

THE MODERATOR EFFECT OF FUTURE TIME  
PERSPECTIVE IN THE RELATIONSHIP BETWEEN  
**SELF-EFFICACY AND RISKY SEXUAL BEHAVIOUR**

by

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## Abstract

The aim of this study was to investigate the moderator effect of future time perspective in the relationship between self-efficacy and risky sexual behaviour. A random cluster consisting of 497 Grade 12 learners from English medium high schools within the Mangaung Community of Bloemfontein participated in this study.

The participants' risky sexual behaviour was measured by determining the sexual activities in which they take part, namely vaginal sex, anal sex, oral sex, and withdrawal. Furthermore, an indication of their use of condoms within these activities was also obtained. To determine the presence of self-efficacy and future time perspective, individual measuring instruments were used. Product term regression analysis was performed to determine the relationship between self-efficacy and risky sexual behaviour and alternatively the relationship between future time perspective and risky sexual behaviour. The effect of future time perspective as moderator variable in the relationship between self-efficacy and risky sexual behaviour was also investigated.

The results indicate that both self-efficacy and future time perspective are negatively related to risky sexual behaviour. Additionally, a moderating effect was not found for future time perspective in the relationship between self-efficacy and risky sexual behaviour. In other words, future time perspective has a direct relationship to risky sexual behaviour and consequently does not influence self-efficacy.

Key words and phrases: **moderator effect, self-efficacy, future time perspective, risky sexual behaviour, vaginal sex, anal sex, oral sex, withdrawal, product term regression analysis.**

## Abstrak

Die doel van hierdie studie was om die moderator-effek van toekomstydsperspektief in die verband tussen selfdoeltreffendheid en seksuele risiko-gedrag te ondersoek. 'n Ewekansige steekproef bestaande uit 497 Graad 12 leerders van Engels-sprekende hoërskole in die Mangaung Gemeenskap van Bloemfontein het aan die studie deelgeneem.

Die deelnemers se seksuele risiko-gedrag is gemeet deur hul deelname aan seksuele aktiwiteite, naamlik vaginale seks, anale seks, orale seks, en terugtrekking, te bepaal. Verder is die gebruik van kondome in hierdie aktiwiteite ook bepaal. Meetinstrumente is gebruik om die selfdoeltreffendheid en toekomstydsperspektief van die leerders te meet. 'n Produkterm regressie-ontleding is uitgevoer om die verband tussen selfdoeltreffendheid en seksuele risiko-gedrag sowel as die verband tussen toekomstydsperspektief en seksuele risikogedrag te bepaal. Die effek van toekomstydsperspektief as moderator-veranderlike in die verband tussen selfdoeltreffendheid en seksuele gedrag risiko is ook aan 'n ondersoek onderwerp.

Die resultate dui aan dat beide selfdoeltreffendheid en toekomstydsperspektief 'n direkte negatiewe verband toon met seksuele risiko-gedrag. Geen moderator-effek vir toekomstydsperspektief in die verband tussen selfdoeltreffendheid en seksuele risiko-gedrag is gevind nie. (Met ander woorde, toekomstydsperspektief het 'n direkte verband met seksuele risiko-gedrag en gevolglik beïnvloed dit nie die verband tussen selfdoeltreffendheid en seksuele risiko-gedrag nie.)

Sleutel woorde en uitdrukking: **moderator effek, selfdoeltreffendheid, toekomstydsperspektief, seksuele gedrag risiko, vaginale seks, anale seks, orale seks, terugtrekking, produkterm regressie-ontleding.**

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# 1. Introduction

Previous more traditional approaches to health and illness focused on the biological dimension that is, treating acute illnesses. Some viruses however, such as HIV (Human Immunodeficiency Virus) which causes AIDS (Acquired Immunodeficiency Syndrome), have no known medical cure. Discovery of effective biological treatments for chronic and degenerative diseases may lower the occurrence of such diseases but will not eliminate them (Bandura, 1997).

Recent approaches to health and illness have shifted their focus to the interactions among both biological and psychosocial factors. The biopsychosocial model, developed by Engel, places emphasis on an integrated approach to human behaviour and disease, that is, each system (biological, psychological, and social) affects and is affected by the others (Sadock & Sadock, 2003).

It is within this light that researchers have turned their attention to, and have begun exploring, the impact that psychosocial factors play in health and illnesses. Bandura (1997) believes that one such psychosocial factor, self-efficacy, has an influence on biological processes which in turn affect human health and illness. The beliefs of individuals beliefs that they can succeed in controlling their behaviour play an important role in whether they consider engaging in behaviours that are a risk to their health or not.

Furthermore, future time perspective is another factor which has been gaining increased attention as much research surrounding this construct has found a relation to positive health consequences (Zimbardo & Boyd, 1999).

The aim of this study will therefore be to investigate the moderator effect of future time perspective in the relationship between self-efficacy and risky sexual behaviour.

## 2. Literature Review

### 2.1 Risky Sexual Behaviour

#### 2.1.1 Definition and components

A number of different definitions of risky sexual behaviour will be explored in an attempt to gain a broader understanding of the concept. One such definition according to Hall, Holmqvist and Sherry (2004) sees risky sexual behaviour as engaging in unprotected vaginal, oral or anal intercourse. Irwin, Igra, Eyre and Millstein (2005) state that risky sexual behaviour also includes engaging in sexual encounters at an early age, no or inconsistent use of contraceptions (condoms, birth control pill etc.), and multiple sexual partners. Rothspan and Read (1996) agree that multiple sexual partners, inconsistent condom use, not determining the sexual history of their partner as well as not refraining from sexual intercourse with a new partner are components of risky sexual behaviour. Additionally, they identify two further components of risky sexual behaviour, that is, a limited sense of self-control and a need for immediate gratification.

According to Pettifor, Rees, Steffenson, Hlongwa-Madikizela, MacPhail, Vermaak and Kleinschmidt (2003) a variety of characteristics can be identified as placing individuals at risk of contracting sexually transmitted diseases and infections. One such characteristic is the number of sexual partners. The greater the number of sexual partners an individual has, the greater the potential exposure to sexually transmitted diseases and infections. Inconsistent condom and contraceptive use is another example. Irwin *et al.* (2005), as well as Rothspan and Read (1996) agree with this characterisation of risky sexual behaviour.

Age difference between individuals and their sexual partners was also identified as a potential risk factor. Older sexual partners are more likely to have been exposed to sexually transmitted diseases and infections than sexual partners who are younger. It was also found that young people are more likely to engage in risky sexual behaviours when under the influence of alcohol and drugs. Transactional sex, that is, sex in exchange for money, gifts,

favours or other material and non-material items, is another high-risk sexual behaviour (Pettifor *et al.*, 2003).

Moore and Rosenthal (1991) suggest that in addition to defining sexual risk according to the behaviour itself, that is, the number of sexual partners an individual has had, the number of sexual partners in the last six months and the actual risky behaviour, it can also be defined according to an individual's knowledge of and attitude towards sexual risk. One may therefore hypothesise that those individuals who have little knowledge of risky sexual behaviours and have a nonchalant and negative attitude towards risky sexual behaviour are at higher risk of falling victim to the negative consequences thereof.

Research conducted by St. Lawrence and Kelly (1989) defines degrees of severity of risky sexual behaviour according to the way in which specific sexual behaviours are practised. Slightly risky sexual behaviours are defined as oral sex and vaginal or anal sex in which a condom is always used. If condoms are used only occasionally for vaginal or anal sex or if withdrawal is practised, these behaviours are defined as moderately risky. High-risk sexual behaviours include never using a condom for vaginal or anal sex. The rationale for these levels of severity are based on the fact that the practice of sexual behaviours of any kind causes some risk but that high risk behaviours involve sex in which bodily fluids are exchanged.

Within this study, one area of focus will be to determine to what extent the particular adolescents involved in this study engage in risky sexual behaviours.

### **2.1.2 Consequences related to risky sexual behaviour**

All research appears to have found only negative consequences related to risky sexual behaviour. Most negative consequences appear to be related to physical and mental health.

The major health consequence of engaging in risky sexual behaviours is the contracting of a sexually transmitted disease (STD) and/or a sexually transmitted infection (STI). In addition to the likelihood of developing an STI and/or an STD, the risk of unwanted pregnancy

increases with the frequency of unprotected sexual intercourse. Other health problems that were found to be associated with teenage pregnancies include: premature births, high blood pressure during pregnancy, low birth weight of the newborn baby, and anaemia (Nel, 1995).

