if she refuses, he will rape her".* Considering the incidence of rape in South Africa, it is surprising that only seven percent of the participants mentioned intimate partner violence. Jewkes, Sikweyiya, Morrell and Dunkle (2009) maintain that the highest incidence of rape that is reported to the police in the world is in South Africa, at almost one report every two hours and HIV may be transferred during rape. In the literature, intimate partner violence may be described as dating violence, acquaintance rape or forced sex in a dating relationship (Centers for Disease Control, 2014; Nattrass, *et al.,* 2012; Peters & Olowa, 2010). Female adolescents are more likely to be forced or tricked into sex than males (Nattrass *et al.,* 2012). The South African Police Services annual crime report 2015/2016 estimated that 18.3% of South African rapes occur in Gauteng province (2016). Gauteng has the highest rape in South Africa (South African Police Services, 2016). It is imperative to note that the above South African Police Services rape estimate in Gauteng includes of both male and female victims. From the table below, the statistics of rape shows that rape is diminishing but some cases of rape may be under-reported in South Africa.

Table 4.2 provides the reported rape statistics for South Africa from 2008/9 to 2015/16 as provided by the South African Police Service analysis of national crime statistics.

Table 4.1: Reported rapes in South Africa adopted from the South African Police Service national crime report 2015/2016

Year	Reported rapes
2008/9	46, 647
2009/10	48, 259
2010/11	48, 158
2011/12	47, 069
2012/13	48, 408
2013/14	45, 349
2014/15	43, 195
2015/16	41, 503

4.5 CONCEPTUAL CATEGORY 3: HEALTH FACTORS

The third conceptual category of contributing factors to adolescents' high HIV prevalence as recognised from the results of interviews was health factors. In this study, health factors are defined as those factors that describe how adolescents come into contact with infected HIV blood and Mother-to-Child-Transmission (MTCT). The sub theme that contributed to this themes are: health practices, cultural incisions, violence, lack of safety equipment and health personnel, sharing of injection needles and tooth brushes and MTCT.

Health practices

Twenty seven percent (27%) of the participants blamed their health practices as a factor that impact on adolescents' HIV and AIDS. Katlego, Nana and Sbonga who mentioned family health practices all live in an urban township. Katlego revealed that some adolescents *"may be trying to help a person infected with HIV without using gloves".* Katlego added that *"when they do their ceremonies … they use one thing ... they share a toothbrush when* (any of) *their gums is bleeding".*

Nana narrated that HIV infected family members may keep blood stained objects at home:

Yea, if your brother, one of your parents or a relative is (HIV and AIDS) *positive and they don't practise safe health, they keep used and blood stained blades, knife or sharp objects around the house. You may have a wound and you touch* (those blood stained sharp objects) *at home, without knowing that there is HIV infected blood* (on those objects)*, you might get it* (HIV and AIDS). *Unsafe practise of health by HIV infected relatives may contribute to that* (HIV and AIDS transmission to adolescents)*.*

Cultural incisions

Sbonga explained that families use the same razor blade for cultural incisions without proper disposal of these razor blades. Cultural incisions could be described as cuttings done by traditional practitioners on individuals' based on their cultural customs and their traditional beliefs. Traditional practitioners cut different parts of their clients' body with knifes or razor blades or broken glasses or scissors. Parts of the head, chest, face and feet may be cut during cultural incisions. Each specific cut could have its healing or protection significance as instructed by traditional practitioners. Sbonga said that, *"They use the same razor blade for cultural cuttings for all members of their family. They keep used razor blade on the table. A child may take that used razor blade to another family to cut* (his or her) *friends to show them"* referring to what his or her parents were practicing at home. Edwards (1986) categorised South African traditional healers into three groups. *Iyangas* (traditional healers or doctors), *Isangoma* (diviner witch doctor) and faith healers that integrate Christian and traditional practice. Petzer and Mngqundaniso (2008) found that most traditional healers carried out incisions or scarifications. Twenty four percent of traditional practitioners use the same razor blade for incisions on more than one person while twenty nine percent performed incisions without gloves in Kwa Zulu Natal, South Africa (Petzer & Mngqundaniso, 2008). It is pertinent to say that Sbonga did not indicate that Iyangas, Isangomas or faith healers that combine Christian and traditional beliefs may use gloves when cutting their clients. So, traditional practitioners could be infected with HIV if they have cuts in their hands. More so, they may accidentally cut themselves during these procedures. As a result, some adolescent clients may come into contact with the HIV infected blood of their traditional practitioners. In addition, some adolescents may become infected with the

virus through sharing of razor blades. Furthermore, some adolescents may contract HIV and AIDS through improper disposal of razor blades used for cultural incisions.

Violence

Sbonga expressed his concern about the possible exposure to blood during violent encounters. He identified knife attacks and attacks with other weapons (school chairs and tables) as possible scenarios where perpetrators, victims and those who tried to assist would be exposed to blood and by extension, possibly HIV. Other participants focused on the lack of safety equipment and health personnel in schools in the context of school based violence.

Sbonga identified the effects of some unemployed adolescent school drop-outs in their community who attack community members with knives and other sharp objects. Although Sbonga identified risks associated with unemployed school drop-outs, such attacks are not necessarily limited to this group of perpetrators. Sbonga explained that adolescent boys who dropped out of school, attack community members in order to steal. Sbonga narrated that:

> *Maybe a group of unemployed boys want to hit me in order to take my phone or take something from me. If I refuse, they will definitely hurt me with a knife or a gun. These boys will also hurt other people after hurting me. They'll go to the next person and hurt the next person with the same knife. Let's say I'm HIV positive, when they go to another person, they will injure him or her* (using the same blood stained knife they used in hurting me)*. That person will get infected with HIV and it goes on and on.*

Community members, including adolescents who assist stabbed victims without gloves, may get infected with HIV if they accidentally touch HIV infected persons' blood. Therefore, there are three parties at risk of HIV infection through blood contact. They are the group of unemployed adolescent school drop-out boys (or any other perpetrators) participating in the knife attack, the victims of the knife attack and the community members who assist wounded victims without gloves.

Lack of safety equipment and health personnel

Twenty percent (20%) of participants blamed a lack of safety equipment and a shortage of health personnel to assist injured adolescents as a factor that expose adolescents to HIV and AIDS. Sbonga explained that learners get injured in a school fight:

> … *when some learners get injured during a school fight, their friends don't use gloves to protect themselves when taking their injured friends to the school's office. They just touch the person's blood and they get infected with HIV and AIDS if the victim of the school fight is HIV and AIDS positive*.

Sbonga indicated that some adolescents may use school tables and chairs to hurt other learners. In Sbonga's school, learners use wooden tables and wooden chairs.

Some adolescents may not use gloves to assist their friends to their school's administrative office. Sbonga explained that:

> *definitely not every school has gloves, not every school has people* (health workers) *who can help learners. Some learners get their friends to help them. Maybe they will take that learner to the office and before they get to the office, some of the learners would have already touched the blood of injured persons.*

HIV may be transmitted to some adolescents through contact with HIV infected blood of their wounded friends.

Sharing of injection needles

Lebogang indicated that HIV may be transmitted to adolescents through sharing injection needles "*You can get infected*" with HIV "*through touching someone's blood by sharing needles for drugs".* World Health Organisation (2017) indicated that HIV can be transmitted through sharing of contaminated injection needles for drugs. Degenhardt and Hall (2012) argued that adolescents who use drugs could be at greater risk of getting infected with HIV through sharing injection needles. Furthermore, these adolescents may engage in other risky behaviours including lesser use of condoms, multiple partners and transactional sex for drugs or to get money to buy drugs.

Sharing tooth brushes

Sbonga went on to say that some adolescents may get infected with the virus through sharing tooth brushes with some family members whose gums are bleeding. HIV may be transmitted through contact with blood of infected persons (World Health Organisation, 2017). Nosik, Rymanova, Sevostyanihin, Sergeeva and Sobkin (2015), World Health Organisation (2017) and AIDS.gov (2016) argued that saliva contact, through open mouth kissing, does not transmit HIV, but contact with blood from bleeding gums, the presence of mucus membrane in the saliva of infected persons and sores in the mouth may increase exposure to the virus. Consequently, some adolescents may get infected with HIV when they share a tooth brush with HIV infected family members whose gums are bleeding.

Mother-to-child transmission

Mother-to-child transmission was presented under this subcategory.

Mother-to-child transmission of HIV and AIDS was identified by twenty percent (20%) of the participants as a factor that contributes to HIV and AIDS amongst adolescents. Nkanyezi explained that some of these adolescents may have been infected with HIV because their mothers were infected with the virus during pregnancy *"some of these adolescents were born with HIV* and *AIDS".* Although mothers may have been infected during consensual sex, or in another way, some mothers of these adolescents were raped by HIV infected persons. Mpho explained that *"a parent may have got raped* (the rape resulted in pregnancy) *and a child was born with HIV* and *AIDS".* HIV and AIDS may be transmitted from the mother to the child *in utero*, during delivery and through lactation (World Health Organisation, 2017; Townsend, Cortina-Borja, Peckham, de Ruiter, Lyall & Tookey, 2008).

4.6 CONCEPTUAL CATEGORY 4: SOCIAL FACTORS

Social factors from the data accounted for the fourth factor that contributes to the spread of HIV amongst adolescents. Social factors relate to beliefs, values and opinions. These are discussed under sub categories of traditional practices and role models.

Traditional practises

Traditional circumcision and early marriages were factors that were discussed under this sub category.

Traditional circumcision

Twenty seven percent (27%) of the participants identified traditional circumcision or medically unauthorised male cultural circumcision as a factor that contributes to high HIV and AIDS prevalence amongst adolescents. Tshepo narrated that during cultural circumcision, unqualified people fail to use sterile tools to circumcise different persons, *"when you are about to get circumcised traditionally, you will be getting circumcised by people who are not medically trained to circumcise you. They are not informed that there are viruses out there because they still use the same equipment to circumcise different people".* Tshepo maintained that since adolescent boys who go for circumcision do not know who is infected with HIV, the use of the same knife to circumcise several boys may transmit the pandemic from infected boys to uninfected teenage boys:

> *I don't know whether you are infected with it* (HIV)*, neither do you know whether am infected with it* (HIV). *Therefore, if you are infected with HIV and AIDS and I will be circumcised after you with the same equipment that circumcised you, the blood in the equipment that was used to circumcise you will transmit your disease to me. I don't know because its tradition, the past generation were circumcised with the same* (equipment) *so we should also be circumcised using the same thing.*

Nhlanhla narrative pointed out the significant influence of culture on black communities and cultural circumcision on adolescent boys:

… well culture is a very important trait especially in the black communities, we are told to abide by the culture. So how it influence learners to contract HIV? I personally believe that in most cases we have rituals where blood is also involved. Things like mmm circumcision especially for boys in our culture it's very vital especially in the … (black South African) *clan. It's very vital, so sometimes the way they* (cultural practitioners) *do these things* (circumcise) *is not a very healthy way*. *Sometimes clinic don't even recommend it* (cultural circumcision) *because it can lead to transmitting HIV or even death. So culture does have a huge impact for learners to contract HIV because this is the age when in most cases, boys get circumcised.*

Katlego's narrative was not explicit on what instrument is used to circumcise these adolescents who go to the mountains for cultural circumcision. However, it is indicative that doctors do not circumcise on the mountains. Katlego said that "*Yeah … there is a culture where they go to the mountain to be circumcised. They are cut* (circumcised) *by one person and he uses instrument or something, I don't know what they use when they cut. They can also get infected because they cut by one person".*

Plank, Makhema, Kebaabetswe, Hussein, FLesetedi, Halperin, ... and Lockman, (2010) found that infant circumcision is safer than circumcision in adulthood because it reduces surgical complications and infections. Kalichman (2010) argued that neo natal circumcision could be resisted in Africa because of cultural circumcision. Mogotlane *et al.* (2004) and Kalichman (2010) argued that Xhosa speaking communities of South Africa circumcise young men as a transition rite from boyhood to manhood. World Health Organisation (2017) stated that HIV and AIDS may be transmitted through lack of use of sterilised equipment to cut or pierce during medical procedures for example during traditional circumcision.

