

**A model examining the relationship between parenting styles and
decision making styles on healthy lifestyle behaviour of
adolescents in the rural Western Cape**

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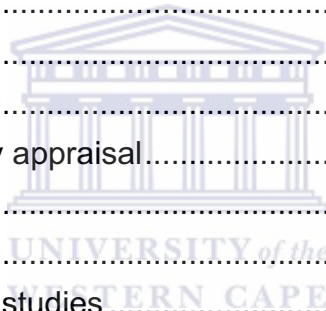
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Abstract

The Health Promotion Model provides a theoretical framework exploring the relationships between healthy lifestyle behaviours of individuals. The three behavioural determinants affecting healthy lifestyle behaviours as posited by the model are (i) individual characteristics, (ii) behaviour-specific cognitions and affects, and (iii) behavioural outcomes that promote health. Research indicates that a number of health risk behaviours are established in adolescence and affect health and well-being in later life. In South Africa where young people account for more than 9 million of the population, and with adolescence being a period where the development of health risk behaviours is prevalent, it becomes important to research the associations that aid in healthy lifestyle behaviours of adolescence in this country, particularly in rural communities where research on adolescents remains limited. This study therefore aimed to develop and test a model that examined the effects of the interaction between perceived parenting styles and adolescent decision making styles on healthy lifestyle behaviours of adolescents in the rural Western Cape.

The study employed a mixed methodological sequential exploratory design, using (i) systematic reviews and (ii) a quantitative methodology with a cross-sectional research design. Systematic reviews established the associations in existing empirical studies that examined the associations of parenting approaches with (a) healthy lifestyle behaviours and (b) decision making styles. Quantitative data was collected using a self-report questionnaire that consisted of four sections, demographical information, Parenting Style and Dimension Questionnaire, Health-Promoting Lifestyle Profile II and the Melbourne Decision Making Questionnaire

among 457 Grade 9 learners in the Overberg Education District in the Western Cape, South Africa. The quantitative data was analysed using the Statistical Package for Social Sciences V23 (SPSS) for descriptive and inferential statistics (correlations and multivariate analysis of variance) and the Analysis of Moment Structures (AMOS) for confirmatory factor analysis and structural equation modelling.

The systematic reviews suggested that empirical studies have found parenting approaches to be associated with (i) healthy lifestyle behaviours and (ii) decision making styles of children and adolescents in existing literature. The quantitative studies showed that perceived authoritative parenting, vigilant decision making styles, and frequent engagement in healthy lifestyle behaviours were the most prevalent among adolescents in the rural Western Cape. No significant main effects were established on the basis of participant gender or family structure. The model developed and tested, guided by the Health Promotion Model, suggests that a significant positive relationship exists between maternal parenting styles and decision making styles of adolescents. In addition, the findings demonstrated that paternal parenting styles positively affect the decision making styles of adolescents as well as their engagement in healthy lifestyle behaviours. Overall, the study suggested the important role that parents play in adolescent decision making styles and healthy lifestyle behaviours, and even more the role of paternal parental figures in the development of children and adolescents.

Keywords

Parenting

Parenting styles

Decision making styles

Healthy lifestyle behaviour

Health Promotion Model

Adolescent

Systematic review

Structural equation model



Declaration

I, Eugene Lee Davids, hereby declare that *A model examining the relationship between parenting styles and decision making styles on healthy lifestyle behaviour of adolescents in the rural Western Cape* is my own work. I also declare that it has not been submitted for any degree or examination at any other university and all sources I have used or quoted has been indicated and acknowledged by complete references.

Eugene Lee Davids

Name



November 2015

Date

Signature

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Accessing higher education is a gift that few are given. Being able to come this far on my academic journey is a blessing indeed, and it would not have been possible if it were not for God and all the wonderful people that He has placed in my life, on this journey. I am profoundly grateful for the many blessings and opportunities during these past few years, in making my dream of being an aspiring academic a reality. Wise words by Nelson Mandela echo this awareness of the value of the people who have helped to shape my journey. He said, “The anchor of all my dreams is the collective wisdom of mankind as a whole.” Therefore, I am deeply grateful for all the individuals who have played an important role in this stepping stone of making my dreams become a reality:



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With heartfelt thanks in the spirit of Ubuntu – “recognition that we are only people
because of other people”



Dedication

I dedicate this thesis to God and the amazing people that I have met in my short life.



Publications and dissemination

PhD by Publication

The PhD in Child and Family Studies was submitted in the format of a PhD by Publication. The findings presented in the doctoral study were deemed important, particularly with the rise in non-communicable diseases and lifestyle-related diseases. Therefore, to disseminate the findings and to assist with the current public health concerns around non-communicable disease, a PhD by Publication was selected.

Central to a PhD by Publication is the dissemination of findings. The findings presented in this doctoral thesis were (i) presented at local and international conferences and research days, (ii) published and currently in review journal articles in journals accredited by the South African Department of Higher Education, and (iii) a published book chapter on parenting and child well-being from an international perspective. The PhD by Publication often assesses the student's published materials to determine the competence of the student as a researcher, understanding of the subject explored, and the planning, implementation and evaluation of the research study (Badley, 2009; Wilson, 2002). It is largely based on the originality of the study, as well as the rigour and the significance of the contribution to the existing body of knowledge (Powell, 2004).

The research presented in this thesis resulted in the following methods of disseminating the research findings.

Conferences & Research Days

Dauids, E.L., Roman, N.V., & Leach, L. (2015). *Child and adolescent decision making styles: A systematic review of the associations with parenting*. A paper presented at the 14th European Congress of Psychology, 7-10 July 2015, Università Milano-Bicocca, Milan, Italy.

Dauids, E.L., Roman, N.V., & Leach, L. (2015). *The effect of family structure on decision making, parenting styles, and healthy lifestyle behaviour of adolescents in rural South Africa*. A paper presented at 5th Annual Sustainable Rural Health Research Days, 18-19 March 2015, University of Stellenbosch, Worcester, South Africa.



Dauids, E.L., Roman, N.V., & Leach, L. (2015). *Does family structure matter? Examining parenting styles, decision making styles and healthy lifestyle behaviours of adolescents in the Overberg Educational District*. A paper presented at World Social Work Day Collaborative Experiences between University of the Western Cape and Howard University, 17 March 2015, University of the Western Cape, Cape Town, South Africa.

Dauids, E.L., Roman, N.V., & Leach, L. (2015). *A review of international perspectives on the associations between decision making styles and parenting*. A paper presented at Child and Family Studies Doctoral Research Symposium, 2 April 2015, University of the Western Cape, Cape Town, South Africa.

Dauids, E.L., Roman, N.V., & Leach, L. (2015). *The effect of family structure on decision making, parenting styles, and healthy lifestyle behaviour of adolescents in rural South Africa*. A poster presented at 4th Annual Community and Health Sciences Research Day, 1 October 2015, University of the Western Cape, Cape Town, South Africa.

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Dauids, E.L., Roman, N.V., & Leach, L. (2015). Decision making styles: A systematic review of the associations with parenting. *Adolescent Research Review*. DOI: 10.1007/s40894-015-0003-y

Dauids, E.L., Roman, N.V., & Leach, L. (2015). The effect of family structure on decision making, parenting styles, and healthy lifestyle behaviour of adolescents in rural South Africa. *African Journal for Physical, Health Education, Recreation and Dance*, 21(3:2), 953-967.

Dauids, E.L. & Roman, N.V. (2014). A systematic review of the relationship between parenting styles and children's physical activity. *African Journal for Physical, Health Education, Recreation and Dance*, Supplement 2(1), 409-427.

Journal Articles – In review

Dauids, E.L., Roman, N.V., & Leach, L. (2015). Parenting styles, decision making styles and healthy lifestyle behaviour among learners: Are males and females significantly different? *Gender & Behaviour*.

Dauids, E.L., Roman, N.V., & Leach, L. (2015). The link between parenting approaches and healthy lifestyle behaviours: A systematic review. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness & Medicine*.

Book Chapter

Dauids, E.L., & Roman, N.V. (2015). Parenting: The association with health responsibility, physical activity, and nutrition among adolescents in rural South Africa (pp. 71-98). In N.V. Roman, *Parenting: Behaviours, Cultural Influences and Impact on Childhood Health*. New York: Nova Science Publishers.

WESTERN CAPE

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Badley, G. (2009). Publish and be doctor-rated: The PhD by published work. *Quality Assurance in Education*, 17(4), 331-342.

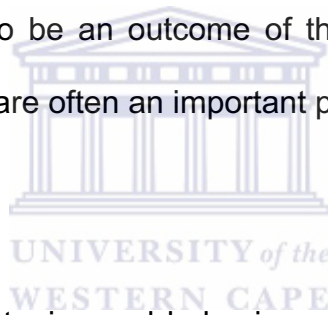
Powell, S. (2004). *The Award of the PhD by Published Work*. Lichfield: United Kingdom Council for Graduate Education.

Wilson, K. (2002). Quality assurance issues for a PhD by published work: A case study. *Quality Assurance in Education*, 10(2), 71-78.

CHAPTER ONE

INTRODUCTION

Healthy lifestyle behaviours are defined as behaviours or actions that individuals engage in with the overall aim of promoting and committing to a lifestyle that promotes health and well-being. Limited research exists that examines healthy lifestyle behaviours among adolescents, particularly adolescents living in rural areas. The health status and healthy lifestyle behaviours of individuals in rural areas has been considered to be low, the lifestyle related behaviours that adolescents engage in are largely dependent on their decision making. While child and adolescent decision making is believed to be an outcome of the social environment in which they find themselves, parents are often an important part of this environment.



1.1. Parenting

Parents, by means of the strategies and behaviours that they engage in as part of the parenting process, play a role in how they mould their children in their development and in different contexts (Achtergarde et al., 2015). The socialisation and moulding of children and adolescents are central to parenting (Spera, 2005). Important to parenting is the quality of attachment displayed in the parent-child relationship that has been associated with a number of developmental outcomes (Germeijs & Verschueren, 2009). When considering the important role of parenting, and the differing roles of maternal and paternal figures, it has been suggested that maternal parental figures play a more important role than the paternal parental figure; it has also been suggested that they play an equally important role in the development of children and adolescents (Yin, Li & Su, 2012; Amato, 1994).

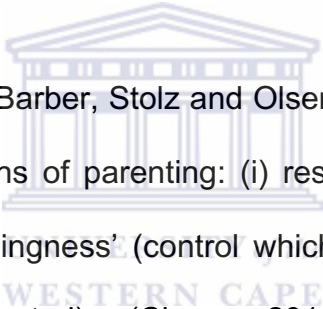
Previous literature focuses largely on the maternal parent's role in the adjustment and development of children, but there has been a shift in the role of fathers (Lewis & Lamb, 2003; McKinney & Renk, 2008). Differences in maternal and paternal parenting are thought to influence differences in the way male and female children and adolescents are reared and socialised (Chaplin, Cole & Zahn-Waxler, 2005). For example, paternal parental figures have displayed subtle differences in the attention shown to male and female youngsters during childhood (Kerr et al., 2004) Even though the role of maternal and paternal parenting remains contested (Laible & Carlo, 2004), a few researchers have examined the differences in maternal and paternal parenting (McKinney & Renk, 2008).

1.2. Parenting: From dimensions to styles

Often when considering the differences in parenting, researchers have examined the parenting dimensions. Parenting dimensions have been defined as the daily attitudes, behaviours and characteristics that parents display across various contexts and times (Rimehaug, Wallander & Berg-Nielsen, 2011), which constitute parental practices. Parental practices are the 'specific, goal-directed behaviours through which parents perform their parental duties' (Darling & Steinberg, 1993, p. 488). According to Barber, Stolz and Olsen (2005), the commonly accepted parenting practices are: (i) parental warmth and support, (ii) psychological control, and (iii) behaviour control.

The practice of parental warmth and support in the parent-child relationship includes the display of responsiveness, positive affect, and support (Carlo et al., 2010). This type of parenting often sees children and adolescents who have developed healthy

attachment relationships as well as displaying pro-social behaviours (Carlo et al., 2010). The other practice of parental psychological control includes strategies and behaviours such as autonomy granting, over-control, and intrusive and overly attentive parenting (Kiff, Lengua & Zalewski, 2011). The third practice of parental behaviour control, demonstrates behaviours and actions related to discipline, limit setting, and monitoring (Sebre et al., 2015; Kiff, Lengua & Zalewski, 2011). Parents who are generally warm and supportive are considered to be important contributors to pro-social and positive developmental outcomes, while, parents who are too controlling will often create developmental outcomes which undermine positive outcomes (Carlo et al., 2010).



The practices as proposed by Barber, Stolz and Olsen (2005) are often grouped into one of the following dimensions of parenting: (i) responsiveness (parental warmth and support) and (ii) 'demandingness' (control which is made up of psychological control and behaviour control) (Chen, 2014; Areepattamannil, 2010). Responsiveness is displayed when parents promote autonomy and expression which often includes warmth, autonomy support, and communication (Baumrind, 2005). Demandingness is often concerned with behavioural regulation and child monitoring (Baumrind, 2005). These two dimensions of parenting are central dimensions to what constitutes the *parenting style* typologies as proposed by Baumrind (1991). The parenting dimensions constitute the *parental practices* that form part of the behaviours that parents display as a result of specific socialisation outcomes, while *parenting styles* can be considered as being the emotional climate in which parenting takes place as part of the parent-child relationship which has an effect on the development and socialisation of children and adolescents (Padilla-

Walker, Christensen & Day, 2011). Baumrind (1991) identified three parenting styles, namely authoritative, authoritarian, and permissive parenting. The authoritative parent will display high responsiveness and demandingness, while the authoritarian parent will exhibit low responsiveness and high demandingness, and the permissive parent commonly has high responsiveness and low demandingness (Areepattamannil, 2010).

The field of parenting and child development contains a great deal of research highlighting the impact that parenting styles have on the development of children and adolescents (Chong & Chan, 2015). Baumrind's typology of parenting styles is commonly used in literature, even though this typology was later extended by Maccoby and Martin (1983). Parenting styles have been defined as the "constellation of attitudes toward the child that are communicated to the child and create an emotional climate in which the parents' behaviours are expressed" (Darling & Steinberg, 1993, p 493). Authoritative parents promote the engagement and involvement of children and adolescents in the familial life, which happens by displaying behaviours which are democratic in nature and creates an environment which is safe, trusting and supporting of children (Olivari et al., 2015; Lee et al., 2014). There is also the display of some control in the life of the child or adolescent which is not restrictive (Olivari et al., 2015; Lee et al., 2014). The authoritarian parent displays behaviours which include strict discipline in the context of high control (Olivari et al., 2015; Lee et al., 2014). The permissive parent seldom displays control in the parent-child relationship, preferring actions and behaviours that are warm and accepting with minimal rules enforced (Olivari et al., 2015; Lee et al., 2014). The typology of parenting styles has been associated with a number of developmental

outcomes; some are thought to promote positive and pro-social development while others may have the opposite effect.

Positive and pro-social development of children and adolescents is believed to be an outcome of parents providing an environment that allows for nurturance and support, as well as good communication (Whitney & Froiland, 2015). This is often thought to be brought about by authoritative parents, who are commonly associated with positive developmental outcomes. Authoritative parents, largely found among Western cultures, produce the most desirable outcomes for children, while authoritarian and permissive parenting have the opposite outcome. The parent-child relationship where authoritative parenting is displayed has been associated with developmental outcomes that promote competence, positive social development, increased mental health, and achievement (Chong & Chan, 2015; Turner, Chandler & Heffer, 2009; Huang & Prochner, 2003; Steinberg, 2001). On the contrary, parent-child relationships where authoritarian and permissive parenting are displayed, have been associated with less positive developmental outcomes for children and adolescents (Lee, Daniels & Kissinger, 2006). Parenting becomes important not only in the development of children and adolescents, but also with regard to the decisions that children and adolescents engage in. Parenting has also been associated with the decision making processes that children and adolescents engage in (Udell et al., 2008).

1.3. Decision making

When considering the nature of cognitive processes or human thinking, decision making is one of the most complex processes (Sanz de Acedo Lizárranga, Sanz de

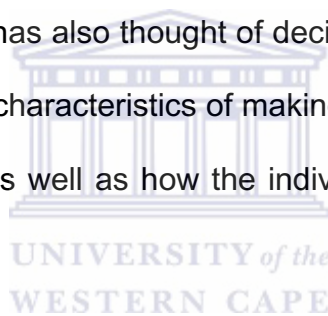
Acedo Baquedano & Cardelle-Elawar, 2007). This is often as a result of the alternative outcomes which become available when examining a situation in which decisions need to be taken. During the developmental phase of adolescence, decision making becomes important because this is often due to the increased autonomy that is associated with this developmental phase (Miller & Byrnes, 2001). With the increase in autonomous behaviour by adolescents, comes an increase in having to make decisions autonomously when a situation arises in which a decision needs to be taken (Eskritt, Doucette & Robitaille, 2014).

The field of judgement and decision making has largely been concerned with processes involved in choice making and how individuals are best able to address situations in which decisions need to be taken (Ayal, Rusou, Zakay & Hochman, 2015). When considering decision making, a number of theories have proposed two perspectives for examining decision making. These perspectives have proposed decision making as being either (i) affective or (ii) rational in nature (Delaney, Strough, Parker & Bruine de Bruin, 2015). The affective perspective of decision making involves the process of decision making that is largely influenced by emotions and intuition, while the rational perspective is influenced by negotiation and reasoning as part of the decision making process (Delaney, Strough, Parker & Bruine de Bruin, 2015; Evans, 2008; Séguin, Arseneault & Tremblay, 2007). Individuals' engagement in decision making that operates on a continuum from affective to rational decision making is shaped by a number of factors which include individual characteristics or differences in making sense of information gathered when faced with a decision making situation, as well as the extent to which the environmental factors influence a particular choice (Ayal, Rusou, Zakay & Hochman,

2015; Epstein, 2007). Some of the other factors which shape decision making are individual cognitive abilities and interests as well as identity and personality (Bubic, 2014; Germeijs et al., 2012; Gati et al., 2010). These factors are particularly important when examining how decisions are made, which is also a reflection of the decision making styles of individuals (Delaney, Strough, Parker & Bruine de Bruin, 2015).

1.4. The choices: Characteristics of decision making styles

How individuals approach situations in which a decision needs to be taken, has been one way of understanding decision making styles (Appelt, Milch, Handgraaf & Weber, 2011). Harren (1979) has also thought of decision making styles as involving the individual differences and characteristics of making sense of situations in which a decision needs to be taken, as well as how the individual responds to the situation (Bubic, 2014).

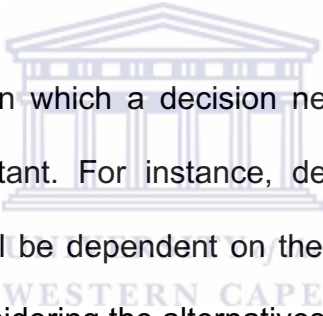


Understanding the decision making process has been extended by Janis and Mann (1977) in proposing a conflict model of decision making. The process is not as simple as making a good or bad decision, because there is the emergence of conflict in the process of decision making where stress becomes apparent (de Heredia, Arocena & Gárate, 2004). The presence of stress in the decision making process can be either experienced excessively or not at all, which has been associated with negative decision making or the opposite, which often is a result of the lack of searching for information related to the decision making situation and the assessment of alternatives (de Heredia, Arocena & Gárate, 2004).

When considering how individuals make decisions, Janis and Mann have identified a number of decision making styles when faced with a conflicting situation in which decisions need to be made. These decision making styles are: vigilance, hypervigilance, and defensive avoidance, and are defined as follows.

In the vigilant decision making style, an individual is optimistic about finding alternative solutions to a particular conflict, and has the belief that there is sufficient time to follow the steps in making a good decision (Burnett, 1991). The seven steps in making a good decision as proposed by Janis and Mann (1977) are: (i) considering a number of alternatives as possible solutions to satisfy the decision making situation at hand, (ii) then to consider the aims and objectives that need to be satisfied related to the situation, and to consider whether the possible alternatives are consistent with the individual's values and beliefs, (iii) each alternative considered should be evaluated for the positive and negative outcomes related to each alternative, (iv) then to explore each alternative for any new information that might be pivotal in selecting a possible alternative, (v) then to organise and make sense of all the possible alternatives and the information gathered that might inform the best possible course of action even if it differs from the initially expected choice, (vi) then to consider all the possible pros and cons of all the possible alternatives, even the alternatives which were considered unacceptable initially (vii) and then to conclude by deliberating a plan of action for the selected alternative with regard to execution and accounting for possible actions in the event of unforeseen risks that might arise (Cenkseven-Önder, 2012; Commendador, 2011; de Heredia, Arocena & Gárate, 2004; Burnett, 1991).

The other decision making style is hypervigilance. Hypervigilance occurs when an individual is optimistic about the various alternatives and solutions. The individual believes that there is insufficient time to make a thorough search for possible solutions, and panic arises and an objectionable alternative is considered (Cenkseven-Önder, 2012; Burnett, 1991). Then the defensive avoidance decision making styles are concerned with an individual who is pessimistic about the alternatives to a decision and then falls into either (a) a procrastination decision making style, where the individual delays making the decision or (b) a buck-passing style, where the responsibility is passed onto someone else (Cenkseven-Önder, 2012; Burnett, 1991).



When faced with a situation in which a decision needs to be taken, the decision making style becomes important. For instance, decision making with regard to adopting a healthy lifestyle will be dependent on the decision to engage in healthy lifestyle behaviours, when considering the alternatives.

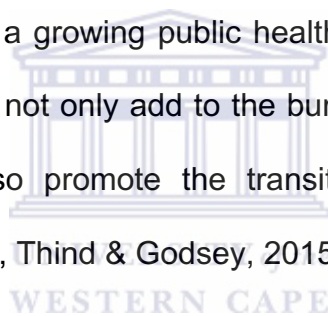
1.5. Health-related lifestyle behaviour

The health status of individuals has received great attention in the field of public health research, largely because the health status of individuals is often associated with the lifestyle of the individual, which accounts for both the health-related quality of life and healthy lifestyle behaviours of individuals (Kessler & Alverson, 2013; Kagee & Dixon, 2000). The concept of lifestyle has been thought to be all-encompassing of an individual's behaviours, attitudes, and perspectives of life (Raj, Senjam & Singh, 2013; Kessler & Alverson, 2013). Healthy lifestyle behaviours, a central element of lifestyle, are the actions that have an effect on the health status of

an individual (Tagoe & Dake, 2011). This health status can be looked at either as operating from behaviours that promote positive health and development, or as that which hinders this development. Unhealthy lifestyle behaviours are those actions which increase the burden of mortality and morbidity, and include poor dietary practices, substance use and abuse, and engaging in behaviours that promote a sedentary lifestyle (Gillison et al., 2015). Unhealthy lifestyle behaviours are among the leading causes of the increase in non-communicable diseases (Raj, Senjam & Singh, 2013; Tagoe & Dake, 2011).

On the other side, healthy lifestyle behaviours have been associated with a decrease in early onset of mortality and morbidity (Allen, 2014; Jepson, Harris, Platt & Tannahill, 2010; Khaw et al., 2008; Acton & Malathum, 2000). These are the lifestyle behaviours that individuals engage in with the goal of sustaining and increasing positive health (Mo & Winnie, 2010; Hoy, Wegner & Hall, 2007). Healthy lifestyle behaviours are those actions that promote the positive development of health, well-being, and overall quality of life (Giles & Brennan, 2014; Caperchione & Coulson, 2010). These behaviours include participation in physical activity, following good nutritional dietary practices and protective health behaviours, including condom use, avoiding the use and abuse of substances, the quality of sleep, and stress management (Allen, 2014; Yan, Finn, Cardinal & Bent, 2014; Eguchi et al., 2012). The healthy lifestyle behaviours that children and adolescents engage in often lay the foundation for health and well-being in later life (Kelly, Melnyk, Jacobson & O'Haver, 2011). Working towards the promotion of healthy lifestyle behaviours is vital, as shown by the World Health Organisation report (2002) that 50.8 per cent of deaths are a result of lifestyle-related behaviour.

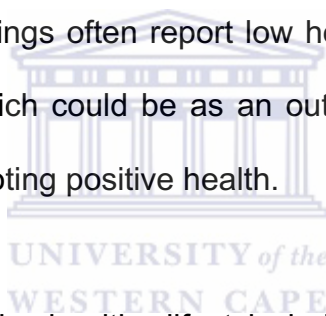
The lifestyle-related behaviours of adolescents typically hinder the promotion of positive health and well-being (Heneghan et al., 2015). These health risk behaviours include poor nutrition which leads to obesity, and predisposes adolescents to strokes, hypertension, diabetes and certain cancers (Baskin, Dulin-Keita, Thind & Godsey, 2015; Rossen, 2014; World Health Organisation, 2002), as well as the lack of physical activity (Hamilton, Thomson & White, 2013; World Health Organisation, 2002), risky sexual behaviour and substance abuse (Jepson, Harris, Platt & Tannahill, 2010) and increase 'screen time' behaviours (Hamilton, Thomson & White, 2013). These lifestyle related behaviours which hamper adolescent health are reported to be prevalent, and a growing public health concern (Baskin, Dulin-Keita, Thind & Godsey, 2015). They not only add to the burden of early onset of morbidity and mortality rates, they also promote the transition of these behaviours into adulthood (Baskin, Dulin-Keita, Thind & Godsey, 2015).