The mere presence of a sexually transmitted infection increases the chances of the transmission of HIV/AIDS. A number of mental health problems are associated with the presence of HIV/AIDS, namely dementia, HIV-related delirium, mood disorders, suicidal ideation, personality disorders and chronic mental illness (Freeman, 2004). A study conducted by Els, Boshoff, Scott, Strydom, Joubert and Van der Rust (1999) in Bloemfontein, South Africa, confirms the above-mentioned theory as they found that 30.4% of HIV-positive patients attending clinics had a dysthymic disorder (depressed mood most of the time for at least two years) (Saddock & Saddock, 2003).

Other negative consequences of risky sexual behaviour include specific socio-economic factors. According to Blum and Goldhagen (1981), adolescent females who fail to complete high school due to an unplanned pregnancy, are at high risk for unemployment. Unemployment therefore results in the premature parent and her child becoming entangled in a web of poverty.

It is evident from the examples provided above, from the available literature, that effective interventions need to be developed in order to reduce the negative consequences of engagement in risky sexual behaviour.

### **2.1.3 Prevalence and incidence**

Statistical data forms a relevant part of this study. If one can determine how many people within the population are affected by the negative consequences of risky sexual behaviour, then one can establish how big the problem is and where the greatest need is for intervention against risky sexual behaviours. Data establishing the number of new incidences of sexually transmitted diseases and infections as well as unwanted pregnancies, could also be helpful in determining the need for effective precautions.

A study which endeavoured to measure the incidence of risk-taking behaviour amongst Cape Peninsula high-school students in South Africa, identified Xhosa males as being most at risk of contracting and spreading sexually transmitted diseases or infections. These students were shown to be more likely to become sexually active earlier in life, to have more frequent sexual experiences with partners known for only a short time, to have more sexual partners and to use contraception less frequently (Fleisher, Ziervogel, Chalton & Robertson, 1994).

Another study conducted in the Eastern Cape investigated adolescents' sexual behaviour in general. It was found that 24.3% of the participants (Afrikaans and English-speaking adolescents) were sexually active. The results indicated that English-speaking adolescents were more sexually active than Afrikaans-speaking adolescents and the older adolescents (18 years and older) were more sexually active than the younger adolescents (Olivier, 1996).

Previous research performed in the United States found that approximately fifteen million new sexually transmitted infections occur annually and that the majority of these infections are amongst adolescents (Hall *et al.*, 2005).

In South Africa, a national survey (Pettifor *et al.*, 2003) was conducted which aimed to determine the prevalence of HIV/AIDS, one specific type of sexually transmitted disease. The results indicated that the peak incidence of HIV/AIDS occurs in young people aged 15-24 years, the most productive sector of South Africa's population. The HIV prevalence amongst this age group was 10.2%. Prevalence among females (15.5%) was higher than amongst men (4.8%). These results provide an indication that among the 10.2% of South African youth that are HIV positive, 77% are females. The highest HIV prevalence was found in KwaZulu-Natal Province (14.1%) and the lowest in Limpopo Province (4.8%). Those provinces with an average level of HIV prevalence were Gauteng (9.2%), North-West Province (9.9%) and the Free State (10.0%). In terms of geographic area, youth living in the urban informal (informal settlement) areas had the highest HIV prevalence (17.4%), followed by rural formal (farms) areas (13.5%), urban formal (urban settlement) areas (9.8%) and rural informal (tribal settlement) areas (8.7%).

As an indicator of the prevalence of unprotected sexual intercourse other than sexually transmitted diseases and infections, pregnancy may be regarded as a further example. In the above-mentioned survey, prevalence rates concerning pregnancy were also investigated. Among the 68% of women who reported ever having had sexual intercourse, 49% reported ever having been pregnant (Pettifor *et al.*, 2003).

An Australian study (Moore & Rosenthal, 1991) examined adolescents' AIDS risk perceptions and sexual behaviours. The sample consisted of 72% females and 28% males. The findings suggest that 42% of the sample had engaged in vaginal sex with a casual partner (individual with whom one has had sexual intercourse on one occasion or rarely) and 80% with a regular partner (individual with whom one has an exclusive sexual relationship). Of the 42% who had engaged in vaginal sex with a casual partner, 28% always used a condom whereas 25% never used a condom. With regard to the number of sexual partners involved, 28% had had no partners in the last 6 months, 50% had had one partner, 12% two partners, and 10% of the adolescents had had three or more. Despite the indication that the majority of adolescents were engaging in safe sex behaviours, the results nevertheless proved that a portion of this sample were engaging in risky sexual behaviours. Regarding their perception of AIDS risk, those adolescents who perceived themselves to be least at risk, were more likely to have been females who had engaged in few unsafe sexual behaviours. The relationship between risky sexual behaviour and perception of AIDS risks indicated that the majority of adolescents who had engaged in risky sexual behaviours saw themselves as having little risk of contracting AIDS.

Another Australian study aimed at determining adolescents' perception of risks in five health-related areas, namely, AIDS, sexually transmitted diseases, lung cancer, skin cancer, and serious car accidents. Additionally, the relationship between risk perception and actual risky behaviour was also explored. Skin cancer and car accidents were perceived to be the events that occur most often, whereas lung cancer and sexually transmitted diseases were viewed as occurring less likely. AIDS was perceived as one of the health-related behaviours that occurred the least. Furthermore, it was found that risky behaviour related significantly to perception of risk. This provides an indication that although adolescents underestimate their

risk to some extent, they are conscious of the fact that negative consequences do occur as a result of engaging in risky behaviours (Moore & Rosenthal, 1992).

The above-mentioned results provide a clear indication that young people aged 15-24 years are negatively affected, with regard to consequences of risky sexual behaviour, within the South African population as well as abroad.

#### **2.1.4 Factors related to risky sexual behaviour**

Previous research has investigated the various protective factors that can protect individuals from engaging in risky sexual behaviours. These factors and their relationship to risky sexual behaviour will be further explored.

McCree, Wingood, DiClemente, Davies and Harrington (2002) conducted research in the United States of America in which they investigated the relationship between religiosity and risky sexual behaviour in African-American adolescent females. The findings revealed that greater religious involvement is a protective factor. Those females who had higher religiosity scores were more likely to have higher self-efficacy in communicating with both new and steady partners about sex, refusing an unsafe sexual encounter, and communicating with their partners about sexually transmitted diseases and infections, as well as pregnancy prevention. Further findings indicated that these female adolescents were more likely to initiate sex at a later age, and possessed more favourable attitudes toward condom use.

Psychological health appears to be another protective factor as research has shown that mentally ill adolescents appear to engage in more risky sexual behaviour than their mentally healthy peers do. Those adolescents that are hospitalised due to their mental illness were found to use condoms less frequently and to engage in sexual activities more frequently. Findings suggest that the majority of youth with a sexually transmitted infection and a psychiatric condition were diagnosed with the psychiatric condition before they were diagnosed with the sexually transmitted infection (Hall *et al.*, 2005).

Masturbation, which occurs in moderation and does not replace other activities, appears to be seen as healthy behaviour, in that it aids adolescents in the process of discovering their bodies and satisfying their sexual needs (Coles & Stokes, 1985). One can therefore hypothesise that this type of masturbation acts as a protective factor against risky sexual behaviour as the individual is choosing a safe form of gratification and exploration rather than entering into a sexual relationship for which he/she may not be sufficiently emotionally mature.

Researchers have also investigated those factors that increase individuals' vulnerability towards risky sexual behaviour.

One such factor that was identified as playing a role in the occurrence of risky sexual behaviour is substance abuse. Correlational research has shown that adolescents who abuse drugs may frequently find themselves in situations where it is more likely that they will engage in risky sexual behaviours and/or be the victim of unwanted sexual advances from others (Hall *et al.*, 2005).

A study was conducted in the United States of America with 710 girls between the ages of 14 and 17 (Cole, 2002). The results indicated that adolescents who had witnessed domestic violence, or who were the subject of violence from a parent, were at least three times more likely to engage in risky sexual behaviour than adolescents who had not experienced violence in the home. Cole (2002) states that the highest rates of risky sexual behaviour were however found amongst those adolescents who were physically abused.