Early marriages

Early marriage was identified by twenty percent (20%) of the participants as a factor that exposes adolescents to HIV infection and AIDS. According to Mosa, in some rural communities in South Africa, female adolescents' virginity testing (*Umthwalo*) precedes early cultural marriages. Mosa continues that after virginity testing, some

group of men from the same community may choose whomsoever they would like to marry from those girls who just concluded their virginity testing rite: "*In the rural areas, most of the time girls who are virgins go for Umthwalo -virginity testing. There will be a group of guys who have the right to choose whomsoever they want* (after the virginity testing)*".*

Sbusiso agreed with Mosa that "*in some cultures, they can get married at a very young age and you can have at least 7 or 8 wives".* Sbusiso further indicated that "… *in monogamy, I don't know whether is monogamy or polygamy you can have a lot of wives due to their cultural, it's like cultural beliefs. Then, if you have many wives, you don't even know if your wives are infected, you could contract the virus. So, I think cultural beliefs can also spread HIV and AIDS".*

Mosa went on to say that in South Africa, older men choose young girls as wives. Mosa described the practice of how these new brides were chosen by their grooms during early marriage in some South African cultures:

> *…you might find that they* (older men) *do not realise that girls they chose may be 13 or 14 years old because they judged by* (the physical) *body, yeah. These guys assume that these girls are old enough to become housewives who could nurture homes because of the curves and big breast of these young girls, yeah. If any guy chooses any girl, she then becomes his wife whether she likes it or not, she doesn't have a say.... He* (the man) *might have other wives probably about four wives he sleeps with* (have sex with)*.*

In addition, Tebogo indicated a different but higher age groups that certain cultures force some adolescents into early marriage which may expose them to the virus. "*May be at 16 or 17 you choose a male partner to be with him for the rest of your life. It's like you are forced in a relationship that you don't want to be in" said Tebogo.*

From the narratives of Sbusiso, Mosa and Tebogo some female adolescents may become susceptible to HIV and AIDS through early marriage. Clark *et al.* (2006) found that African teenagers engage in early marriages. Harrison *et al.* (2008) posited that age difference in sexual partnership contributes to high HIV and AIDS prevalence amongst adolescents in South Africa.

Furthermore, Mosa and Tebogo explained the consequences of early marriages on some female adolescents' sexual behaviour and exposure to HIV infection. Mosa narrated that:

> *He might have other wives probably about four wives he sleeps with* (have sex with), *obviously unprotected sex because he is in rural area. Maybe they don't have much information about how to prevent HIV and AIDS. So those persons* (men) *force these girls to sleep with them.*

The new bride in early marriage is compelled by her culture to have sex as Tebogo narrated:

> *It's like you are forced in a relationship that you don't want to be in. As a result, you don't have any say. You are in forced relationship right! There's nothing you can do to protect yourself from having sex with that particular person because you are forced by your culture. That's culture you cannot do anything about it.*

Consequently, polygamy, multiple partners and possibility of intimate partner violence are some of the perils of early marriage on new brides as Mosa, Tebogo and Sbusiso's narratives revealed. Subsequently, they may contract HIV and AIDS through early marriages.

In addition to this, Mosa reported the plight of female adolescents after their parents have collected bride price commonly known in South Africa as *lobola*:

> *Obviously you don't have a say because he sent those cows or goats to your parents (as bride price) yeah, yeah. You are now married to him. So he now owns you. The choice is up to him whether he wants to use a condom or not.*

These newly married teenagers may not be permitted by their husbands to negotiate for condom use during sex. Reddi (2007) explained that the husbands of these young girls during cultural marriages in South Africa pay *lobola* (bride price) to the family of the woman. The wife is therefore obligated to have sex with the husband without the right to negotiate for the use of condoms during sexual intercourse. Any wife who negotiates for condom use may be accused by her husband of infidelity

and/or accusing her husband of adultery (Reddi, 2007). Clark *et al.* (2006) found that married adolescents practised unprotected sex which could expose these adolescents to HIV infection and AIDS.

Role models

Role models was the only subcategory that was presented.

Thirteen percent (13%) of the participants indicated that imitation of role models such as movie actors or other role models is a factor that contributes to high HIV and AIDS prevalence amongst adolescents. A role model is someone whom adolescents directly or indirectly are in contact with, that may influence adolescents' behaviour (Bandura, 1986). Celebrities named Phil and Jackie (pseudonyms) were *"internationally known that they took videos of their private"* sexual *"acts…at their young ages"* said Motheo. Motheo explained that celebrities also show nudity and use drugs. Consequently, some adolescents may assume that in order to be popular they have to imitate celebrities. Lebogang explained the society adolescents live in and how their role models influence them to get infected with HIV. Lebogang said that *"children tend to say that 'cos my role model can do this thing, I can also do the same. So they get influenced by people they look up to".* Lebogang and Motheo reported that these adolescents assume that in order to get to the position of their role models, they need to imitate their role models, even if these are negative role models. This may increase some adolescents' susceptibility to HIV and AIDS.

Parents are the *"assigned"* role models for their children, but as they grow up, adolescents select their *"vicarious"* role models from TV and movie stars, athletes, best friends (Liu & Laird, 2008, p.1037). Role models may influence adolescents if they adopt their role models' life styles or self-image (Liu & Laird, 2008).

4.7 CONCEPTUAL CATEGORY 5: KNOWLEDGE FACTORS

Finally, the researcher recognised from participant's report that knowledge factors accounts for a conceptual category that relate to HIV and AIDS preventive measures that participants have acquired. These are discussed under abstinence, use of condoms, testing for HIV and AIDS status, contact with blood and number of sexual partners.

All of the participants described their knowledge of factors that prevent HIV and AIDS amongst adolescents. Nhlanhla, Sbusiso, Nkosi and Mpho indicated that their teachers taught them about HIV and AIDS preventive measures. Nkosi reported that his parents and sisters used pictures of STD patients and HIV and AIDS positive patients to show him the consequences of unsafe behaviours:

> *… if my father didn't tell me at the age I can have sex, about condoms and AIDS, whenever everything is up there* (when I am sexually aroused, I will be) *having sex like a dog, but right now, because of information I have heard from my father, I… do not do things to please others. I think it's when your parents teach you how to be mentally fit. They… show you* (pictorial) *examples that if you contract this you will look like this. That's what I saw. That's what my sister, my family did. They showed me pictures of people who contracted different types of sexually transmitted diseases STD. … in my mind, I thought No! No!! No!!! I wouldn't want to get this especially at a young age.*

Nkosi could not erase the picture of conditions of those persons whom his family showed him that contracted STIs from his mind. The mental picture became a positive influence on Nkosi to abstain from sexual intercourse.

Abstinence

Fifty three percent (53%) of the participants indicated that adolescents should abstain from sexual activity to reduce their HIV and AIDS prevalence. Nhlanhla narrated that *"my advice is, the best way is abstinence, not having sex at all until you are sure you are at the age where you can deal with the circumstances before participating in sexual intercourse"*. Nhlanhla, Sbusiso and Mpho indicated that their Life Orientation teachers encouraged them to abstain from sex.

Testing for HIV and AIDS status

Twenty percent (20%) of the participants agreed that lack of knowledge of HIV and AIDS status of sexual partners contributes to HIV infection and AIDS amongst adolescents. Nana mentioned proper testing of HIV and AIDS status of partners. *"…in the clinics most especially government clinics, they allow you to get a free HIV test if you wanna have sex with somebody".* Nhlanhla explained that adolescents ought to *"know their HIV status"* and that "*they should know their partners' status before participating in sexual intercourse*".

Ijumba, Gamieldien, Meyer and Morroni (2008) established that knowledge of individuals infected with the virus improved use of condoms and reduced multiple sexual partners. People with lower socio-economic status have lower testing percentages than those with higher socio-economic status (Probst *et al.,* 2016), despite the HIV counselling and testing campaign launched in 2010 in the Gauteng province of South Africa and other campaigns.

Use of condoms

Thirteen percent (13%) that the use of condoms will reduce adolescents' exposure to the pandemic. Nkanyezi said that *"young people should use condoms*" during sexual intercourse. Tebogo indicated that health care services provide condoms.

Contact with blood

Thirteen percent (13%) of the participants indicated that blood contact will expose some adolescents to the virus. Sbonga and Nhlanhla expressed in their opinion that adolescents should avoid contact with blood of injured persons. Nhlanhla further explained that *"maybe there is accident that happened at school or at a party that involves blood. The best thing we could do is, not to do what we think it right*" by touching accident victims. Nhlanhla continued that "*regardless of the person pleading because you don't know, you might have a very tiny cut in your hands* (which) *you are not even aware of".*

Number of sexual partners

Thirteen percent (13%) reported that the number of sexual partners and sex for money could increase adolescents' exposure to the virus. On number of sexual partners and avoiding sex for money, Katlego explained that adolescents should have single sexual partners to prevent their exposure to the virus.

4.8 SITUATING THE DATA IN THE CONTEXT OF EXISTING THEORIES

The researcher situated the data in the context of three existing theoretical frameworks (Baral, Logie, Grosso, Wirtz & Beyrer, 2013; Armitage & Talibudeen, 2010; Fisher, Fisher, Amico & Harman, 2006). These three models are the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory. When situating the data, the researcher identified that some concepts that participants recognised in the existing three models occurred in more than one of these models as aforementioned in Section 2.4.2. Consequently, the researcher combined these concepts with similar properties, but selected one concept over the other. The criterion for selection was that any concept that had additional construct(s) besides the overlapping concept was selected as a theoretical category over the other. Each model's description of these concepts that were similar differs (see section 2.4.2). The researcher incorporated definitions of concepts that were not selected into the selected concepts. Consequently, results that support the existing literature in the existing three models are discussed under intentions, subjective norms, perceived behavioural control, knowledge, and social ecology settings. These five conceptual categories were identified after situating the data in the context of these three existing theoretical models.

4.8.1 Intentions

In this study, participants identified that some adolescents had behavioural intentions. The Theory of Planned Behaviour describes behavioural intentions as desire to practise a specific behaviour such as HIV and AIDS behaviour (Ajzen, 1991; 2011). In this study, intentions and behavioural intentions are used synonymously. Some participants indicated that some adolescents had intended to

practise HIV and AIDS preventive behaviours. Conversely, some participants reported that some adolescents had behavioural intentions to engage in behaviours which may increase their exposure to the virus, such as early sexual debut, unprotected sex, multiple partners, intimate partner violence, cultural incisions, cultural circumcisions and alcohol and drug use. Adolescents are a vulnerable population and may be exposed to risk behaviours.

According to the Theory of Planned Behaviour, attitudes show how some adolescents evaluate behaviours before they accept or reject such behaviours (see Section 2.3.1 & 2.3.4). Participants reported that some adolescents did not consider the consequences of their intentions to reject HIV and AIDS preventive behaviours before engaging in such activities (see Sections 4.3; 4.4; 4.5 & 4.6). In addition, some adolescents' behavioural beliefs may affect their attitudes to adopt or reject HIV and AIDS preventive behaviour. For example, some adolescents had behavioural beliefs that sex without condoms was more pleasurable (see Section 4.3). Others believed that boys who practise unprotected sex were regarded as men (see Section 4.3). Participants indicated that some adolescents showed favourable attitudes to reject HIV and AIDS preventive behaviour because they misjudged the outcome of such behaviours as described in Sections 4.3**,** 4.4, 4.5 and 4.6**.** Consequently, such adolescents underrated the outcomes of contracting HIV and AIDS before accepting to engage in such behaviours.

4.8.2 Subjective norms

Subjective norms was adopted from the Theory of Planned Behaviour. The Theory of Planned Behaviour defines subjective norms as social pressures that may influence the prediction of intentions. In this study, the concept of social pressure occurs in subjective norms and motivation (see Sections 2.3.1 & 2.3.2), besides the concept of personal pressure also occurs in motivation. However, the concept of normative beliefs that influence subjective norms was described in Section 2.3.1. The researcher selected subjective norms over motivation but incorporated the definition of motivation into subjective norms (see Sections 2.3.1 & 2.3.2). In this study, subjective norms are personal and social pressures that may influence adolescents to accept or reject HIV and AIDS preventive behaviours. In addition, the researcher

used subjective norms and motivation synonymously. Nkosi reported that his parents motivated him to adopt HIV and AIDS preventive behaviour as described in Section 4.7. Some adolescents' teachers could motivate them to adopt HIV and AIDS preventive behaviours (see Section 4.7). On the other hand, some participants indicated that lack of home training could influence their exposure to HIV and AIDS amongst adolescents. Furthermore, participants reported that lack of parental supervision and lack of parental involvement could motivate some adolescents to reject HIV and AIDS preventive behaviour. More so, participants indicated that some adolescents were motivated by anger at being rejected in respect of sex by their girlfriends to intimately violate their sexual partners (see Section 4.4). Furthermore, unavailability of parents motivated some lonely adolescents to adopt behaviours that may expose them to the virus as described in Section 4.3. Finally, participants reported that peer pressure and lack of money could motivate some adolescents to reject HIV and AIDS preventive behaviours (see Sections 4.3 & 4.4).