1.6. Adolescent health: A rural perspective

Research has largely focused on the lifestyle-related behaviours which hinder the positive development of health and well-being, and little focus has been on healthy lifestyle behaviours in literature, particularly for adolescents in rural settings (Rew, Arheart, Horner, Thompson & Johnson, 2015; Atav & Spencer, 2002). How adolescents in rural settings understand or make meaning of healthy lifestyle behaviours has not been well explored in research (Groft, Hagen, Miller, Cooper & Brown, 2005). This absence of research highlights the gap in literature for an understanding of the importance of contextual (rural) influences on the health of adolescents (Katz et al., 2013; Birungi, Mugisha, Obare & Nyombi, 2009).

Understanding adolescents' health-related behaviour in rural communities becomes important, as the World Health Organisation (2002a) has stressed the vulnerability of adolescents' health in rural settings due to under-resourced and under-skilled specialised health services, lack of transportation to access health care facilities, and limited routine health services (Hamdan-Mansour, Puskar & Sereika, 2007). Adolescent health in rural settings is largely affected by the lack of access and availability of health-related information, resources and services (Rew, Arheart, Horner, Thompson & Johnson, 2015; Biddle, Sekula, Zoucha & Puskar, 2010; Filbert, Chesser, Hawley & Romain, 2009; Hamdan-Mansour, Puskar & Sereika, 2007). Individuals in rural settings often report low health status (Patterson, Moore, Probst & Shinogle, 2004), which could be as an outcome of the lack of resources and services to assist in promoting positive health.



Having an understanding of the healthy lifestyle behaviours of adolescents would play an important role in decreasing mortality and morbidity rates as a result of lifestyle related behaviours. Adolescents have reported that the familial environment, where parenting mostly takes place, has been an important factor in their actions related to health and well-being (Nair et al., 2015; Hingle, O'Connor, Dave & Baranowski, 2010). The role of parenting therefore becomes important when considering the engagement in behaviours related to healthy lifestyles (Hamilton, Thomson & White, 2013). The decision making that adolescents engage in can be considered of central importance in the choices to engage or not in healthy lifestyle behaviours (Umeh, 2009; Steinberg, 2004). The social environment in which parenting exists can be considered very important in the nurturance of autonomous

decision making, and the choices related to healthy lifestyle behaviours. The current study therefore developed and tested a model which examined the interaction between perceived parenting styles and decision making styles on the engagement in healthy lifestyle behaviour of adolescents in the rural Western Cape.

1.7. Theoretical framework

The research study was framed within the Health Promotion Model. This model provides a theoretical basis for exploring the factors and associations or relationships that aid an individual's healthy lifestyle behaviours (Srof & Velsor-Friedman, 2006). The model identifies three health behaviour determinants: (i) individual characteristics and experiences, (ii) behaviour-specific cognitions and affects, of which situational or interpersonal influences are part, and (iii) behavioural outcomes of healthy lifestyle behaviours that promote positive health (Srof & Velsor-Friedman, 2006). Srof and Velsor-Friedman (2006) define the three health behaviour determinants as follows: (i) individual characteristics are innate factors of the individual (such as age, gender, developmental phase) as well as experiences that would assist in informing future behaviours, (ii) behaviour-specific cognitions and affects are the perceived obstacle that prevents action or the perceived benefits of the behaviour, as well as the effects of the behaviour, and (iii) the situational or interpersonal influences are the environmental or social elements that influence the health-related behaviour.

When considering the three health behaviour determinants in the context of the intended study, the (i) individual characteristics and experiences are related to the current study sample, who are identified as adolescents at a developmental phase

where they need to make decisions about their future with regard to their career and lifestyle choices. The second determinant focusing on (ii) behaviour-specific cognitions and affects in light of the current study, are concerned with the conflicting decision making process in which adolescents have to engage. As well as the health behaviour determinant of situational or interpersonal influence related to the parental home and the types of parenting styles that the adolescent is exposed to, are in (iii) the behavioural outcomes of healthy lifestyle behaviours. Therefore in light of the Health Promotion Model and the current research study, the health determinants were examined, as well as the role they play in the healthy lifestyle behaviours of adolescents in the rural Western Cape, and the role of decision making styles and parenting styles at this developmental stage of adolescence in relation to healthy lifestyle behaviours.



1.8. Problem statement

Jackson, Henderson, Frank and Haw (2012) state that a number of health risk behaviours are established during adolescence and are often continued into adulthood, affecting health and well-being in later life. The World Health Organisation (2004) indicates that 60% of an individual's quality of life, health and well-being are dependent on the health-related behaviours and lifestyle choices employed. As adolescence is a period where establishing health-risk behaviours are prevalent and often maintained throughout into adulthood, it becomes important to establish the health promoting behaviours of adolescents. Globally, adolescents account for 1.2 billion of the population (United Nations, Department of Economic & Social Affairs, 2011). In South Africa, young people account for 9.7 million of the population (Reddy et al., 2010). The health promoting behaviours of young persons both globally and in

South Africa, therefore become important to investigate, from a health perspective, adolescent health-risk behaviour and the increase in mortality and morbidity needed to be examined to assist in improving the health status of adolescents (Nair et al., 2015). Health status, which is often indicated by the lifestyle-related behaviour of adolescents, (Kessler & Alverson, 2013) is an outcome of the decision making process that adolescents engage in. Studies examining adolescent decision making in relation to health behaviour remain limited (Umeh, 2009). However, as decision making often takes place within a particular social context which ascribes to the rules of society, decision making by adolescents is mainly influenced and shaped by their parents (Wolff & Crockett, 2011). Parents therefore play an important role in decision making regarding healthy lifestyle behaviours, this becomes important to examine, particularly with the global burden of non-communicable diseases as a result of diminished healthy lifestyle behaviours (Hanson & Gluckman, 2015). Therefore this study aimed to develop and test a model that looked at the interaction effects of perceived parenting styles and adolescent decision making styles on healthy lifestyle behaviours of adolescents in the rural Western Cape, South Africa.

1.9. Research questions

1. What are the findings of previous research determining the relationships between parenting styles, decision making styles and healthy lifestyles behaviours of adolescents?
2. What are the prevalent perceived parenting styles, decision making styles and healthy lifestyle behaviours among adolescents in the rural Western Cape?
3. What are the relationships between perceived parenting styles, decision making styles and healthy lifestyle behaviours of adolescents in the rural Western Cape?

4. Are there differences between perceived mother's and father's parenting styles, adolescent decision making styles and healthy lifestyle behaviours for adolescents in the rural Western Cape?
5. What are the goodness-to-fit indices for the Health Promotion Model examining the relationships between perceived parenting styles, decision making styles and healthy lifestyle behaviours of adolescents in the rural Western Cape?
6. Are there significant differences between mother and father models examining the relationships between perceived parenting styles, decision making styles and healthy lifestyle behaviours of adolescents in the rural Western Cape?

1.10. Research aim

The aim of the study is to develop and test a model that examines the interaction effects of perceived parenting styles and adolescent decision making styles on healthy lifestyle behaviours of adolescents in the rural Western Cape.

1.11. Research objectives

Objective 1: To systematically review and describe previous research examining the relationship between perceived parenting styles, adolescent decision making styles and healthy lifestyle behaviours of adolescents.

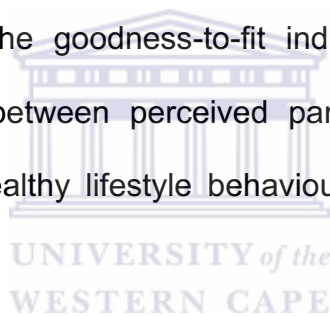
1.1. Systematically review previous studies examining the relationship between perceived parenting styles and adolescent decision making styles.

1.2. Review studies that examined the relationship between perceived parenting styles and healthy lifestyles behaviours of adolescents.

Objective 2: To determine the prevalence of the types of perceived parenting styles, types of adolescent decision making styles and healthy lifestyle behaviours of adolescents in the rural Western Cape.

Objective 3: To establish the relationships between perceived parenting styles, adolescent decision making styles and healthy lifestyle behaviours of adolescents in the rural Western Cape.

Objective 4: To determine the goodness-to-fit indices for a model which best examines the relationships between perceived parenting styles and adolescent decision making styles on healthy lifestyle behaviours of adolescents in the rural Western Cape.



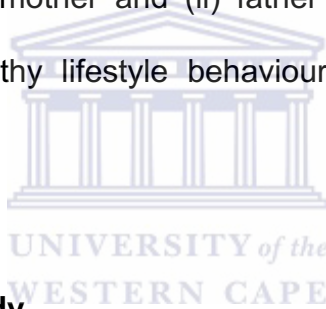
Objective 5: To establish the significant differences that exist between mother and father models examining the relationship between perceived parenting styles and adolescent decision making styles on healthy lifestyle behaviours of adolescents in the rural Western Cape.

1.12. Hypotheses

This study hypothesised that:

- A relationship exists between the perceived authoritative parenting style and the vigilant decision making style of adolescents in the rural Western Cape.

- A relationship exists between the perceived authoritative parenting style and healthy lifestyle behaviours of adolescents in the rural Western Cape.
- A relationship exists between the vigilant decision making style and healthy lifestyle behaviours for adolescents in the rural Western Cape.
- The model demonstrates the interacting effect of the relationship between the perceived authoritative parenting style and the vigilant decision making styles of adolescents on the healthy lifestyle behaviours of adolescents in the rural Western Cape.
- There is a significant difference between the model looking at the interacting effect of perceived (i) mother and (ii) father parenting styles and decision making styles on healthy lifestyle behaviours of adolescents in the rural Western Cape.



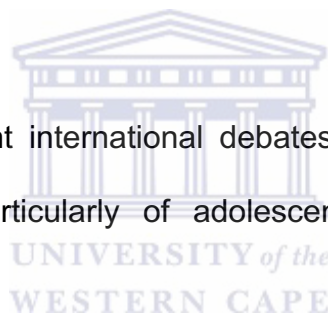
1.13. Significance of the study

The results presented in this research study will help a number of individuals: (i) adolescents, (ii) parents and guardians, (iii) schools, and (iv) government and policy makers. (i) Adolescents may become aware of how their decision making affects their health and lifestyle behaviours, which have a ripple effect on health and well-being, (ii) Parents and guardians may become aware of the role parenting could play in their children's decision making and health promoting behaviours which have implications for the future health of their children and how they, as parents can become involved to assist in enabling health and well-being. (iii) Schools will be able to establish the current situation of adolescent decision making and health promoting behaviours among South African adolescents and to establish ways in which

subjects such as Life Orientation can be adapted to assist in decision making, well balanced lifestyles and psychological well-being for future health. (iv) Government and policy makers may have an understanding of the current situation of South African adolescents' decision making styles and the relationship between the health promoting behaviours that adolescents engage in. In addition they will be able to establish the effects of parenting on the relationship between decision making and healthy lifestyle choices and behaviours and its impact on the future health of adolescents. This would act as a guide and framework on which programmes and policies can be based that assist in the holistic health and well-being of adolescents in relation to decision making and parenting, both in South Africa and abroad.

This research adds to current international debates around parenting and health related decision making, particularly of adolescents, by making the following contributions:

- Paternal parenting and parental involvement have often been ignored in literature (Kerr, Lopez, Olson & Sameroff, 2004), but this study has examined the perceived paternal parenting and the role it plays in decision making and healthy lifestyle behaviours of adolescents.
- Differences between maternal and paternal parenting styles have received less attention particularly in the developmental phase of adolescence (Levesque, 2011; McKinney & Renk, 2008). In the current study both maternal and paternal parenting have been examined as well as the similarities and differences between the two parental figures.



- Emerging literature needs to focus on integrating decision making processes with behavioural development, to address the need of a more holistic perspective on decision making (McFall, 2015). The current study makes a significant contribution by highlighting the associations between decision making styles and healthy lifestyle behaviours.
- In order to reduce the burden of non-communicable disease, there needs to be a promotion of healthy lifestyle behaviours (World Health Organisation, 2012). The study contributes to the current body of knowledge by highlighting the importance of healthy lifestyle behaviours in addressing one of the growing public health concerns, non-communicable diseases.
- The World Health Organisation's (2015) has for the first time included adolescents alongside women and children in its Global Strategy for Women's, Children's and Adolescents' Health, which signifies the importance of adolescent health. One of the objectives of the strategy was to ensure health and well-being for women, children and adolescents. The current study highlights adolescents' healthy lifestyle behaviours as well as the role that parents and decision making play, which could assist South Africa in its policies and programmes to achieve the objective by the year 2030.
- Only limited research exists which explores healthy lifestyle behaviours and promotes positive health, particularly among adolescents in rural settings (Rew, Arheart, Horner, Thompson & Johnson, 2015). The study contributes to the existing body of knowledge in both South Africa and Africa; it is one of the

first studies to examine perceived parenting styles, decision making styles, and healthy lifestyle behaviour of adolescents in a rural setting.

- A number of theories and models have developed from the fields of economics and cognitive psychology, but only a few have been developed from behavioural psychology (especially with the extensive body of literature that exists in choice making behaviour) (McFall, 2015). The current study developed and tested a model examining the interaction between perceived parenting styles and decision making styles on healthy lifestyle behaviours of adolescents, from the perspective of behavioural choice making.
- A number of health behaviour models consider psychological constructs as part of behaviour change, but few examine distress (psychological or emotional in nature) (McKenzie & Harris, 2013). This model has developed, tested, and examined distress as part of decision making, more specifically maladaptive decision making where stress arises as part of the decisional process.

1.14. Definition of terms

Parenting

The behaviours and actions employed by a parent, (mother, father or guardian), as part of the child-rearing process, usually displayed during the developmental phase of childhood (Human-Hendricks & Roman, 2015).

Parenting styles

Parenting styles have been defined as the behaviours that parents employ when they socialise, guide, and rear their children (Maepa, Idemudia & Ofonedu, 2015). Three parenting styles have been identified, namely authoritative, authoritarian, and permissive parenting. These parenting styles differ in their dimensions of parental warmth and strictness (Nosko, Tieu, Lawford & Pratt, 2011).

Decision making

Decision making is a task that people encounter on a daily basis, where there is a constant need to negotiate the best possible course of action for a number of situations in which a decision needs to be taken (Davids, Roman & Leach, 2015).

Decision making styles

Decision making styles are considered as the process that an individual engages in when deciding on the best possible course of action for a decisional situation. The decision making styles that individuals engage in differ from person to person, and have been thought of as being the manner in which an individual gathers information about a decision that needs to be made, as well as how to make sense of the information that has been gathered (Saidur Rahaman, 2014; Albert & Steinberg, 2011).

Health

The World Health Organisation (2006) defines health as being “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”

Healthy lifestyle behaviours

Healthy lifestyle behaviours are actions that an individual engages in that improve health, well-being and self-actualisation (Pender, 1996). They are mostly concerned with lifestyle -related behaviours which improve overall health and well-being of individuals (Steinberg, 2014).

Adolescent

An adolescent is an individual in the developmental phase of adolescence, a transitional phase of development between childhood and adulthood (Louw & Louw, 2014).



Health promotion model

The Health Promotion Model is a theoretical framework which examines the factors that play a role in the promotion of positive health and well-being (Mohamedian et al., 2011).

Structural equation modelling

Structural equation modelling is an accepted statistical technique that is used to test theory in a number of academic spheres. It is used to establish measurement models and structural models to examine complicated behavioural relationships and associations (Nusair & Hua, 2010).

Systematic review

According to Petticrew and Roberts (2006), a systematic review is “a review that strives to comprehensively identify, appraise, and synthesize all the relevant studies on a given topic.”

1.15. Thesis layout

Chapter One

The first chapter of the thesis introduces the reader to the field of the study. The three key variables that will be explored in the thesis, namely parenting styles, decision making styles, and healthy lifestyle behaviour, are introduced to the reader.

Chapter Two

Chapter Two presents the Health Promotion Model, which was the theory that guided the study. The chapter looks at the theoretical assumptions and propositions, as well as the main constructs of the theory.

Chapter Three

Chapter Three introduces the mixed methodology that was used in the study, as well as explaining the process that was followed in the different stages. This chapter aims to provide the reader with an overall understanding of the steps followed and often refers to more details regarding the methodology in the various chapters that were published in article format. This was done to avoid duplication of information, but to still provide sufficient information regarding the methodological steps followed.

Chapter Four

Chapter Four addresses Objective One of the study that examines the associations between parenting styles and physical activity in previous empirical studies. This chapter has been published; it was taken as a pilot study for Stage One of the research study, as a number of limitations were established. These limitations were as follows: (i) considering only parenting styles in empirical studies would be limiting and would not be a true reflection of the role of parenting and (ii) considering only physical activity as a healthy lifestyle behaviour also limits the quality of the information yielded in the review because when one considers the World Health Organisation's definition of health, it seeks to consider a holistic understanding of health and not just the absence of disease. Therefore an additional review was conducted that examined parenting approaches and healthy lifestyle behaviours. This chapter has been accepted and published in the African Journal for Physical Health Education, Recreation and Dance. The findings were also presented at the Community and Health Sciences Research Day. This manuscript was rated as the top downloaded manuscript in South Africa by ResearchGate, on 19 July 2015.

Chapter Five

Chapter Five addresses the limitations that were established at the completion of the review presented in Chapter Four. This chapter examines the associations between parenting approaches and healthy lifestyle behaviours of children and adolescents. It considers parenting approaches as it allows for a greater understanding of the complexity of parenting and general healthy lifestyle behaviours which are not restricted to physical activity and nutrition but extend to the holistic understanding of health as presented by the World Health Organisation. This chapter presents the

associations between parenting approaches and healthy lifestyle behaviours of children and adolescents as established in empirical studies. The chapter has been submitted to the *Health: An Interdisciplinary Journal for the Social Study of Health, Illness & Medicine* and is currently under review.

Chapter Six

Chapter Six addresses Objective One that examines the associations between parenting approaches and decision making styles of children and adolescents. This chapter sheds more light on the associations that are presented in empirical studies to guide the conceptualisation of the model. This chapter has been accepted and published as part of Springer International's First Online in the Adolescent Research Review. Its findings have been presented at the (i) European Congress of Psychology in Milan, Italy as well as the (ii) Child and Family Studies Doctoral Students Symposium in Cape Town, South Africa.



Chapter Seven

Chapter Seven and Eight address Objective Two; they were presented separately because Chapter Seven established whether there were significant differences among adolescents' perceived parenting styles, decision making styles, and engagement in healthy lifestyle behaviours on the basis of family structure, while the next chapter aims to establish whether there are any significant differences on the basis of gender. The reason for these two chapters was to establish whether family structure (Chapter Seven) or gender (Chapter Eight) could be confounding variables that might have affected the model presented in Chapter Nine. This chapter has been accepted and published in the *African Journal for Physical Health Education,*

Recreation and Dance. The findings presented in this chapter have also been presented at the (i) Rural Research Days Conference, hosted by the University of Stellenbosch, Cape Town, South Africa as well as the (ii) Community and Health Sciences Research Day, Cape Town South Africa.

Chapter Eight

Chapter Eight also addresses Objective Two of the study; it aims to establish whether there are any significant differences between male and female participants' perceived parenting styles, decision making styles, and healthy lifestyle behaviours. This chapter has been submitted and is currently under review in the journal Gender and Behaviour.



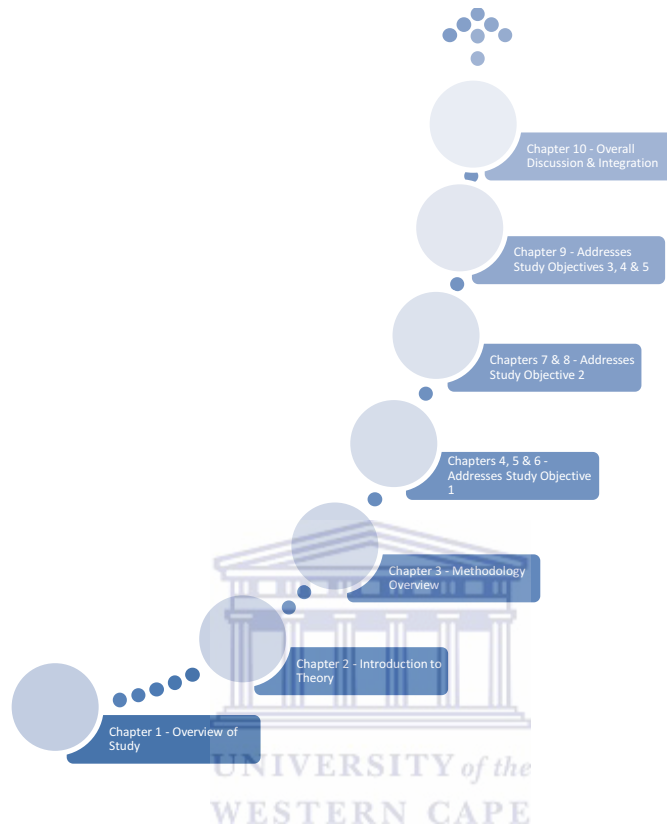
Chapter Nine

Chapter Nine addresses Objectives Three, Four and Five of the study. It presents the testing of the proposed model using both Confirmatory Factor Analysis and the Structural Equation Model. The chapter presents the findings in relation to the interaction between maternal and paternal parenting styles, decision making styles, and engagement in healthy lifestyle behaviour. This chapter has been submitted and has been accepted for publication in the African Journal for Physical Health Education, Recreation and Dance.

Chapter Ten

Chapter Ten presents the overall discussion and integration of the findings, the conclusion, and recommendations for future studies.

Figure 1.1: Diagrammatical Representation of Thesis Outline



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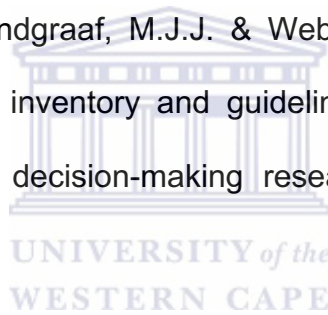
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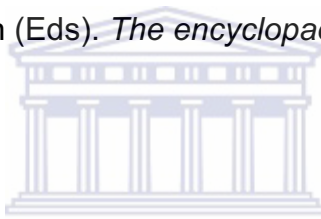
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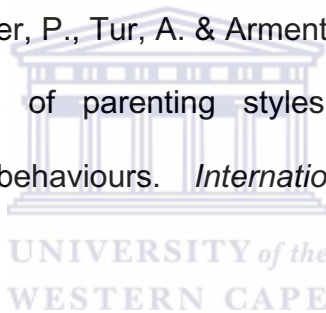
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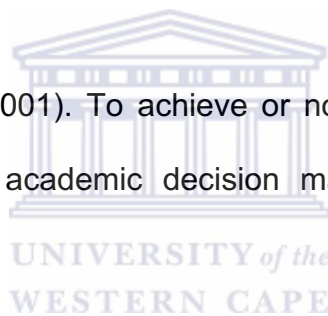
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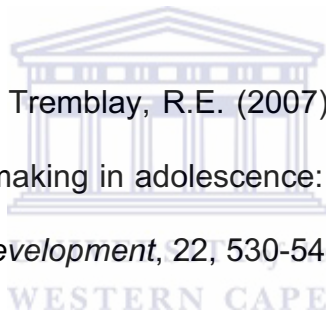
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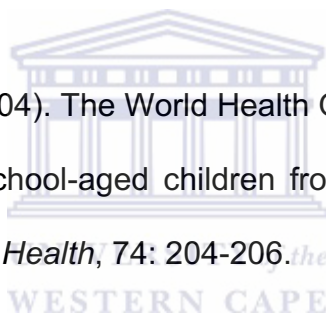
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CHAPTER TWO

THE HEALTH PROMOTION MODEL

2.1. Introduction

The first chapter provided an understanding of the variables or constructs that were examined in the study, namely perceived parenting styles, decision making styles, and healthy lifestyle behaviours. Understanding the problems associated with adolescent engagement in healthy lifestyle behaviours presented in research is not sufficient, if not grounded within a particular theory. The current chapter therefore provides insight into the Health Promotion Model that was used to contextualise this study.