An American study conducted by Lang, Rodgers, Laffaye, Satz, Dresselhaus and Stein (2003) investigated the question of whether a relationship exists between sexual trauma and poor health behaviour. The results suggest that those individuals who had a history of sexual assault engaged in increased substance use, risky sexual behaviours, less energetic forms of exercise and increased preventive healthcare.



According to Louw, Van Ede and Louw (1998) urbanisation and deterioration in parental control in South Africa have resulted in a rise in teenage pregnancies.

Booyesen and Summerton (2002) conducted a study in South Africa to determine whether poor women, between the ages of 15 and 49, are less likely to be informed about HIV/AIDS and more likely to engage in risky sexual behaviour. The findings suggest that poorer women are less likely to have the necessary knowledge about HIV/AIDS, which implies that their vulnerability to HIV should be increased, there is in fact little evidence to suggest that poverty as such is associated with risky sexual behaviour.

An association has been found between overnight travel from home and being HIV-positive. A total of 896 men and 1 100 women from Cameroon in Africa were included in the study. Researchers found a positive correlation between geographic mobility and once off sexual encounters as well as number of sexual partners in the case of men. They failed, however, to find as distinct a relationship between travel and HIV status in women (Carter, 2004).

Previous research has indicated that unusually early physical maturation in girls is often linked to early sexual activity and unplanned pregnancies (Dubas, Graber & Petersen, 1991; Stattin & Magnusson, 1990).

The evolution of treatments for specific sexually transmitted diseases and more effective means of contraception have resulted in an increase in the engagement of risky sexual behaviours (Berk, 1994).

The media as well as peer pressure also appear to increase adolescents' vulnerability towards risky sexual behaviour as sex appears to be portrayed in the media as an activity that is impulsive and does not require effective means of contraception to ward off unwanted pregnancies, sexually transmitted diseases and infections. Many adolescents engage in sexual behaviours that are often risky as a means to be accepted by their peer group (Louw *et al.*, 1998).

### **2.1.5 Risky sexual behaviour in adolescents**

Findings within the research mentioned above provides evidence that adolescents are at high risk of contracting and/or spreading sexually transmitted diseases and infections.

To gain a broader perspective of the vulnerable position in which adolescents find themselves, the specific developmental tasks accompanying adolescence will be further explored.

According to Havighurst (1953) and Louw *et al.* (1998), a developmental task is a task that arises in specific developmental stages within an individual's life, for example, infancy and early childhood, adolescence, adulthood and old age. Successful achievement of these tasks leads to healthy psychological functioning and to success with tasks that occur later during other developmental areas within the individual's life. Failure in achieving these tasks leads to difficulties in healthy psychological functioning as well as difficulties with tasks that occur later during other developmental stages.

The specific developmental tasks that may contribute towards the vulnerability of adolescents concerning risky sexual behaviour will be further explored using the literature proposed by major developmental theories.

#### **a. Physical development**

Adolescence is characterised by accelerated physical growth. Accompanying this growth process is the development of sexual maturity. Sexual maturation in girls is distinguished by the development of sexual characteristics, one of which is menarche (first menstruation) accompanied by, or shortly thereafter, ovulation. Sexual maturation in boys, on the other hand, is characterised by the first seminal emission (Berger, 1994).

Sexual maturation in both males and females results in strong physical attraction between the sexes. Adolescents become familiar with their bodies and begin experimenting with interactions of physical intimacy in the search to find a sense of sexual identity (Dreyer, 1975). This phase of sexual exploration, if accompanied by a lack of awareness of the

dangers of high-risk sexual behaviour, places adolescents in a vulnerable position regarding risky sexual behaviour.

### **b. Psychosocial development**

Another developmental task that adolescents work towards achieving is the development of their own holistic identity (Havighurst, 1953). According to Erikson (1968) the psychosocial stage of development that characterises adolescence, is identity versus role confusion. This stage implies that adolescents begin exploring who they are, what they value and what they will grow up to become. They are in the process of integrating physical, sexual, social, cognitive and moral tasks of development to form a unified self-identity. As one's sexual identity forms an integral part of one's self, this developmental stage involves sexual experimentation and gratification that leads to healthy psychological development. Should these sexual needs not be satisfied in a socially accepted manner, biological problems such as the spreading of sexually transmitted diseases and infections occur. Socio-economic problems, such as unwanted pregnancies, may also have a negative impact on the development of a healthy psyche (Havighurst, 1953).

### **c. Cognitive development**

According to Havighurst (1953), specific cognitive skills are developed in adolescence. Cognitive changes that take place in adolescence can be defined as a more comprehensive and advanced ability to reason logically about concrete as well as abstract concepts and to analyse situations (Inhelder & Piaget, 1958). Elkind (1967) on the other hand believes that although adolescents are cognitively able to take others' thoughts and feelings into account, when attempting to do so, they often fail as they end up believing that others share their thoughts and feelings surrounding specific concepts or situations. One way in which the above-mentioned cognitive error manifests, is in the form of the personal fable. Lapsley and Murphy (1985) describe this concept as adolescents' perception of themselves as special and unique. They also tend to believe that they are invulnerable and indestructible. Research conducted by Arnett (1990) confirms this theoretical belief as it was proven that adolescent girls with a high level of egocentrism believed that there was almost no possibility that they would fall pregnant if they were to have sexual intercourse without the use of contraceptives.

Research conducted by Moore and Rosenthal (1991) indicates that adolescents are susceptible to the kind of thinking in which they believe that they are immune to the negative consequences of risky behaviour. This belief system that they adopt, places them in a vulnerable position amongst the general population regarding the contraction of HIV/AIDS.

Although adolescents may be biologically prepared to engage in sexual behaviours, they are often not psychologically ready to make responsible decisions or to realise the negative consequences of this behaviour (Louw *et al.*, 1998).

It is evident from the literature provided that adolescents' physical, psychosocial and cognitive development places them in a vulnerable position regarding risky sexual behaviour. Within this light, a decision was taken to investigate whether self-efficacy and future time perspective are factors that assist adolescents in strengthening themselves against vulnerability in terms of engaging in risky sexual behaviours.

## **2.2 Self-efficacy**

### **2.2.1 Definition and components**

Although many different definitions exist concerning self-efficacy, Albert Bandura is well known for his research surrounding this concept.

The concept of self-efficacy originates from the social cognitive theory (Bandura, 1986). This theory proposes that human functioning is the product of the reciprocal relationship between personal factors (cognitive, affective and biological events), behaviour and environmental influences. Bandura believes that in order to understand how behaviour is influenced by environmental factors, it is important to recognise how an individual cognitively processes information in order to obtain the desired results. Much emphasis is therefore placed on the role of cognitive processes. Self-efficacy beliefs form the core of these cognitive processes.

Bandura (1986) defines the concept of self-efficacy according to a combination of specific abilities that he believes individuals have the ability to possess. These abilities include:

extracting meaning from their environment; planning alternative strategies; learning through observation; self-regulating their behaviour; and engaging in self-reflection. Furthermore, he states that these abilities have the capacity to enable individuals to determine their own destiny.

Bandura (1986) proceeds to state that self-efficacy provides the foundation for psychological well-being. He postulates that individuals have the motivation to persevere in difficult situations due to their self-efficacy beliefs. These beliefs influence one's behaviour and consequently produce the results that the individual is striving toward.

Although most findings concerning the definition of self-efficacy refer to Bandura's definition, other researchers and authors have attempted to form their own definitions thereof. One such author, Kleinke (1998), defines self-efficacy as an individual's viewpoint that his or her abilities and endeavours play an important role in succeeding in difficult situations and coping with life challenges. In addition, he adds that self-efficacy influences an individual's cognitions, motivation, and mood. On a cognitive level, people with self-efficacy beliefs perceive that positive consequences of behaviour can be achieved by applying the necessary skills needed, such as problem solving and goal setting. Self-efficacy also encourages a sense of determination and endurance when an individual is faced with a difficult task. Those individuals with a sense of self-efficacy are also less prone to anxiety and depression as they have confidence that their coping skills will assist in resolving the problem situation.

Bandura (1986) identifies three dimensions of self-efficacy. These dimensions are magnitude, generality, and strength. The magnitude of self-efficacy beliefs refers to the difficulty of the task that an individual is willing to undertake, namely, simple task demands, moderately difficult demands, and taxing performance demands. Generality as a dimension of self-efficacy refers to the degree to which an individual feels capable of responding to challenges in a variety of situations. Specific self-efficacy as opposed to general self-efficacy suggests having a sense of competence to tackle a specific task such as condom self-efficacy for example (Luszczynska, Gutiérrez-Doña & Schwarzer, 2005). The third dimension is

strength. This dimension refers to whether the self-efficacy beliefs that exist are weak or strong (Bandura, 1986).