4.8.3 Perceived behavioural control

Perceived behavioural control was adopted from the Theory of Planned Behaviour. Perceived behavioural control determines the ease or difficulty in performing any behaviour (see Section 2.3.1). The concept of skills occurs in perceived behavioural control and behavioural skills. In addition, abilities, safety equipment and personnel also occur in perceived behavioural control. As a result, perceived behavioural control was selected over behavioural skills of the Information Motivation Behaviour Skills Model. However, the researcher incorporated behavioural skills as described in section 2.3.2 into the definition of perceived behavioural control. Availability of skills, abilities and resources will make it easy for some adolescents to perform their intended behaviour such as HIV and AIDS preventive behaviour. Participants reported that condoms were provided by health care services. Nevertheless, Nana pointed out that during sexual intercourse, condoms could rupture. The probability of condoms bursting during sexual intercourse could imply that some adolescents may lack skills to effectively use condoms. Failure of condoms during sexual intercourse may increase some adolescents' vulnerability to the virus (see Section 4.3).

Furthermore, participants reported that some of these adolescents who engaged in transactional sex and early marriages or who are victims of rape could not negotiate for condom use during sex. In other words, some adolescents could be prevented by their sexual partners or attackers from using condoms during sex. Inability to negotiate for condom use during sexual intercourse could expose adolescents to the pandemic.

In addition, participants indicated that a shortage of health personnel and lack of safety equipment to assist victims of school fights and community violence imply that some adolescents could not actualise their intended HIV and AIDS preventive behaviour (see Section 4.5). Participants reported that school health personnel including nurses, First Aid teachers and health staff were sometimes not available to assist injured victims of school fights or community violence. Participants also said that some schools and communities lack gloves to assist victims of school fights and stabbings as described in Section 4.5.

In the Theory of Planned Behaviour, control beliefs are adolescents' beliefs about what would compel or constrain them to practise HIV and AIDS preventive behaviour (see Section 2.3.1). Participants' reports implied that some adolescents could be prohibited from practising HIV and AIDS preventive behaviour due to lack of effective condoms use skills and condom negotiation skills (see Section 4.3). Furthermore, participants indicated that a lack of safety equipment and health personnel could hinder some adolescents from practising HIV and AIDS preventive behaviours (see Section 4.5). Adolescents' control beliefs influence their perceived behavioural control as was described in the literature in Chapter 2.

4.8.4 Knowledge

The Information Motivation Behaviour Skills Model states that HIV and AIDS risk related behaviour may be reduced through information of what causes HIV and AIDS and information on how HIV and AIDS could be prevented (Fisher & Fisher, 1992). HIV and AIDS could be prevented through knowledge of contributing factors to HIV and AIDS and HIV and AIDS prevention knowledge. Participants reported their

knowledge of factors that prevent HIV and AIDS amongst adolescents as described in Section 4.7.

4.8.5 Social ecology settings

The Social Ecology Theory explains bidirectional influence of individuals and their different social ecology settings on individuals' behaviour (see Section 2.3.3). In this study, participants described how all social ecology settings may influence some adolescents' behaviour exposing them to HIV infection and AIDS. These include the microsystem, mesosystem, exosystem, macrosystem and chronosystem (Bronfenbrenner, 1994). The first social ecology setting, the microsystem, explains the interplay of adolescents with their immediate social setting such as their homes and their classrooms (see Sections 2.3.3; 4.3 & 4.5). Participants revealed that lack of home training, parental absence, lack of parental involvement, lack of parental supervision, incest and MTCT could increase some adolescents' HIV and AIDS prevalence (see Sections 4.3 & 4.4). More so, participants explained how intimate partner violence may influence some adolescents to adopt behaviours that could expose them to the virus (see Sections 4.3 & 4.4). In addition, participants explained that some adolescents whose parents were unemployed, deceased or poor may practise transactional sex (see Section 4.3). Furthermore, participants explained that unhealthy practices in the family may expose some adolescents to the virus through contact with HIV contaminated blood (see Section 4.5). On the contrary, a participant indicated that his family members could influence him to practise HIV preventive behaviour (see Section 4.7).

The mesosystem is the second social setting which comprises of interactions between two or more of the individual's microsystems (Bronfenbrenner, 1994), for instance, the interface amongst an adolescent's family, school and peer group. Peer pressure may compel some adolescents to engage in early sexual debut and unprotected sex (see Section 4.3). Participants explained that some adolescents use alcohol and drugs and share injection needles as described in Sections 4.3 and 4.5. According to participants, some adolescents discussing sex in their classrooms and school fights may expose some adolescents to HIV and AIDS as described in Section 4.3. Mosa said that some adolescents deceive their friends to engage in

early sexual debut through untrue stories of their sexual exploits (see Section 4.3). More so, a participant revealed that good friends could influence him to practise HIV preventive behaviour (see Section 4.3).

The third social ecology setting, the exosystem is an extension of the mesosystem to include formal and informal social structures such as work, neighbourhood and government agencies (Bronfenbrenner, 1994). According to a participant, community violence may expose some adolescents to HIV and AIDS as described in Section 4.5.

The fourth social ecology setting is the macrosystem. The macrosystem embraces influences from microsystems, the mesosystem and the exosystem that could involve their "*belief systems, bodies of knowledge, material resources, customs and life styles, opportunity structures, hazards and life course options that are embedded in each of these broader systems*" (Bronfenbrenner, 1994, p. 1646). In this study, the macrosystem's influence on adolescents will comprise of cultural customs and traditional beliefs. Participants described influences from some adolescents' macrosystem as contributing factors to high HIV and AIDS prevalence amongst them. Participants reported that cultural incisions, cultural circumcision, early marriages and rape as a cure for HIV and AIDS are influences from some adolescents' macrosystem that may expose them to the virus.

Participants reported that cultural incisions and traditional circumcisions could expose some adolescents to contract HIV and AIDS through contact with HIV infected blood as described in Sections 4.5 and 4.6.

More so, some female adolescents' cultural practice of early marriages may expose them to HIV and AIDS through polygamous husbands, unprotected sex and intimate partner violence as described in Section 4.6.

Participants indicated that some female adolescents may be raped by men who believe that sex with a virgin may cure HIV and AIDS. Some South Africa studies recognised the existence of the myth of virgin rape as a cure for HIV and AIDS (Meel, 2003; Meier, 2002). However, Van Staden and Badenhorst (2009) did not

associate rape with the belief that sex with a virgin cures HIV and AIDS (see Section 4.4).

Finally, the chronosystem is those changes that occur over time that affect the individual's life and their environments, for example changes in social or economic status, changes of employment, divorce and death (Bronfenbrenner, 1994). Participants revealed some changes that occurred over time due to circumstances and situations of some adolescents which could affect their behaviour. Such changes are death of parents, parents' unemployment, adolescents' employment status and employability of some adolescents as well as dropping out of formal schooling (see Sections 4.3 & 4.5).

Participants indicated that some adolescents whose parents were dead or unemployed or who dropped out of school engaged in transactional sex (see Sections 4.3 & 4.5). Furthermore, participants explained that some female adolescent school dropouts practise unprotected sex and indulge in multiple sexual partners to enable them to qualify for child support grants (see Section 4.3). Sbonga reported that some male school dropouts may stab different people in the community with the same knife in order to steal from them (see Section 4.5). Sbonga suggested that other community members who may assist them without gloves could be predisposed to HIV and AIDS through infected HIV blood (see Section 4.5). As a result, some adolescents who attacked community members, victims of community violence and community members who assisted without gloves could be exposed to the virus through blood contact.

4.9 CONCLUDING REMARKS

The researcher presented the data by telling the personal narratives of fifteen adolescents who were interviewed on the determinants of HIV infection amongst adolescents. The researcher included some verbatim words of some of these participants on the factors that they thought exposed adolescents to HIV infection. Furthermore, the researcher located the data in the context of existing three models as participants' responses on determinants of HIV infection amongst adolescents. Given the high HIV and AIDS prevalence amongst adolescents in Gauteng province

of South Africa, adolescents' narratives could better account for factors that determine the transmission of the pandemic amongst their peers.

In the next chapter, the researcher presented and discussed findings, used the identified factors to develop an HIV and AIDS intervention model. In addition, the researcher indicated how this new multifaceted theoretical model may be employed to design HIV preventive interventions.

CHAPTER FIVE: FINDINGS AND DISCUSSION

5.1 INTRODUCTION

In this chapter the researcher presented and discussed the findings and conclusions of the study. In Chapters 1 and 2 the researcher highlighted the gaps that exist in the models of the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory. In Chapter 2 the researcher further explained the need to develop models that may provide perspectives to guide HIV and AIDS interventions in order to address the high HIV and AIDS prevalence amongst adolescents in Gauteng province. The three existing frameworks were combined to form a conceptual framework to guide the study. In Chapter 3 the researcher discussed the methodology that was used to carry out the investigation. In Chapter 4 the researcher presented the interview data that were obtained from this study. From the responses of the participants in Chapter 4 the researcher performed a comparative analysis and constructed five core factors that the participants of this study believe contribute to HIV and AIDS prevalence amongst adolescents. The researcher situated the data in the context of the existing three models.

From the data, the researcher identified factors that participants recognised may contribute to HIV and AIDS prevalence amongst adolescents. In addition, the researcher combined some categories that had similar concepts in the above mentioned three models, but selected those categories with additional concepts as theoretical categories. In addition, the researcher incorporated definitions of concepts that were not selected into the definition of selected categories (see section 4.8). The newly identified categories from the data could not stand alone as conceptual categories but were integrated as extensions of some categories in the three existing model. The researcher indicated how the new multifaceted theoretical model could be used by relevant stakeholders. In this chapter, these findings are related to the research questions. The researcher addressed the main research question after addressing the research sub-questions. Furthermore, the researcher discussed the findings in relation to the conceptual framework of this study as described in Chapter 2. Although the findings of this study may not be generalised to

the rest of South Africa, it may increase the knowledge base of the scholarship pertaining to HIV and AIDS.

5.2 REVISITING THE RESEARCH QUESTIONS OF THE STUDY

The main research question was:

> How can factors that learners associate with contributing to high HIV and AIDS prevalence be used to develop a new multifaceted theoretical model that will inform effective interventions on HIV and AIDS?

The researcher used the following research sub-questions to address the main research question:

i) What factors, identified in the Theory of Planned Behaviour do learners recognise as contributing factors to HIV and AIDS prevalence in Gauteng?
ii) What factors, identified in the Information Motivation Behaviour Skills Model do learners recognise as contributing factors to HIV and AIDS prevalence in Gauteng?
iii) What factors, identified in the Social Ecology Theory do learners recognise as contributing factors to HIV and AIDS prevalence in Gauteng?
iv) What factors, omitted from the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory do learners recognise as contributing factors to HIV and AIDS prevalence in Gauteng?

5.3 FACTORS PARTICIPANTS RECOGNISED IN THE THEORY OF PLANNED BEHAVIOUR THAT WERE PERCEIVED TO CONTRIBUTE TO HIGH HIV AND AIDS PREVALENCE AMONGST ADOLESCENTS

The following findings were made based on the research sub-question, *'Which factors, identified in the Theory of Planned Behaviour, do learners recognise as contributing factors to HIV* and *AIDS prevalence in Gauteng?'*

In this study, findings show that some of the factors that were recognised in the Theory of Planned Behaviour were described by the participants to contribute to adolescents' HIV and AIDS prevalence. However, subjective norms was discussed in Section 5.5.

Finding 1: Some adolescents had intentions to either adopt or reject HIV and AIDS preventive behaviour

In this study, intentions are desires to accept or reject HIV and AIDS preventive behaviour. Findings correlate with the Theory of Planned Behaviour that some adolescents intended to either adopt or reject HIV and AIDS preventive behaviour (see Sections 2.3.1 & 4.8.1). The researcher found that subjective norms, perceived behavioural control and influences from some adolescents' social ecology settings may predict their intentions (see Sections 4.8.1; 4.8.2; 4.8.3 & 4.8.5). The researcher also identified a novel finding that barriers that inhibit behavioural intentions may predict behaviour better than behavioural intentions alone. Furthermore, the researcher found that intentions could change over time. Consequently, sub-categories of intentions were described as personal intentions, barriers that inhibit intentions and changes in intentions.