2.2. Theories and models

There is a distinct difference between theories and models. Theories can be defined as well-documented descriptions and explanations of a particular phenomenon within a particular discipline that explains and predicts interactions among variables (Tracey & Morrow, 2012). Models are considered as generalised or hypothesised understandings used in the process of explaining and analysing a particular phenomenon (Glanz & Rimer, 1995). The concepts 'theory' and 'model' are often used interchangeably, and there are disagreements among scholars as to whether they are indeed distinctly different or the same (Tracey & Morrow, 2012). In this chapter, these terms will be considered as being the same, as understanding of the world is often shaped by the worldview of the application of certain theories or models. Theories and models are often made up of three components, namely (i) naming and defining the phenomenon of interest that is examined, (ii) defining the

constructs or variables associated with the phenomenon, and (iii) providing an understanding of the associated relationships of the constructs and variables when examining the phenomenon (Haugh, 2012; Suddaby, 2010).

2.3. Health Promotion Model

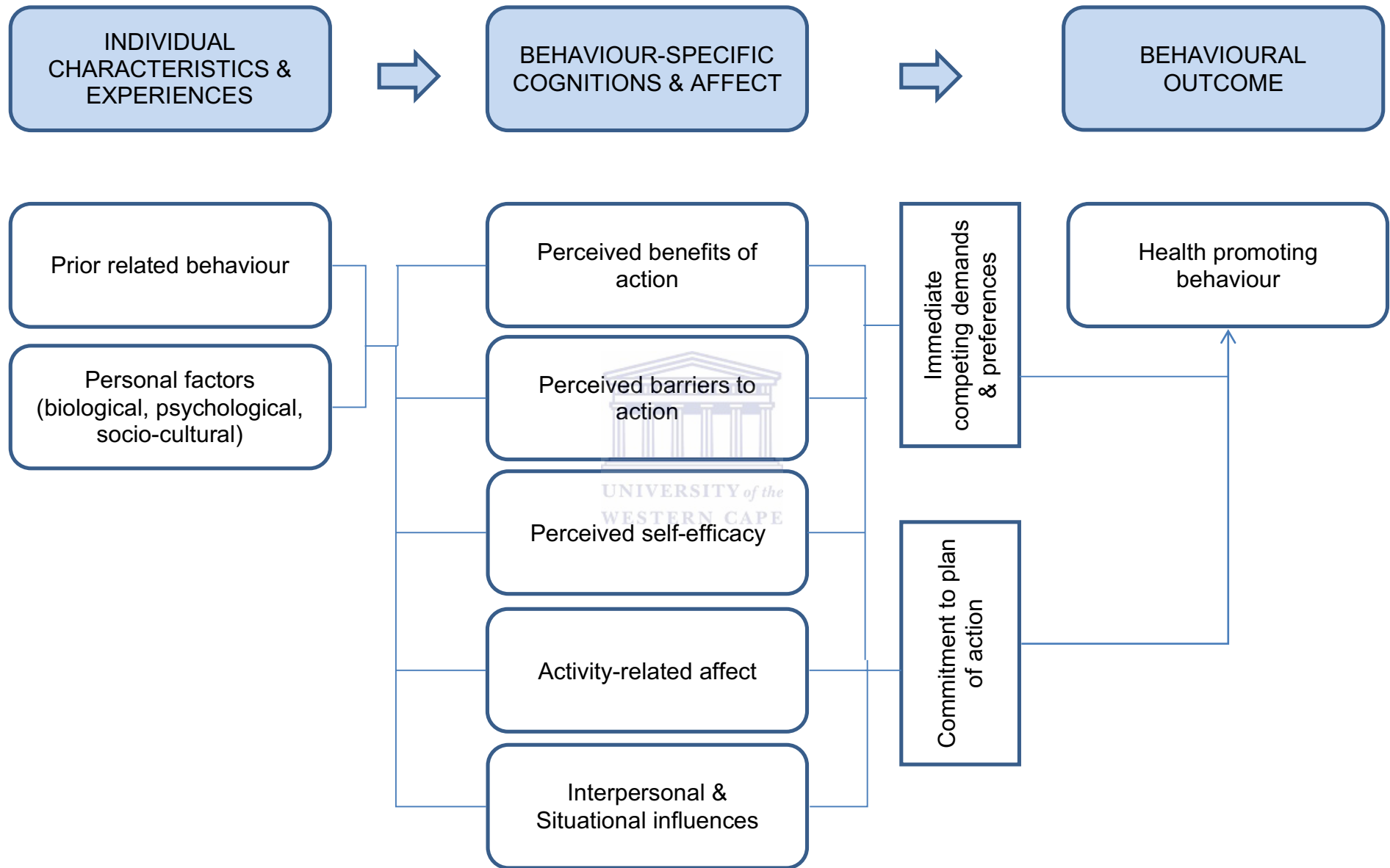
Pender's (1996) Health Promotion Model is a theoretical framework often used in understanding and predicting behaviours which promote positive health and well-being of individuals, and was therefore selected in theoretically guiding the study (Dehdari, Rahimi, Aryaeian, Gohari & Esfeh, 2014; Vakili, Rahaei, Nadrian & YarMohammadi, 2011); (see Figure 2.1 for a diagrammatic representation of the model). The model considers the interaction between the individual, the interpersonal factors, and the environment in which an individual find him/herself in pursuit of behaviours which promote health (Dehdari et al., 2014; Mohamadian et al., 2011). Pender first developed the Health Promotion Model in 1982, adapted it in the late 1980s, and then finally in 1996 (McEwen & Wills, 2002).

Theoretically, the Health Promotion Model is grounded in expectancy-value theory (which proposes that individuals' behaviour is goal-directed, and behaviour will yield positive expected value or outcomes) and social cognitive theory (which proposes that an individual's behaviour together with environment and personal factors, all interact with one another) (Michie et al., 2014; Dehdari et al., 2014; Masters, 2011; Pender, Murdaught & Parsons, 2002; McEwen & Wills, 2002). The model provides a framework to work in that incorporates both viewpoints from within the behavioural sciences and nursing, to provide perspectives of understanding regarding the factors associated with engagement in positive health and well-being (McEwen & Wills,

2002). These perspectives of understanding the associated factors that are pivotal in the promotion of positive health-related behaviours can be seen in the theoretical assumptions and propositions as stated below:



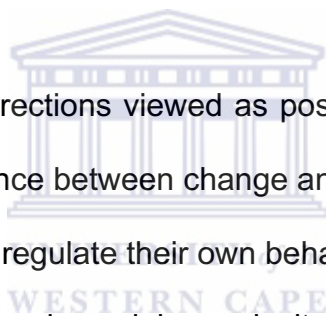
Figure 2.1 Diagrammatical representation of Pender's Health Promotion



2.4. Health Promotion Model: Theoretical assumptions

Pender's (1996) Health Promotion Model provides seven theoretical assumptions guiding the model, that take into account the important role that an individual (or adolescent within the context of the current study) plays in creating and sustaining healthy lifestyle behaviours, as well as the context in which these behaviours take place (Masters, 2012, p. 256; Masters, 2011, p. 407; Pender, Murdaught & Parsons, 2002, p. 63):

- 'Persons seek to create conditions of living through which they can express their unique human health potential;
- Persons have the capacity for reflective self-awareness, including assessment of their own competencies;
- Persons value growth in directions viewed as positive, and attempt to achieve a personally acceptable balance between change and stability;
- Individuals seek to actively regulate their own behaviour;
- Individuals in all their bio-psycho-social complexity, interact with the environment, progressively transforming the environment and being transformed over time;
- Health professional (from the perspective of the model) constitute a part of the interpersonal environment, which exerts influence on persons throughout their life span;
- Self-initiated reconfiguration of person-environment interactive patterns is essential to behaviour change (Masters, 2012, p. 256; Masters, 2011, p. 407; Pender, Murdaught & Parsons, 2002, p. 63).



2.5. Health Promotion Model: Theoretical propositions

Health behaviour that promotes positive health and well-being within the framework of the Health Promotion Model is based upon fourteen theoretical propositions in attempts to understand health behaviour from the perspective of the model (Masters, 2011). These fourteen propositions listed by Masters (2011, p. 408; 2012, p. 257) and Pender, Murdaught and Parsons (2002; p. 63-64) are:

- 'Prior behaviour and inherited and acquired characteristics influence beliefs, affect, and enactment of health promoting behaviour;
- Persons commit to engage in behaviours from which they anticipate deriving personally valued benefits;
- Perceived barriers can constrain commitment to action, a mediator of behaviour, as well as actual behaviour;
- Perceived competence or self-efficacy to execute a given behaviour increases the likelihood of commitment to action and actual performance of the behaviour;
- Greater perceived self-efficacy results in fewer perceived barriers to a specific health behaviour;
- Positive affect toward a behaviour results in greater perceived self-efficacy, which can, in turn, result in increased positive affect;
- When positive emotions or affect are associated with a behaviour, the probability of commitment and action are increased;
- Persons are more likely to commit to and engage in health-promoting behaviours when significant others model the behaviour, expect the behaviour to occur, and provide assistance and support to enable the behaviour;

- Families, peers, and health care providers are important sources of interpersonal influence that can increase or decrease commitment to and engagement in health-promoting behaviour;
- Situational influences in the external environment can increase or decrease commitment to or participation in health-promoting behaviour;
- The greater the commitment to a specific plan of action, the more likely health-promoting behaviours are to be maintained over time;
- Commitment to a plan of action is less likely to result in the desired behaviours when competing demands over which persons have little control require immediate attention;
- Commitment to a plan of action is less likely to result in the desired behaviour when other actions are more attractive and thus preferred over the target behaviour;
- Persons can modify cognitions, affect, and the interpersonal and physical environments to create incentives for health actions' (Masters, 2012, p. 257; Masters, 2011, p. 408; Pender, Murdaught & Parsons, 2002, p. 63-64).

The Health Promotion Model assists in understanding adolescents' healthy lifestyle behaviours (Mohamadian et al., 2011; Guthrie, Loveland-Cherry, Frey & Dielman, 1994) but not many research studies have framed their research within the Health Promotion Model (Dehdari, Rahimi, Aryaeian, Gohari & Esfeh, 2014).

2.6. Health Promotion Model: Determinants of health behaviour

The Health Promotion Model proposes three factors that are important in the determinants of health behaviour of individuals; these are (i) individual

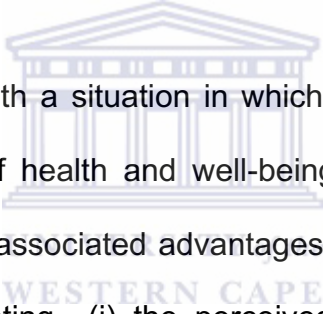
characteristics and experiences, (ii) behaviour-specific cognitions and affect, and (iii) situational and interpersonal influences (Dehdari et al., 2014; Masters, 2012; Keegan, Chan, Ditchman & Chiu, 2012; Masters, 2011; Vakili, Rahaei, Nadrian & YarMohammadi, 2011; Mohamadian et al., 2011; Srof & Velsor-Friedrich, 2006; McEwen & Wills, 2002; Pender, Murdaught & Parsons, 2002). These factors are important in the engagement in healthy lifestyle behaviours of individuals.

2.7. Individual characteristics and experiences

Individuality is characterised by uniqueness. The first determinant of the Health Promotion Model dealing with the individual characteristics and experiences highlights individuality by taking into consideration the subjective characteristics and experiences that make individuals unique. The individual characteristics include personal factors related to age, developmental phase, and biological factors (Masters, 2011). These characteristics could be shaped by psychological as well as socio-cultural factors (Masters, 2012). They often shape the individual's experiences, which in-turn are associated with the proposed behavioural changes to promote health. The determinants of individual characteristics and experiences are made up of two constructs, namely (i) prior related behaviour (the individual previously engaged in particular behaviour which has led him/her to the current situation to engage in possible health behaviour) and (ii) personal factors (the characteristics that make the individual unique and includes biological, psychological and socio-cultural factors) (Keegan, Chan, Ditchman & Chiu, 2012).

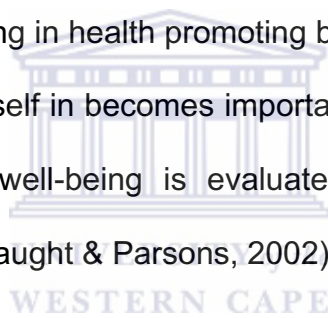
2.8. Behaviour-specific cognitions and affect

The second determinant as identified within the Health Promotion Model is the behaviour-specific cognitions and affect. This determinant constitutes the behaviour-specific constructs within the model that play an important role in motivation towards engagement in health promoting behaviour (Masters, 2011; Pender, Murdaught & Parsons, 2002). The behaviour-specific cognitions and affect determinant in the model are made up of the following constructs: (i) perceived benefits of action, (ii) perceived barriers to action, (iii) perceived self-efficacy, (iv) activity-related affect, (v) interpersonal influences and (vi) situational influences (Michie et al., 2014; Masters, 2012, 2011; Pender, Murdaught & Parsons, 2002).



When individuals are faced with a situation in which a decision needs to be taken that involves the promotion of health and well-being, considering all the possible alternatives available and the associated advantages of each action and behaviour, would be a display of evaluating (i) the perceived benefits of each action and behaviour (Masters, 2012). In addition to considering the expected positive outcomes of the available actions and behaviour, people often take into consideration possible obstacles associated with the alternatives available in deciding whether to engage in a particular health-related behaviour or not. This would be a situation where there is the display of considering all possible (ii) perceived barriers to action that might hinder the promotion of positive health (Michie et al., 2014; Pender, Murdaught & Parsons, 2002). These two constructs of considering both the possible benefits and barriers to the alternatives at hand, is often part and parcel of the individual's convictions that he or she is capable of implementing actions that promote positive health. This construct would be the

display of an evaluation of (iii) the perceived self-efficacy (Masters, 2011). Emotional components in the decisions to engage in a particular behaviour or not are not uncommon; an individual's evaluation of the subjective emotions associated with a particular alternative, whether positive or negative, would be an example of activity-related affect. In addition to these constructs that form part of the behaviour-specific cognitions and affect are (v) the interpersonal influences and (vi) situational influences (McEwen & Wills, 2002). The interpersonal influences common to health related behaviour engagement are family, peers, and healthcare professionals who are often influential in the decisions that are shaped by the norms prescribed, social support, and modelling (Pender, Murdaught & Parsons, 2002). When considering the array of alternatives to engaging in health promoting behaviours, the context in which the individual finds him or herself in becomes important, because each alternative to improve health and overall well-being is evaluated considering all the options (Masters, 2012; Pender, Murdaught & Parsons, 2002).



2.9. Behavioural outcome

The third component of the Health Promotion Model is the behavioural outcome of engaging in health promoting behaviours as a result of the influence of the individual characteristics and experiences as well as behaviour-specific cognitions and affect (Pender, Murdaugh & Parsons, 2006). Even though the model in terms of structure does not suggest that the individual characteristics and experiences influence the behaviour-specific cognitions, it actually does, and healthy lifestyle behaviour is largely predicted and shaped by the behaviour-specific cognitions and affect (Keegan, Chan, Ditchman & Chiu, 2012; Ronis, Hong & Lusk, 2006). The behavioural outcome of engaging in health promoting behaviours is also believed to

be shaped by (i) the individual's preferences and demands, as well as (ii) the plan of commitment before the behaviour is engaged in (Pender, Murdaugh & Parsons, 2006).

The Health Promotion Model proposes that (i) individual characteristics and experiences which were considered as being the developmental phase of adolescence in the study, play an important role in (ii) the behaviour-specific cognitions and affects, including interpersonal and situational factors, were represented by the perceived parenting styles and the adolescent's decision making styles. The model suggests that the behaviour-specific cognitions and affect also predict (iii) the behavioural outcome, which in this study was the healthy lifestyle behaviours.



2.10. Conclusion

Theory plays an important role in research, as it provides the lenses through which one makes sense of the world, or the phenomena being studied, as presented in the current chapter. The Health Promotion Model in the study provides a framework in which to examine and understand the variables that were central to the study, namely perceived parenting styles, decision making styles, and healthy lifestyle behaviours of adolescents. The important role that theory plays in research can also be seen in certain methodologies, as will be discussed in the next chapter.

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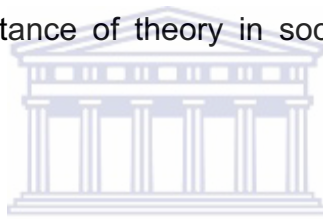
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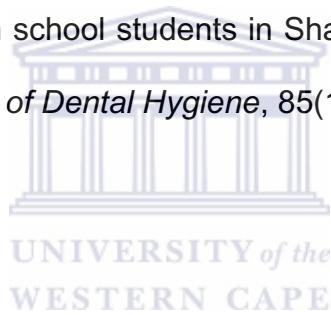
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CHAPTER THREE

METHODOLOGY

3.1. Introduction

In the first chapter the background information for the study as well as the research aims and objectives were outlined. The aim of the study was to develop a model that tests the interaction between perceived parenting styles and decision making styles on healthy lifestyle behaviours of adolescents, from the perspective of Pender's Health Promotion Model as discussed in Chapter Two. To achieve this aim, the study employed a mixed methodological sequential exploratory design, using both (i) systematic literature reviews and (ii) cross-sectional quantitative data. This chapter aims to explain the methodology employed for the research design used.

3.2. Mixed methodology

'Mixed method research' refers to the amalgamation of qualitative and quantitative research methods (Hanson, Creswell, Plano Clark, Petska & Creswell, 2005). It is believed that when these two methods of research are meshed the researcher's findings are likely to be enriched.

Mixed methodological research has become an increasingly popular research design in a number of fields, including health and health related research (Doyle, Brady & Byrne, 2009). Tashakkori and Cresswell (2007) have defined it as a study where the researcher collects, analyses and interprets the results making use of both qualitative and quantitative approaches in a single study. It is believed that mixed methodological research is shaped by using the study aim as its foundation,

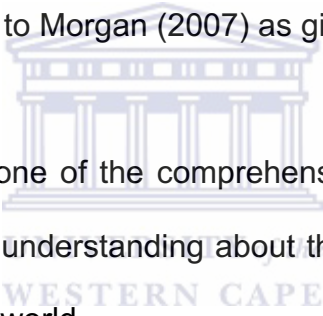
particularly when framed within a pragmatist paradigm. The use of mixed methodological research arises when neither qualitative nor quantitative methodologies on their own would be sufficient to suit the research problem (Ivankova, Creswell & Stick, 2006).

3.3. Paradigms of mixed methodology

Constant debate within research still exists, particularly in the social sciences, regardless of the advantages that mixed method studies present. These perspectives of the value which qualitative and quantitative research provide in answering an array of questions, often arise as a result of the paradigm 'wars' presented in literature (Feilzer, 2010). The positivist / post-positivist paradigm views reality as being independent of and separate from the researcher, where making sense of the world can only be done by following a 'scientific process' when a phenomenon can only be studied and observed when it is measurable (taking into consideration quantitative methods and statistics) (Somekh et al., 2005; Creswell, 2003). In contrast is the constructivist / social constructivist paradigm, where researchers make sense of the world by understanding subjective experiences that people associate with their conceptions of the world (that are largely interpretative and done by means of qualitative methods) (Somekh et al., 2005; Creswell, 2003). Research perspectives have also contributed to the assumption that quantitative methods are deemed higher on the hierarchy of evidence, while the opposite is thought of qualitative methods (Muncey, 2009). The 'purist' view of researchers stuck within their silos of qualitative and quantitative research, as well as the paradigm wars have led to the perceived importance of the hierarchy of evidence, and has given rise to the methods which are more readily published and accessed. The

emergence of mixed methodological research, also came with contested views from researchers on different ends of the continuum (Bryman, 2008). A number of purists were of the opinion that qualitative and quantitative research cannot be merged, and that they each have their own distinct purpose (Creswell & Plano Clark, 2011; Bryman, 2008).

In understanding perspectives of paradigm wars, it becomes important to define the concept of 'paradigm', particularly within the social sciences. Morgan (2007) has proposed four conceptions of paradigm common to the social sciences. which are: (i) worldviews, (ii) epistemological stances, (iii) shared beliefs in a research field, and (iv) model examples according to Morgan (2007) as given below:

- 
- Paradigm as worldview is one of the comprehensive paradigms as it takes into consideration the broadest understanding about the views, actions, experiences, and thoughts regarding the world.
 - Paradigms as epistemological stances, are largely shaped by the researcher's 'philosophy of knowledge' that shapes the manner in which research questions are examined and answered, narrowly framed within the researcher's belief system (examples of this paradigm include realism and constructivism).
 - Paradigms as shared beliefs often arise in a group of researchers who share a common view of which questions are considered important and the ways in which they should be answered in research.

- The final perspective of paradigms as model examples, is where archetypes or protocols of research act as examples of how research can be conducted within a given specific research area.

Taking into consideration the perspectives of paradigms, the final perspective becomes interesting particularly when examining mixed method research. Pragmatism as a research paradigm is one such example of where paradigms are understood from the perspective of being 'model examples' for research. The perspective of paradigms as examples for how research should be done, in light of pragmatism, becomes important when examining the combination of qualitative and quantitative methods in mixed methodological research (Morgan, 2007).

3.4. Mixed methodology: Pragmatism (an alternative paradigm)

Amalgamation of qualitative and quantitative research methods has often left researchers searching for alternative paradigms that only take into consideration the one method and not the other (Feilzer, 2010). This has led to a number of questions among researchers, and has resulted in attempts to find an alternative paradigmatic perspective of incorporating mixed methodology which moves away from the main philosophical underpinnings present in previous paradigms, and more to addressing the research questions that need to be satisfied (Creswell & Plano Clark, 2007; 2011). Mixed methodological research presents a number of alternative 'paradigms' of which pragmatism is most commonly used (Feilzer, 2010). Pragmatism allows for the researcher to focus on the research problem that needs to be addressed and the associated consequences of the research, which is contrary to what positivism, post-positivism, and constructivism offer as part of their worldview (Feilzer, 2010; Bryman,

2008; Miller, 2006; Tashakkori & Teddlie, 1998). This is often demonstrated when 'purists' believe that qualitative and quantitative methods are different, and are each confined to their own epistemological and ontological perspectives of research (Hanson, Creswell, Plano Clark, Petska & Creswell, 2005). On the contrary, the pragmatists are of the opinion that regardless of the 'purist' perspectives, what matters is the research question or problem at hand, and that that takes precedence over the method or theoretical perspective, and that both qualitative and quantitative methods can be used in a single study (Hanson et al., 2005; Tashakkori & Teddlie, 2003)

Pragmatism, as a paradigm, views the world as consisting of both single and multiple realities that allow the researcher to be open to examining and addressing the research problem within the 'real world' (Creswell & Plano Clark, 2011; Feilzer, 2010; Morgan, 2007; Creswell & Plano Clark, 2007). The pragmatic paradigm questions the underpinnings of positivism and constructivism, and promotes a worldview of the amalgamation of qualitative and quantitative methodologies (Feilzer, 2010; Morgan, 2007) confirming that these methods are not distinct when considering the epistemology and ontology, but that they are collectively similar in their attempts to unravel research problems (Feilzer, 2010; Hanson, 2008). Overall, pragmatism is not concerned about the segregation that exists in the hierarchy of evidence regarding qualitative and quantitative methods, and can be seen as providing a solution to what has been considered the paradigm 'wars' (Feilzer, 2010; Hanson, 2008; Morgan, 2007). Pragmatism affords researchers the opportunity of satisfying what their intended questions were regarding the research problem, rather than addressing it minimally from within a silo, or 'purist' paradigm (Feilzer, 2010; Hanson,

2008). Therefore the current study employed a pragmatist paradigm, as using both qualitative and quantitative methods would assist in satisfying the overall aim of the study, which was *to develop and test a model that examines the interaction effects of perceived parenting styles and adolescent decision making styles on healthy lifestyle behaviours of adolescents in the rural Western Cape.*

3.5. Mixed methodology: Types of research designs

Mixed methodology generally has six research designs which are grouped into being either sequential or concurrent. The sequential research designs are made up of (i) sequential explanatory design, (ii) sequential exploratory design and (iii) sequential transformative design. (i) The sequential explanatory design has the quantitative data collected and analysed, and this is followed by the qualitative method. Usually more importance is placed on the quantitative data, while the qualitative data is used to explain and discuss the quantitative data. Usually this form of research design is used when the research questions are about explaining relationships and interactions in a study (Hanson et al., 2005). (ii) The sequential exploratory design first starts with the qualitative data collection and analysis, and is followed by the quantitative methods. Importance in this design is placed on the qualitative data, and uses the quantitative data to explore and understand the qualitative data. This design is often used when the study variables are unknown, or when testing a theory, as well as when generalising qualitative data to a study population (Hanson et al., 2005). (iii) The sequential transformative design is different to the sequential explanatory and exploratory designs in that it uses an 'explicit advocacy lens' usually stated at the beginning of the research study. Data collection usual starts with either qualitative or quantitative first, and no importance is placed on either qualitative or

quantitative methods as part of the study. This design is useful when trying to understand certain phenomena that might change, that is currently being examined by the researcher (Hanson et al., 2005).