Furthermore, strong self-efficacy beliefs have several positive consequences for individuals. These beliefs tend to influence the choices individuals make. Those who have a strong sense of self-efficacy normally have realistic aspirations, are committed to their goals, select tasks in which they feel they will succeed, and recover quickly should they fail in a task. These individuals will also tend to put more effort into tasks. Performance, as a result of perseverance through difficult tasks, enhances these individuals' psychological well being (Pajares, 2004).

According to Bandura (1986), in order for self-efficacy beliefs to produce positive consequences, an individual needs to accurately evaluate the aim of the challenge at hand, as well as the performance levels. It is only when these beliefs are accurately assessed that they then can act as predictors of behaviour.

When an individual who has a strong sense of self-efficacy does not succeed in a difficult situation, it could be as a result of lack of resources or incentives. Within this situation, strong self-efficacy will therefore not lead to achievement or to coping with the specific challenge (Pajares, 2004).

Pajares (2004) explains that some individuals have the capacity to have a greater or stronger sense of self-efficacy than others. This finding appears to be associated with the development of self-efficacy beliefs. The sources of self-efficacy beliefs include: mastery experience, vicarious learning, social persuasions, and emotional states. Mastery experience refers to how individuals interpret the results of their previous performance. Outcomes which are interpreted as successful, raise an individual's sense of self-efficacy. Vicarious learning enables individuals to develop a sense of self-efficacy by observing and modelling how significant others, within the individual's life, cope successfully with obstacles. Social persuasions that are positive may encourage the individual to persist in the face of adversity whereas persuasions that are negative weaken an individual's self-efficacy beliefs. Those

individuals who provide positive persuasions are often viewed as role models. These may include family members, teachers, peers, community leaders and the mass media. The fourth source of self-efficacy is the emotional state. Strong emotional reactions to a task provide indications about the expected success or failure of the task. When an individual experiences an emotional reaction that is negative regarding their ability to approach a task, that reaction can lower their self-efficacy beliefs and result in additional negative reactions.

### **2.2.2 Factors related to self-efficacy**

Previous research has investigated the various factors that are related to self-efficacy. These factors and their relationship to self-efficacy will be further explored in an attempt to highlight the role that self-efficacy beliefs play within the areas of one's life.

Most research investigated in this regard has evidenced positive relationships in terms of self-efficacy. One such study conducted in America by Prussia, Anderson and Manz (1998) examines the mediating effects of self-efficacy on the relation between self-leadership (ability to achieve the motivation and direction needed to accomplish desirable outcomes) and performance. The results indicated that self-leadership had a significant effect on self-efficacy and self-efficacy directly affected performance. Additionally, self-efficacy was found to fully mediate the relation between self-leadership and performance.

Benight (1996) evaluates the influence that self-efficacy beliefs had on psychological distress following the Oklahoma City bombing incident. The sample consisted of 27 victims. A strong sense of self-efficacy was found to be related to improved psychological adjustment after the bombing.

A Norwegian study aimed to investigate the relationship between various psychosocial factors and happiness among school adolescents. The specific positive emotional reaction investigated was happiness, and self-efficacy was one of the psychosocial factors. The results indicated that general self-efficacy was positively related to feelings of happiness (Natvig, Albrektsen & Qvarnstrom, 2003). Furthermore, Pajares (2004) suggests that self-

efficacy is related to positive thinking, which consequently leads to positive emotional reactions.

Dinter (2000) examines the relationship between self-efficacy and lifestyle traits. His sample consisted of 195 college students from a university in North America. The majority of students were between the ages of 18 and 25. The results showed that those students who had strong aspirations towards perfection, weak to moderate desires for recognition, and a strong sense of belonging and social interest, displayed a strong sense of self-efficacy.

Luszczynska *et al.* (2005) explores the relations between general self-efficacy and a number of different psychological constructs. The sample in this study consisted of 8796 participants from Costa Rica, Germany, Poland, Turkey and the United States of America. General self-efficacy was positively correlated with optimism, self-regulation and self-esteem. Academic performance was also positively related to general self-efficacy. This finding supports the research of Prussia *et al.* (1998). Additionally, a negative relationship exists between general self-efficacy, and anxiety and depression. The research also revealed that the associations between general self-efficacy and the above-mentioned psychological constructs were stable across cultures and samples (Luszczynska *et al.*, 2005).

### **2.2.3 The relationship between self-efficacy and risky sexual behaviour**

Bandura (1997) states that the weaker one's self-efficacy to practise personal control, the greater the possibility that psychosocial aspects, such as peer pressure, will increase the chances of engaging in risky sexual behaviour.

Previous research aimed to determine South African youths' sense of self-efficacy to control events surrounding safe sexual practices. The results obtained indicate that the majority of these young people felt that they could refuse sex with their partners if the partner refused to use a condom. This same majority was positive that they could use a condom every time they engaged in sexual behaviours (Pettifor *et al.*, 2003). Taking into consideration that the HIV prevalence amongst this age group was 10.2%, one may hypothesise that those youths who were HIV negative possibly have a strong sense of self-efficacy.



Burns and Dillon (2005) find that greater probability of condom use is related to higher self-efficacy and future time orientation amongst African American college students.

A Taiwanese study explored the factors associated with adolescent pregnancy. Results showed that sexually experienced but never-pregnant adolescents had higher contraceptive self-efficacy scores than pregnant adolescents (Wang, Wang & Hsu, 2003).

A South African study conducted by Perkel (1992) attempted to establish the psychosocial factors that influence sexual attitudes and behaviours. The sample consisted of 308 students from the University of the Western Cape. The findings indicate that a poor self-concept, weak sense of self-efficacy, more external locus of control, higher defences of denial, as well as higher rates of vulnerability toward peer pressure were related to poor knowledge of and negative attitude toward risky sexual behaviour, and a higher incidence of unsafe sexual practices.

The relationship between self-efficacy and contraceptive practices in male and female adolescents was the focus of an American study undertaken by Van Den Bossche and Rubinson (1997). The results indicated that both males and females scored low on self-efficacy statements that comprise the ability to communicate about sexual matters and contraception use.

Longmore, Manning, Giordano and Rudolph (2003) investigated the relationship between a specific type of self-efficacy, that is contraceptive self-efficacy, and contraceptive use among adolescents. The influence of demographic and background characteristics on contraceptive self-efficacy was also explored. The results indicate that female adolescents who are older, live with step-parents and whose mothers approve of contraceptive use report higher contraceptive self-efficacy.

In another study, factors that are related to self-efficacy for use of condoms and birth control amongst women who are at risk of HIV infection, were investigated. Limited social and

economic resources, dependence on a partner, exchanging sex for money or drugs, and binge-drinking were identified as the factors that are negatively related to self-efficacy for use of condoms and birth control (Lauby, Semaan, O'Connell, Person & Vogel, 2001).

The findings of Seal, Minichiello and Omodei (1997), however, do not support the above-mentioned findings. They examined young women's sexual risk-taking behaviour and found that within sexual relationships with a regular partner as well as with a casual partner, the effect of sexual self-efficacy on risk-taking behaviour was positive.

In conclusion, Bandura (1997) believes that providing information to adolescents concerning contraceptive use and the risks involved in engaging in unprotected sex, for example, does not necessarily result in behaviour change. He believes that this information needs rather to be transferred, by adolescents, into effective management of their sexuality. Self-regulation and a sense of self-efficacy are essential skills needed in transferring this knowledge into practice.

## **2.3 Future Time Perspective**

### **2.3.1 Definitions and components**

According to Zimbardo and Boyd (1999), time perspective is a process in which an individual's experiences are attached to time frames. The findings of earlier researchers such as Lewin (1951) and Nuttin (1964) in regard to time perspective, strengthen Zimbardo and Boyd's (1999) belief that time frames, namely past, present, and future, influence the way an individual arranges and provides meaning to experiences. These time frames also affect the decisions an individual makes in response to a specific stimulus.