Findings 2: Perceived behavioural control predicted some adolescents' intentions to accept or reject HIV and AIDS preventive behaviour

Perceived behavioural control was selected as a conceptual category that superseded behavioural skills predicted by the Information Motivation Behaviour Skills Model. The concept of skills occurs in the Theory of Planned Behaviour as well as in the Information Motivation Behaviour Skills Model, so it has to be combined, moreover, perceived behavioural control contains additional sub-concepts (see Sections 2.3.1; 2.3.2 & 4.8.3). In addition, the researcher incorporated the definition of behavioural skills in Section 2.3.2 into the new definition of perceived behavioural control. In this study, perceived behavioural control is determined by the presence or absence of abilities or skills, safety equipment and health personnel to practise HIV and AIDS preventive behaviour (see Sections 2.3.1; 2.3.2; 4.3; 4.5; 4.6 & 4.8.3).

According to the Theory of Planned Behaviour, control beliefs may influence perceived behavioural control (see Section 2.3.1). Findings from this study indicate that perceived behavioural control may be influenced by control beliefs as well as influences from adolescents' social ecology settings (see Sections 2.3.1; 2.3.2; 4.8.3 & 4.8.5). The researcher discussed perceived behavioural control as the absence of skills or abilities, lack of safety equipment and shortage of health personnel.

Lack of skills to effectively use condoms and their inabilities to negotiate for condom use during sex could hinder some adolescents from practising safe sex (see Sections 4.3; 4.4; 4.5; 4.6; 4.8.3 & 4.8.5). In this study, the availability of condoms was not reported to reduce unsafe sex amongst some adolescents. Participants indicated that condoms were provided at clinics but some adolescents may lack skills to effectively use condoms during sex and they may not be able to negotiate for condom use. More so, victims of rape and some adolescents who engaged in early marriages could not negotiate to use condoms. Lack of skills to effectively use condoms during sex and an inability to negotiate for condom use could be influenced by some adolescents' exosystems. The Department of Health that provides condoms at clinics forms part of adolescents' exosystem.

Moreover, lack of gloves could expose some adolescents to HIV contaminated blood (see Sections 4.5; 4.8.3 & 4.8.5). More so, negligence of duty by school staff or health personnel could contribute to inability to request gloves and consequently, lead to a lack of gloves. Binduko (2016) found that sometimes First Aid equipment is not replaced. In order words, negligence of duty may lead to staff members failing to replace safety equipment.

The School Safety Policy requires school governing bodies to create a safe school environment that is free of weapons and drugs (Gauteng Department of Education, 2012). Schools do not categorise wooden school tables or chairs as weapons although findings indicate that some adolescents use them as weapons to inflict injury (see Section 4.5). This study supports Binduko's (2016) finding that high school learners may use hard objects to harm their fellow learners. Some of these adolescents may come into contact with bodily fluids of their injured friends while taking them to their schools' administrative office, which may expose them to the

virus. In this study, a lack of gloves may be an interacting influence between their schools and the Health Department, situated in adolescents' exosystems.

This study found that health personnel were sometimes not available to assist victims of school violence and community violence. Violent attacks occur in some adolescents' exosystems. The National Education Policy Act (1996) Sections 7 and 8 on HIV and AIDS, authorises Members of the Executive Council (MEC) to create a safe school and institutional environment. The policy further indicated that the MEC should train learners and educators in First Aid and ensure that schools are equipped with at least two First Aid kits (Department of Education, 1996). Moreover the goal of the Integrated School Health Policy for public schools (2012) is to improve the general health of Grade R to Grade 12 learners and the condition of the school environment. According to the National Education Policy Act, (1996) the content of these First Aid kits should include disposable latex gloves. Sbonga and Nhlanhla reported that their schools lacked gloves, so learners assisted their injured friends without gloves which may expose them to HIV contaminated bodily fluids. The National Education Policy Act (1996) discourages contact with any bodily fluids, including blood. More so, Binduko (2016) found that there was insufficient and low First Aid training including First Aid teachers and First Aid learners.

5.4 FACTORS PARTICIPANTS RECOGNISED IN THE INFORMATION MOTIVATION BEHAVIOUR SKILLS MODEL THAT WERE PERCEIVED TO CONTRIBUTE TO HIGH HIV AND AIDS PREVALENCE AMONGST ADOLESCENTS

The researcher found the following based on the research sub-question, *'Which factors, identified in the Information Motivation Behaviour Skills Model, do learners recognise as contributing factors to HIV* and *AIDS prevalence in Gauteng?'*

Participants indicate that all of the factors that were recognised in the Information Motivation Behaviour Skills Model were described to contribute to high HIV and AIDS prevalence amongst adolescents. These factors were knowledge, motivation and behavioural skills. However, behavioural skills was combined with perceived behavioural control in Section 5.3 and motivation was combined with subjective

norms and was discussed in Section 5.5. Moreover, in Section 5.6, knowledge and lack of application of knowledge which contributed to adolescents' high HIV and AIDS prevalence was discussed.

5.5 FACTORS PARTICIPANTS RECOGNISED IN THE SOCIAL ECOLOGY THEORY THAT WERE PERCEIVED TO CONTRIBUTE TO HIGH HIV AND AIDS PREVALENCE AMONGST ADOLESCENTS

The following findings were made based on the research sub question, *'Which factors, identified in the Social Ecology Theory, do learners recognise as contributing factors to HIV and AIDS prevalence in Gauteng?'*

Finding 3: **Some adolescents' five social ecology settings may influence their decisions to accept or reject HIV and AIDS preventive behaviour**

The researcher established that adolescents' microsystem, their mesosystem, their exosystem, their macrosystem and their chronosystem could increase their exposure to HIV infection. However, some influences from adolescents' chronosystem have been discussed in Section 5.3.

The microsystem describes the interaction between some adolescents and their immediate social ecology settings (see Section 2.3.3). In this study, adolescents' microsystem consists of interaction with their homes. Influences from their homes was presented under lack of money and family instability.

From descriptions some participants gave on some adolescents' homes, one may infer that some of their homes are unstable. Instability in homes is expressed in this study as lack of parental supervision, parental absence and parental non-involvement in the life of their vulnerable adolescents. In the same vein, this researcher may also infer that in unstable homes some adolescents are left without supervision, direction and home training. In other words, these adolescents may lack self-confidence as well as the ability to overcome pressures from their peers and from social media (see Section 4.3). As a result, these adolescents may adopt negative role models from amongst their peers and from social media. These

negative role models may influence them to reject HIV and AIDS preventive behaviours (see Section 4.3).

In this study, peer pressure is a major influence from some adolescents' mesosystem to reject HIV and AIDS preventive behaviours. It was found that some adolescents may acquire knowledge from their peers which may deceive them to engage in early sexual debut, unprotected sex and alcohol and drug use (see Section 4.3). Mutinta *et al.* (2012) found that adolescents are in their experimental stage. In order words, some adolescents could experiment with the aforementioned behaviours which may dispose them to contract HIV and AIDS. Selikow *et al.* (2009) found that peers could motivate some teenagers to reject healthy social norms. Unhealthy social norms may expose some adolescents to HIV and AIDS.

Some adolescents could make wrong choices due to negative peer pressure**.** The study found that peer acceptance and peer approval are crucial to some adolescents. Some adolescents perceive peer acceptance as an opportunity to be considered as "mature" or "*cool".* More so, some adolescents consider peer approval as an endorsement that they fit into a social group. Negative peer pressure could manifest in forms of persuasion by their peers, peer deception and competition among peers to reject HIV and AIDS preventive behaviour. This finding supports previous studies that negative peer pressure could motivate some adolescents to engage in early sexual debut and unprotected sex (Selikow *et al.*, 2009). As aforementioned in this section, Selikow *et al.* (2009) established that some adolescents could be influenced by peer pressure to adopt unhealthy social norms.

Some adolescents may be driven by negative peer pressure to engage in alcohol and drug use (see Sections 4.3; 4.8.1 & 4.8.2) which may motivate some adolescents to practise behaviours that may expose them to the virus. This study confirms that some adolescents are motivated by their peers to use drugs, for example marijuana (Akanle *et al.,* 2015). In Eminhle's opinion, risky behaviours are associated with alcohol and drug use amongst adolescents (see Section 4.3). This study supports previous studies that found that the use of alcohol and drugs encourage adolescents' sexual risky behaviours. Furthermore, road accidents due to

reckless driving may expose them to HIV and AIDS (Erinosho *et al.*, 2012; Blackman *et al.*, 2008).

Furthermore, in this study, the exosystem include formal and informal social structures which comprise of schools, neighbourhood, the Department of Health, the Department of Social Development and social media. The school was adopted as part of adolescents' exosystem in place of work because all of these adolescents are learners. The Department of Health provided condoms for adolescents as described in Section 4.7. Influences from some adolescents' exosystem that could expose them to contract HIV and AIDS were discussed in this section under child support grants.

Some adolescent school dropouts may engage in unsafe sex in order to qualify for child support grants as a means of financial support (see Section 4.3). The Department of Social Development provides child support grants to less privileged children (Dlamini, 2016). Female adolescents who wish to access child support grants are not entitled to grants unless they have children. The Department of Social Development form part of adolescents' exosystems.

Moreover, in this study, the macrosystem includes influences from adolescents' cultural customs and traditional beliefs. The findings show that some adolescents' cultural customs and traditional beliefs could encourage them to practise unsafe cultural incisions, traditional circumcision and early marriages (see Sections 4.5; 4.6 & 4.8.5). Cultural incisions could expose some adolescents to the virus through contact with HIV contaminated blood (see Sections 4.5) through sharing of sharp objects. In their study, Petzer and Mngqundaniso (2008) found that twenty four percent of traditional healers use the same razor blades on all their clients while twenty nine percent do not use gloves to carry out incisions. HIV and AIDS positive traditional healers may infect their adolescent clients while performing incisions on them as described in Section 4.5.

Although participants reported male traditional circumcision, female genital mutilation is also practised by some cultures in South Africa. However, female genital mutilation differs from male circumcision and may not be performed in clinics. More so, female

genital mutilation is unlawful in South Africa. Plank *et al.* (2010) and Peters and Marcus (2011) found that circumcisions performed in clinics or hospitals may be safer, reduce surgical complications and contamination. Peters and Marcus (2011) also found that medical circumcisions could resolve complications. On the contrary, this study found that traditional circumcisions may be performed by medically unqualified traditional healers. This confirms the study of Meissner and Buso (2007) that in the Eastern Cape Province of South Africa, traditional circumcisions were performed by unqualified practitioners and careless nurses. By implication, these traditional practitioners may not use gloves when performing circumcisions. However, Peltzer, Nqeketo, Petros and Kanta (2008) in their study found that most traditional practitioners and their nurses in the Eastern Cape use gloves to perform circumcisions and during care. One may infer that some traditional practitioners may not use gloves when performing circumcisions while some others do.

5.6 FACTORS PARTICIPANTS RECOGNISED THAT WERE EXCLUDED FROM THE THREE MODELS THAT WERE PERCEIVED TO CONTRIBUTE TO HIGH HIV AND AIDS PREVALENCE AMONGST ADOLESCENTS

The researcher found the following based on the sub question, *'What factors, omitted from the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory do learners recognise as contributing factors to HIV and AIDS prevalence in Gauteng?'*

Finding 4: Barriers that inhibit intentions predict some adolescents' HIV and AIDS behaviour

In this study, findings indicate that barriers that inhibit intentions were excluded from the Theory of Planned Behaviour. Some barriers such as MTCT, incest, intimate partner violence, school violence and community violence could inhibit some adolescents from realising their intended HIV and AIDS preventive behaviour (see Sections 4.3; 4.4 & 4.5). From the previous findings of this study, one could infer that some adolescents could have made wrong choices to adopt behaviours that may expose them to high incidence of HIV and AIDS. Clearly, in the case of victims, barriers that inhibit HIV and AIDS preventive intentions were not consequences of

wrong choices. Chatzisarantis, Frederick, Biddle, Hagger and Smith's (2007) investigation on physical activity and effort within the Theory of Planned Behaviour, found that violation of intentions predicated behaviour over attitudes, subjective norms and intentions. This researcher supports Chatzisarantis ***et al.'s*** (2007) finding that barriers that inhibit intentions may better predict behaviour than attitudes, subjective norms and intentions. Barriers that inhibit intentions were not incorporated in the Theory of Planned behaviour. Intentions to practise HIV and AIDS preventive behaviours may predict behaviour if the behaviour is under complete volitional control of the person (see Section 2.3.1). However, barriers that inhibit intentions may predict adolescents' behaviour better in the absence of complete volitional control. In other words, some adolescents may have complete volitional control over their intended HIV and AIDS preventive behaviours, but factors such as incest and intimate partner violence may hinder them from realising their intended behaviours.