The concurrent research designs are made up of (i) concurrent triangulation design, (ii) concurrent nested design, and (iii) the concurrent transformative design. (i) The concurrent triangulation design collects and analyses both qualitative and quantitative data at the same time; both qualitative and quantitative data is given equal importance. Understanding the data collected and analysed usually happens when the data is triangulated or converged, which makes this design useful when the researcher tries to confirm findings in the research study (Hanson et al., 2005). (ii) The concurrent nested design also collects and analyses both qualitative and quantitative data at the same time; either the qualitative or quantitative data is deemed as having more importance than the other, while the nested data would be considered as being of lesser importance. Understanding the data usually takes place when data is integrated, which makes this design useful when the researcher tries to gain a comprehensive understanding of the phenomena being examined (Hanson et al., 2005). (iii) The concurrent transformative design uses an 'explicit advocacy lens' usually started at the beginning of the research study'. Both qualitative and quantitative data are collected and analysed at the same time while no importance is placed on qualitative or quantitative data. This design also becomes useful when the researcher tries to understand certain phenomena that might change as they are being examined or when attempting to establish diverse viewpoints on a research topic (Hanson et al., 2005).

3.6. Mixed methodological research design

A mixed methodological sequential exploratory research design was used in this study, to address the research problem as outlined in Chapter One. A mixed methodological sequential exploratory design, as previously discussed, is a study that employs both qualitative and quantitative approaches in one study, where the data collected from the one approach (qualitative) provides a basis for the next approach (quantitative) used in the study (Cameron, 2009).



Figure 3.1

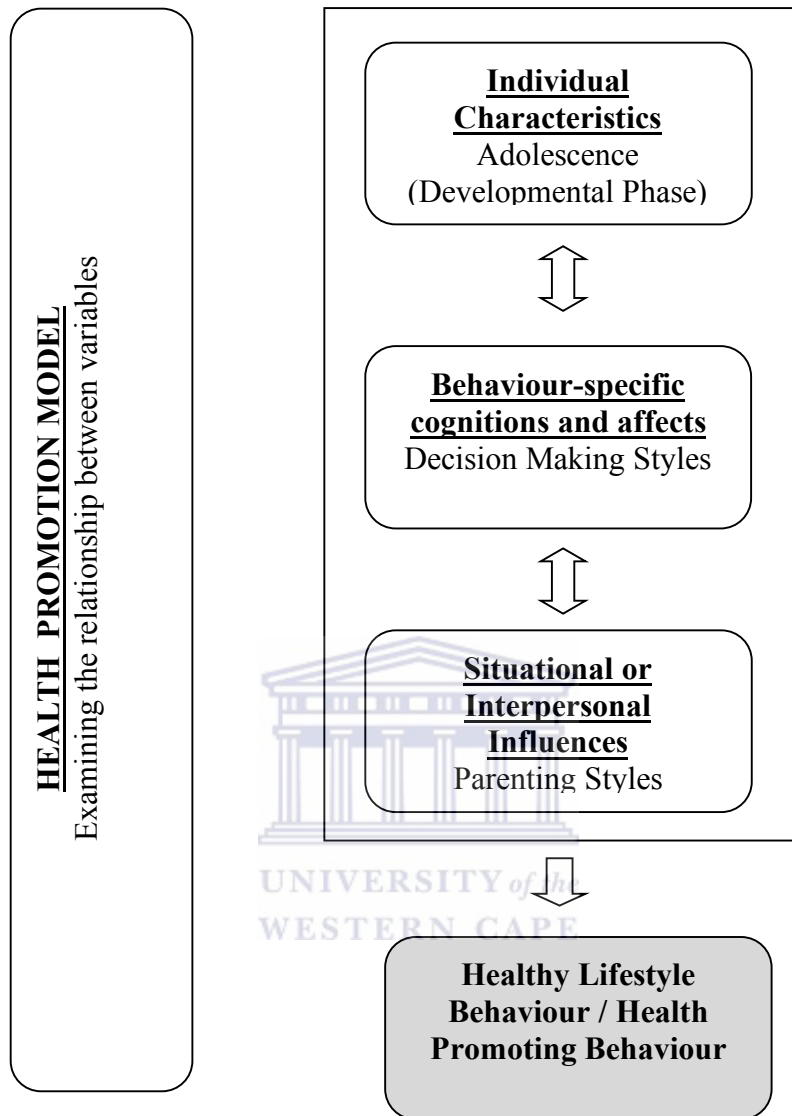
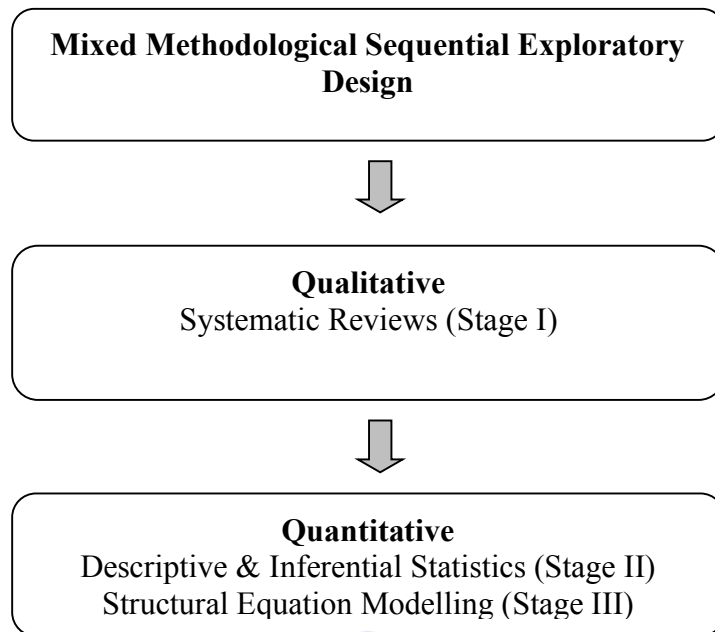


Figure 3.2



The figure (Figure 3.2) is a diagrammatical representation of the sequential steps taken in the research study. The first step used a qualitative methodology, and this was followed by a quantitative methodology in the second and third step. In sequential exploratory designs, the qualitative data and findings provide insight into the phenomena being studied. In this study, the phenomena which were studied were perceived parenting styles, decision making styles, and engagement in healthy lifestyle behaviours of adolescents in the rural Western Cape, which was guided by the Health Promotion Model (Figure 3.1).

The study employed both systematic literature reviews (Stage One) and a quantitative cross-sectional research design (Stage Two and Three) to assist in establishing the interaction between perceived parenting styles and decision making styles on healthy lifestyle behaviours of adolescents. The systematic literature review provides insight into what current literature has to say about the interaction between perceived parenting styles and decision making styles on healthy lifestyle behaviours of adolescents. Researchers often debate about whether systematic and narrative reviews are in fact approaches of qualitative methodology, but Flick (2006) sheds light on this continuous debate. Flick (2006) posits that the notion of qualitative research is often assumed to be synonymous with discovering new information and uncovering areas of research which have not been looked into or discovered before. However, this view is often corrupted, as the view of uncovering information which has previously not been uncovered is rather rare, seeing that research areas these days often overlap in some terms and concepts, and the idea of an area of research being new and undiscovered or untapped into could be considered a rather naive or limited point of view. The view of considering systematic reviews as important points

of departure in research studies, stems from the initial view point of Grounded Theory, where it is assumed that researchers should collect and make sense of the information gathered, without consulting what currently exists in literature (Flick, 2006). Therefore, regardless of the constant debate among scholars about whether or not to consider systematic reviews of literature as being qualitative in nature, the proposed view by Flick (2006) has guided the decision to consider the systematic reviews as a qualitative approach in the study.

In quantitative cross-sectional research, Denzin and Lincoln (2000) state that quantitative research tends to highlight the measurement and analysis of the various cause-and-effect relationships between the variables. It is also a method where data is gathered in the form of numbers which are analysed using statistical measures (Terre Blanche, Durrheim & Painter, 2006). In the cross-sectional design, the time dimension is considered as only providing a snapshot of the current status of the issue and does not consider the issue longitudinally (Babbie & Mouton, 2007).

3.7. Research setting

The research study was set in South Africa, which in terms of population and land is one of the largest countries in sub-Saharan Africa (Gossage et al., 2014; Haworth & Acuda, 1998). The countries also find agriculture as being one of the largest employment sections (London, Sanders & te Water Naude, 1998). South Africa is divided into nine provinces, one of which is the Western Cape. The Western Cape, in terms of agriculture, is home to the largest wine and fruit production areas (Gossage et al., 2014). The research study took place within the Theewaterskloof Municipality

in the Overberg Region of the Western Cape. The Theewaterskloof Municipality is made up of 8 rural towns. Each of the rural towns has their own natural crops that play a pivotal role in the economic development of the region. The present study was conducted in the Grabouw area as part of a larger Community Engagement study funded by the National Research Foundation to build and strengthen the Theewaterskloof Communities. Grabouw is a mid-sized town located in the Western Cape Province approximately 65 km south-east of Cape Town along the N2 highway. It is located over Sir Lowry's Pass from Somerset West in the vast Elgin Valley, which stretches between the Hottentots-Holland, Kogelberg and Groenland Mountains, with the valley floor still being substantially hilly. Grabouw is the commercial centre of the Elgin Valley, the largest single export fruit-producing area in Southern Africa.



3.8. Population

The study population is defined as “the totality of persons, events, organisation units, case records or other sampling units with which the research problem is concerned” (de Vos, Strydom, Fouché & Delport, 2005, p194). Therefore it can be considered as the objects that were used in the research study to assist in yielding results. In the various stages of the study, different study populations were used. Stage One made use of databases, search engines and various journals as part of the population for the first stage. The population for the second stage were made up of high school learners from the Overberg education district in the Western Cape. The third stage used the databases, search engines and journals from the first stage as well as the high school learners from the Western Cape from the second stage. The next

section will discuss the sampling procedure, data collection and analysis followed in the three stages (which are discussed in more detail in Chapters Four to Nine).

3.9. Stage One: Systematic review

Systematic review of literature is “a systematic, explicit, and reproducible method for identifying, evaluating, and synthesising the existing body of completed and recorded work produced by researchers, scholars, and practitioners” (Fink, 2010, p. 3).

The procedure followed in the systematic reviews (further discussed in Chapters Four, Five and Six) were consistent with outlines provided for systematic reviews that allowed for methodological rigour. The steps followed were (Figure 3.3) (Fink, 2010; Davids & Roman, 2014; Khan, Kunz, Kleijnen & Antes, 2003):

a. Selected research questions in line with aims and objectives of the research study.

To satisfy the first objective of the study (*To systematically review and describe previous research examining the relationship between perceived parenting styles, adolescent decision making styles and healthy lifestyle behaviours of adolescents*) the following research questions were selected and satisfied within the three reviews (in Chapters Four, Five and Six):

- i. What are the relationships / associations between parenting styles and adolescent decision making styles?
- ii. What are the relationships / associations between parenting styles and healthy lifestyle behaviours of adolescents?

b. Choose appropriate databases and/or websites.

The following databases were chosen for the reviews (as well as the reasons why they were selected):

- i. Science Direct: This database was selected as it is considered one of the largest scientific and medical databases currently available.
- ii. Ebscohost: Ebscohost was chosen as it provides a platform to access just over 24 different database platforms that can be searched individually. These were the databases that were selected, based on the subject matter of the reviews in Ebscohost:
 - a. Academic Search Complete
 - b. PsycArticles
 - c. Medline
 - d. SocIndex
 - e. ERIC
- iii. BioMed Central: This database was chosen as it provides open access to over 200 different journals.
- iv. PubMed: This database was selected as it is an open access platform that continually updates current articles on a range of academic subject fields.
- v. Directory of Open Access Journal (DOAJ): DOAJ was selected as it is another database that provides open access to a number of journal articles.
- vi. SAGE Journals: This database was chosen as it consists of widely published journal articles that cover over 560 journals in various academic fields.



c. *Selected search terms and definitions considered in the review.*

The selected search terms and how they are defined are of importance, as the definitions of the search terms must always be considered in the context of the study (in-depth lists of search terms and definitions specific to each review are discussed in Chapters Four, Five and Six). The key terms which were considered in Stage One was:

i. Parenting styles

The term 'parenting styles' is often associated with Baumrind's typology of parenting styles (namely, authoritative, authoritarian and permissive parenting). When piloting (this step is discussed in more detail below in subsection f) the review process in the first review (in Chapter Four) which was the pilot test for the review examining parenting styles and healthy lifestyle behaviours which focused on physical activity only, it became evident that considering parenting styles only was limiting in nature, especially when examining the complexity of parenting within existing literature. In addition to the initial pilot test of the review process, an initial search between parenting styles and decision making styles yielded only one study which examined the associations between parenting styles and decision making styles of adolescents (Commendador, 2011). It became clear that examining the associations between parenting styles only was a narrow and limiting view to consider. Even though the first review (Chapter Four) was accepted for publication, the limitations which became evident were implemented in the other reviews examined (Chapters Five and Six). The key term of parenting style was then replaced with 'parenting approach'. Parenting approach was a much broader concept, which allowed for a number of dimensions of

parenting to be considered instead of the limiting view of only considering parenting rearing behaviours / parenting styles. Considering parenting approaches in the reviews allowed for more depth in finding a number of possible associations with parenting (in a broader sense than parenting styles) as well as (a) decision making styles and (b) healthy lifestyle behaviours.

ii. Decision making styles

Decision making styles in the context of the study looked at decision making from the perspective of Janis and Mann's (1977) model of conflictual decision making (namely, vigilant, hypervigilant and defensive avoidant decision making styles). Research in the social sciences using the perspective on decision making styles was very limited, and only one study in the piloting phases of the review process (this step is discussed in more detail below in sub-section f) considered decision making from the perspective of Janis and Mann. To allow for a more inclusive and information-rich review, decision making styles was considered as being a process in which an individual engages before acting, or having a behavioural outcome based on the decision made. It also allowed for the consideration of more associations between decision making processes / styles. Using the definitions of the various styles as posited by Janis and Mann and other theorists, decision making styles were grouped into being either adaptive or maladaptive forms (this process is explained in more detail in Chapter Six).

iii. Healthy lifestyle behaviours

The concept of healthy lifestyle behaviours in the review studies was considered as being the behaviour outcome, possibly after engaging in a

decision making process, with regard to general health and well-being. The concept of healthy lifestyle behaviours has often been considered as being either engagement in (a) physical activity or (b) good nutrition, or a combination of these. However this limiting, view of healthy lifestyle behaviours constituting only these two elements, was disregarded in this review after conducting the initial pilot review (Chapter Four) which examined parenting styles and physical activity. The final review considered several behaviours with the ultimate goal of aiding and promoting health and well-being in the individual (Chapter Five).

d. Identified inclusion and exclusion criteria for the review.

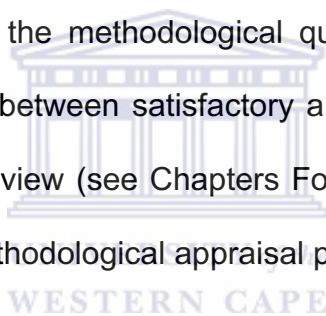
The vast sources of literature available can become overwhelming and cause diminished methodological quality in a review. To avoid presenting findings which lacked robust and methodological rigour, inclusion criteria were established before embarking on the review process. The general inclusion criteria used in reviews were as follows (see Chapters Four, Five and Six for more details on this process):

- i. The study had to be either published in or translated into the English language.
- ii. The study had to be published between 2004 and 2014 (with the exception of the pilot study that covered 2002-2012 – see Chapter Four).
- iii. The study had to use either children, adolescents or youth as part of the sample.

iv. In addition, the study had to examine the relationship / association between parenting approaches, decision making styles / processes and healthy lifestyle behaviours.

e. Developed methodological appraisal tool.

A methodological appraisal tool was developed to assess the adequacy of a study to be considered within the review. The appraisal tool that was developed evaluated the sampling techniques, response rate, reliability and validity as well as the data source used in the various studies (see Chapters Four, Five and Six for the methodological appraisal tool developed specifically for the proposed systematic review). When the methodological quality appraisal score obtained was categorised as being between satisfactory and good, it was considered for possible inclusion in the review (see Chapters Four, Five and Six for a more in-depth discussion of the methodological appraisal procedure employed).



f. Piloted the review process.

The overall aim of conducting the pilot study of the review process is to allow for reliability (Fink, 2010). The pilot study (Chapter Four) assessed the appropriateness and adequacy of the inclusion criteria and methodological appraisal tool. A random sample of studies was selected based on the proposed research questions and the inclusion criteria, and the methodological appraisal tool was used. A week later the reviewer followed the sample process to see if there were any similarities or differences between the consideration for inclusion and the methodological quality of the study. When differences were found between the week of initial piloting, reasons were sought for this inconsistency

until the inclusion criteria and methodological appraisal tool had the same findings within the one week time lapse of the piloting.

g. Review process commenced.

The review processes started after the piloting of the review yielded similar results after the week lapse. The review process started again, with the inclusion criteria as well as the methodological appraisal of the study (each review process is discussed in more detail in Chapters Four, Five and Six).

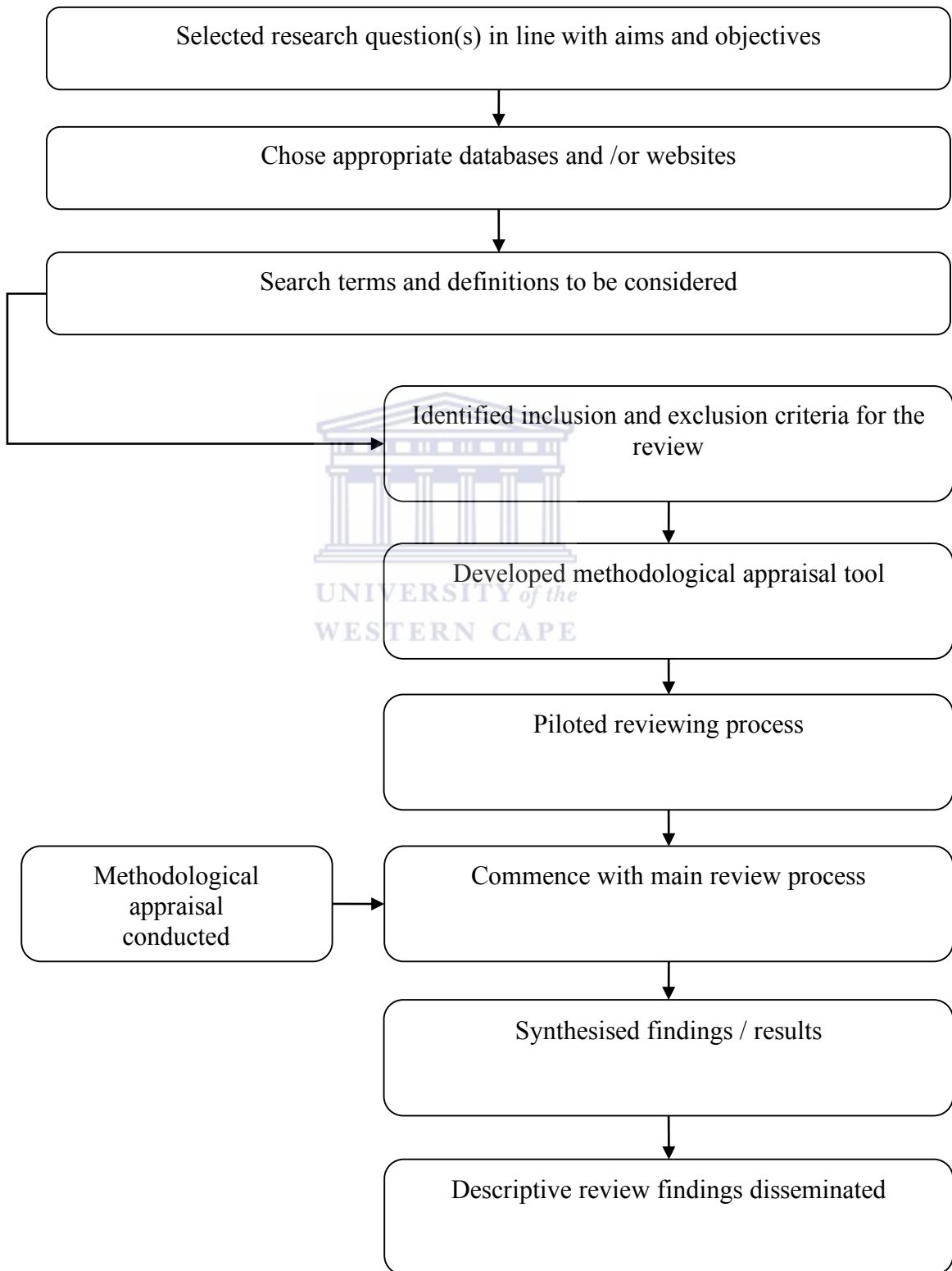
h. Synthesised the research findings and results in the review.

After the selected sample was gathered, data extraction took place within the review. The process of data extraction is used as a method of synthesising and collating all the findings which have been gathered in the review. The data extraction form used gathered the following information about the study: Author(s) name(s), country / geographical location, study design, participant demographic details, measures used, data on the association that was found, and the findings in line with the research question (discussed in more depth in Chapters Four, Five and Six).

i. Results established in the review were disseminated.

After the review process was completed, the synthesised findings were collated and presented in article format and was submitted for publication, as part of the dissemination of findings step of the review process (the dissemination of findings which were published in various accredited, peer-reviewed journals is presented in Chapters Four, Five and Six).

Figure 3.3



3.10. Stage Two: Assessing the variables of adolescents (perceived parenting styles, decision making styles and healthy lifestyle behaviour)

The data collected in this stage of the study was also used in Stage Three along with the information gathered in Stage One of the research study.

a. Research setting

The research study took place in the Theewaterskloof Municipality in the Overberg Region of the Western Cape. The Western Cape is one of the nine provinces in South Africa, and the Theewaterskloof Municipality is made up of 8 rural towns. Each of the towns has its own natural crops that play a pivotal role in the economic development of the region. This study was conducted in the Grabouw area as part of a larger Community Engagement study funded by the National Research Foundation which was aimed at building and strengthening the Theewaterskloof Communities. Grabouw is a mid-sized town approximately 65 km south-east of Cape Town along the N2 highway. It is located over Sir Lowry's Pass from Somerset West in the Elgin Valley, which stretches between the Hottentots-Holland, Kogelberg and Groenland Mountains, with the valley floor still being substantially hilly. Grabouw is the commercial centre for the Elgin Valley, the largest single export fruit producing area in Southern Africa.

b. Sampling

The research study formed part of a larger Community Engagement Project at the University of the Western Cape. The Community Engagement Project had a number of sub-projects that was aimed at the development of the community through evidence-based research. The research study, formed part of the

Decision Making sub-project that aimed at improving decision making regarding health and well-being of adolescents with Professor Nicolette Roman as the Principal Investigator of this sub-project. The population for this stage of the research study was made up of 2571 Grade 9 learners from high schools in the Overberg Education District in the Western Cape Education Department. The learners in this district were selected for inclusion in this research study as part of a larger research.

The sample size for the study was computed using the Yamane formula. It selected 350 Grade 9 high school learners, both male and female, from this district. However, as sample size plays an important role when using Structural Equation Modelling (stage three of the study), a sample of at least 400 learners was needed for statistical significance in the model (Hair et al., 2006; Loehlin, 1992). The Yamane formula applied to assist in computing the sample size states:

$$n = \frac{N}{1 + N e^2}$$

n = sample / N = population / e² = probability error

Probability sampling was used within the research study. The probability design of sampling is based on the foundations of randomness and probability theory

(Maree, 2007). Probability sampling allows for every unit of the population to have a probable chance of being part of the selected sample. The stratified random sampling method was used within the study. Stratified random sampling, allowed for the use of known information about the population before engaging in sampling to allow for a good sampling process (de Vos, Strydom, Fouché & Delport, 2011; Grinnell & Unrau, 2005). Stratified random sampling is most suitable when researching a heterogeneous population. In this method, the population is divided into a number of strata. In the research study the population was divided into strata on the basis of socioeconomic status, which was assessed by the amount of the annual school fees at the different schools (see Chapters Seven and Eight). This sampling method was selected as it allowed for different groups of the population to be represented in the sample (de Vos et al., 2011; Creswell, 2003). The intended sample was then randomly selected from the defined strata. In the study, four schools were randomly selected for inclusion (see Chapters Seven and Eight for more details on the final study sample for Stage Two).

c. *Instrument piloting*

To address the overall aim of the study, which was “*to develop and test a model that examines the interaction effects of perceived parenting styles and adolescent decision making styles on healthy lifestyle behaviours of adolescents in the rural Western Cape*”, the researcher examined scientific literature to establish instruments that would assist in satisfying this aim as well as the research questions of the study. The search for instruments concluded with the following instruments to assess the three key variables in the study (namely, perceived

parenting styles, decision making styles and healthy lifestyle behaviours, see Appendix IV):

- (i) Parental Style and Dimension Questionnaire
- (ii) Flinders Decision-Making Questionnaire
- (iii) Health-Promoting Lifestyle Profile II

The instruments were included in a questionnaire that was made up of four sections: (i) demographical details, (ii) Parental Style and Dimension Questionnaire, (iii) Flinders Decision-Making Questionnaire and the (iv) Health-Promoting Lifestyle Profile II. Once the questionnaire was finalised with the instruments included, a pilot study was conducted. A pilot study is often referred to as being a scaled down version of a full scale study that assists in establishing the 'feasibility' of a study. It also assists in testing reliability and validity of the measure being used, and identifying possible practical problems in the research process (van Teijlingen & Hundley, 2001; Grinnell & Unrau, 2008). The pilot study is also used as a measure of testing and validating the instruments that form part of the questionnaire (Barker, 2003).