Zimbardo and Boyd (1999) arranged the three broad time frames into five factors, which arose as a result of repeated factor analyses. The five factors are: *Past-Negative*, *Past-Positive*, *Present-Hedonistic*, *Present-Fatalistic*, and *Future*. *Past-Negative* time perspective refers to an aversive view of the past. Possibilities for the adoption of this view may have arisen as a result of an individual having experienced events that were traumatic or/and a

negative reorganisation of events that occurred in the past. *Past-Positive* time perspective on the other hand refers more to a warm, sentimental attitude toward the past. *Present-Hedonistic* indicates a risk-taking attitude toward life and immediate gratification of needs, while *Present-Fatalistic* reflects an attitude in which the individual feels hopeless towards the future and perceives himself/herself as having no control of his/her actions. The *Future* time perspective is represented by an attitude in which one strives for goals and rewards (Zimbardo & Boyd, 1999).

A previous study conducted by Nuttin and Lens (1985) found that both past and future events that occur within an individual's life influence the way in which individuals think about these events and consequently how they behave in the present. Those individuals who are oriented toward the future place a great deal of emphasis on delaying gratification, planning, organising, setting goals, resisting temptations and distractions, as well as the achievement of long term goals. This behaviour, in the majority of instances, leads to positive life consequences such as academic achievement, fewer health risks and higher socio-economic status (Zimbardo & Boyd, 1999).

Lennings, Burns and Cooney (1998) appear to have created an alternative term for future time perspective, that is, the "actualizer profile" (pp.631). It appears that this term was coined from the idea that individuals who are oriented to the future may display characteristics of self-actualisation. Additionally, a positive outlook on the future and a strong sense of awareness of time as well as delaying gratification and practising impulse control are also characteristics of this profile. They also believe that individuals exhibiting this profile would try and protect themselves from emotional suffering.

According to Seijts (1998), future time perspective is a cognitive construct. This implies that individuals think about their life experiences and then develop a plan of action in terms of how they are going to act on these beliefs. He also states that future time perspective is a flexible construct thereby suggesting that individuals have the capability to shape their beliefs concerning their future.

Further exploration surrounding future time perspective has identified five dimensions within this construct namely: “extension (length of the future time span), coherence (degree of organisation of events in the future time span), density (number of events expected in one’s future), directionality (the extent to which one perceives oneself as moving forward from the present into the future), and affectivity (extent to which one is gratified by future events)” (Seijts, 1998, pp.157-158). The dimension of extension and coherence refer to the cognitive aspects of future time perspective, that is, the cognitive schemas that one forms about future events. The density, directionality, and affectivity refer to how one experiences the future, which subsequently influences behaviour (Seijts, 1998).

Due to the findings of Zimbardo and Boyd (1999), that depicting the behaviours characteristic of a future time perspective leads to positive life consequences, one focus of this study will therefore be to determine whether future time perspective acts as a possible protective factor against risky sexual behaviour in adolescence.

### **2.3.2 Factors related to future time perspective**

Previous research has investigated the factors that are related to future time perspective. These factors and their relationship to future time perspective will be further explored to gain a broader awareness of the impact of a future time perspective on different areas within one’s life.

Future time perspective appears to be associated with various career-related factors. The specific career-related factors that will be further explored include career goals, career choice and student motivation.

An American study conducted with introductory psychology students at Stanford University found that those students who had a future time perspective were willing to sacrifice present gratification in order to obtain their career goals. They also had outstanding time management and planning skills, and were more efficient than those students who did not have a future time perspective. Results also indicated that future-orientated individuals had

the tendency to become stressed as they put pressure on themselves to perform and to use their time efficiently (Zimbardo & Boyd, 1999).

A study in South Africa (Pienaar, 1994) aimed to investigate the role of time perspective in the career choice of secondary school pupils. The conclusions drawn from this study show that there is a significant difference between the average time perspective of pupils who have decided on a career choice and those who have not. Those pupils who had made a decision regarding their career have a high future time perspective. These pupils had a good idea of where they would like to be in the future concerning their personal, public and occupational lives. Additional findings illustrate that boys and girls do not differ significantly with regard to time perspective. Furthermore, Pienaar (1994) also demonstrates that no relationship exists between intelligence and an individual's time perspective.

Another South African study, conducted in the Free State, investigated the possible differences in time perspective among groups of adolescents from different cultures, with different socio-economic status and from both gender groups. The sample consisted of 390 Grade 9 learners from four schools situated in Bloemfontein. The results indicate that future time perspective was the most dominant time orientation among the learners and that gender, socio-economic status and culture was not correlated with the learners' time perspective (Athawale, 2004). This finding supports the results obtained in the research conducted by Pienaar (1994).

Nuttin and Lens (1985) find that future time perspective is positively correlated to achievement motivation. In their view, students' perceptions of the future influence their beliefs and motivation to learn, which consequently have a positive impact on their level of achievement.

Much research has been done on the relationship between different types of risky behaviours and future time perspective. One study in this regard investigated the relationship between time perspective and risky driving behaviours amongst college students in America. The results indicated that college students who had a more present-oriented time perspective

engaged in risky driving more often than did those students who were future-oriented. Furthermore, it was found that females are more future-oriented than males, who are marginally more present-oriented (Zimbardo, Keough, & Boyd, 1997).

Robbins and Bryan (2004) undertook an investigation into the relationships between future time perspective, impulsive sensation seeking and risk behaviour among adolescents. Significant relationships between impulsive sensation seeking and future time perspective were found for several risky behaviours. Those adolescents who were oriented to the future were less likely to use drugs, had fewer alcohol problems, and perceived the risks attached with these risky behaviours. Impulsive sensation seeking, otherwise known as present-hedonistic time perspective according to Zimbardo and Boyd (1999), was found to be positively related to risk behaviours such as alcohol use and cigarette smoking. Wills, Sandy and Yaeger (2001) also support this finding.

Hall and Fong (2003) conducted research to ascertain whether health behaviour is correlated with time perspective. They formed the hypothesis that long-term thinkers are more likely to engage in health protective behaviours than short-term thinkers. The results supported the hypothesis, in that the evidence suggested that future time perspective is associated with health behaviour.

MacLeod and Salaminiou (2001) discovered that depressed individuals displayed a reduction in positive future thinking. The implications of this form of thinking may result in individuals having difficulty in effectively planning for the future.

Previous research explored the impact of time perspective on resilience in at-risk African American youth. It was found that at least one caring and competent adult within an at-risk youth's life is one correlate of resilience. This relationship between adult and child appears to influence development and shape attitudes. Furthermore, a hypothesis was formed that the interactions within the relationship between adult and child create a sense of future time perspective in the child and consequently results in the development of resilience. The hypothesis was tested and the results indicated that future time perspective plays an

important role in mediating the relationship in terms of the interactions between adult and child and resilience. Future time perspective was also found to play a significant role in the development of resilience for both male and female at-risk youths (Aronowitz, 2002).

Research to date appears to reveal that future time perspective has a positive impact on many areas within our lives.

### **2.3.3 The relationship between future time perspective and risky sexual behaviour**

Research has shown that the presence of a future time perspective plays an important role in risky behaviour. Individuals who are able to realise the consequences of their present behaviour on their future functioning will be less likely to engage in risky behaviours (Zimbardo, 2002).

Taking into consideration the findings of Zimbardo and Boyd (1999) that the possession of a future time perspective is related to many positive health consequences, one may infer that individuals who are more oriented to the future will be less likely to engage in behaviours that are harmful to their health. As previously mentioned, engaging in risky sexual behaviour has many negative health consequences. Those individuals who have an orientation towards the future will be more likely to delay the immediate gratification that is provided by a sexual encounter. They tend to evaluate the situation first, keeping a view of their future in mind. They realise that indulging in this sexual temptation could possibly impair the accomplishment process of their long-term goals.

Other research in this regard has also confirmed the above-mentioned findings. A study done by Pettifor *et al.* (2003), which aimed to determine the prevalence of HIV amongst the youth of South Africa, also investigated the determinants of sexual behaviour. One such determinant that was researched was future time perspective. The specific behaviours included within the concept of future time perspective were explored. The results obtained indicate that the majority of the participants had long-term goals, knew what they wanted out of life, and believed that they had a good idea of where they are headed in the future. Two thirds of the participants appeared to have a well-developed future time perspective, while

one third felt that there was no use planning for the future, as one does not have control thereof. Additionally, the results indicate that those adolescents who have no sense of purpose in life and/or no future plans, engage more readily in risky behaviours than those adolescents who have a sense of purpose and long-term goals. The former tend to live for the moment without considering the consequences of their current actions.