It is pertinent to say that some adolescents who may have contracted HIV and AIDS through MTCT were unable to form HIV and AIDS preventive behavioural intentions. MTCT is an influence from some adolescents' microsystems (see Sections 4.5 & 4.8.5). Some mothers of these adolescents may contract the virus through consensual sex or through other avenues. Mpho reported that some adolescents could be the products of rape and that their mothers could have been raped by HIV and AIDS positive men. In effect, these adolescents contracted HIV and AIDS through their mothers' exosystems.

Incest and intimate partner violence (see Sections 4.4 & 4.6) are regarded as sexual violence. In addition, incest is statutory rape. As a result, HIV and AIDS preventive behavioural intentions of all victims of rape were desecrated. Rape may happen in some adolescents' microsystems and their exosystems. The researcher alluded to Ajzen that the Theory of Planned Behaviour was developed to predict intentions but it was not a model to predict behaviour change (see Section 2.3.1). However, in response to the critique of Sniehotta *et al.* (2014) against the Theory of Planned Behaviour, Ajzen (2015) approved of the incorporation of more variables to his model to enable it to be used to predict behaviour (see Section 2.3.1). Consequently, this researcher incorporated barriers that inhibit intentions as a sub-category of intentions.

Finding 5: Changes in HIV and AIDS behavioural intentions over time may expose some adolescents to the virus

Some adolescents may discard their original intentions to adopt new behaviours due to prevailing circumstances and situations from their social ecology settings as described in Sections 4.8.1 and 4.8.5. This includes parental unemployment and dropping out of school. This study confirms that incidents that may occur in the life of people could change their intentions and behaviours (Ajzen, 2011). However, changes that occur over time in intentions were not incorporated in the Theory of Planned Behaviour (see Section 2.3.1). This study confirms that some adolescents' chronosystems could predict changes in their HIV and AIDS behavioural intentions thereby exposing them to the virus (see Section 2.3.3). Consequently, the chronosystem was incorporated as a subcategory of changes in behavioural intentions.

Finding 6: Knowledge was excluded from the Theory of Planned behaviour

Some adolescents could not perform their intended HIV and AIDS preventive behaviour due to lack of knowledge (see Section 4.3). Availability of condoms without knowledge of skills and abilities on how to effectively use condoms or negotiate for condom use may result in some adolescents engaging in unprotected sex. This confirms the study of the Information Motivation Behavioural Skills Model that information is a prerequisite to perform HIV and AIDS preventive behaviour. In their study, Jemmott *et al*. (2007) found that adolescents need to acquire knowledge on how to use condoms and how to negotiate for condom use during sex.

Some factors that were excluded from the Information Motivation Behaviour Skills Model that could increase HIV and AIDS prevalence amongst adolescents were presented below.

Finding 7: Some adolescents may not practise their HIV and AIDS preventive behaviour

Information was adopted from the Information Motivation Behaviour Skills Model. Knowledge and information are used synonymously. Lack of application of knowledge describes some adolescents' inability to apply their acquired HIV and AIDS preventive knowledge. Taukeni and Ferreira's (2016) study found that most adolescents in poor rural South African communities possess knowledge of HIV and AIDS prevention and infection. This study confirms that adolescents in rural and urban South African community possess the knowledge of HIV and AIDS prevention strategies (see Sections 4.3; 4.4; 4.5; 4.6 & 4.7). Nevertheless, lack of money, peer pressure and loneliness may influence them to adopt unsafe behaviours despite their HIV and AIDS knowledge (see Sections 4.3 & 4.7).

Finding 8: Influences of some adolescents' social ecology settings that could influence their HIV and AIDS prevalence were excluded from the Information Motivation Behaviour Skills Model

The Information Motivation Behaviour Skills Model excluded influences from some adolescents' social ecology settings that may influence adolescents to contract or prevent HIV and AIDS. This study confirms the study of Ndebele *et al*. (2012) that the behaviour of learners was influenced by social, economic and cultural factors, which were not incorporated in the Information Motivation Behaviour Skills Model. This study is in line with the research of Kelly *et al.* (2012) who advocated that models that are used to describe the HIV and AIDS epidemic in South Africa could be used to design programmes that focus on the socio ecology of HIV and AIDS. The social ecology of HIV and AIDS explains influences from some adolescents' social ecology settings that may prevent or contribute to high HIV and AIDS prevalence amongst adolescents.

The researcher presented some factors that participants recognised that were excluded from the Social Ecology Theory below.

Finding 9: Social media was excluded from the mesosystem of the Social Ecology Theory

Social media was not categorised under the exosystem of the Social Ecology Theory. Social media came into the limelight about two decades after the Social Ecology Theory was developed. Some adolescents may access and share pornography through social media which may influence their sexual behaviours, consequently, their risk of HIV and AIDS. Pornography may arouse some adolescents' sexual desires. Charles and Blum (2008) reported that sexual risk is affected by sexual images on the media. The influence of social media was incorporated into the exosystem of the model that was developed from this study.

Finding 10: Personal intentions were excluded from the Social Ecology Theory

The Social Ecology Theory expresses reciprocal influence of all social settings on adolescents' behaviour that may either expose them to or prevent HIV infection but excluded personal intentions. The omission of personal intentions in the Social Ecology Theory indicates that only adolescents' social ecology settings could influence their HIV and AIDS preventive behaviour. However, this study revealed that some adolescents may have personal intentions to engage in behaviours that may reduce or increase their susceptibility to the virus.

Finding 11: How some adolescents acquire knowledge from their social ecology settings was not explicitly indicated in the Social Ecology Theory

Finally, the Social Ecology Theory did not explicitly describe how some adolescents may acquire knowledge through their social ecology settings unlike the Information Motivation Behaviour Skills Model. The Social Ecology Theory indicated that some adolescents' behaviours could be influenced by their social ecology settings. However, the researcher identified that some adolescents could acquire knowledge from their social ecology settings. Some influences from adolescents' social ecology settings to accept or reject HIV and AIDS preventive behaviour is an indication that they have acquired new knowledge. For instance, some adolescents' homes, their peers, their schools, the social media and their cultures or traditions are avenues

through which they acquire new knowledge. Consequently, knowledge was incorporated as new sub-categories of all social ecology settings.

5.7 FACTORS PARTICIPANTS ASSOCIATE WITH CONTRIBUTING TO HIGH HIV AND AIDS PREVALENCE THAT COULD BE USED TO DEVELOP A NEW MULTIFACETED THEORETICAL MODEL TO INFORM HIV AND AIDS INTERVENTION

The researcher compiled the following based on the main research question, *'How can factors that learners associate with contributing to high HIV and AIDS prevalence be used to develop a new multifaceted theoretical model that will inform HIV and AIDS intervention?'*

In answering the main research question, the researcher identified five key factors according to participants that learners associate with contributing to high HIV and AIDS prevalence. These key factors were intentions, subjective norms, perceived behavioural control, knowledge and social ecology settings. These key factors were adopted to develop a new model that may be used to design HIV and AIDS interventions amongst adolescents.

In Table 5.1 The researcher tabulated the theoretical categories of the new model.

Table 5.1: The theoretical categories of the new model

Theoretical categories	Sub categories
Category 1: Intentions	Personal intentions Barriers that inhibit intentions Changes in intentions
Category 2: Subjective norms	Personal pressures Social pressures
Category 3: Perceived behavioural control	Absence of abilities or skills Lack of safety equipment Shortage of health personnel
Category 4: Knowledge	Knowledge Lack of knowledge Lack of application of knowledge
Category 5: Social ecology settings	Microsystem Mesosystem Exosystem Macrosystem Chronosystem

5.7.1 Theoretical category 1: Intentions

The researcher incorporated intentions in the model of factors that may prevent or contribute to HIV and AIDS amongst adolescents. The researcher extended intentions by constructing sub categories of intentions as personal intentions, barriers that inhibit intentions and changes in intentions.

In corroboration with the Theory of Planned Behaviour, personal intentions are some adolescents' desire to adopt or reject HIV and AIDS preventive behaviour. However, some barriers may inhibit some adolescents' HIV and AIDS preventive behavioural intentions (see Section 5. 6). This researcher compared Chatzisarantis *et al*'s (2007) violation of intentions to barriers that inhibits intentions. Barriers that inhibit intentions may increase some adolescents' susceptibility to the HIV and AIDS. In addition, chronosystems, microsystems and mesosystems may influence some adolescents to change their initial HIV and AIDS preventive behavioural intentions to adopt new and risk behavioural intentions. Lack of money and peer pressure motivated some adolescents to adopt new intentions which may increase their susceptibility to HIV and AIDS. Reuter, Ziegelmann, Wiedemann, Geiser, Lippke, Schüz & Schwarzer (2010) indicated that some adolescents' change in intentions may translate to behaviour change.

5.7.2 Theoretical category 2: Subjective norms

The data indicated that personal and social pressures were subjective norms that influenced some adolescents to accept or reject HIV and AIDS preventive behaviour (see Section 4.8.2). Some adolescents could be motivated by individual reasons and some elements from their social ecology settings to accept or reject HIV and AIDS preventive behavioural intentions (see Section 5.5).

5.7.3 Theoretical category 3: Perceived behavioural control

Perceived behavioural control describes the ease or difficulty in performing intended behaviour. Lack of skills or abilities, absence of safety equipment and shortage of health personnel could make it difficult for some adolescents to perform their intended HIV and AIDS preventive behaviour (see Section 4.8.3 & 5.3) thereby, exposing them to the virus.

5.7.4 Theoretical category 4: Knowledge

In this study, knowledge of factors that contributes to HIV and AIDS and knowledge of how HIV and AIDS could be prevented can be a factor to reduce adolescents' HIV

and AIDS prevalence (see Sections 4.3; 4.4; 4.5; 4.6 & 4.7). However, lack of knowledge and lack of application of knowledge may expose some adolescents to contract HIV and AIDS. Some adolescents may lack knowledge of skills and abilities to practise their intended HIV and AIDS preventive behaviour as described in Sections 4.3; 4.7 and 5.5. More so, some adolescents may not apply their HIV and AIDS preventive behaviour due to wrong choices or influences from their social ecology settings.

5.7.5 Theoretical category 5: Social ecology settings

In line with the Social Ecology Theory, some influences from some adolescents' social ecology settings influence their intentions, perceived behavioural control and knowledge. For example, novel findings depict that pornographic films in the social media may influence some adolescents' sexual behaviour exposing them to the virus. In this study, social media has been used to extend the exosystems of the social ecology setting. More so, influences from some adolescents' cultural customs and traditional practices, their macrosystem may contribute to their HIV and AIDS prevalence.

5.7.6 The multiple factors contributing to high HIV and AIDS prevalence amongst adolescents in Gauteng province: a new model

The researcher used the findings to develop a new multifaceted theoretical model of factors participants perceived are contributing to adolescents' high HIV and AIDS prevalence. The researcher further indicated how relevant stakeholders may use the new multifaceted theoretical model to carry out HIV preventive intervention amongst adolescents.

The researcher presented a diagram to indicate the new model.