A research proposal was submitted to the University of the Western Cape's Higher Degrees Committee for ethical clearance. Once ethical clearance was received, the Western Cape Education Department was contacted for permission to conduct research within the identified schools. When the Department had granted permission, the respective principals were contacted to set up appointments. When convenient dates and times had been set, the research team (doctoral candidate and two research assistants) met with the

various principals and the teachers to inform them about the study. Information sheets (see Appendix I) regarding the study were left for the parents of the Grade 9 learners along with informed consent forms (see Appendix II) that were completed by the parents. Once the informed consent forms were collected by the teachers, convenient dates and times were set when the research could be conducted at the particular schools.

Fifteen per cent of the identified sample were used in the pilot study to test the reliability of the instrument. As part of the pilot study, the questionnaires were administered to a second group that was similar to the sample, to allow for a test-retest method. The test-retest method assisted in measuring the internal consistency of the questionnaire. It also assisted with problems and limitations that might arise in the final data collection. The participants were informed of the study and were given an opportunity to ask the research team any questions that they had. The learners were given assent forms (see Appendix III) that needed to be signed before the questionnaires were administered, as an indication of their voluntary participation in the study. The questionnaire (see Appendix IV) was answered in a group, in a class room setting that took place within the limits of the school time table.

The pilot study measured the reliability of the instrument; it explored language options in the questionnaire and gave insight into the data collection process. The questionnaires took approximately 30 minutes to self-administer. The Cronbach alpha scores obtained for the pilot study indicated that the Flinders Decision Making Questionnaire had the lowest alpha score (see Table 3.1).

Table 3.1 Cronbach Alpha Scores – Instrument Scales / Sub-Scales

Scale / Sub-Scale	Alpha Score (α)
Parental Style and Dimension Questionnaire	.90
Flinders Decision Making Questionnaire	.58
Health-Promoting Lifestyle Profile II	.90

d. Questionnaire modifications

The Flinders Decision Making Questionnaire had a low alpha score in the pilot study, and was replaced by the Melbourne Decision Making Questionnaire, which is a revised version of the original with better internal consistency and reliability.

e. Data collection for main study

The data collection procedure for the main study took the same approach as the pilot study, except for the change to the Melbourne Decision Making Questionnaire (Appendix IV).

f. Data analysis

The raw data collected from the main research study was entered into the Statistical Package for the Social Science (SPSS). The data was then coded,

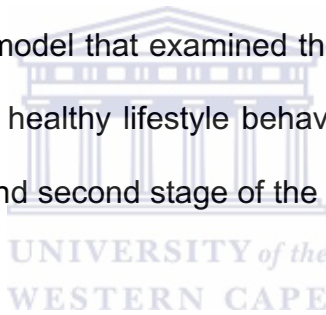
cleaned and checked for errors. It was analysed using descriptive and inferential statistics. Descriptive statistics will include frequencies and means, while inferential statistics will include Pearson correlations, Multivariate analysis of variance (MANOVA), and Univariate analysis of variance (ANOVA). (Data analysis is discussed in more detail in Chapters Seven and Eight).

3.11. Stage Three: Model testing

Structural equation modelling uses a number of models to illustrate the relationships and associations among variables, with the aim of quantitatively testing a hypothesised model (see Figure 3.1 for hypothesised model) (Schumacker & Lomax, 2010). Empirical research findings (Stage I; Chapters Four, Five and Six) and theory (Chapter Two) inform the hypothesised model (Figure 3.1) and the interactions among variables or constructs. The overall aim of structural equation modelling (Stage III) is to assess to what degree the hypothesised theoretical model is satisfied by the data collected for the study sample (Stage Two) (Schumacker & Lomax, 2010).

Structural equation modelling was used in this study to test the proposed hypothesised model, which examined the associations between perceived parenting styles, decision making styles and engagement in healthy lifestyle behaviours. The constructs of the hypothesised model were based on the Health Promotion Model (Srof & Velsor-Friedman, 2006) (Figure 3.1). When considering the aims of using structural equation modelling there are two important elements to consider: (i) the important role that empirical findings and theory play in conceptualising the hypothesised model, and (ii) the extent to which the sample data satisfies the proposed hypothesised model (Schumacker & Lomax, 2010).

The third stage of the study involved model testing, using the quantitative data collected in Stage Two of the study, which was based on the theoretical foundations of the Health Promotion Model (see Figure 3.1, and discussed in Chapter Two). The Health Promotion Model was adapted to fit the constructs examined in this study (parenting styles, decision making styles and healthy lifestyle behaviour) that assisted in testing the measurement model. The first step towards the model testing was uploading the dataset used in Stage Two of the study into the Analysis of Moment Structures (AMOS) that was used for drawing the path analysis, as well as conducting the confirmatory factor analysis and testing the causal modelling that was used to develop and test the model that examined the effect of parenting styles and decision making styles on the healthy lifestyle behaviours of adolescents. The data that was obtained in the first and second stage of the research study was used in the third stage of the study.



The analysis of the third stage data was analysed using both Confirmatory Factor Analysis and Structural Equation Modelling. Structural Equation Modelling consists of two phases as outlined by Nusair and Hua (2010). During the first phase, confirmatory factor analyses were conducted to assess and measure the adequacy of the measurement model. The Confirmatory Factor Analysis assisted in ascertaining which of the items and sub-scales loaded onto which constructs in the model and to determine which constructs were not needed in the model testing.

During the first phase of the Structural Equation Modelling the following items were assessed by means of the Confirmatory Factor Analysis: (i) construct reliability as well as item reliability, and when the reliability of the constructs was satisfied, (ii) the construct validity assessed by means of convergent and discriminant validity (see Chapter Nine for more detailed explanation regarding the analysis using AMOS). After the reliability and validity were assessed, the measurement model was evaluated. The second phase of Structural Equation Modelling was characterised by evaluating the structural model (Nusair & Hua, 2010). During this phase the model fit for both the measurement model and structural model was evaluated, using the goodness-of-fit indices (see Chapter Nine for more details regarding the analysis). In addition, the χ^2/df ratio, Comparative Fit Index, and Root Mean-Square Error of Approximation were also used to assess the goodness-to-fit of the measurement model (Nusair & Hua, 2010).



3.12. Ethical considerations

Ethics has to do with making decisions, these decisions deal with situations where the researcher needs to choose between “right or wrong, proper or improper, good or bad” (McMillan & Schumacher, 2006, p142). In considering the choices made, the researcher always kept the best interest of the participants in mind. To ensure that a high ethical standard was maintained throughout the study, the ‘principilism’ approach was applied. Principilism is applied when a research study is conducted with four philosophical principles in mind to ensure that it is conducted in an ethical manner (Terre Blanche, Durrheim & Painter, 2006; Beauchamp & Childress, 2001). These four philosophical principals are: (i) respect for participants, (ii) nonmaleficence, (iii) beneficence and (iv) justice.

(i) *Respect for participants*: Respect for participants was ensured in the research study by implementing the following:

- a. Informed consent to participation in the research study by parents;
- b. Informed assent obtained by participants;
- c. Maintained confidentiality and anonymity of both participants and the schools who partook in the study;
- d. The participants were also treated with the utmost respect and dignity throughout the research study.

(ii) *Nonmaleficence*: Nonmaleficence is a philosophical principle based on causing no harm, both intended and unintended to the participants, by protecting the participant at all times. This was ensured by implementing the following in the research study:

- a. The study proposal was also submitted to the University of the Western Cape's Higher Degrees and Ethics committees and the Western Cape Education Department's research division to ensure that the proposed procedures, and those executed in the study were done in a manner that would not harm the participant, but rather that the participant be protected at each stage of the research study, in the event of any unforeseen circumstance.
- b. Participants were informed that they had the right to withdraw from the study at any time, without explanations or consequences, and that participation was completely voluntary.

- c. Anonymity was also maintained to protect the participants from any unforeseen harm; this was ensured by coding all questionnaires with numbers to enforce anonymity of participants.
- d. A referral list of health professions and centres for support was available in the event that any participant might have been affected directly or indirectly by the content of the research study.

(iii) *Beneficence*: The principle of beneficence is based on the philosophical assumption that the research study will benefit the participants, even though these were not benefits that the participants directly benefited from, but rather that the dissemination of the research study findings allowed for more information to be generated on the topic, especially as research in this area is limited, but also that it will inform future project implementations (as part of the bigger Community Engagement Project at the University of the Western Cape). The sub-project focused on Decision Making has proposed implementing a psycho-education workshop on decision making aimed at assisting adolescents in the community with skills around choice making and selecting alternatives. The participants in the study also received no incentives for their voluntary participation in the study.

(iv) *Justice*: The principle of justice allowed for the research participants to be treated at all times in a non-discriminatory and just manner. This was ensured by implementing the following ethical considerations within the study:

- a. The sampling technique employed was part of random selection, which allowed any individual as part of the identified population to have an equal opportunity for possible inclusion in the research study.
- b. The information regarding purpose of the study, consent and assent as well as questionnaires, was made available in the language which participants and parents understood best.

3.13. Conclusion

The chapter provided insight into the mixed methodological design that was employed in the study, and how the chapters that follow form part of the three stages discussed as part of the methodology. Chapters Four, Five and Six form part of Stage One of the research study, while Chapters Seven and Eight form part of Stage Two of the study. The final chapter (Chapter Nine) forms part of the third stage of the study. The next six chapters expand on the methodological process followed as presented in this methodology chapter.

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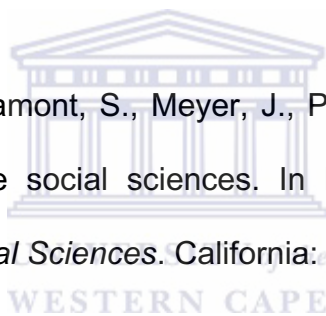
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CHAPTER FOUR

A SYSTEMATIC REVIEW OF THE RELATIONSHIP BETWEEN PARENTING STYLES AND CHILDREN'S PHYSICAL ACTIVITY

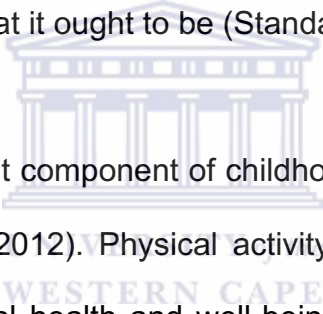
4.1. Introduction

The previous chapter provided an outline of the methodology employed in the study to address the overall aim and objectives as presented in Chapter One. The current chapter addresses Objective 1, which was *to systematically review and describe previous research examining the relationship between perceived parenting styles, adolescent decision making styles and healthy lifestyle behaviours of adolescents*. More specifically the chapter addresses the sub-objective that aimed to *review studies that examined the relationship between perceived parenting styles and healthy lifestyle behaviours of adolescents*. This chapter has been accepted and published in the African Journal for Physical Health Education, Recreation and Dance, which looked at the associations between parenting styles and physical activity of children and adolescents.

4.2. A systematic review of the relationship between parenting styles and children's physical activity.

Physical inactivity and low levels of physical activity are related to sedentary lifestyles and poor nutrition intake, and are considered the fourth leading cause of global mortality (World Health Organisation, 2009). Physical inactivity has also been found to be the leading cause of non-communicable disease, and therefore could potentially become a public health concern (Strydom, 2013). Children especially have been found to be more physically inactive as they progress into adolescence

(Mountjoy et al., 2011). Sedentary lifestyles develop among youth as a result of physical inactivity, which may continue into adulthood (Sekot, 2012). A decrease in being physically active during childhood and adolescence could result in obesity and other health-related concerns (Monyeki et al., 2012). This phenomenon is experienced internationally, in both developing and developed countries, as a result of urbanisation, industrialisation and globalisation (Jacka et al., 2011). In South Africa, 74.6 per cent of people are physically inactive (Strydom, 2013), which means that only a quarter of the population is physically active. These findings are worrying. The general assumption is that physical activity is an important component of health and well-being, but young people's involvement in physical activity may not necessarily be aligned with what it ought to be (Standage et al., 2012).



Physical activity is an important component of childhood that sets the stage for adult behaviours (Standage et al., 2012). Physical activity is associated with numerous benefits of physical and mental health and well-being that increase as the amount and intensity of activity increases (Ahn & Fedewa, 2011). Involvement in physical activity is also considered essential during childhood for brain development and, when carried out in the form of sport participation, it is beneficial for pro-social development (Jacka et al., 2011). Clearly then, children should become physically active and increase their physical activity especially if their levels of physical activity are not as desired. Parents could be the key to encouraging their children to actively participate in physical activities.

As children are socialised and shaped by the values and beliefs of both their parents (Spera, 2005), parenting plays a pivotal role in the socialisation and development of

children (White et al., 2009). The parent-child relationship is also linked to the child's development and well-being (Akinsola, 2011). Central to the parent-child relationship is the parenting style which can, or cannot assist in the development of competent and adjusted children (Akinsola, 2011). Parenting style is defined as a "typology of attitudes and behaviours that characterise how a parent will interact with a child across domains of parenting" (Ventura & Birch, 2008: 3). These styles create the context in which parents raise their children and the manner in which they parent (Darling & Steinberg, 1993).

Three commonly accepted parenting styles, namely authoritarian, authoritative and permissive, have been associated with different outcomes for children. These styles are differentiated by parental control and acceptance, as well as by warmth and interactions (Fuemmeler et al., 2012). An authoritarian parent is low on acceptance and high on control, while an authoritative parent is high on both control and acceptance, and a permissive parent is high on acceptance and low on control (Swartz et al., 2008). The authoritarian parent sets strict rules and standards to which children must adhere, with little warmth shown towards the children (Swartz et al., 2008). On the other hand, authoritative parents display warmth and respect towards their children; they have rules in place and explain to their children the reasons behind the rules they set for them (Spera, 2005; Keshavarz & Baharudin, 2009). The permissive parent displays nurturance and warmth toward his/her children, but, there are little to no rules and limits imposed (Swartz, 2008). Parenting styles can play a pivotal role in the development and belief of children and adolescents in physical activity (Kimiecik & Horn, 2012), as supporters of their children's engagement in physical activity and health-related behaviours (Berge et

al., 2010). Since parenting plays an important role in determining the lifestyle that children lead (Lau, Lee & Ransdell, 2007; Mountjoy et al., 2011), it is very important for health professionals to have a comprehensive understanding of the relationship between parenting styles and physical activity in children.

Systematic reviews have been conducted which examine parenting and children's physical activity (Newman, Harrison, Dashiff & Davies, 2008; Beets, Cardinal & Alderman, 2010). However, these reviews mainly covered parental social support and children's physical activity (Beets et al., 2010) as well as parenting styles and adolescent risk behaviour (Newman et al., 2008; Beets et al., 2010). The current systematic review, however, aims to establish the association between parenting styles (in terms of Baumrind's (1991) typology of parenting) and physical activity that currently exist in the body of research. A review by Trost and Loprinzi (2011) considered the social environment in which children often find themselves, which are the parental home, family cohesion, parental practices and behaviours, as well as parenting styles. Trost and Loprinzi (2011) included only two studies about the association between parenting styles and physical activity. Both of these studies looked at the authoritative parenting style and did not consider the other parenting styles of Baumrind (which would also include the authoritarian and permissive parenting styles). This review, however, considers the three main parenting styles which Baumrind defines, and considers the underlying association between the parenting styles and physical activity of children, adolescents and/or youth.

The current review includes more studies than those in the review by Trost and Loprinzi (2011) as it goes beyond the authoritative parenting style, which was the

main focus of their review. Trost and Loprinzi (2011) indicated that there was a gap in the literature in studies that examined the association between physical activity and parenting styles. However, the contribution by Trost and Loprinzi (2011) assisted in providing more valuable information on the association between parent-child interactions and physical activity than on parenting styles and physical activity. This systematic review, therefore, adds to the current debates in the research concerning the contribution of parents to the promotion of physical activity among children. This review aims (i) to determine which parenting style promotes physical activity, (ii) to examine the influence of parenting styles on physical activity, (iii) to identify the instruments or methods to assess physical activity and parenting styles, and (iv) to evaluate the methodological quality of studies looking at parenting styles and physical activity among children, adolescents and/or youth.



4.3. Methods

Before embarking on the systematic review, terms and explanations to be included in the review were considered (Table 4.1). A systematic process of collection, examination and reporting was subsequently followed.

4.3.1. Terms and definitions

Table 4.1: Terms and definitions

Term:	Definition / explanation:
Parenting styles	'Typology of attitudes and behaviours that characterise how a parent will interact with a child across domains of parenting' (Ventura & Birch, 2008). Baumrind identifies three parenting styles namely that of (i) authoritative, (ii) authoritarian and (iii) permissive (parenting, parenting styles).
Physical activity	Any bodily movement made by the skeletal muscles with the overall outcome of energy expenditure by an individual (Thorsen et al., 2005).

4.3.2. Search strategy

In addressing the role that parenting styles play in physical activity of children, adolescents and/or youth, a search was conducted in February 2013, using databases and journals such as Science Direct, Ebscohost (PsycArticles, Medline, Academic Search Complete, SportDiscus and Rehabilitation and Sport Medicine Source), BioMed Central, PubMed, Directory of Open Access Journal (DOAJ) and SAGE Journals for the period of 2002 to 2012. The studies included in the review consisted of prevalence studies that determined the incidence of physical activity and parenting styles, as well as those which looked at the association between the two variables. The terms used in the search included *physical activity*, *parenting style*, *authoritative parenting*, *authoritarian parenting*, *permissive parenting* and *uninvolved parenting*. From the results obtained, the titles and abstracts were reviewed and examined, using the inclusion criteria outlined in the next section. The retrieval of possible full text articles was investigated by one of the reviewers, and the same process was then followed by another reviewer to determine whether the article adequately met the criteria for inclusion in the review.

4.3.3. Inclusion criteria

The following criteria were considered before a study was included in the review: (i) the paper had to be published in, or translated into, the English language, (ii) the paper had to be published between 2002 and 2012 (to consider literature that was published in the past ten years to give an overview of what is considered current in the findings), (iii) the study had to include either children, adolescents or youth as

part of the sample and (iv) the study had to look at the relationship/association between parenting styles and physical activity.

4.3.4. Methods of the review

The primary researcher conducted an initial search and reviewed the abstracts and articles. The initial search yielded 6 619 articles for the keywords *parenting styles and physical activity*. The searches thereafter yielded 1 424 articles for *parenting styles, authoritative parenting, authoritarian parenting, permissive parenting, uninvolved parenting and physical activity*. Following these searches, the titles were reviewed for eligibility and a sample of 123 studies was reached. Six additional studies were considered for possible inclusion, which were obtained from other sources and from reference lists of other articles. The next stage involved removing any duplicates that existed, and the remaining sample consisted of 13 retrieved articles that met the inclusion criteria. These articles were independently read to establish inclusion in the systematic review, and the methodological quality of the articles was evaluated to establish their inclusion.

4.3.5. Methodological quality appraisal

The methodological quality for the studies was assessed using an instrument (Table 4.2) adapted from previous systematic reviews by Louw, Morris and Grimmer-Somers (2007), Wong, Cheung and Hart (2008) as well as Roman and Frantz (2013). The final sample consisted of 13 articles which were included in the systematic review (Table 4.3). Figure 4.1 outlines the process involved in the systematic review.

Table 4.2: Methodological Quality Appraisal Tool

1	Sampling method: Was it representative of the population intended in the study?	
	A. Non-probability sampling (including: purposive, quota, convenience and snowball sampling)	0
	B. Probability sampling (including: simple random, systematic, stratified g, cluster, two-stage and multi-stage sampling)	1
2	Was a response rate mentioned within the study? (Respond no if response rate is below 60)	0
	A. No	1
	B. Yes	
3	Was the measurement tool used valid and reliable?	
	A. No	0
	B. Yes	1
4	Was it a primary or secondary data source?	
	A. Primary data source	1
	B. Secondary data source (survey, not designed for the purpose)	0
5	Was Physical Activity looked at within the study?	
	A. No	0
	B. Yes	1
6	Was the relationship/association between Parenting Styles and Physical Activity explored?	
	A. No	0
	B. Yes	1
*** Scoring: Total score divided by total number of items multiplied by 100		
Methodological Appraisal Score		
Bad	Satisfactory	Good
0 – 33 %	34 – 66 %	67 – 100 %

Table 4.3: Methodological Appraisal

Author(s)	Q1	Q2	Q3	Q4	Q5	Q6	%	Total
Saunders, Hume, Timperio and Salmon (2012)	1	1	1	1	1	1	100	67 – 100 %
Hennessy et al. (2010)	1	1	1	1	1	1	100	67 – 100 %
Arredondo et al. (2006)	1	1	1	1	1	1	100	67 – 100 %
Berge, Wall, Loth and Neumark-Sztainer (2010)	0	1	0	0	1	1	50	34 – 66 %
Benar and Behrozi (2012)	1	1	1	1	1	1	100	67 – 100 %
Johnson et al. (2012)	0	1	1	1	1	1	83.33	67 – 100 %
Wen and Hui (2012)	1	1	1	1	1	1	100	67 – 100 %
Oliver, Schluter, Schofield and Paterson (2011)	0	1	0	0	1	1	50	34 – 66 %
Berge, Wall, Bauer and Neumark-Sztainer (2010)	0	1	0	0	1	1	50	34 – 66 %
King et al. (2010)	1	1	1	1	1	1	100	67 – 100 %
Benar, et al. (2012)	1	1	1	1	1	1	100	67 – 100 %
Chen, Unnithan, Kennedy and Yeh (2008)	0	1	1	1	1	1	83.33	67 – 100 %
Schmitz et al. (2002)	1	1	1	1	1	1	100	67 – 100 %



4.3.6. *Data extraction*

After the completion of the Methodological Quality Appraisal, the studies that met the criteria for the categories of 'good' to 'satisfactory' were reviewed, and a data extraction table was formed, using the guidelines of Roman and Frantz's (2013) data extraction tool, which included information regarding the study. The information in the data extraction table included author, geographical location of study, study design, participant information, the aim of the study, instruments used to assess physical activity and parenting styles, as well as the relationship/association between parenting styles and physical activity (Table 4.4).