Rothspan and Read (1996) explored the hypothesis that behaviours which might reduce exposure to HIV would correlate positively with future time perspective, while risky behaviours would correlate with present time perspective. These researchers believed that safe sex behaviours are future-oriented, in that individuals who have well-developed visions of their future take the necessary steps in order to be equipped for the future, such as purchasing condoms in advance, abstaining from sexual intercourse, and/or negotiating condom use. The results of this study confirmed the hypothesis as it was found that individuals who were more future-oriented were more likely to engage in safe sex behaviours than those who had a present-hedonistic time perspective. Furthermore, individuals with a present-fatalistic time perspective reported having had more lifetime sexual partners and more sexual partners over the previous 6 months. The safe sex behaviours that future-oriented individuals engage in include determining the sexual history of their current partner, using condoms consistently, attempting to stay with one sexual partner as well as refraining from having sexual intercourse with a new partner.

Further research in North America also confirms the above-mentioned hypothesis. The results of a study undertaken by Hall *et al.* (2005) found that adolescents who were more orientated to the here-and-now were less likely to engage in health protective behaviours. The immediate consequences of engaging in risky sexual behaviour momentarily outweighed the negative long-term consequences of doing so.

Burns and Dillon (2005) investigated the relationship between self-reported frequency of condom use, locus of control, self-efficacy, and future time perspective. The results show that women with stronger orientation toward the future display more frequent current and past use of condoms than males.



Research aimed at determining the relationship between future time perspective and risky sexual behaviour amongst students at the University of the Free State, South Africa, found that female students who were highly oriented toward the future were less likely to engage in risky sexual behaviour. Male students who were also more oriented to the future were more likely to have a positive attitude toward HIV/AIDS risk, had more knowledge about HIV/AIDS transmission, and were also less likely to engage in risky sexual behaviours. The results also show that amongst male students, a negative relationship exists between both present and future time perspective and risky sexual behaviour. Amongst white students, a negative relationship was found between future time perspective and risky sexual behaviour; they also displayed negative attitudes towards HIV/AIDS prevention. Black students who were more oriented to the future displayed a positive attitude towards HIV/AIDS prevention (Erasmus, 2003).

A negative relationship between future time perspective and risky sexual behaviour has been found by all investigations into this issue.

This study will not only attempt to determine the relationship that both self-efficacy and future time perspective have on risky sexual behaviour but also the moderator effect of future time perspective in the relationship between self-efficacy and risky sexual behaviour.

### **3. Methodology**

#### **3.1 Research Participants**

Research conducted by Moore and Rosenthal (1991) indicates that adolescents are susceptible to the kind of thinking in which they believe that they are immune to the negative consequences of risky behaviour. This belief system places them in a vulnerable position amongst the general population regarding the contraction of sexually transmitted diseases and infections as well as unwanted pregnancies. It is therefore evident that adolescents represent the most appropriate target population for this specific study.

A random cluster consisting of 497 Grade 12 learners from English medium high schools within the Mangaung Community of Bloemfontein participated in this study.

Information regarding the participants' home language, gender and whether they have children is represented in Table 1.

Table 1: Frequency distribution of the research participants regarding the biographical variables

Variable	Category	N	%
Home language	English	3	0,6
	Afrikaans	7	1,4
	Setswana	209	42,1
	Zulu	4	0,8
	Tsonga	4	0,8
	Xhosa	62	12,5
	Sotho	196	39,4
	(no indication)	12	2,4
Total		497	100,00
Gender	Male	235	47,3
	Female	248	49,9
	(no indication)	14	2,8
Total		497	100,0
Children	Yes	33	6,6
	No	404	81,3
	(no indication)	60	12,1
Total		497	100,0

With regard to home language, it is evident that a limited number of participants belong to the following language groups: English, Afrikaans, Zulu and Tsonga. Consequently, a decision was made to ignore the data of the participants belonging to these four language groups, together with the data of those who did not provide any indication of their language group in the analysis (n = 12). A total of 467 research participants' data were therefore analysed. It is evident that a reasonably equal distribution of the two genders exists. Of the 467 research

participants 220 (47,1%) indicated they were males, with 236 (50,5%) indicating that they were females.

A large percentage of participants (12,1%) did not answer the question relating to whether they have a child. Of the 437 adolescents who did answer this question, 33 (6,7%) indicated that they do have a child.

Information about the age groups of the participants was also obtained. As this variable was measured using the interval scale, the mean scores and standard deviations are therefore indicated. The average age group of the research participants is 18,26 years with a standard deviation of 1,8 year.

## **3.2 Measuring Instruments**

The operationalisation of the criterium, predictor and moderator variables will briefly be discussed, together with the measuring instruments used to measure each variable.

### **3.2.1 Criterium variable: Risky sexual behaviour**

Risky sexual behaviour of the participants was measured using the **Perceptions of HIV/AIDS Risk Survey** (Moore & Rosenthal, 1991). This survey was designed for the Australian population, but has since been adjusted by Akande (1997) for use in South Africa. It has successfully been used by Erasmus (2003) and appears to have acquired judgemental validity.

The survey consists of three subscales, namely, *attitude*, *knowledge*, and *behaviour*. This study has however only made use of the latter section as the focus of the study is on determining adolescent's risky sexual *behaviour*.

The section on risky sexual behaviour consisted of 16 items. Information regarding the participants' risky sexual behaviour was obtained firstly by determining the sexual activities in which they take part. Four activities, namely vaginal sex, anal sex, oral sex, and withdrawal, were listed. The participants had to indicate whether they engaged in any of these activities

with a regular (exclusive sexual relationship) and/or casual (sex with once or infrequently) partner. Secondly, if the participants engaged in any of the activities, they had to indicate their use of condoms in these activities by using one of the following three statements: “never”, “seldom” and “always”.

Sexual behaviour was identified as most risky if any of the activities were practised regularly without use of a condom. A high score in this survey provides an indication that the behaviour is risky. Engaging in sexual behaviours with a regular partner with consistent condom use is however viewed as less risky than engaging in sexual behaviours with a casual partner in which condoms are also used consistently.

### **3.2.2 Predictor variable: Self-efficacy**

The **Generalized Perceived Self-efficacy Scale** was administered in an attempt to measure the participants’ sense of self-efficacy. The scale has been used in numerous research projects in different languages and cultural groups, where it has typically yielded internal consistencies of between 0.75 and 0.91. The scale has also been proven valid in terms of convergent and discriminant validity (Schwarzer & Jerusalem, 1995).

The scale consists of 10 items. The response format to the items was presented as follows: 1 (not at all true), 2 (barely true), 3 (moderately true), and 4 (exactly true). An example of an item within the scale is “I can always manage to solve difficult items if I try hard enough”. A high total score indicates that a strong sense of self-efficacy is present.

### **3.2.3 Moderator variable: Future Time Perspective**

Future time perspective was measured using the **Zimbardo Time Perspective Inventory**. This inventory has been standardised on a large population and has since been repeatedly refined through factor analysis. Previous research indicates that the test-retest reliabilities of the five subscales (*Past-Negative*, *Past-Positive*, *Present-Hedonistic*, *Present-Fatalistic*, and *Future*) range from 0.70 to 0.80 (Zimbardo & Boyd, 1999). This questionnaire has been successfully administered in South Africa (Erasmus, 2003).

This study only made use of the Future Scale which consists of 15 items. Previous research indicates that the Future Scale of the inventory demonstrates the best test-retest reliability of 0.80 (Zimbardo & Boyd, 1999). Participants were asked to assess the items which referred to future time perspective using a 5-point Likert Scale. An example of one of these items is: “before making a decision, I weigh the costs against the benefits”. If the sentence applied to the participant, he/she would choose number 5 (very true of me). If the opposite was true, a point of 1 (very untrue of me) would be chosen. Between this continuum, three other possibilities existed, including: 4 (often true of me), 3 (sometimes true of me), and 2 (hardly true of me). A high score provides an indication of the presence of a future time perspective.

Accredited translators were used to translate the English questionnaire into Sotho. A back translation was used to translate the Sotho version back into English. A back translation is a means of assessing whether the original meaning of the items has remained the same. Each item within the questionnaire that was administered to the learners was available in both English and Sotho.