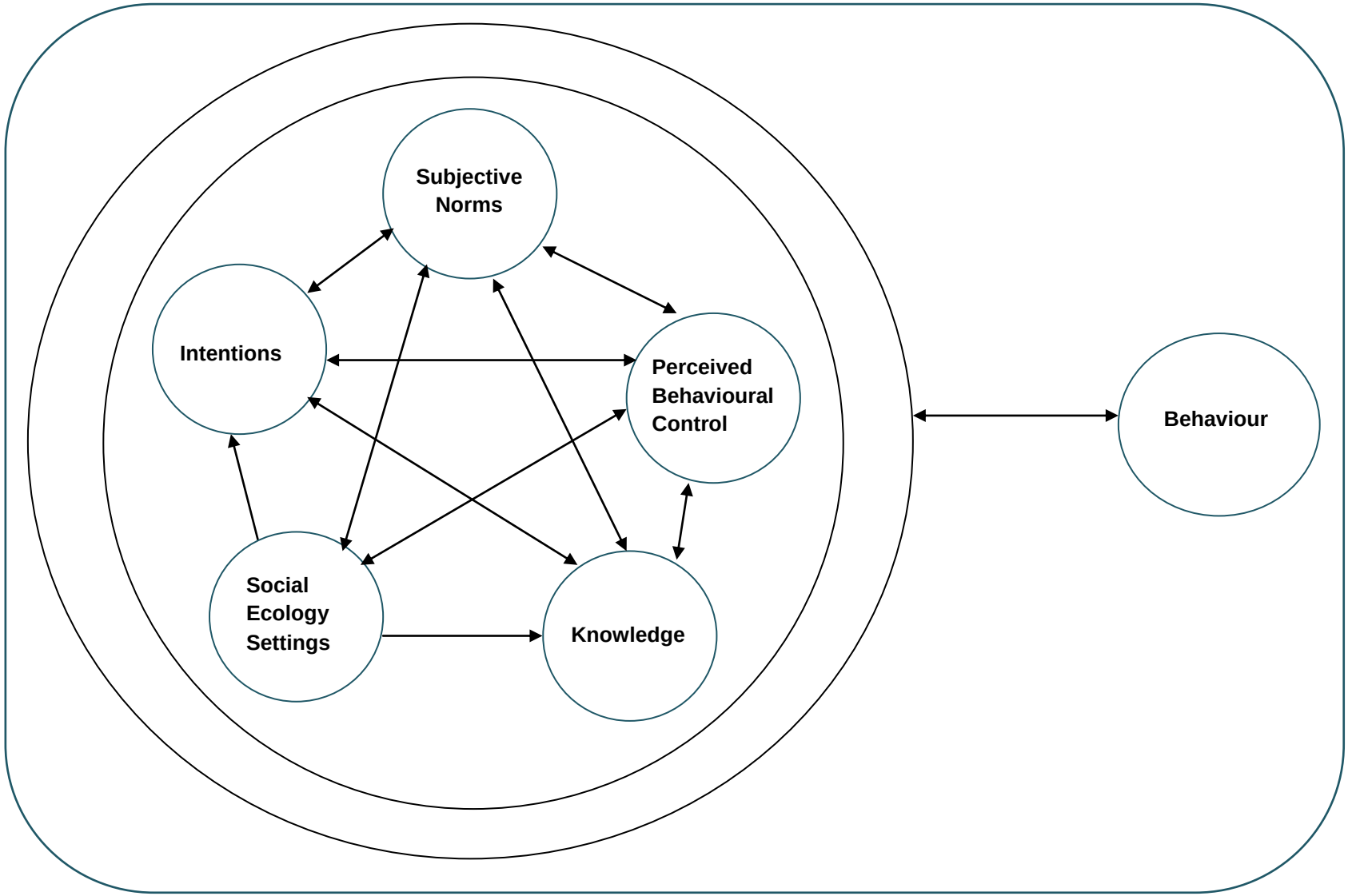

Figure 5.1: Multiple factors contributing to high HIV and AIDS prevalence amongst adolescents: A new model.

In the rest of the document, the new multifaceted theoretical model will be referred to as multiple factors contributing to high HIV and AIDS prevalence amongst adolescents. The new model of multiple factors contributing to high HIV and AIDS prevalence amongst adolescents could be used to develop HIV prevention interventions. Relevant stakeholders who would prefer to use the new multifaceted theoretical model for intervention are encouraged to carry out qualitative intervention on adolescents and a longitudinal study.

5.8 CONCLUDING REMARKS

The researcher identified findings from the data to answer the research questions. The researcher constructed five theoretical categories from the synthesis of main findings of factors that contribute to high HIV and AIDS prevalence amongst adolescents. These five theoretical categories were used to develop the multiple factors contributing to high HIV and AIDS prevalence model. In the next chapter, the researcher wrote a summary of the study and reached conclusions.

CHAPTER SIX: CONCLUSION

6.1 INTRODUCTION

In the previous chapter, the researcher presented findings of the study and identified five theoretical categories to develop the new multifaceted theoretical model. In this chapter the researcher presents a summary of the study including limitations and recommendations. The researcher also made suggestions for further research and conclusion.

6.2 SUMMARY OF FINDINGS

In summary, this study revealed that factors that contribute to high HIV and AIDS prevalence amongst adolescents were intentions, subjective norms, perceived behavioural control, knowledge and social ecology settings. Based on the findings, the researcher agrees that intentions could be inhibited and intentions could change because if intentions have not been translated into behaviour, it could be changed or inhibited. Although the study of Fisher *et al.* (2002), found that peer based intervention could not uphold HIV and AIDS preventive behaviour, the researcher supports that some adolescents may be easily influenced by their peers to adopt behaviours that could expose them to the virus. The findings establish that some adolescents may come from unstable homes which may easily influence them to imitate negative role models such as their peers or celebrities. Furthermore, King (2014) indicated that adolescents are in their experimental stage and as a result, they may experiment with behaviours that may expose them to the virus.

The researcher agrees that lack of skills or abilities, lack of safety equipment and shortage of health personnel could make it difficult for some adolescents to practise their intended HIV and AIDS preventive behaviour. More so, inability to practise acquired HIV and AIDS preventive behaviour may expose some adolescents to the virus.

Some adolescents may be motivated by lack of money, culture and their employment and employability status to reject HIV and AIDS preventive behaviour.

Adolescents' social ecology settings such as their microsystem, their mesosystem, their exosystem, their macrosystem and their chronosystems impacted on all the factors incorporated in this new model that contributed to their high HIV and AIDS prevalence. In addition, multiple factors contributing to high HIV and AIDS prevalence amongst adolescents' model extended the exosystem of the social ecology settings.

This study provided broader perspective of factors contributing to high HIV and AIDS prevalence amongst adolescents. In addition, the researcher's model extended some theoretical categories and incorporated some categories these existing three models downplay, to develop this new model. It is hoped that the new multifaceted theoretical model developed from this study could provide the basis for the development of a broader and longer lasting HIV and AIDS interventions than the interventions based on previously developed models.

6.3 LIMITATIONS OF THE STUDY

In this section, the researcher addressed some weaknesses of the study. The researcher acknowledges that this research was not a longitudinal study. The implication for this study is to determine if participants' narratives or opinions would change over time. Furthermore, this study may not be generalised to the general population of adolescents in South Africa. The researcher used a non-random sampling method and the sample size used for this study is not a representation of all adolescents in South Africa.

6.4 RECOMMENDATIONS

Based on the findings of this study, I recommend that the Department of Education, the Department Social Development, the Department of Health, Non-governmental Organisations (NGO's) and Non Profit Organisations (NPO's) should be encouraged to jointly carry out HIV and AIDS preventive interventions using the new multifaceted theoretical model developed from this study to both school going and out of school adolescents.

It is recommended that education and health policies should focus on how adolescents could practically implement their knowledge of HIV and AIDS preventive measures.

In addition, policy makers and other stakeholders should adopt this new multifaceted theoretical model to plan both education and health policies.

6.5 TESTING OF RESULTS

In line with the qualitative nature of the study, the researcher tested the trustworthiness and validity of the results using credibility, confirmability, dependability and transferability (Lincoln & Guba, 1985). Credibility measures the extent of the accuracy or true value of the results that is established from the participants (Lincoln & Guba, 1995). In measuring credibility of results, the researcher used some aspects of the Grounded Theory research strategy during interviews, coding and comparative analysis of incidents (see Sections 3.2 & 4.2). The researcher embraced the back and forth data collection and analysis methods to recognize inconsistencies that may affect the results. More so, the researcher situated the study in the Theory of Planned Behaviour, the Information Motivation Behaviour Skills Model and the Social Ecology Theory to find out if these factors adolescents reported were previously described in these existing three models (see Sections 4.8; 4.8.1; 4.8.2; 4.8.3; 4.8.4 & 4.8.5). In addition, the researcher used prolonged engagement (Lincoln & Guba, 1985) to test credibility (see Section 3.7). The use of some aspects of the Grounded Theory method, situating the data in the context of the existing three models as well as prolonged engagement were to ensure that thick descriptive data of factors the participants identified that contribute to adolescents' high HIV and AIDS prevalence in order to develop a multifaceted theoretical model.

Confirmability measures the extent to which findings were obtained from interviews data and research condition rather than from the researcher biases (Linclon and Guba, 1985). To ensure confirmability of results, the researcher went back to participants during data analysis to verify or confirm results (see Section 3.2 & 3.5).

In addition, the researcher ensured that factors used to develop the new multifaceted theoretical model were derived from learners' perceptions on factors contributing to adolescents' high HIV and AIDS prevalence, through back and forth data collection and comparing incidents or stories of adolescents. More so, the researcher used verbal quotations of the participants during the interviews to analyse the results (see Sections 4.3; 4.4; 4.5; 4.6 & 4.7).

Transferability or applicability of results means how the results may be transferred to another setting. The ontological stance implied that the results may vary when tested in another setting. Since multiple realism exists, the findings of this study may not be generalised. However, rich thick descriptive data could ensure that findings of this study may be applicable to an extent in similar contexts (Creswell & Miller, 2000). As a result, the researcher used back and forth collection and analysis of data to collect and analyse data in order to eliminate irrelevant information and to get rich data of factors participants think that contribute to adolescents' high HIV and AIDS prevalence.

Finally, dependability is the repetition of the research procedure and method over time using the same sample or similar sample (Guba and Lincoln, 1985). To ensure the dependability of this study, the researcher tape-recorded all interviews to ensure that the research process and method are free from error more so, tape-recorded interviews could be kept over time (see Section 3.7).

6.6 CONTRIBUTION TO PRACTICAL AND THEORETICAL KNOWLEDGE

This study contributes to the knowledge base on factors contributing to HIV and AIDS prevalence amongst adolescents in Gauteng province of South Africa. The study also confirms existing studies that emphasise the factors contributing to high HIV prevalence as well as identifies new factors that hitherto were not regarded as contributing to adolescents' high HIV and AIDS prevalence.

The study used the identified factors to develop a new multifaceted theoretical model of factors contributing to high HIV and AIDS prevalence amongst adolescents. The new multifaceted theoretical model developed from this study combined three

existing models as well as newly identified factors that learners perceived that were contributing factors to adolescents' high HIV and AIDS prevalence. The study extended some theoretical categories of these three existing frameworks.

The study contributed to new multifaceted theoretical model that could be used in designing HIV interventions that may be broader in perspective and may reduce HIV and AIDS prevalence amongst adolescents.

Researchers, policy makers and educators may use the new models of factors of contributing to adolescents' high HIV and AIDS prevalence.

6.7 SUGGESTIONS FOR FURTHER RESEARCH

These areas that were found in the study need further investigation by other researchers.

In this study, it was found that incest and intimate partner violence could expose some adolescents to the virus. Therefore investigations should be carried out on incarcerated or previously convicted perpetrators of rape on what contributed to the crime of raping adolescents or intimate partners. Research should also be carried out on victims of rape to discover the circumstances of the crime and how rape in such circumstances could be avoided.

This study shows that some adolescents linked exposure to HIV and AIDS to viewing pornographic films that they accessed from social media. Therefore investigations should be made on how adolescents could adopt positive uses for social media.

Research should be carried out on how learners could practise their acquired HIV and AIDS preventive knowledge as behaviour.

Studies should address how cultural customs and traditional practices could be used to inform HIV and AIDS prevention campaigns amongst adolescents.

Further research should be carried out on how orphaned adolescents, adolescents from poor financial backgrounds and adolescents whose parents were unemployed access child support grants and fees exemption from the Department of Social Development and the Department of Education.

In addition, investigations should be carried out on how to enhance skills development amongst adolescent school dropouts.

Finally, this study developed a HIV and AIDS intervention multifaceted theoretical model, as a result, HIV and AIDS prevention interventions should be carried out amongst adolescents using the new multifaceted theoretical model of multiple factors contributing to adolescents' high HIV and AIDS prevalence.