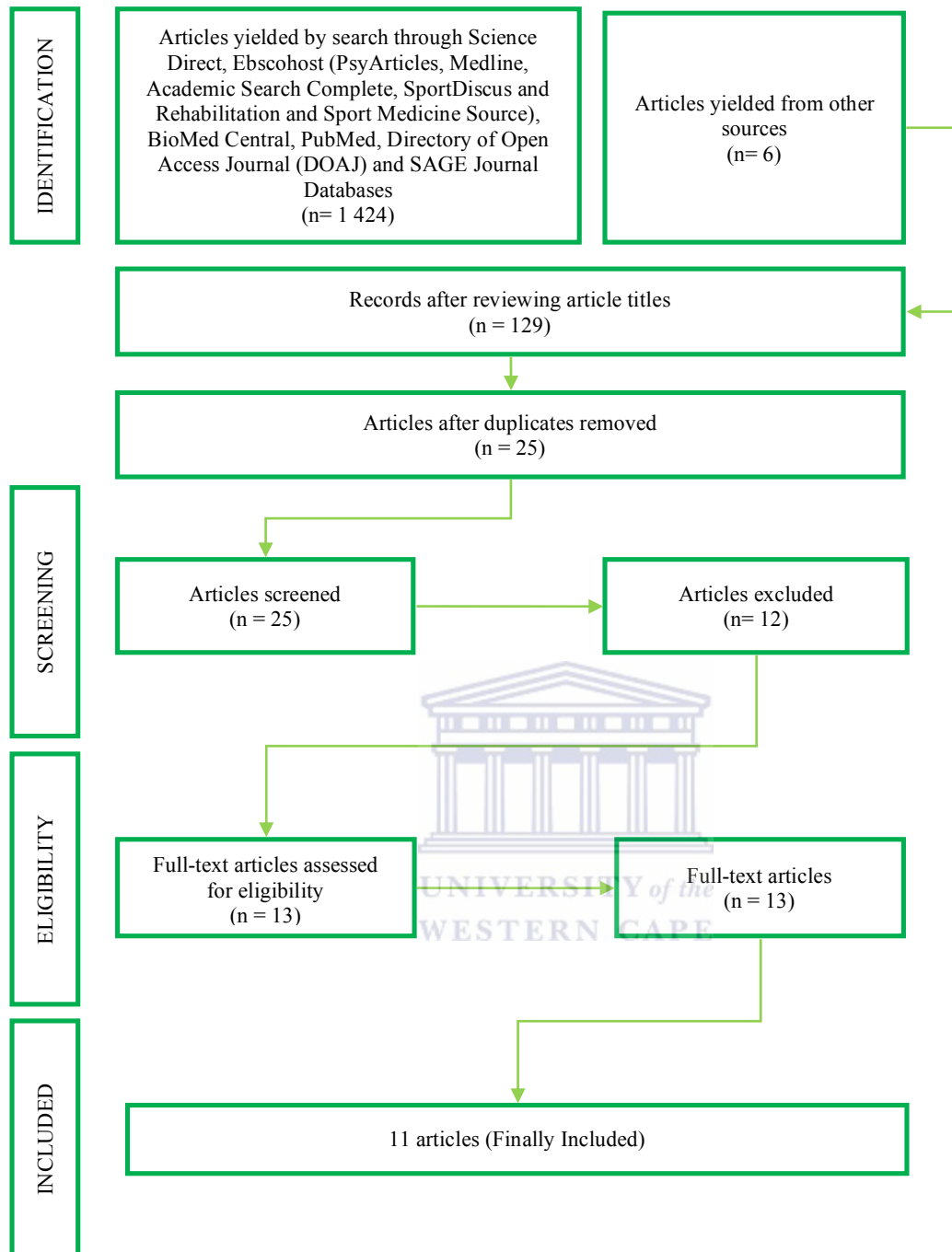


Figure 4.1: Flow chart of study screening

Table 4.4: Data extraction

Author(s)	Country/ Geographical location	Study Design	Participants	Instrument(s) used	Relationship / association between <i>Parenting Styles (PS)</i> and <i>Physical Activity</i>
Saunders, Hume, Timperio and Salmon, (2012)	Melbourne, Victoria, Australia	Cross- sectional and longitudinal Cohort Study	2001: 919 children (495=girls) between ages 10 -12 and their parents 2004: 222 adolescent girls and their parents 2006: 166 adolescent girls and their parents	Height & Weight: digital scale and stadiometer Parenting styles (PS): 22 item adaptation of Baumrind's typology Organised sport participation: Adolescent Physical Activity Recall Questionnaire Walking/cycling trips: self- report Moderate-to-vigorous physical activity (MVPA): Accelerometers	Cross-sectional: Authoritarian PS and frequency in organised sport participation; less walking and cycling due to authoritative and indulgent PS. Single parents: Authoritative PS and increased MVPA; decreased authoritarian related in increased walking/ cycling. Longitudinal: 2006: Authoritative and neglectful PS and physical activities
Hennessey et al., (2010)	USA (California, Mississippi, South Carolina & Kentucky)	Cross- sectional Survey	99 parent-child dyads (children were between the ages of 6 – 11) from rural communities	Parenting styles (PS): Parenting Dimensions Inventory Activity Related Parenting Practices: Assessment of logistical support and explicit modelling. Physical Activity:	Permissive, not uninvolved, PS related to increased MVPA. Increased parental reinforcement and monitoring to be associated with increased levels of physical activity.

					Accelerometer Height and weight: Stadiometer and digital scale	
Berge, Loth and Neumark-Sztainer, (2010)	Wall, Minnesota, United States of America	Minnesota, United States of America	Cohort study	2516 adolescents from 31 Minnesota schools	Parenting styles (PS): 4 PS were created using adolescents' reports of parenting characteristics	Time 1: Paternal neglectful PS predicted less physical activity in sons. Time 2: No significant association between physical activity and parenting styles.
					Body Mass Index: Height/Weight Dietary Intake: 149 item Youth and Adolescent Food Frequency Questionnaire Physical Activity: Adapted from Godin Leisure-Time Exercise Questionnaire	
Benar and Behrozi, (2012)	Rasht City, Iran	Rasht City, Iran	Cross-sectional: survey design	360 female high school learners, between ages 14 – 17.	Parenting Styles: Parenting Styles Questionnaire Physical Activity: Physical Activity Questionnaire for Adolescents	No significant association between parenting styles and physical activity.
Johnson, Saint-Maurice and Ihmels, (2012)	Welk, USA	USA	Cross-sectional: survey design	182 children from two urban elementary schools, aged 7 - 10	Parenting Styles: Parenting Styles and Dimensions Questionnaire Nutrition and Physical Activity: Family Nutrition	Family nutrition and physical activity positively associated with authoritative PS and negatively associated with authoritarian and

						and Physical Activity Assessment	permissive PS.
Oliver, Schluter, Schofield and Paterson, (2011)	Pacific Island		Two studies: (i) Cohort (ii) Cross-sectional	135 children and 91 mothers	Physical Accelerometer	Activity: Parenting Styles: Abbreviated version of Parenting Styles and Dimensions Questionnaire	Increased authoritative PS associated with increased MVPA
Berge, Wall, Bauer and Neumark-Sztainer, (2010)	Minnesota, USA		Cohort study	4764 adolescents from 31 different middle and high schools, between ages 11 - 18	Parenting styles and practices	Physical Activity: Adapted from Godin Leisure-Time Exercise Questionnaire	Authoritative and permissive PS co-occurred with modelling and encouraging health behaviour (A parenting practice promoting physical activity among adolescents).
King et al., (2010)	North East England, United Kingdom		Birth Cohort Study	480 participants	Physical Accelerometer	Activity: Parenting style	No significant relationships
Benar, Hemmatinezhad, Behrozi, Andam and Yousefi, (2012)	Rasht City, Iran		Cross-sectional Survey design	360 female learners aged 14 – 17 years	Parenting Styles: Parenting Style Questionnaire (PSI-II)	Physical Activity: Physical Activity Questionnaire for Adolescents	A negative relationship between physical activity and mothers' permissive PS.
Chen, Unnithan, Kennedy and Yeh (2008)	Taiwan		Cross-sectional	Children aged 7 and 8 and their mothers from two elementary	Parenting Styles: Child-Rearing Report, 91 item questionnaire	Practice	Boys: Increased moderate-to-vigorous activity and low authoritarian PS.

				schools (one urban and one rural)	Physical Activity: (i) Seven day physical activity recall (ii) Progressive Aerobic Cardiovascular Endurance Run (PACER)		
Schmitz, Lytle, Phillips, Murray, Birnbaum and Kubik, (2002)	Twin Cities, Minnesota	Cross-sectional: survey design	3 878 seventh graders from 16 different schools	Physical Activity: 2 items rating physical activity levels	Girls: authoritative PS increased activity.	Maternal PS related to physical activity.	
				Parenting Styles: Jackson et al (1994; 1998)			



4.4. Results

Table 4.3 provides an outline of the results that were obtained for the various studies, which used the methodological appraisal instrument to assist with the final inclusion criteria. Of the initial 25 studies, 13 formed part of the methodological appraisal section of the review. The criteria that were used in the methodological quality assessment instrument included sampling methods, measurement tool, the data sources used, whether physical activity was looked at in the study, and whether the relationship between parenting styles and physical activity was discussed. Of the 13 articles that formed part of the methodological appraisal, 10 reached the desired outcome in the 'good' category in the 67 – 100 per cent range, and three reached the 'satisfactory' category in the 34 – 66 per cent range. The three articles which were in the 'satisfactory' category were included in the review; only if an article fell into the 'bad' category was it excluded from the review. The three studies that were included also examined the associations between physical activity and parenting styles. This was another reason why they were included in the review. Two of the articles (Arredondo et al., 2006; Wen & Hui, 2012) fell into the 'good' category in the 67 – 100 per cent range; however, they were excluded from the review because, although they examined the associations between physical activity and parenting styles, they did not use the typology of parenting styles as defined by Baumrind, but instead examined the associations between physical activity and parenting practices. Therefore the remaining 11 studies that were methodologically appraised were included in the final review.

Of the initial 25 articles, 11 articles met the reviewers' inclusion criteria (Table 4.4).

4.4.1. Overview of reviewed studies

Of the final sample of 11 articles included in the systematic review, six were cross-sectional, three were cohort studies, and two included both cross-sectional and cohort components. The geographical location of the studies included five conducted within the United States of America, two in Iran, and one in Australia, the Pacific Islands, North East England and Northern Taiwan respectively. The age groups of the participants of the various studies included in the review extended to adolescence. Four of the studies looked at the parent-child dyad when collecting the required data.

4.4.2. Parenting Styles

The 11 articles in the review all considered parenting styles using Baumrind's typology.



4.4.3. Physical Activity

All 11 articles considered physical activity, because it was one of the methodological quality appraisal items to be considered for inclusion in the systematic review. In the context of the review, physical activity was considered as being any bodily movement made by the skeletal muscles with the overall outcome of energy expenditure by an individual, as proposed by Thorsen et al. (2005).

The types of physical activities in which the participants engaged were very difficult to establish, as the only study that made use of actual physical activities was one conducted by Chen et al. (2008) which included muscular endurance (sit ups), flexibility (sit-and-reach test), and aerobic capacity of the participants. In addition to

this study, only four studies involved the use of accelerometers to measure participants' physical activity engagement on the various days of data collection (King et al., 2010; Oliver et al., 2011; Saunders et al., 2012; Hennessy et al., 2010). The other studies used paper-based questionnaires and recall methods to establish physical activity participation.

4.4.4. Parenting Styles and Physical Activity

The studies reviewed looked at the relationship between parenting styles and physical activity. Four of the studies found a relationship between authoritative parenting style and physical activity (Saunders et al., 2012 [negatively associated with walking and cycling]; Johnson et al., 2012 [positively associated with family nutrition and physical activity scores]; Oliver et al., 2011 [positively associated with moderate to vigorous physical activity]; Schmitz et al., 2002 [maternal authoritative parenting style was positively associated with higher levels of physical activity]); three found a relationship between permissive parenting styles (Hennessy et al., 2010 [positively related to moderate to vigorous physical activity]; Johnson et al., 2012 [negatively associated with family nutrition and physical activity scores]; Benar et al., 2012 [negative association in mothers and physical activity]); three for authoritarian (Saunders et al., 2012 [positive association with organised sport]; Johnson et al., 2012 [negative association with family nutrition and physical activity scores]; Chen et al., 2008 [less authoritarian parenting was associated with increased METs with physical activity]), one for uninvolved/neglectful parenting styles (Berge, Wall, Loth & Neumark-Sztainer, 2010 [paternal neglectful parenting predicted less physical activity in sons]) and one study found that a mixture of authoritative and permissive parenting was related to increased physical activity (Berge, Wall et al, 2010 [a

model of authoritative and permissive parenting was associated with an encouraging health behaviour which included the promotion of physical activity among adolescents]). The two studies that looked at the relationship between parenting styles and physical activity found that some of the findings had no significant relationship between parenting styles and physical activity (Benar & Behrozi, 2012 [no associations found between physical activity and parenting styles]; King et al., 2010 [no associations found between physical activity and parenting styles]).

4.4.5. Measures of assessment used

A number of methods were used to assess parenting styles in the studies reviewed: (i) two of the studies created parenting styles based on self-reports of adolescents' parenting characteristics (Berge et al., 2010; Berge, Wall et al., 2010), (ii) two studies used the Parenting Styles and Dimensions Questionnaire; other methods used by the various studies included (Oliver et al., 2011; Johnson et al., 2012), (iii) an instrument adapted from Baumrind's typology of parenting (Saunders et al., 2012), (iv) parenting dimension inventory – short form (Hennessy et al., 2010), (v) Parenting Styles Questionnaire (PSI-II) (Benar & Behrozi, 2012; Benar et al., 2012), (vi) Child-Rearing Practice Report (Chen et al., 2008), (vii) Authoritative versus non-authoritative parenting instrument (Schmitz et al., 2008) and (viii) one study did not report on the parenting styles' assessment (King et al., 2010).

Regarding the methods of physical activity assessment in the studies reviewed: (i) four studies used accelerometers to assess physical activity (Hennessy et al., 2010; King et al., 2010; Oliver et al., 2011; Saunders et al., 2012), (ii) two used an adapted version of the Godin Leisure-Time Exercise Questionnaire (Berge et al., 2010;

Berge, Wall et al.,2010), (iii) additional two studies used the Physical Activity Questionnaire for Adolescents (Benar & Behrozi, 2012; Benar et al., 2012); the other studies used (iv) the Adolescent Physical Activity Recall Questionnaire (Saunders et al., 2012), (v) self-reported measure of walking/cycling (Saunders et al., 2012), (vi) the Family Nutrition and Physical Activity Assessment (Johnson et al., 2012), (vii) 7-Day Physical Activity Recall (Chen et al., 2008), (viii) two items self-rating of physical activity levels (Schmitz et al., 2002) and (ix) Progressive Aerobic Cardiovascular Endurance Run (PACER) (Chen et al., 2008).

4.5. Discussion

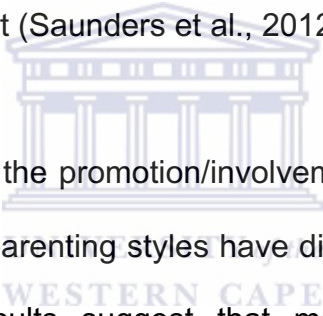
This systematic review was carried out to examine the relationship between parenting styles and physical activity. The review focused on studies conducted internationally. Most of the studies reviewed were conducted in the United States of America. The review showed that authoritative, authoritarian and permissive parenting styles were positively related to the promotion of physical activity.

The relationship between parenting styles and physical activity indicated that authoritarian parenting styles were related to frequent participation in organised sport (Saunders et al., 2012), and an increase in moderate-to-vigorous activity (MVPA). Moderate-to-vigorous activity Metabolic Equivalent's (MET's) was found among boys where there were less authoritarian parenting styles (Chen et al., 2008).

Authoritative and permissive parenting styles were negatively related to walking and cycling (Saunders et al., 2012). However, in a bi-variable analysis the relationship between authoritative parenting was associated with more moderate-to-vigorous

physical activity (Oliver et al., 2011). The results also suggested that maternal authoritative parenting styles were related to higher physical activity among girls (Schmitz et al., 2002). In addition, authoritative and permissive parenting styles were found to co-occur with 'modelling and encouraging health behaviour' that included the promotion of physical activity (Berge et al., 2010).

Neglectful paternal parenting styles were found to be associated with less physical activity among their sons (Berge et al., 2010); however, a longitudinal study found that there were associations between authoritative parenting styles and walking/cycling, as well as MVPA and neglectful parenting, and the duration as well as frequency of organised sport (Saunders et al., 2012).



Parenting styles play a role in the promotion/involvement of physical activity among children because the various parenting styles have differing implications for physical activity involvement. The results suggest that most studies found a positive relationship between authoritative parenting styles and physical activity. Authoritative parenting style is often associated with pro-social/socially acceptable outcomes for children. Three of the studies suggest a positive relationship between authoritative parenting and physical activity; Lee, Daniels and Kissinger (2006) have also suggested that parenting that involves nurturing, assistance and monitoring, which are characteristics that are consistent with authoritative parenting, are associated with children's positive health outcomes.

Authoritarian and permissive parenting are associated with less positive outcomes for children (Lee, Daniels & Kissinger, 2006) but this was not the case in the results.

For example, two studies found a positive relationship between authoritarian parenting and physical activity (Berge et al., 2010; Saunders et al., 2012). In addition, the results for the permissive parenting style were ambivalent, with both positive and negative associations found between permissive parenting and physical activity (Hennessey et al., 2012; Johnson et al., 2012). Therefore, more research which examines the associations of parenting styles in the context of physical activity and its implications for children, is needed.

With the myriad of assessment tools available to evaluate physical activity, the review intended to establish the measures that were most commonly used to assess physical activity in studies that examined the association between parenting styles and physical activity. The measure of assessing physical activity suggests that two common types of measures were used: namely, (i) recall measures and (ii) accelerometers. Recall measures have some disadvantages as they are dependent on how the participants respond to the various items, and there is the possibility that participants may not provide reliable responses when partaking in the measurement of physical activity. In contrast, accelerometers indicate the actual energy expenditure of the participants and are a more reliable reflection of the participant's physical activity levels and energy expenditure. Of the studies reviewed, the Godin Leisure-Time Exercise Questionnaire (Berge et al., 2010; Berge, Wall et al., 2010) and Physical Activity Questionnaire for Adolescents (Benar & Behrozi, 2012; Benar et al., 2012) were the most commonly used recall measures. Similar to variations in assessing physical activity, parenting styles have been assessed in a number of ways by different researchers. The current review also attempted to establish the most commonly used measures to assess parenting styles in studies that examined

the association between physical activity and parenting styles. The results suggest that the most commonly used measures in the articles reviewed were the Parenting Styles and Dimensions Questionnaire (Oliver et al., 2011; Johnson et al., 2012) as well as parenting styles based on participants' self-reported characteristics.

4.6. Conclusion

The social environment often plays a significant role in the development of certain behaviours and habits among children and adolescents. The home and family environment are usually those to which children, adolescents and/or youth are exposed. The growing rate of physical inactivity among young persons has become a public health concern. This review examined the association between parenting styles and physical activity, to provide valuable information to health professionals about the critical role that parenting plays. Because parenting plays an important role in influencing how young persons engage in and perceive their involvement in physical activity, it is necessary that future interventions are focused not only on children but also on their parents.

4.7. References

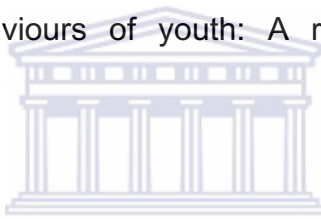
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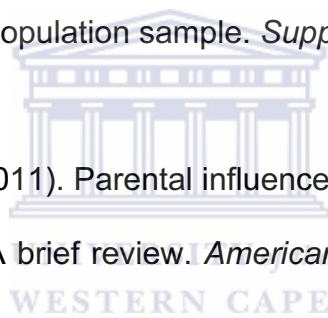
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CHAPTER FIVE

THE LINK BETWEEN PARENTING APPROACHES AND HEALTHY LIFESTYLE BEHAVIOURS: A SYSTEMATIC REVIEW

5.1. Introduction

The previous chapter examined the associations between parenting styles and physical activity of children and adolescents. Chapter Four served as the pilot study for the systematic review stage in the study, and the limitations as presented in Chapter Three informed the changes for the systematic review presented in this chapter, that focused on parenting approaches rather than parenting styles, and considered healthy lifestyle behaviours instead of narrowly focusing on physical activity and nutrition as the only factors that influence health. This chapter addresses the sub-objective of Objective 1 which was to *review studies that examined the relationship between perceived parenting styles and healthy lifestyles behaviours of adolescents*. The chapter has been submitted to Health: An Interdisciplinary Journal for the Social Study of Health, Illness & Medicine and is currently under review.

5.2. The link between parenting approaches and healthy lifestyle behaviours: A systematic review

Internationally, lifestyle-related health problems are steadily increasing among children and adolescents, and are often associated with the rise in childhood obesity (Sirois, Kitner & Hirsch, 2014; Cottrell et al., 2012; Sawyer et al., 2012). Over half a century of research has indicated that there is a continuous increase in lifestyle-related health problems. These problems are evident for both children and adolescents, which could be a result of few attempts to encourage behaviours that

promote positive health (Sawyer et al., 2012). A public health concern is evident, because the health behaviours that are engaged in during early years of development have an impact on health and well-being in later life (Lee & Loke, 2005).

Child and adolescent health-related behaviours are complex. The complexity is as a result of the many developmental tasks that need to be satisfied, as well as the pressures of socially acceptable roles and behaviours that arise from childhood through adolescence (Sawyer et al., 2012). Adolescents are in a phase of development where they are more vulnerable to health issues that could result in chronic health-related issues in later life (Curtis, Waters & Brindis, 2010). When considering lifestyle-related behaviours that are associated with health, two types of behaviours emerge: (i) risky behaviours associated with health and well-being and (ii) healthy lifestyle behaviours (Wang et al., 2009). Risky behaviours associated with health are often the behaviours that children and adolescents engage in that increase their vulnerability for ill-health and negative lifestyle outcomes (Wang, Ou, Chen & Duan, 2009; Engle, Castle & Menon, 1996). Health risk behaviours are also lifestyle behaviours that are associated with a rise in mortality rates. Healthy lifestyle behaviours, however, are the behaviours that children and adolescents display when engaging in actions or behaviours that promote health, well-being and self-actualisation (Pender, 1996).

Healthy lifestyle behaviours are actions that promote positive choices that increase positive outcomes for children and adolescents' health status (Lee & Loke, 2011). These healthy lifestyle behaviours are important to examine, particularly from a

health promotion perspective, when considering the steady increase in lifestyle-related health problems. Internationally, lifestyle-related behaviours have been a major cause in the promotion of non-communicable diseases (Tagoe & Dake, 2011; Proimos & Klein, 2012). The increase in non-communicable diseases has created great concern, as it affects individuals regardless of the geographical location, socioeconomic status or gender (World Health Organisation, 2005). The constant increase in these diseases globally creates public health concern, as well as the associated risk factors (Khuwaja et al., 2011; Hanson & Gluckman, 2015).

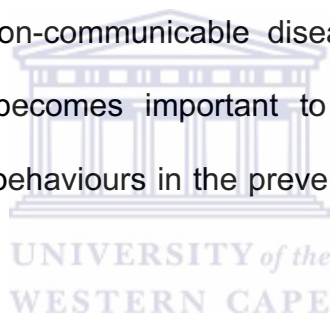
Hanson and Gluckman (2015) suggest that the developmental origins of health and disease are affected by a number of factors in the developmental environment. These include socio-economic status, access to resources, decision making, and behaviours in the familial home environment. One particularly important factor is parenting in the family home, especially in the context of child and adolescent non-communicable diseases. Parenting within the familial home environment is very important as the health-related behaviours established by children and adolescents often have implications on health in later life (Kwon & Wickrama, 2014), particularly when considering that these behaviours predispose children and adolescents alike to the increase in non-communicable diseases (Proimos & Klein, 2012).

Parenting is a central element of the home environment, during childhood and adolescence. It has been associated with a number of health-related behaviours (Kwon & Wickrama, 2014; Ryan, Jorm & Lubman, 2010) such as the onset and establishment of dietary related behaviours, substance use and abuse, and behaviours associated with the promotion or prevention of sedentary lifestyles.

Owing to the complexity of parenting, examining parenting from different approaches makes for a better understanding of the associations that exist with healthy lifestyle behaviours. Kwon and Wickrama (2014) as well as Ryan, Jorm and Lubman (2010) consider the role of parents and parenting as vital in the engagement of healthy lifestyle behaviours.

Previous reviews exist which have examined the associations between parenting and (i) nutritional dietary behaviours (Ventura & Birch, 2008; Collins, Duncanson & Burrows, 2013) and (ii) physical activity (Davids & Roman, 2014). These reviews, however, have only considered nutritional behaviours and physical activity as being part of a healthy lifestyle, but when one considers the definition of health from the perspective of the World Health Organisation (2006), it is an all-encompassing concept that extends far beyond nutrition and physical activity only. The current review therefore has attempted to examine the associations with healthy lifestyle behaviours not limited to physical activity and nutrition as in previous reviews. Furthermore, previously conducted reviews have considered parenting largely from Baumrind's typology, which is limiting in nature. The complexities of parenting can be as a result of (i) societal norms that affect the parent-child relationship as well as (ii) the assumption that parenting is uniform in the parent-child relationship (Davids, Roman & Leach, 2015). The findings presented in the review may also assist in addressing some of the challenges that health risk behaviours pose, particularly to developing countries (Tagoe & Dake, 2011) by providing an understanding of the important role that parenting plays in health promotion at a primary preventative level.

It is hoped that the review may add to the current available body of knowledge on the role of parenting in the adoption and engagement of healthy lifestyle behaviours of children and adolescents. Ray, Kalland, Lehto and Roos (2013) have suggested that information on the associations between parenting and healthy lifestyle behaviours will assist in filling the knowledge gap that exists regarding the promotion of healthy lifestyles in the familial home environment. The findings presented in the review may therefore also assist in providing practical guidelines for parents, organisations and departments of health in the prevention of health risk behaviours that promote ill-health, and focus on interventions that aid health promotion. Healthy lifestyle behaviours have been associated with a decrease in the burden of lifestyle-related diseases (such as chronic non-communicable diseases) (Wainwright, Thomas & Jones, 2000). Therefore it becomes important to understand the influence of parenting on healthy lifestyle behaviours in the prevention of morbidity and mortality (Cottrell et al., 2012).



5.3. Methods

5.3.1. Terms and definitions

The aim of the systematic review was to establish the relationship between child and adolescent healthy lifestyle behaviours and parenting approaches. The terms and definitions of healthy lifestyle behaviour and parenting approaches in the context of the systematic review are explained in Table 5.1.