### 3.2.4 Internal consistency of items investigated within this study

The internal consistency of the items (sexual behaviour, self-efficacy, and future time perspective) in the questionnaire used in this study were investigated. This was determined according to Cronbach’s  $\alpha$ -coefficients and calculated using the SPSS-computer programme (SPSS Incorporated, 2003). This information appears in Table 2.

Table 2: Cronbach’s  $\alpha$ -coefficient, means, and standard deviations for the scales used within the questionnaire

Variable	Number of items	a-coefficient	$\bar{X}$	s
Risky sexual behaviour	16	0,874	4,28	5,45
Self efficacy	10	0,854	31,08	6,60
Future time perspective	15	0,718	52,35	7,27

The calculated coefficients in Table 2 indicate that the coefficient of risky sexual behaviour and self-efficacy present high internal consistency measurements, while future time

perspective presents an acceptable internal consistency measurement. Consequently, the data presented in the analysis can be used with a relatively high degree of confidence.

With regard to the means and standard deviations, the variable of risky sexual behaviour had a mean score of 4,28 and a standard deviation of 5,45. The mean for self-efficacy was 31,08 and it had a standard deviation of 6,60. Furthermore, the future time perspective variable mean score was 52.35 and the standard deviation 7.27.

### **3.3 Data Gathering Procedures**

Informed consent to administer the questionnaire within the Mangaung schools was received from the Free State Department of Education as well as from the schools involved.

Fourth-year Psychology learners from the University of the Free State were the fieldworkers who assisted in gathering the data required for this research. The fieldworkers were provided with background information concerning the topic to be investigated as well an explanation on each of the constructs. Additionally, training was provided in administering each of the measuring instruments that was to be used. Once the training was completed, the battery was administered to small groups of research participants on each testing occasion. Participation of learners within this study was voluntary. The information was gathered under the supervision of the researcher.

Confidentiality of information shared by the learners was assured in a discussion with the learners before the administration of the questionnaire, as well as by means of having a box available in each testing location in which the questionnaires could be placed after completion. Once completed questionnaires were placed in the box, they could not be retrieved by anyone other than the researcher.

### **3.4 Statistical Analysis**

As this study aims to establish the role of future time perspective in the relationship between self-efficacy and risky sexual behaviour amongst adolescents, regression analyses was used

to determine the interaction between the predictors (Jaccard, Turrisi & Wan, 1990). The product term regression analysis, graphically presented in Table 3, was performed.

Table 3: Product term regression analyses

Step	Predictor	Result	Conclusion
1	Adverse condition	Significant	Adverse condition has <b>direct</b> effect on outcome
Alt. 1	Intervening variable	Significant	Intervening variable has <b>direct</b> effect on outcome
2	Adverse condition	Significant	If intervening variable significant in previous step but non-significant in step 2 - <b>mediator</b>
	Intervening variable	Non-significant	
	Adverse condition	Non-significant	If adverse condition significant in previous step but non-significant in step 2 – <b>confounding</b>
	Intervening variable	Significant	
3	Product intervening & adverse condition	Significant	<b>Moderating</b> effect

Note 1: Adverse condition = self efficacy; Intervening variable = future time perspective; Outcome = sexual behaviour.

Note 2: To avoid multicollinearity (redundancy) the deviation scores of predictors were used in step 3.

Step 1 of the product term regression analyses independently investigated the relationship between self-efficacy and risky sexual behaviour and alternatively the relationship between future time perspective and risky sexual behaviour. If the results of both are significant, both predictors (self-efficacy and future time perspective) are directly related to risky sexual behaviour.

Within step 2, if self-efficacy is significant and future time perspective is non-significant, then future time perspective acts as a mediator (the level of influence that future time perspective has on the self-efficacy of adolescents, which in turn impacts on their risky sexual behaviour).

Alternatively, if self-efficacy is non-significant and future time perspective is significant, then future time perspective has a confounding effect (the relationship between self-efficacy and risky sexual behaviour is largely due to the significant relationship that future time perspective has with both self-efficacy and risky sexual behaviour).

In Step 3, the product of self-efficacy and future time perspective are investigated. If the results are significant, this implies that future time perspective has a moderating effect (the relationship between self-efficacy and risky sexual behaviour is directly influenced by future time perspective) in the relationship between self-efficacy and risky sexual behaviour.

The SAS computer programme (SAS Institute, 2003) was used for the analyses.

### 3.5 Results

One objective of this study was to determine adolescent's risky sexual behaviour. Further information regarding this variable will be provided before the results of the regression analyses are discussed. Firstly, the total number of adolescents who engaged in risky sexual behaviour was determined and thereafter, an indication is provided of those who participated in these activities and made use of condoms. The last column in the table presented below indicates the number of people who did not answer the question. The frequency distribution regarding the activities is provided in Table 4.

Table 4: Frequency distribution of the incidence of different sexual activities

Activity	Never		Once/rarely		Regularly		No indication	
	N	%	N	%	N	%	N	%
Vaginal sex with a casual partner	274	58,7	111	23,8	44	9,4	38	8,1
Vaginal sex with a regular partner	233	49,9	110	23,5	84	18,0	40	8,6
Anal sex with a casual partner	370	79,2	31	6,6	18	3,9	48	10,3
Anal sex with a regular partner	360	77,1	39	8,4	24	5,1	44	9,4
Oral sex with a casual partner	309	66,2	67	14,3	42	9,0	49	10,5
Oral sex with a regular partner	283	60,6	72	15,4	67	14,3	45	9,6
Withdrawal with a casual partner	327	70,0	65	13,9	21	4,5	54	11,6
Withdrawal with a regular partner	316	67,7	72	15,4	32	6,8	47	10,1



Approximately 10% of the participants did not answer this section.

The results presented in Table 4 are discussed as follows:

a) With regard to vaginal sex with a casual partner, 23,8% of the participants indicated that they had engaged in this activity once or rarely while only 9,4% indicated that they engaged in this activity regularly. Alternatively, 18% of the participants indicated that they engaged in vaginal sex regularly with a regular partner, while 23,5% had engaged once or rarely in vaginal sex with a regular partner. The total number of participants who engaged in vaginal sex (rarely or regularly) with a regular partner is 194, which is 41,5% of the total group.

b) Approximately 80% of the group indicated that they do not engage in anal sex. Only 5,1% indicated that they engaged in this activity with a regular partner and 3,9% with a casual partner.

c) A relatively small percentage (14,3%) of the participants indicated that they engaged in oral sex regularly with a regular partner and 15,4% had engaged once or rarely in oral sex with a regular partner. The total number of participants who engaged in oral sex (rarely or regularly) with a regular partner is 139, which is 29,8% of the total group. With regard to oral sex with a casual partner, 14,3% of the participants indicated that they had engaged in this activity once or rarely while only 9,0% indicated that they engaged in this activity regularly.

d) 6,8% of the participants indicated that they engaged in withdrawal regularly with a regular partner, while 15,4% had engaged once or rarely in withdrawal with a regular partner. The total number of participants who engaged in withdrawal (rarely or regularly) with a regular partner is 104, which is 22,2% of the total group. With regard to withdrawal with a casual partner, 13,9% of the participants indicated that they had engaged in this activity once or rarely, while only 4,5% indicated that they engaged in this activity regularly.

It is evident that the order of occurrence (rarely or regularly) of the activities engaged in with a **regular** partner is as follows:

- Vaginal sex - 41,5%
- Oral sex - 29,8%
- Withdrawal - 22,2%
- Anal sex - 13,5%

Furthermore, the order of occurrence (rarely or regularly) of the activities engaged in with a **casual** partner is as follows:

- Vaginal sex - 33,2%
- Oral sex - 23,3%
- Withdrawal - 18,4%
- Anal sex - 10,5%

It is important to remember that these categories are not mutually exclusive. In other words the same participant could be involved in all the activities.

Consequently, the condom use of those who engage in sexual activities (rarely or regularly) was investigated. These results appear in Table 5.

Table 5: Frequency distribution regarding the use of condoms for those who are sexually active

Activity	Never		Seldom		Always		No indication	
	N	%	N	%	N	%	N	%
Vaginal sex with a casual partner	24	15,5	47	30,3	67	43,2	17	11,0
Vaginal sex with a regular partner	34	17,5	68	35,1	75	38,6	17	8,8
Anal sex with a casual partner	14	28,6	13	26,5	14	28,6	8	16,3
Anal sex with a regular partner	12	19,1	15	23,8	22	34,9	14	22,2
Oral sex with a casual partner	36	33,0	24	22,0	32	29,4	17	15,6
Oral sex with a regular partner	53	38,1	24	17,3	32	23,0	30	21,6
Withdrawal with a casual partner	18	20,9	28	32,6	28	32,6	12	13,9
Withdrawal with a regular partner	22	21,2	37	35,6	36	34,6	9	8,6

It is evident that several participants chose not to answer this question.