6.8 CONCLUSION

In this study, the researcher developed a multifaceted theoretical model of determinants of HIV infection amongst adolescents which combined three existing models and newly identified factors as was perceived by participants. The Theory of Planned Behaviour is a model which could be used to predict adolescents HIV and AIDS behaviour but it is not a model for behavioural change. The Social Ecology Theory is a model which expresses the influence of environment on an individual behaviour. The Social Ecology Theory could explain the influence of adolescents' environment on adolescents HIV and AIDS behaviour but it is not a model for behavioural change. The Information Motivation Behaviour Skills Model is a model for HIV and AIDS behavioural intervention which downplays influences of adolescents' social ecology settings that may contribute to HIV infection amongst adolescents.

The three individual models when used to design HIV and AIDS interventions were found to be narrow in their perspectives and their results were short-lived. According to the Theory of Planned Behaviour, intentions could predict HIV and AIDS behaviour. However, this study extended intention to comprise of personal intentions, barriers that inhibit intentions and changes in intentions. Moreover, the

exclusion of knowledge in the Theory of Planned Behaviour could reveal that some adolescents who lack skills or abilities to perform their HIV and AIDS preventive behavioural intentions may not realise their intended behaviours. Consequently, this study included knowledge and influences of social ecology settings on intentions. The Theory of Planned Behaviour described subjective norms as societal pressures that influence intentions to adopt any behaviour. This study incorporated the definition of motivation by the Information Motivation Behavioural Skills Model into the new definition of subjective norms. This study defined subjective norms as personal and social pressures that may influence adolescents to accept or reject HIV and AIDS preventive behaviours. In this study, it was elucidated that perceived behavioural control is influenced by lack of skills or abilities, lack of safety equipment and shortage of health personnel. Moreover, this study integrated behavioural skills as described by the Information Motivation Behaviour Skills Model into skills and abilities of perceived behavioural control.

In the Information Motivation Behaviour Skills Model, motivation to carry out HIV and AIDS preventive behaviour was based on information, motivation and behavioural skills. In this study, some adolescents did not possess knowledge or skills and abilities to carry out their intended HIV and AIDS preventive behaviours. This could infer that these adolescents were not taught practical skills on how to use condoms and or abilities to negotiate for using condoms. More so, influences from some elements of their social ecology settings influenced some adolescents to reject their intended HIV and AIDS preventive behaviour despite their knowledge of preventive measures.

The Social Ecology Theory as a social ecosystem emphasises the interrelationship between social ecology settings and adolescents' HIV and AIDS prevalence. This study confirms that all social ecology settings may influence adolescents' intentions, perceived behavioural control and knowledge contributing to their high HIV and AIDS prevalence. However, this study extended the exosystem of adolescents' social ecology settings to include social media.

The researcher used these five theoretical categories: intentions, subjective norms, perceived behavioural control, knowledge and social ecology settings to develop the new multifaceted theoretical model. The model developed from this study is broader in perspective because it combined three models and added newly identified factors that contribute to adolescents' high HIV and AIDS prevalence. The researcher used newly identified factors to extend some theoretical categories of some of these three existing models. Consequently, interventions designed using this new multifaceted theoretical model may produce lasting results, subsequently, reducing adolescents' high HIV and AIDS prevalence. The researcher identified the contributions of the study and made recommendations for further research.

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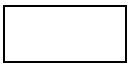
8. APPENDICES

8.1 Appendix A: Interview questions

1. How old are you?



2. What do learners do that cause them to contract HIV/AIDS?
3. What do you think influence young people to behave in a way that cause them to get infected with HIV/AIDS?
4. What do you think influence learners from their home that cause them to contract HIV/AIDS?
5. What do you think influence learners from the school environment that cause learners to get infected with HIV/AIDS?
6. What do you think influence learners from the society that cause learners to get infected with HIV/AIDS?
7. What do you think influence learners from their cultures that cause learners to get contract HIV/AIDS?
8. What do you think young people should do to prevent them from getting infected with HIV/AIDS?

8.2 Appendix B: Gauteng Department of Education- Consent Letter

GAUTENG PROVINCE
Department: Education
REPUBLIC OF SOUTH AFRICA

For administrative use:
Reference no: D2016 / 159
enquiries: Diane Buntting 011 843 6503

GDE RESEARCH APPROVAL LETTER

Date:	**27 July 2015**
Validity of Research Approval:	**27 July 2015 to 2 October 2015**
Name of Researcher:	**Ifekoya K.O.**
Address of Researcher:	**Department of Science Mathematics and technology Education; University of Pretoria; Groenkloof Campus; 0002**
Telephone / Fax Number/s:	**012 420 5569; 078 747 3135**
Email address:	**kletcho4u@yahoo.com**
Research Topic:	**A multifaceted theoretical framework that informs HIV/AIDS knowledge base on factors contributing to high prevalence rates**
Number and type of schools:	**THREE Secondary Schools**
District/s/HO	**Johannesburg East**

Re: Approval in Respect of Request to Conduct Research

This letter serves to indicate that approval is hereby granted to the above-mentioned researcher to proceed with research in respect of the study indicated above. The onus rests with the researcher to negotiate appropriate and relevant time schedules with the school/s and/or offices involved. A separate copy of this letter must be presented to the Principal, SGB and the relevant District/Head Office Senior Manager confirming that permission has been granted for the research to be conducted. However participation is VOLUNTARY.

The following conditions apply to GDE research. The researcher has agreed to and may proceed with the above study subject to the conditions listed below being met. Approval may be withdrawn should any of the conditions listed below be flouted:

CONDITIONS FOR CONDUCTING RESEARCH IN GDE

1. The District/Head Office Senior Manager/s concerned must be presented with a copy of this letter;

2015/07/27

Office of the Director: Knowledge Management and Research
9th Floor, 111 Commissioner Street, Johannesburg, 2001
P.O. Box 7710, Johannesburg, 2000 Tel: (011) 355 0506
Email: David.Makhado@gauteng.gov.za
Website: www.education.gpg.gov.za

2. A copy of this letter must be forwarded to the school principal and the chairperson of the School Governing Body (SGB);
3. A letter / document that outlines the purpose of the research and the anticipated outcomes of such research must be made available to the principals, SGBs and District/Head Office Senior Managers of the schools and districts/offices concerned;
4. The Researcher will make every effort obtain the goodwill and co-operation of all the GDE officials, principals, SGBs, teachers and learners involved. Participation is voluntary and additional remuneration will not be paid;
5. Research may only be conducted after school hours so that the normal school programme is not interrupted. The Principal and/or Director must be consulted about an appropriate time when the researcher/s may carry out their research at the sites that they manage;
6. Research may only commence from the second week of February and must be concluded before the beginning of the last quarter of the academic year. If incomplete, an amended Research Approval letter may be requested to conduct research in the following year;
7. Items 6 and 7 will not apply to any research effort being undertaken on behalf of the GDE. Such research will have been commissioned and be paid for by the Gauteng Department of Education.
8. It is the researcher's responsibility to obtain written parental consent and learner;
9. The researcher is responsible for supplying and utilising his/her own research resources, such as stationery, photocopies, transport, faxes and telephones and should not depend on the goodwill of the institutions and/or the offices visited for supplying such resources;
10. The names of the GDE officials, schools, principals, parents, teachers and learners that participate in the study may not appear in the research report without the written consent of each of these individuals and/or organisations;
11. On completion of the study the researcher must supply the Director: Education Research and Knowledge Management with one Hard Cover, an electronic copy and a Research Summary of the completed Research Report;
12. The researcher may be expected to provide short presentations on the purpose, findings and recommendations of his/her research to both GDE officials and the schools concerned; and
13. Should the researcher have been involved with research at a school and/or a district/head office level, the Director and school concerned must also be supplied with a brief summary of the purpose, findings and recommendations of the research study.

The Gauteng Department of Education wishes you well in this important undertaking and looks forward to examining the findings of your research study.

Kind regards

.....

Dr David Makhado

Director: Education Research and Knowledge Management

DATE: 2015/07/27

8.3 Appendix C: Consent letter to principals and teachers

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

DEPARTMENT OF SCIENCE, MATHEMATICS AND TECHNOLOGY EDUCATION
FACULTY OF EDUCATION
Groenkloof Campus
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Tel: (012) 420 5569
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Dear Sir/madam,

I am a student at the University of Pretoria and I am enrolled for a PhD degree in Science Education. I request your permission to collect data from the learners at your school. This is part of my PhD project titled: **A multifaceted theoretical framework that informs HIV/AIDS knowledge base on factors contributing to high prevalence rates**. Participating learners will respond to one interview (please see the attached interview schedule) that asks questions about learners' understanding of factors contributing to HIV/AIDS high prevalence, as well as behavioural patterns related to HIV/AIDS.

Some of the interview questions may be considered to be sensitive as participants will be asked to give information about whether they think the society and culture influence young people's decision on HIV/AIDS? As well as questions on what they think young people can do to protect themselves from HIV/AIDS infection? May I please the request you give the contact details of your school counsellors. This is to prepare should any emotional incident occur so that I may give learners the contact details of the counsellor bearing in mind anonymous nature of the study.

I will only be working with Grade 11 learners. I will do the interview at the school of the learners or a venue of their choice with the permission of their Principal and at a time that will not interfere with their classes. I hope that the interview will not last for longer than 45 minutes. The interview will be audio taped and transcribed by me.

Learners who are willing to participate in the study will be requested to read through the assent letters that will be provided to them. If they choose to participate in the study, they will complete the assent form and return the assent forms to me. The parents or legal guardian of learners will also be requested to go through the consent forms and if they choose that their child or ward may participate in the study will complete the consent forms and return to me.

I hope that the results of the study will be useful for the development of informed response strategies/theoretical framework that will be used for HIV/AIDS intervention. The results of this project will be submitted as a report for my doctoral degree, published in scientific journals, presented at conferences and on the internet.

Learners' participation will be governed by the following terms:

1. The name of the learners will not be used in the study. We will choose a pseudonym (nickname) that will be used if we want to refer to what the learner said in the interview. Their names will not be used in the verbal and written records and reports.
2. The responses from the learners will be treated in a confidential manner and the recordings will only be heard by the learner, the researcher (Mrs Kelechi Ifekoya) and the supervisor (Dr Mia Abrie). When the recording is typed up, the documents will also be seen only by the learner, the researcher (Mrs Kelechi Ifekoya) and the supervisor (Dr Mia Abrie).
3. No one at the school will be told what any learner said. Nothing that learners say in the interview will be revealed to other persons in a manner that will reveal their identity.
4. Participation in this research is voluntary. Learners have the right to withdraw during the interview.
5. If the participants, schools and the government would like to know what we found out during the research, a summary of the findings will be made available accordingly
6. No direct benefit will be given to learners or their school.

If you have any questions or concerns about this consent letter you may contact me or my supervisor at the following details:

Mrs Kelechi Ifekoya

78 Eden Road Bramley

Tel: 078 747 3135

Email: kletcho4u@yahoo.com

Dr Mia Abrie

University of Pretoria

Tel: (012) 420 5569

Email: mia.abrie@up.ac.za

Yours sincerely,

Mrs Kelechi Ifekoya

Signature

Signature

Date

If you do agree that your school should participate in the study under the above stated terms, please fill in the consent form and return the form to me.

Consent Form: parents and legal guardian

DEPARTMENT OF SCIENCE, MATHEMATICS AND TECHNOLOGY EDUCATION
FACULTY OF EDUCATION
Groenkloof Campus
Pretoria 0002
Republic of South Africa
Tel: (012) 420 5569
Fax: (012) 420 5621
http://www.up.ac.za

I have read the consent letter and understand the terms of participation as explained in the consent letter.

I do agree/do not agree (delete what applies to you) that my child may participate in the research titled: A multifaceted theoretical framework that informs HIV/AIDS knowledge base on factors contributing to high prevalence rates.

I do agree/do not agree (delete what applies to you) that my child will be interviewed at the school during break or after school for a period not longer than 45mins. The interview will be audio taped and transcribed by the researcher.

I do understand that participation is voluntary and that learners have the right to withdraw during the interview.