Table 5.1: Terms and definitions

Terms:	Definition / explanation:
Healthy lifestyle behaviour(s)	The behaviours or actions that individuals engage in with the aim of promoting and committing to a lifestyle that promotes health and well-being (Leddy, 2003).
Parenting approach	Strategies or ways used by parents in the rearing and caring for their children / offspring (Kitamura et al., 2014).

5.3.2. Search strategy

During the months of November and December 2014 a search was conducted using the following databases and journals: Science Direct, Ebscohost (Academic Search Complete, PsycArticles, Medline, SocIndex and ERIC), BioMed Central, PubMed, Directory of Open Access Journals (DOAJ) and SAGE Journals from 2004 to 2014. The review consisted of studies that examined the relationship between healthy lifestyle behaviours and perceived parenting approaches. The terms used in the search included *healthy lifestyle behaviours, health-related behaviour, health promoting behaviour, healthy behaviour, health-seeking behaviour, parenting, parenting approaches, parenting styles, authoritative parenting, authoritarian parenting, permissive parenting and uninvolved parenting*. The titles and abstracts of the various publications were examined using the inclusion criteria for the review. The retrieval of full text articles was done by one of the reviewers (ELD) and the same process was then followed by the other reviewers (NVR and LL) to determine whether the articles met the criteria for inclusion.

5.3.3. Inclusion criteria

The criteria that had to be met for inclusion in the review were that the study had to (i) have been published in or translated into the English language; (ii) been published between 2004 and 2014; (iii) use either children, adolescents or youth as part of the

sample; (iv) examine the relationship or association between healthy lifestyle behaviours and parenting approaches; and (v) could be either a cross-sectional or longitudinal study.

5.3.4. Methods of the review

The first author (ELD) conducted an initial search and review of the abstracts and articles. The search yielded 1 788 articles for the keywords *healthy lifestyle behaviours* and *parenting*. The searches thereafter yielded 96 729 articles for *healthy lifestyle behaviours*, *health related behaviour*, *health promoting behaviour*, *healthy behaviour*, *health seeking behaviour*, *parenting*, *parenting approaches*, *parenting styles*, *authoritative parenting*, *authoritarian parenting*, *permissive parenting* and *uninvolved parenting*. In addition to the searches, the titles were reviewed for eligibility, and a sample of 183 studies was identified. One additional study was obtained from another source, and reference lists of other articles produced a total of 184 articles. Next, all duplicates were removed, reducing the sample to 33 articles. These articles were independently read and assessed, and 10 articles were finally selected for inclusion in the methodological quality appraisal.

5.3.5. Methodological quality appraisal

An instrument was used to assess the methodological quality for the studies (Table 5.2). The instrument was adapted from previous systematic reviews by Louw, Morris and Grimmer-Somers (2007), Wong, Cheung and Hart (2008), Roman and Frantz (2013) as well as Davids and Roman (2014). The final sample consisted of ten articles which were included in the systematic review (Table 5.3). Figure 5.1 outlines the process involved in the systematic review.

Table 5.2: Methodological Quality Appraisal Tool

Q1	<i>Sampling method: Was it representative of the population intended in the study?</i>	
	A. Non-probability sampling (including: purposive, quota, convenience and snowball sampling)	0
	B. Probability sampling (including: simple random, systematic, stratified, cluster, two-stage and multi-stage sampling)	1
Q2	<i>Was a response rate mentioned within the study? (Respond no if response rate is below 60%)</i>	
	A. No	0
	B. Yes	1
Q3	<i>Was the measurement tool valid and reliable?</i>	
	A. No	0
	B. Yes	1
Q4	<i>Was the data source primary or secondary?</i>	
	A. Primary data source	1
	B. Secondary data source (survey, not designed for the purpose)	0
Q5	<i>Were Healthy Lifestyle Behaviours examined in the study?</i>	
	A. No	0
	B. Yes	1
Q6	<i>Was the relationship or association between Healthy Lifestyle Behaviours and Parenting Approaches explored?</i>	
	A. No	0
	B. Yes	1
*** Scoring: Total score divided by total number of items multiplied by 100 (expressed as a percentage)		
Methodological Appraisal Score		
<i>Bad</i>	<i>Satisfactory</i>	<i>Good</i>
0 – 33 %	34 – 66 %	67 – 100 %

Table 5.3: Methodological Appraisal

Author(s)	Q1	Q2	Q3	Q4	Q5	Q6	%	Decision
Browne & Jenkins (2012)	0	1	1	0	1	1	66.67	Included
Coccia et al. (2012)	0	1	1	1	1	1	83.33	Included
Kwon & Wickrama (2014)	0	1	1	0	1	1	66.67	Included
Lohaus, Vierhaus & Ball (2008)	0	1	1	1	1	1	83.33	Included
Nicholls et al. (2014)	1	0	1	0	1	1	66.67	Included
Philips et al. (2014)	1	1	1	1	1	1	100	Included
Ray & Roos (2012)	1	1	1	0	1	1	83.33	Included
Ray et al. (2013)	1	1	1	0	1	1	83.33	Included
Rew et al. (2013)	0	1	1	1	1	1	83.33	Included
Wong (2006)	1	1	1	1	1	1	100	Included



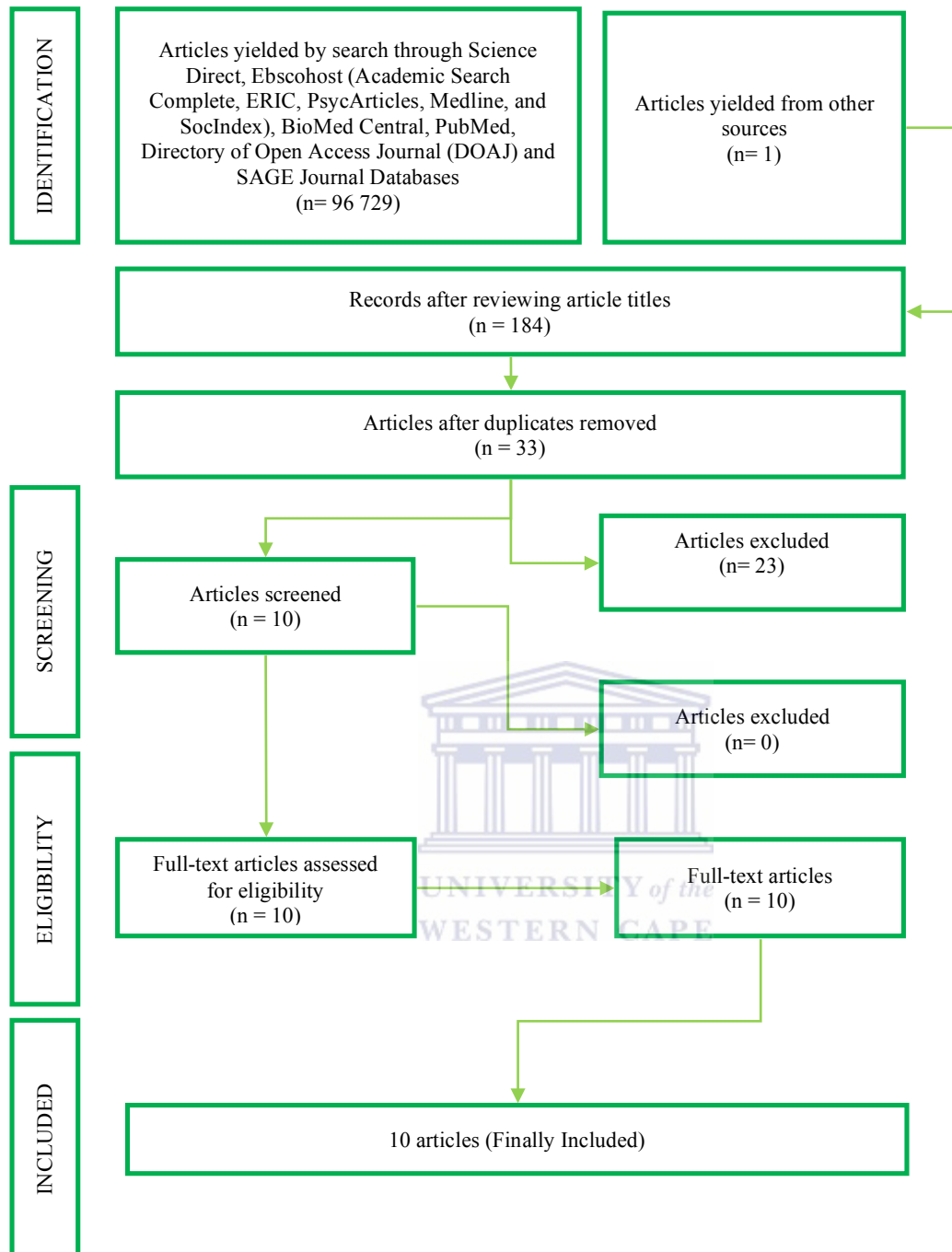


Figure 5.1: Diagrammatical representation of Systematic Review

5.3.6. *Data extraction*

After the methodological quality was appraised for each of the studies, only those studies that met the criteria for the categories of 'satisfactory' to 'good' were reviewed, and a data extraction table (Table 5.4) was drawn up using Davids and Roman's (2014) data extraction tool. The information in the data extraction table included author, geographical location of study, study design, participant information, instruments used, healthy lifestyle behaviour, and the association between healthy lifestyle behaviour and parenting approaches (Table 5.4).

5.4. Results

The studies that were considered for inclusion in the methodological quality appraisal phase of the systematic review can be found in Table 5.3. Of the 33 studies that were initially retrieved, 10 studies met the criteria for methodological appraisal. The criteria that had to be met were sampling methods, measurement tools, data sources used, whether healthy lifestyle behaviours were considered, and whether the relationship between healthy lifestyle behaviours and parenting approaches were examined. Of the 10 studies that formed part of the methodological quality appraisal, all scored 'good' (67-100%) for the methodological appraisal score.

5.4.1. *Overview of the reviewed studies*

The systematic review sample consisted of 10 studies, of which five were cross-sectional (Nicholls et al., 2014; Philips et al., 2014; Ray et al., 2013; Coccia et al., 2012; Wong, 2006) and five longitudinal (Kwon & Wickrama, 2014; Rew et al., 2013; Browne & Jenkins, 2012; Ray & Roos, 2012; Lohaus, Vierhaus & Ball, 2008). From a geographical perspective, five studies were conducted in North America (Kwon &

Wickrama, 2014; Rew et al., 2013; Browne & Jenkins, 2012; Coccia et al., 2012; Wong, 2006), four in Europe (Philips et al., 2014; Ray et al., 2013; Ray & Roos, 2012; Lohaus, Vierhaus & Ball, 2008), and one in Australia (Nicholls et al., 2014). No studies included in the review were from Africa, Asia and South America. The studies reported the ages of the children and adolescents to be in the range of 3 to 16 years of age. Some of the studies also reported data collected from parent-child dyads.



Table 5.4: Data Extraction Table

Author	Geographical location	Study design	Participants	Instruments used	Parenting approach(es)	Healthy lifestyle behaviour(s)	Associations / relationships between parenting approach(es) and healthy lifestyle behaviour(s)
Kwon & Wickrama (2014)	Rural Iowa	Longitudinal	407 parents and their adolescents (Mean age at baseline study: Mothers = 37, Fathers = 39, and adolescents = 13 years old)	<p><u>Parenting:</u></p> <ul style="list-style-type: none"> - Autonomy supportive parenting (17 items used to assess). - Monitoring (assessed using 7 items). - Parental warmth (assessed using 10 items). <p><u>Healthy lifestyle behaviour:</u></p> <ul style="list-style-type: none"> - Health promoting behaviour (2 items assessed health behaviour). 	Autonomy supportive parenting, parental monitoring and warmth.	Health promoting behaviour (eating behaviours and physical activity, converted to overall health behaviour). Health risk behaviour.	<ul style="list-style-type: none"> - Maternal autonomy supportive parenting had no direct association for health risk behaviours for male adolescents; however it was negatively associated for female adolescents. - Paternal autonomy supportive parenting was found to promote female adolescent health promoting behaviour, but no association was

				-Health risk behaviour (5 items used assessing alcohol and nicotine use in past year).			found for male adolescents.
Nicholls et al. (2014)	Barwon-South West region of Victoria, Australia	Cross-sectional	3040 adolescents (56.12% males, 43.88% females, mean age= 14.62 years)	<u>Parenting: Adolescent Behaviours, Attitudes & Knowledge Questionnaire (ABKQ)(4 items)</u> <u>Healthy lifestyle behaviour: Paediatric Quality of Life inventory</u>	Parental encouragement	Global health behaviour, with regards to emotional, social and school functioning and well-being as well as physical activity	- Medium to high levels of parental encouragement was significantly associated with higher global health related quality of life behaviours. - High levels of parental encouragement were associated with behaviours that promote higher psychosocial functioning and well-being. - Medium to high levels of parental encouragement was significantly associated with behaviours

							related to better physical functioning and well-being.
Philips et al. (2014)	Belgium	Cross-sectional	288 parents (mainly mothers) and their children (145 males; 143 females)	<u>Parenting:</u> Comprehensive General Parenting Questionnaire <u>Healthy lifestyle behaviour:</u> - Children's eating habits questionnaire (CEHQ)-food frequency questionnaire - Dutch eating behaviour questionnaire - Items asking parents about physical activity and bedtime	Nurturance, structure, behaviour control, coercive control, and overprotection	Frequencies of food consumption, physical activity and sleep, emotional eating, external eating, restricted eating	- Parental behaviour control positively associated with consumption of light soft drinks - Parental coercive control and nurturance was significantly positively associated with sedentary behaviour - Parental coercive control was significantly negatively associated with sleep duration
Ray et al. (2013)	Helsinki, Finland	Cross-sectional	805 matched parent-child dyads.	<u>Parenting:</u> - 3 statements assessing parenting practices - 4 statements were used to	Parenting practices, parental warmth and responsiveness	Health related behaviour assessed using frequency of screen time,	- More frequent parenting practices as well as more parental warmth and responsiveness was associated

				<p>assess parental warmth / responsiveness</p> <p><u>Healthy lifestyle behaviour:</u> Questions taken from Health Behaviours of School-aged Children study (HBSC)</p>		<p>sleep duration, leisure physical activity, and frequency of food intake</p>	<p>with more favourable health related behaviour (longer sleep duration, more healthy food intake, regular meal frequency)</p>
Rew et al. (2013)	Central Texas	Longitudinal	1081 adolescents in their junior and senior years of high school	<p><u>Parenting:</u> - Authoritative Parenting Index - Parental monitoring assessed using 8 items as used in a study by Huebner and Howell (2003)</p> <p><u>Healthy lifestyle behaviour:</u> - Self-care Inventory - Adolescent Lifestyle Questionnaire</p>	Parental responsiveness, demandingness and monitoring	Nutrition, physical activity, safety, health practices awareness and stress management	<p>- Parental monitoring was a significant predictor of health behaviours around nutrition, physical activity, safety, health practice awareness and stress management</p> <p>- Parental responsiveness was found to be a significant predictor of behaviours for safety and</p>



nutrition
 - However, parental responsiveness was also positively associated with safety, however it was negatively associated with physical activity and nutrition
 - Parental health promoting behaviours were also a significant predictor for adolescent health related behaviour of nutrition, physical activity and health practices awareness

Browne & Jenkins (2012)	Cities of Toronto & Hamilton, Ontario, Canada	Longitudinal	501 Canadian families (females / mothers and their children)	Parenting: Parenting items adapted from a study by Strayhorn and Weidman's (1988) Parent Practices Scale	Positive and negative differential parenting	Overall healthy lifestyle behaviours	- Differential negative parenting was associated with more prevalent engagement in poorer health behaviours
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				<u>Healthy lifestyle behaviour:</u> 1 item assessing overall child healthy lifestyle behaviour			- For every one standard deviation in differential negative parenting at time 1, there was engagement in poor health behaviours that were 49% higher
Coccia et al. (2012)	United States	Cross-sectional	169 students (52.6% males, 47.7% females) with a mean age of 15.8 years old	<u>Parenting:</u> - 31 item instrument measuring parental indulgence as used in a study by Clarke et al. (2004) <u>Healthy lifestyle behaviour:</u> 1 item assessing perceived health related to behaviour	Parental indulgence: (i) too much, (ii) over-nurturing and (iii) soft structure	Overall health related behaviour	- Perceived parental indulgence (having parents give too much, being over-nurturing and provide soft structure) was related to higher perceptions of health behaviour engagement
Ray & Roos (2012)	Helsinki, Finland	Longitudinal	Participants (344 girls; 322 boys) were in	<u>Parenting:</u> Approaches to parenting was assessed with	Parenting practices / parental involvement	Healthy lifestyle behaviours around sleep	- The prevalence of parenting practices at meal times predicted

			grades 5 - 6	<p>the frequency of family meals times during the week, parenting being physically involved with a child and spending time with a child, as well as frequency of the child being alone at home</p> <p><u>Healthy lifestyle behaviour:</u> Questions were taken from those assessing healthy lifestyle behaviour in the Health Behaviours of School Children (HBSC) study</p>	duration, screen time, leisure time physical activity and food intake frequency	less screen time, longer sleeping durations, increased fruit and vegetable intake and less soft-drink and chocolate intake (more healthy lifestyle behaviours) - Having family mealtimes, being physically active with children and being home alone after school (parental involvement) predicted several health behaviours	
Lohaus, Vierhaus & Ball (2008)	Germany	Longitudinal	2 groups in the study: (i) 202 females and 230	<u>Parenting:</u> - 27 item instrument assessing	Parenting styles	Positive and negative health related	- Authoritative parenting style (maternal and paternal) was

			<p>males followed from grades 3-5 with a mean age of 7.9 years in first year of study, (ii) 202 females and 164 males followed from grades 5-7 with a mean age of 10.1 at the first year of the study</p>	<p>parenting as used in a study by Reitzle, Winkler-Metzke & Steinhausen (2001)</p> <p><u>Healthy lifestyle behaviour:</u> - 27 item instrument assessing positive and negative behavioural aspects to health</p>		behaviour	<p>found to be associated with higher levels of positive health-related behaviour for both groups, however the opposite was found for maternal and paternal authoritarian and neglectful parenting</p>
Wong (2006)	Northern California, San Francisco	Cross-sectional	<p>93 African-American and 103 Latino parents and their children. Mean age for African-American children was 2.5 years and Latino children was</p>	<p><u>Parenting:</u> Parent Behaviour Checklist – Short form</p> <p><u>Healthy lifestyle behaviour:</u> 10 item version of the Functional Status IIR</p>	Parental discipline and nurturing	Overall functional health status made up of physical, mental and psychological health	<p>- Higher overall functional health status related to behaviour was significantly associated to more parental nurturing</p> <p>- Lower functional health status in relation to behaviour was associated with more physical</p>

2.8 years of
age

discipline
displayed in
parenting



5.4.2. Healthy lifestyle behaviour

Healthy lifestyle behaviours have been defined as the behaviours that individuals engage in that form part of their daily routines, such as diet, physical activity, sedentary behaviours and sleep (Ray & Roos, 2012). When examining healthy lifestyle behaviours, physical activity and nutritional behaviours are often thought of. When considering the World Health Organisation's definition of health, this too speaks of a holistic understanding of health that extends beyond merely engaging in physical activity and nutritional diet. In the review, healthy lifestyle behaviours took on a number of health-related behaviours that promoted health and well-being (Table 5.5). These behaviours that constituted healthy lifestyle behaviours included: overall or general health behaviour (Kwon & Wickrama, 2014; Nicholls et al., 2014; Ray et al., 2013; Rew et al., 2013; Browne & Jenkins, 2012; Coccia et al., 2012; Lohaus, Vierhaus & Ball, 2008; Wong, 2006), nutritional behaviour (Philips et al., 2014; Rew et al., 2013; Ray & Roos, 2012), physical activity and functioning (Nicholls et al., 2014; Rew et al., 2013), sleep duration (Philips et al., 2014; Ray & Roos, 2012), psychosocial functioning and well-being (Nicholls et al., 2014), screen-time behaviours (Ray & Roos, 2012) and safety (Rew et al., 2013). Of these behaviours the most prevalent was overall or general health behaviour. The health-related behaviour of overall or general health behaviour was made up of a number of health-related behaviours in the various studies. These healthy lifestyle behaviours were nutritional dietary behaviours, physical activity, frequency of health risk behaviours, emotional and social functioning, overall physical, mental and psychological health, and overall healthy lifestyle related behaviours (Kwon & Wickrama, 2014; Nicholls et al., 2014; Ray et al., 2013; Rew et al., 2013; Browne & Jenkins, 2012; Coccia et al., 2012; Lohaus, Vierhaus & Ball, 2008; Wong, 2006). The health-related behaviours

that constituted healthy lifestyle behaviours with the least prevalence in the review were psychosocial functioning and well-being (Nicholls et al., 2014), screen-time behaviours (Ray & Roos, 2012) and safety (Rew et al., 2013).

5.4.3. Parenting approaches

The myriad of parenting approaches examined in the various studies in the review highlights the complexity of parenting (Table 5.4). The identified approaches were categorised into either positive or negative, based on the definition of the approaches used in the studies (Table 5.6). This is similar to a review conducted by Davids, Roman and Leach (2015) that categorised parenting approaches. Nineteen parenting approaches were identified in the 10 studies reviewed; the positive parenting approach was the most prevalent one in the reviewed studies (Kwon & Wickrama, 2014; Nicholls et al., 2014; Philips et al., 2014; Ray et al., 2013; Rew et al., 2013; Browne & Jenkins, 2012; Ray & Roos, 2012; Lohaus, Vierhaus & Ball, 2008; Wong, 2006) and negative parenting was the least prevalent (Philips et al., 2014; Rew et al., 2013; Browne & Jenkins, 2012; Coccia et al., 2012; Lohaus, Vierhaus & Ball, 2008; Wong, 2006). The studies by Philips et al. (2014), Rew et al. (2013), Browne and Jenkins (2012), Lohaus, Vierhaus and Ball (2008) and Wong (2006) included both positive and negative parenting approaches.

Based on the parenting approaches presented in Table 5.4 and considering the definitions of the approaches, 10 were categorised as positive, namely: (1) autonomy supportive parenting (Kwon & Wickrama, 2014), (2) parental monitoring and warmth (Kwon & Wickrama, 2014), (3) parental encouragement (Nicholls et al., 2014), (4) parental nurturance (Philips et al., 2014; Wong, 2006), (5) parental structure (Philips

et al., 2014), (6) positive parenting practices (Ray et al., 2013), (7) parental warmth and responsiveness (Ray et al., 2013; Rew et al., 2013), (8) positive differential parenting (Browne & Jenkins, 2012), (9) parental involvement (Ray & Roos, 2012), and (10) authoritative parenting (Lohaus, Vierhaus & Ball, 2008). Nine approaches presented in the review were categorised as being negative parenting approaches, namely: (1) parental behaviour control (Philips et al., 2014), (2) coercive control (Philips et al., 2014), (3) parental over-protection (Philips et al., 2014), (4) parental demandingness (Rew et al., 2013), (5) negative differential parenting (Browne & Jenkins, 2012), (6) parental indulgence (Coccia et al., 2012), (7) authoritarian parenting (Lohaus, Vierhaus & Ball, 2008), (8) neglectful parenting (Lohaus, Vierhaus & Ball, 2008) and physical parent discipline (Wong, 2006).


5.4.4. Associations between healthy lifestyle behaviour and parenting approaches

The sample of studies considered in the systematic review examined the associations between healthy lifestyle behaviours and parenting approaches. When looking at the associations from the perspective of positive and negative parenting approaches, 7 studies had 13 positive associations between healthy lifestyle behaviours and positive parenting approaches (Kwon & Wickrama, 2014; Nicholls et al., 2014; Ray et al., 2013; Rew et al., 2013; Ray & Roos, 2012; Lohaus, Vierhaus & Ball, 2008; Wong, 2006), while two studies had two positive associations between negative parenting approaches and healthy lifestyle behaviours (Philips et al., 2014; Coccia et al., 2012) (Tables 5.4 & 5.5). Positive parenting approaches had two negative associations with healthy lifestyle behaviours in one of the studies in the review (Rew et al., 2013), while negative parenting approaches had four negative associations with healthy lifestyle behaviours in four studies (Philips et al., 2014;

Browne & Jenkins, 2012; Lohaus, Vierhaus & Ball, 2008; Wong, 2006)(Tables 5.4 & 5.5). Interestingly, one study also found parental health promoting behaviour as a significant predictor of engagement in healthy lifestyle behaviours among children and adolescents (Rew et al., 2013). The results presented in the review indicate that the positive associations between positive parenting approaches and healthy lifestyle behaviours were the most common association established (Table 5.5).