Further results from Table 5 demonstrates that:

a) 43,2% of the participants indicated that they always used a condom when they engaged in vaginal sex with a casual partner and 38,6% with a regular partner.

b) 28,6% of the participants indicated that they always used a condom when they engaged in anal sex with a casual partner and 34,9% with a regular partner.

c) 29,4% of the participants indicated that they always used a condom when they engaged in oral sex with a casual partner and 23,0% with a regular partner.

d) 32,6% of the participants indicated that they always used a condom when they engaged in withdrawal with a casual partner and 34,6% with a regular partner.

It is evident that the order of occurrence of activities with a **casual** partner in which a condom was always used is as follows:

- Vaginal sex - 43,2%
- Withdrawal - 32,6%
- Oral sex - 29,4%
- Anal sex - 28,6%

Furthermore, the order of occurrence of activities with a **regular** partner in which a condom was always used is as follows:

- Vaginal sex - 38,6%
- Anal sex - 34,9%
- Withdrawal - 34,6%
- Oral sex - 23,0%

The results of the product term regression analysis, which investigated the possible moderator effect of future time perspective in the relationship between self-efficacy and risky sexual behaviour among adolescents, appears in Table 6.

Table 6: Product term regression analyses with risky sexual behaviour as the outcome

Step	Predictor	Beta	p-value
1	Self efficacy	-0,157	p < 0,01
Alt. 1	Future time perspective	-0,181	p < 0,01
2	Self efficacy	-0,053	-----
	Future time perspective	-0,137	-----
3	Self efficacy* future time	0,125	-----

Note: When the product term in step 3 was applied, the standard deviation scores were used to prevent multicollinearity.

From Table 6 it is evident that in step 1, self-efficacy, as well as future time perspective of the adolescents, delivers significant results on the 1% level. The conclusion can be drawn that both self-efficacy and future time perspective have a direct effect on adolescents' risky sexual behaviour. An indication is therefore provided that self-efficacy (adverse condition) as well as future time perspective (intervening variable) on their own, play an important role in adolescents' risky sexual behaviour. Future time perspective has a direct relationship to risky sexual behaviour: in other words, it does not influence self-efficacy.

No significant results were obtained in step 2, while in step 3 a significant product term was also not found. Consequently, no significant moderating effect for future time perspective, in the relationship between self-efficacy and risky sexual behaviour for the group of adolescents, was found.

The results of the first step are graphically represented as follows:

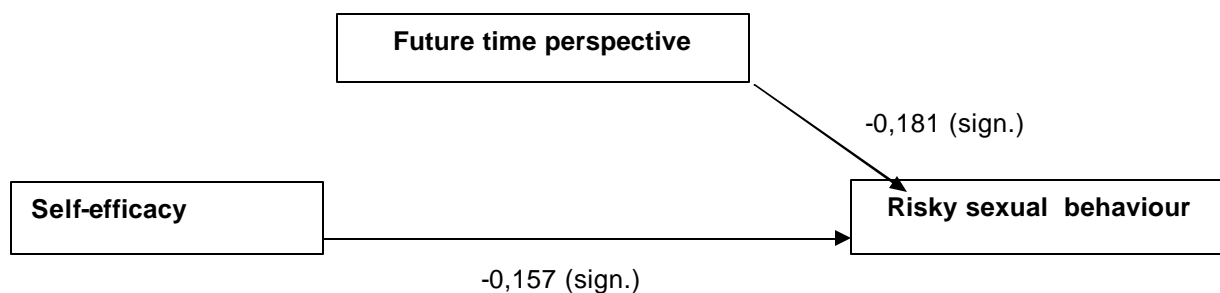


Figure 1: Graphical representation of the first step of the product term regression analysis

Both self-efficacy and future time perspective have a **direct** effect on adolescents' risky sexual behaviour. Future time perspective does not feature as mediator or moderating variable in this model. In both instances, the relationships are negative and therefore provide an indication that the greater their sense of self-efficacy and future time perspective, the less they will engage in risky sexual behaviour.

## 4. Discussion and Conclusion

Firstly, although the results (Table 4) provide an indication that the majority of the adolescents who participated in this study have never engaged in risky sexual behaviour, a small number of them are engaging in sexual behaviours that put them at risk.

As mentioned previously one negative consequence of engaging in risky sexual behaviours is teenage pregnancy. Although only a small number of adolescents in Table 1 indicated that they have children, this finding provides a good indication that negative consequences are occurring as a result of the engagement in risky sexual behaviours.

On a global scale, in comparing this study to a study performed in Australia (Moore & Rosenthal, 1991), which also aimed to investigate adolescents' risky sexual behaviours, it is evident that the adolescents in this study do not engage in risky sexual behaviours as much as they do in Australia. Furthermore, it appears that the majority of adolescents who engage in risky sexual behaviours do not use condoms consistently (Table 5). This was also found amongst adolescents in the Australian study. The number of South African adolescents who

do use condoms on a consistent basis however appears to be slightly greater than their Australian counterparts.

The relationship between risky sexual behaviour and two protective factors, namely future time perspective and self-efficacy, was also investigated (Table 6). The results indicated that self-efficacy was negatively related to risky sexual behaviour. This finding supports previous research conducted in South Africa that indicated that the majority of youth felt that they could refuse sex with their partners if the partners refused to use condoms. This same majority were positive that they could use a condom every time they engaged in sexual behaviours (Pettifor *et al.*, 2003). Both findings are characteristic of a sense of self-efficacy. Perkel (1992) also supports the findings obtained from both studies in this regard.

With regard to the findings related to the interaction between future time perspective and risky sexual behaviour, a negative relationship was found. This study replicated the findings of previous research in America which found that safe sex behaviours are future-oriented (Rothspan and Read, 1996). A South African study in this regard obtained the same findings (Erasmus, 2003).

The main focus of this study was to determine whether future time perspective acts as a moderating effect in the relationship between self-efficacy and risky sexual behaviour (Table 6). The findings indicate that future time perspective and self-efficacy are not interrelated, in other words, future time perspective does not act as a moderating variable. It is however evident that future time perspective and self-efficacy are two separate variables, each with a strong influence on risky sexual behaviour.

In conclusion, this study supports the biopsychosocial model which postulates the importance that psychosocial factors play in health and illnesses.

## 5. Recommendations and Limitations

A recommendation for further research in this regard is that adolescents' knowledge and attitude regarding risky sexual behaviour be explored. Should it be found that knowledge and attitude play a significant role in risky sexual behaviour, then an attempt can be made to improve the knowledge of the target population, and to instil a more positive and serious approach towards risky sexual practices.

Obtaining an indication of those adolescents who have or have had a sexually transmitted disease and/or infection, will also provide a clearer indication of the prevalence of those who are/were engaging in risky sexual behaviours and are/were suffering from the negative consequences thereof.

Self-efficacy and future time perspective were identified within this study as qualities that protect adolescents from engaging in risky sexual behaviours. This finding can be useful in developing future risky sexual behaviour prevention programmes. Many programmes focus on providing information on the negative consequences of engaging in risky sexual behaviours and consequently on effective contraceptive methods as a means of preventing these negative consequences. Focus should rather be placed on introducing the behaviours that are characteristic of those individuals who are future orientated and have a strong sense of self-efficacy. Due to the limited scope of this study, further research in this regard is necessary to broaden investigations and explore other possible protective factors.

Additionally, one could also explore the relationship between the other four constructs of time perspective (*Past-Negative*, *Past-Positive*, *Present-Hedonistic*, *Present-Fatalistic*) and risky sexual behaviour. This may be useful in determining whether any of the other constructs of time perspective may act as protective factors as well as identifying those constructs which are positively related to risky sexual behaviour.

Gender differences which exist with regard to the variables (risky sexual behaviour, future time perspective and self-efficacy) could also be explored. This would be useful in the

determination of the target population for prevention programmes. Programme developers should also consider shifting their focus to target younger children rather than waiting for them to reach adolescence and begin exploring their sexual identity. In this way, risky sexual behaviours could be prevented from occurring.

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