Parent's signature: _____

Date: _____

8.4 Appendix D: Consent letter to parents or legal guardians

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

DEPARTMENT OF SCIENCE, MATHEMATICS AND TECHNOLOGY EDUCATION
FACULTY OF EDUCATION
Groenkloof Campus
Pretoria 0002
Republic of South Africa
Tel: (012) 420 5569
Fax: (012) 420 5621
http://www.up.ac.za

Dear Sir/madam,

I am a student at the University of Pretoria and I am enrolled for PhD degree in Science Education. I am asking for permission for your child to participate in my research. This is part of my PhD project titled: **A multifaceted theoretical framework that informs HIV/AIDS knowledge base on factors contributing to high prevalence rates**. Participating learners will respond to one interview (please see the attached interview schedule) that asks questions about learners' understanding of factors contributing to high HIV/AIDS prevalence, as well as behavioural patterns related to HIV/AIDS.

Some of the interview questions may be considered to be sensitive as participants will be asked to give information about whether they think the society and culture influence young people's decision on HIV/AIDS? As well as questions on what they think young people can do to protect themselves from HIV/AIDS infection?

I will only be working with Grade 11 learners. I will do the interview at the school of the learners or a venue of their choice with the permission of their Principal and at a time that will not interfere with their classes. I hope that the interview will not last for longer than 45 minutes. The interview will be audio taped and transcribed by me.

Learners who are willing to participate in the study will be requested to read through the assent letters that will be provided to them. If they choose to participate in the study, they will complete the assent form and return the assent forms to me.

I hope that the results of the study will be useful for the development of informed response strategies/theoretical framework that will be used for HIV/AIDS

intervention. The results of this project will be submitted as a report for my doctoral degree, published in scientific journals, presented at conferences and on the internet.

Learners' participation will be governed by the following terms:

7. The name of the learners will not be used in the study. We will choose a pseudonym (nickname) that will be used if we want to refer to what the learner said in the interview. Their names will not be used in the verbal and written records and reports.
8. The responses from the learners will be treated in a confidential manner and the recordings will only be heard by the learner, the researcher (Mrs Kelechi Ifekoya) and the supervisor (Dr Mia Abrie). When the recording is typed up, the typed document will only be seen by the learner, the researcher (Mrs Kelechi Ifekoya) and the supervisor (Dr Mia Abrie).
9. Nothing that the learners said in the interview will be revealed to other persons in a manner that will reveal their identity.
10. Participation in this research is voluntary. Learners have the right to withdraw during the interview.
11. If the participants, the schools and the government would like to know what we found out during the research, a summary of the findings will be made available accordingly.
12. No direct benefit will be given to learners or their school.

If you have any questions about the consent letter you may contact me or my supervisor at the following details:

Mrs Kelechi Ifekoya

78 Eden Road Bramley

Tel: 078 747 3135

Email: kletcho4u@yahoo.com

Dr Mia Abrie

University of Pretoria

Tel: (012) 420 5569

Email: mia.abrie@up.ac.za

Yours sincerely,

Mrs Kelechi Ifekoya

Signature

Signature

Date

If you approve of your child's participation in the study under the above stated terms, please fill in the consent form below and return the form to me.

Consent Form: parents and legal guardian

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YUNIBESITHI YA PRETORIA

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http://www.up.ac.za

I have read the consent letter and understand the terms of participation as explained in the consent letter.

I do agree/do not agree (delete what applies to you) that my child may participate in the research titled: A multifaceted theoretical framework that informs HIV/AIDS knowledge base on factors contributing to high prevalence rates.

I do agree/do not agree (delete what applies to you) that my child will be interviewed at the school after school for a period not longer than 45mins. The interview will be audio taped and transcribed by the researcher.

I do understand that participation is voluntary and that learners have the right to withdraw during the interview.

Parent's signature: _____

Date: _____

8.5 Appendix E: Assent letter to learners

UNIVERSITEIT VAN PRETORIA
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Republic of South Africa
Tel: (012) 420 5569
Fax: (012) 420 5621
http://www.up.ac.za

Dear Learner,

I am a student at the University of Pretoria and I'm enrolled for a PhD degree in Science Education. I am trying to find out why HIV/AIDS is such a problem in schools in Gauteng. I need to ask Grade 11 learners like you to help me to collect data for my research. Will you be willing to be interviewed about your understanding of factors that contribute to high HIV/AIDS prevalence, as well as behavioural patterns related to HIV/AIDS? I will be very grateful if you will agree to this.

Some of the questions in the interview may be sensitive as you will be expected to provide details about behaviour and attitudes that young people have about HIV/AIDS. I will ask you to tell me why you think that young people in Gauteng province expose themselves to HIV/AIDS infection. What do you think that they can do to protect themselves from HIV/AIDS infection and what will influence some young people to protect themselves from HIV/AIDS infection? Do you think that society and culture influence young peoples' decisions? As you go through these questions, you might experience strong emotions.

I will come to your school to do the interview or a venue of their choice, at a time that will not interfere with your classes and with the permission of your Principal. I hope that the interview will not last for longer than 45 minutes. The interview will be audio taped (I will record what you say), and this will be typed up so that I can read what you said. This will make it easier for me to combine what you said to me with what other learners have said.

The results of this project will be submitted as a report for my doctoral degree for which I am studying at the University of Pretoria. The results will be published in scientific journals and presented at conferences as well as on the internet.

Should you decide to participate, the following terms will apply:

1. Your name will not be used in the study. We will choose a pseudonym (nickname) that will be used if we want to refer to what you said in the interview. Your name will not be used in the verbal and written records and reports.
2. Your responses will be treated in a confidential manner and the recordings will only be heard by you, the researcher (Mrs Kelechi Ifekoya) and the supervisor (Dr Mia Abrie). When the recording is typed up, the documents will also be seen only by you, the researcher (Mrs Kelechi Ifekoya) and the supervisor (Dr Mia Abrie).
3. No one at your school will be told what you said. Nothing that you say in the interview will be revealed to other persons in a manner that will reveal your identity.
4. Participation in this research is voluntary. You have the right to withdraw your participation or not to answer specific questions that you do not want.
5. No direct benefit will be given to you or your school.

If you have any questions or concerns about being in the study, you may contact me or my supervisor at the following telephone numbers or addresses:

Mrs Kelechi Ifekoya

78 Eden Road Bramley

Tel: 078 747 3135

Email: kletcho4u@yahoo.com

Dr Mia Abrie

University of Pretoria

Tel: (012) 420 5569

Email: mia.abrie@up.ac.za

Yours sincerely,

Mrs Kelechi Ifekoya

Signature

Signature

Date

If you agree to participate in the study as we have described it in this letter, please fill in the assent form below and return the assent form to me.

Assent Form learners

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
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DEPARTMENT OF SCIENCE, MATHEMATICS AND TECHNOLOGY EDUCATION
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Groenkloof Campus
Pretoria 0002
Republic of South Africa
Tel: (012) 420 5569
Fax: (012) 420 5621
http://www.up.ac.za

I have read the assent letter and understand the terms of participation as explained in the assent letter.

I do agree/do not agree (delete what applies to you) to participate in the research titled: A multifaceted theoretical framework that informs HIV/AIDS knowledge base on factors contributing to high prevalence rates.

I do agree/do not agree to be interviewed by the researcher at the school for not longer than 45mins after school hours. The interview will be recorded and typed up.

I do understand that participation is voluntary and I have the right to withdraw during the interview.

Date of birth: (DD/MM/YY)_____

Signature: _____

Date:_____

8.6 Appendix F: Initial coding of factors participants think contribute to high HIV and AIDS prevalence amongst adolescents

The following codes were identified from interviews data:

1. Early sexual debut
2. Unprotected sex
3. Multiple sexual partners
4. Lack of knowledge of partners status
5. Sex for financial benefits
6. Pornography accessed and shared through social media
7. Fathers raping daughters or step fathers raping step daughters
8. Boyfriends raping their girlfriends
9. Mother-to- child transmission
10. Some adolescents are products of rape
11. Lack of parental advice
12. Poverty
13. Family past history
14. Parental unemployment
15. Parenting
16. Lack of parental involvement
17. Lack of parental guidance and supervision
18. Parental unavailability
19. Orphaned adolescents
20. Parents' sexual behaviour
21. Family health practises
22. Single mothers' inability to train their adolescent boys
23. Family background
24. Parents afraid of their adolescent boys becoming homosexuals
25. Sexual intercourse not discussed in black African families
26. Driving under the influence of alcohol
27. Driving parents' cars without driver's license
28. Causing road accident by driving without licence
29. Causing road accident by driving under the influence of alcohol
30. Peer pressure

31. School tables and chairs used as weapons for school fights
32. Assisting injured friends without gloves
33. Lack of gloves at schools to assist victims of school fight
34. Shortage of school health personnel
35. Sharing of injection needles
36. Alcohol and drugs use
37. Poor living conditions and poor environments
38. Low self-esteem
39. Following trend or fitting in
40. Spiking of drinks
41. Raping intoxicated and drugged adolescents
42. Imitating role models sexual behaviours
43. Developing self-worthless
44. Incomplete information on prevention of HIV and AIDS
45. Teachers incomplete education is the information on HIV and AIDS
46. Sharing sharp objects at schools
47. Polygamous men influence multiple sexual partners
48. Influence of music
49. Low standard of social settings
50. Low mind sets
51. Mentally underdeveloped
52. Comparing and imitating past generation in practising unprotected sex
53. Comparing and imitating past generation in practising cultural circumcision
54. Unemployed adolescents school dropout males stabbing people in the community with same knife
55. Community members assisting stabbed victims without gloves
56. No health personnel to assist stabbed victims
57. Unemployed female adolescents practising sex for money
58. Unemployed female adolescents practising unprotected sex and multiple partnerships
59. Road accidents
60. Imitating celebrities
61. Female school drop outs desire to qualify for child support grants
62. Cultural virginity testing

63. Medically unauthorised male cultural circumcision
64. Raping a virgin as cure for HIV and AIDS
65. Family members sharing same razor blade during cultural incisions
66. Lack of proper disposal of shared razor used during cultural incisions
67. Family members sharing same tooth brush during cultural ceremonies
68. Sharing same tooth brush with family members whose gums are bleeding
69. Borrowing and sharing cultural hats with bleeding heads
70. Under aged female adolescents forced cultural marriages with polygamist husbands
71. Forced sex by polygamist husbands in cultural marriages
72. Under aged female adolescents in forced cultural marriages cannot decide use of condom
73. Culture encourages early sexual debut
74. Rape influenced by cultural clothes
75. Abstain from sex
76. Delayed sex until you are able to deal with the consequences
77. Use of condoms during sex
78. Testing for your status and the status of your partner
79. Know your status and your partners status
80. Free HIV testing at government clinics
81. Avoid contact with blood
82. Avoid sex for money
83. Have one single sexual partner
84. Pictures of people who contact STI's positive persons
85. Mental image of the HIV positive persons
86. Parents, relatives and teachers teaching about HIV prevention

8.7 Appendix G: Focused codes of factors participants think contribute to high HIV and AIDS prevalence amongst adolescents

The focused codes were categorised under related categories with their sub categories.

1. Sexual risk behaviours

Unprotected sex

Transactional sex

Early sexual debut

2. Peer pressure

Peer pressure

Alcohol and drug use

Pornography

3. Lack of parental supervision and guidance

Lack of parental involvement

Lack of parental advice

Lack of parental availability

Lack of parental guidance and supervision

4. Orphanhood

Death of parents

5. Driving under the influence of alcohol and untrained drivers

Driving under the influence of alcohol

Untrained drivers

6. Rape

Incest

Raping of virgins

Spiking of drinks

Intimate partner violence

7. Contact with blood

Health practises

Cultural incision

Violence

Lack of safety equipment and health personnel

Sharing of injection needle and toothbrush

8. Mother-to-child-transmission
9. Cultural practices

Cultural circumcision

Early marriages

10. Role models

Imitating celebrities and role models

11. Knowledge of HIV preventive measures

Abstinence or delayed sex

Use of condoms

Testing for status

Avoid contact with blood

Number of sexual partner

8.8 Appendix H: Conceptual categories

During comparative analysis of incidents some of the codes were subsumed as more analytical categories emerged. These following conceptual categories were identified from the comparative analysis of this research:

1. **Risk behaviour factors**

- Sexual risk behaviours
- Peer pressure
- Lack of parental supervision
- Orphanhood
- Driving under the influence of alcohol and untrained drivers

2. **Sexual abuse**

- Sexual abuse

3. **Health factors**

- Contact with blood
- Mother-to-child transmission (MTCT)

4. **Social factors**

- Cultural practices
- Role models

5. **Knowledge factors**

- Knowledge of HIV prevention measures