Table 5.5: Examining Healthy Lifestyle Related Behaviours, and associations with Parenting Approaches

Healthy Lifestyle Behaviours	Health-Related Behaviour(s)	Author(s)	Association with Parenting Approach
<p>Healthy lifestyle behaviours: These are behaviours that promote positive health and well-being</p>	<p><i>General / overall health</i></p>	Kwon & Wickrama (2014)	<ul style="list-style-type: none"> - Paternal autonomy supportive parenting positively associated with female health promoting behaviour, no association for males. (+PA)
		Nicholls et al. (2014)	<ul style="list-style-type: none"> - Medium to high levels of parental encouragement positively associated (+PA)
		Ray et al. (2013)	<ul style="list-style-type: none"> - Frequent parenting practices positively associated (+PA) - Parental warmth and responsiveness positively associated (+PA)
		 Rew et al. (2013)	<ul style="list-style-type: none"> - Parental monitoring was a significant predictor (+PA) - Parental health promoting behaviours was a predictor of health related behaviours of (+PA)
		Browne & Jenkins (2012)	<ul style="list-style-type: none"> - differential negative parenting negatively associated (-PA)
		Coccia et al. (2012)	<ul style="list-style-type: none"> - perceived parental indulgence was positively associated (-PA)
		Lohaus, Vierhaus & Ball (2008)	<ul style="list-style-type: none"> - Paternal and maternal authoritative parenting was positively associated (+PA) - Paternal and maternal authoritarian and neglectful

	Wong (2006)	parenting was negatively associated (-PA) - Parental nurturing positively associated with higher overall functional health status (+PA) - Physical discipline displayed by parent negatively associated with overall functional health status (-PA)
<i>Nutrition</i>	Philips et al. (2014) Rew et al. (2013) Ray & Roos (2012)	- Parental behaviour control positively associated (-PA) - Parental responsiveness negatively associated and was a predictor for (+PA) - Parenting practices (involvement) was positively associated (+PA)
<i>Physical functioning / physical activity</i>	Nicholls et al. (2014) Rew et al. (2013)	- Medium to high levels of parental encouragement positively associated (+PA) - Parental responsiveness negatively associated (+PA)
<i>Sleep duration / quality</i>	Philips et al. (2014) Ray & Roos (2012)	- Parental coercive control negatively associated (-PA) - Parenting practices (involvement) was positively associated (+PA)
<i>Psychosocial functioning</i>	Nicholls et al. (2014)	- Higher levels of parental encouragement positively associated (+PA)
<i>Screen-time</i>	Ray & Roos (2012)	- Parenting practices (involvement) was positively



<i>Safety</i>	Rew et al. (2013)	associated (+PA) - Parental responsiveness positively associated as well as a predictor of (+PA)
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Note

+PA = Positive Parenting Approach

-PA = Negative Parenting Approach



Table 5.6: Positive and negative parenting approaches examined in the review

Parenting approach	Author(s)	Parenting approach definition
<i>Positive parenting approach</i>		
Positive parenting approaches are often synonymous with socially acceptable developmental outcomes for children and adolescents (Davids & Roman, 2014), and there is often a display of nurturance, support, and monitoring within the parent-child relationship (Lee, Daniels & Kissinger, 2006).	Kwon & Wickrama (2014)	Autonomy supportive parenting: Parenting that consists of support, encouragement and acceptance during the childhood and adolescence (Kwon & Wickrama, 2014; Ryan et al., 2010).
	 <p>Nicholls et al. (2014)</p>	<p>Parental monitoring and warmth: Characteristics of monitoring and warmth in parenting, are key dimensions of authoritative parenting that has been associated with pro-social outcomes among Western societies (Davids, Roman & Leach, 2015).</p>
	<p>Philips et al. (2014) Wong (2006)</p>	<p>Parental encouragement: Parenting where there is a display of medium to high levels of positive reinforcement and encouragement to engage in activities that promote pro-social development (Nicholls et al., 2014).</p> <p>Parental nurturance: Parenting where there is the promotion and support of individuality and self-assertion through the display of support and responsiveness (Philips et al., 2014).</p> <p>Parental structure: Parenting where there is the display of organisation in the child's environment by means of help and</p>

Ray et al. (2013)

enforcing rules aimed at achieving goals and setting boundaries (Philips et al., 2014).

[Positive] parenting practices: These are the strategies that parents employ, usually behavioural, in the socialisation and rearing of their children with the aim of promoting pro-social development (Ray et al., 2013).

Parental warmth and responsiveness: One of two dimensions that constitutes parenting styles. High levels of parental warmth and responsiveness is common among authoritative parenting (Ray et al., 2013).

Rew et al. (2013)



Parental warmth and responsiveness: As previously defined by Ray et al. (2013), parental warmth and monitoring is one of the dimensions that forms part of parenting styles, and high levels of warmth and responsiveness has been associated with positive developmental outcomes for children as it is commonly associated with authoritative parenting (Rew et al., 2013).

Browne & Jenkins (2012)

Positive differential parenting: The level of positivity experienced by the child within the parent-child relationship which has been associated with psychosocial and behavioural development (Browne & Jenkins, 2012).

Ray & Roos (2012)

Parenting practices [parental

Lohaus, Vierhaus & Ball (2008)

involvement]: These practices refer to the behavioural strategies that parents employ where there is the display of involvement and parental warmth in the socialisation and rearing of their children with the aim of promoting pro-social development (Ray et al., 2013).
Authoritative parenting style: Parenting where there is the display of high levels of both parental responsiveness and demandingness (Lohaus, Vierhaus & Ball, 2008).

Negative parenting approach

Negative parenting approaches are synonymous with developmental outcomes which hinder positive, psychosocial development as a result of the parent-child relationship within children and adolescents (Betts et al., 2013). It also involves parenting that occurs in the presence of inadequate parental monitoring and supervision, as well as a display of parental inconsistency and / or harsh forms of discipline (Barry, Frick & Grafeman, 2008).

Philips et al. (2014)



Parental behaviour control: The display of parental supervision in the child's daily activities (Philips et al., 2014).

Coercive control: Parenting where there is the display of behaviours or actions that are intrusive and dominating where individuality and autonomy is discouraged (Philips et al., 2014).

Rew et al. (2013)

Parental over-protection: Excessive nurturing and strict control is common with the parent-child relationship (Philips et al., 2014).

Browne & Jenkins (2012)

Parental demandingness: Parenting that is commonly associated with high levels of control.

Negative differential parenting: The level of negativity experienced by the child within the parent-child relationship which has been associated with negative outcomes on the psychosocial and emotional development of children (Browne & Jenkins, 2012).

Coccia et al. (2012)



Parental indulgence: Parenting where there is the display of over indulgence which has implications on the development of self-efficacy in the child (Coccia et al., 2012).

Lohaus, Vierhaus & Ball (2008)

Authoritarian parenting: Parenting where there is a display of high levels of demandingness and low levels of responsiveness, which has been associated with diminished outcomes for children (Lohaus, Vierhaus & Ball, 2008).

Neglectful parenting: Parenting that is commonly associated with low displays of demandingness and responsiveness in the parent-child relationship (Lohaus, Vierhaus & Ball, 2008).

Wong (2006)

Physical parent discipline: Parenting where there is the display of physical



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5.5. Discussion

The developmental phase of adolescence is often associated with engaging behaviours that could either promote positive health or hinder it. The behaviours that are established during this developmental phase have been associated with outcomes in later life. Central to the establishment of health-related behaviours has been the influential role of the parent-child relationship. The current review aimed to establish the associations between healthy lifestyle behaviours of children and adolescents and parenting approaches.

5.5.1. *Healthy lifestyle behaviours*

Health related behaviours are influenced by a number of factors which could be behavioural, psych-social or socio-cultural (Terre, 2007). When considering the behaviours related to the health status of individuals, behaviours related to dietary nutrition and physical activity engagement are brought to mind. However, when considering the factors related to health behaviour, as suggested by Terre (2007), considering dietary behaviours and physical activity in isolation would be limiting. Lifestyle related behaviour that promotes positive health should consider behaviours related to both psycho-social and socio-cultural dimensions of an individual's life to aid in the promotion of positive health and in the prevention of ill-health (Sleet, Gielen, Diekmann & Ikeda, 2010). This is also presented in the World Health Organisation (WHO, 2006)'s definition of health as being "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". The current review, therefore considered health related behaviour that included the physical, mental and social health and well-being of children and adolescents. The most prevalent health related behaviours presented in the review

was behaviours in the category of general health behaviour. These lifestyle behaviours included physical, mental and psychological health behaviours which were representative of the health related behaviours as considered in the WHO (2006)'s definition of health. Healthy lifestyle behaviours have been presented in literature as associated with a number of positive developmental outcomes on health and well-being. These have included decreased prevalence of diseases such as cardiovascular disease and cancer (Grunbaum, Lowry & Kann, 2001) and a decline in death rates related to ill-health (Wang, Ou, Chen, & Duan, 2009) as well as immediate and long-term positive health and well-being outcomes (Pender, Murdaugh & Parsons, 2010), self-efficacy (Smith 2011; Smith & Holloman, 2013), an increased sense of psychological safety (Harris, 1998), heightened self-esteem and healthier self-concept (Taylor & Turner, 2001), decreased risk of obesity (Garaulet et al., 2011), and increased energy levels (Gaina et al., 2007). On the other hand, literature suggests that health risk behaviours are often associated with engagement in substance abuse, sexual risk taking behaviour, adoption of poor diet and physical activity, diminished mental health and engagement in violence which hinders the development of children and adolescents (Wang, Ou, Chen, & Duan, 2009; Johnson & Taliaferro, 2012). Interestingly, the health related behaviours that children and adolescents engage in are often as a result of the contributory role that their environment plays (Johnson & Taliaferro, 2012). The environment that children and adolescents are exposed to is their familial home environment in which parenting takes place.

5.5.2. *The role of parenting*

Parenting as a central element of the environment is often thought of as being a process. Parenting as a process is largely concerned with direct and indirect interactions between child and parent, and how they play a role in the pro-social development of children and adolescents (Brooks, 2011). The effect that parenting has on the parent-child relationship has been of interest, particularly with regard to the development of the child and adolescent. The process of parenting can be seen as promoting pro-social behaviours, development and well-being (positive parenting approaches) (Davids, Roman & Leach, 2015; Kaiser et al., 2011) or it can hinder the pro-social development and create a diminished sense of well-being (negative parenting approaches) (Dallaire et al., 2006). The role that these parenting approaches exert on the development of children and adolescents can be seen as having a ripple effect on development throughout the lifespan of individuals, as can be found in literature. In the review the parenting approaches were categorised into positive and negative parenting approaches. The most prevalent parenting approach presented in the review was the positive parenting approach, which has been associated with a number of positive developmental outcomes and socially appropriate behaviours for children and adolescents (Danzig et al., 2015). Developmentally, children who were raised by parents who display positive parenting approaches were found to be well-adjusted (Danzig et al., 2015), display diminished behavioural problems (Aunola & Nurmi, 2005), and be socially competent (Baumrind, 1991), while negative parenting approaches have been associated with developmental outcomes that have implications on the development of the child and adolescent.

5.5.3. *The link: Healthy lifestyle behaviour and parenting approaches*

For centuries parenting approaches have been associated with a number of developmental outcomes for children and adolescents alike (Davids & Roman, 2014; Davids, Roman & Leach, 2015). Parenting approaches that allow for autonomy and display warmth have been associated with a number of positive developmental outcomes (Aunola & Nurmi, 2005). The results presented in the review support the association of positive parental approaches which promote autonomy and display warmth with positive developmental outcomes, and the review has found a prevalent association between healthy lifestyle behaviour of children and adolescents with positive parenting approaches. The results suggest that when parents make use of positive parenting approaches, they are associated with an increase in healthy lifestyle behaviour in their children. The association of positive parenting approaches and healthy lifestyle behaviours as presented in the review adds to the current body of knowledge that examines the associations with healthy lifestyle behaviours. The findings present an important contribution, particularly with the global public health concern about non-communicable disease and other lifestyle related diseases (Tagoe & Dake, 2011; Proimos & Klein, 2012). Non-communicable diseases are often associated with lifestyle related behaviours that diminish positive health and well-being and have posed an international concern with the ever increasing numbers (Hanson & Gluckman, 2015). Kwon and Wickrama (2014) have alluded to the important role that the familial home environment, where parenting often takes place, plays in either the promotion or hindering of healthy lifestyle behaviours. The results presented in the review confirm the important role of parenting in healthy lifestyle behaviours (Kwon & Wickrama, 2014) as positive parenting has been associated with healthy lifestyle behaviours of children and adolescents. The current

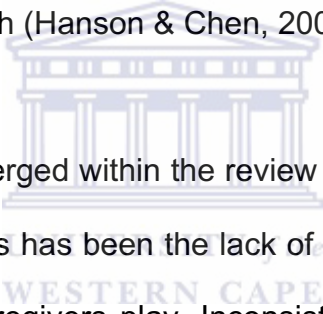
review proposes the importance of the role that parenting plays in the adoption of healthy lifestyle behaviours which would promote positive health and might decrease the current public health concern of the increase in non-communicable disease as highlighted by the United Nations.

5.5.4. Implications for practice

The findings presented in the review propose that positive parenting approaches have been associated with healthy lifestyle behaviours of children and adolescents. Globally, non-communicable disease is a public health concern and innovative strategies are needed to tackle this current concern. Public health practitioners and policy makers could use the findings of the current review to develop and implement parenting programmes that promote the positive parenting approaches as displayed in the review. namely, autonomy supportive parenting (Kwon & Wickrama, 2014), parental monitoring and warmth (Kwon & Wickrama, 2014), parental encouragement (Nicholls et al., 2014), parental nurturance (Philips et al., 2014; Wong, 2006), parental structure (Philips et al., 2014), positive parenting practices (Ray et al., 2013), parental warmth and responsiveness (Ray et al., 2013; Rew et al., 2013), positive differential parenting (Browne & Jenkins, 2012), parental involvement (Ray & Roos, 2012), and authoritative parenting (Lohaus, Vierhaus & Ball, 2008) to assist in the promotion of healthy lifestyle behaviours which could assist in lessening the current burden of mortality and morbidity as a result of the steep incline in non-communicable and other lifestyle related diseases.

5.6. Limitations and recommendations

One of the limitations of the current review was the lack of focus on socio-economic status when examining the associations between healthy lifestyle behaviours of children and adolescents and parenting approaches. Socio-economic inequalities play an important role in the health status and behaviours of societies (Rathmann et al., 2015) therefore to examine the effect of socio-economic status in the associations between health behaviour and parenting approaches would yield even greater outcomes for programme development and implementation to address some of the emerging public health concerns, such as non-communicable diseases. Socio-economic status has been documented as playing a pivotal role in the associations with child and adolescent health (Hanson & Chen, 2007).



Another limitation that has emerged within the review related to the understanding of the role of parental approaches has been the lack of considering the differential role that maternal and paternal caregivers play. Inconsistency in maternal and paternal parenting approaches has been identified (Rinaldi & Howe, 2012) therefore a recommendation for future research would be to consider the differential role that maternal and paternal parenting could play in the associations presented within the review. The role of paternal parenting too has changed as a result of social and historical changes in terms of paternal involvement in parent-child interactions (Cabrera, Tamis-LeMonda, Bradley, Hofferth & Lamb, 2000).

Future research should also consider the role that society plays in the conceptions of positive and negative parenting, as what is considered negative parenting in Western societies may be considered positive in other societies. This difference in societal

conceptions of parenting can be seen in authoritarian parenting that is considered detrimental to child development in Western societies but in Asian societies the opposite is found (Chao, 2001; Ang & Goh, 2006).

5.7. Conclusion

Parenting plays an important role in the development of children and adolescents. The findings in the review suggest that parenting approaches play a significant role in the association with healthy lifestyle behaviours of children and adolescents. Positive parenting approaches have been associated with healthy lifestyle behaviours which adds to the current body of literature and might act as a recommendation for programme development particularly in addressing some of the lifestyle related diseases that pose a threat to children and adolescents.



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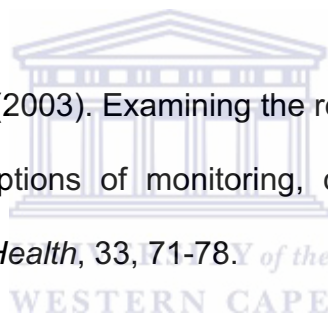
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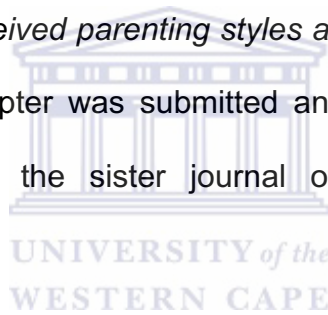


CHAPTER SIX

DECISION MAKING STYLES: A SYSTEMATIC REVIEW OF THEIR ASSOCIATIONS WITH PARENTING

6.1. Introduction

Chapters Four and Five addressed one of the two sub-objectives of Objective 1 which was *to systematically review and describe previous research examining the relationship between perceived parenting styles, adolescent decision making styles and healthy lifestyle behaviours of adolescents*. In this chapter, the additional sub-objective of the first objective *to systematically review previous studies examining the relationship between perceived parenting styles and adolescent decision making styles* is addressed. The chapter was submitted and published in the Adolescent Research Review, which is the sister journal of the Journal of Youth and Adolescence.

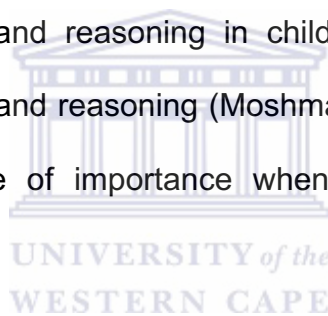


6.2. Decision making styles: A systematic review of their associations with parenting

For decades, developmental theorists and researchers have been concerned with cognitive development (Moshman 2011). One theorist who has been at the forefront has been Piaget (2006, 1972). Piaget (2006, 1972) proposed a four-phase perspective on cognitive development, namely, the sensorimotor, preoperational, concrete operations and formal operations phases (Shaffer & Kipp 2014). The fourth phase of formal operations is normally reached during adolescence, and is synonymous with abstract thinking, logical reasoning and problem-solving skills

which are important in making decisions (Swartz, de la Rey, Duncan & Townsend 2008).

Conceptions of cognition and thoughts during the formal operations phase, see adolescent thinking as involving hypothetical alternatives and solutions considered important for adaptive decision making (Klaczynski 2005; Steinberg 2007). Adaptive decision making can be seen as a process, in which an individual engages in thinking about all the possible hypothetical alternatives, and the abstract consequences of each alternative (Steinberg 2007). The formal operations phase in cognitive development during adolescence is different from cognitive development in childhood. Decision making and reasoning in childhood often take place in the absence of abstract thoughts and reasoning (Moshman 2011; Shaffer & Kipp 2014). Decision making is therefore of importance when considering cognition during development.



6.2.1. Towards an understanding of decision making styles

Decision making is routine, as there is a constant need to negotiate the best course of action for a range of situations. The process of making a decision, however, is often stressful (Bruine de Bruin, Parker & Fischhoff 2007; Janis & Mann 1977; Salo & Allwood 2011). The processes that individuals follow in making decisions tend to differ from person to person (Galotti et al. 2006; Riaz, Riaz & Batool 2012; Williams & Esmail 2014). These processes are categorised as decision making styles (Janis & Mann 1977; Scott & Bruce 1995; Leykin & DeRubeis 2010). Decision making styles often differ in the manner in which individuals gather information concerning the decision that needs to be made, as well as in the way in which they consider the

possible alternatives in resolving the conflicting situation to make a decision (Saidur Rahaman 2014). Styles of decision making have also been thought of as the differences that exist between individuals in how they make sense of the information gathered, and the possible alternatives (Albert & Steinberg 2011; Scott & Bruce 1995).

A number of decision making styles have been identified for individuals making critical decisions (Phillips & Ogeil 2011). Janis and Mann (1977) have proposed four styles, namely, vigilance, hypervigilance, and defensive avoidance, which is divided into procrastination and buck-passing (Brown, Abdallah & Ng 2011; Cenkseven-Önder 2012). These styles differ in the belief that there is sufficient time to find alternative solutions. They also differ in their approach to a thorough, independent search for alternatives. The lack of searching for alternatives could result from leaving the responsibility to others, or postponing the process of making a decision until later.

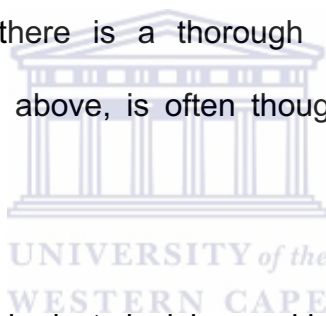
Other researchers have identified other decision making styles. Harren (1979) identified three styles, namely rational, intuitive and dependent decision making styles (Tinsley, Tinsley & Rushing 2002). Scott and Bruce (1995) supplemented Harren's proposed styles by adding avoidant and spontaneous decision making styles (Curşeu & Schruijer 2012; Riaz, Riaz & Batool 2012). These styles ranged in processes in which there was a thorough evaluation of the available alternatives to decision making, based purely on feelings and intuition. Additionally, these decision making styles ranged from autonomous, independent decision making to dependent approaches. Johnson (1978) proposed styles of making decisions that were based

on two elements, namely: (i) how information was gathered, and (ii) how information was analysed. This determined the four proposed decision making styles, namely, spontaneous-internal, spontaneous-external, systematic-internal and systematic-external (Hardin & Leong 2004; Tinsley, Tinsley & Rushing 2002). In addition to these styles, processes of decision making also looked at dealing with the decision making situation.

The approaches to decision making also consider maximising and satisfying conflictual decision making situations. Simon (1956) proposed the maximising and satisficing decision making styles (Parker, Bruine de Bruin & Fischhoff 2007). The satisficing style is one where an alternative is selected, which would be acceptable to satisfy the situation in which a decision needs to be made. The maximising style, however, is one when an alternative is selected in which the alternative goes beyond only resolving the situation, but yields an even better outcome (Parker, Bruine de Bruin & Fischhoff 2007). A more recent approach to decision making styles has been proposed by Leykin and DeRubeis (2010), in which nine styles were identified that covered the varied approaches to decision making in its broadest sense, namely: respected, confident, spontaneous, dependent, vigilant, avoidant, brooding, intuitive and anxious decision making. The proposed styles presented by Leykin and DeRubeis (2010) take into consideration a number of the previously proposed styles.

For many years, decision making research has focused primarily on decisional processes deemed normative, and has often failed to consider alternative processes or approaches (Parker, de Bruin & Fischhoff 2007). Normative approaches to decision making are often those in which a systematic process is followed in which a

number of alternatives and the possible consequences are considered. These are similar to the steps proposed in Janis and Mann's vigilant decision making style (Cenkseven-Önder 2012) where individuals depart from (i) considering a wide variety of alternatives as solutions; (ii) considering the various aims and objectives that need to be satisfied and considering whether they are consistent with the individual's values; (iii) considering the pros and cons of each alternative; (iv) researching new information that exists on the various solutions; (v) collating and making sense of all the solutions, and considering the course of action to be taken; (vi) considering the pros and cons of the solutions and (vii) considering a plan of action for the selected solution and the possible risks (Burnett 1991; Cenkseven-Önder 2012). Decision making situations in which there is a thorough evaluation of alternatives, as presented in the seven steps above, is often thought to yield the most desirable outcomes.



A number of studies have looked at decision making styles in the area of career decision making and development, marketing and consumer studies (such as Faraci, Lock & Wheeler 2013; Madahi, Sukati, Mazhari & Rashid 2012; Mokhlis & Salleh 2009). There has been little focus in research on decision making styles or processes when considering individual decision making (Commendador 2011; Wolff & Crockett 2011; Galotti 2007; Parker, Bruine de Bruin & Fischhoff 2007; Reyna & Farley 2006; Scott & Bruce 1995). Decision making research has also missed the complexities of social phenomena. Experimental research has largely been considered when examining decision making processes. This experimentation takes place in a laboratory setting where social phenomena are lacking, and it excludes therefore the real-life experience of the decision making process (Wolff & Crockett

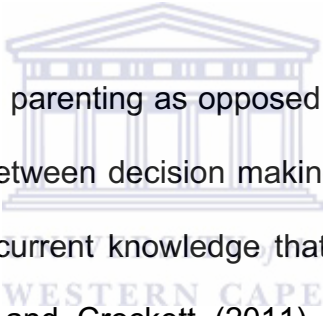
2011). There is clearly a variety of ways in which individuals make decisions. However, as Piaget (2006, 1972) suggests, decision making forms part of a developmental process, that really takes effect in its implementation during adolescence. Decision making during adolescence is important, as it assists with the many challenges in this developmental phase (Galotti et al. 2006). There is an assumption that independent decision making styles develop during adolescence, but Öztürk, Kutlu and Atli (2011) believe that they start during pre-adolescence, consequential to the familial environment.

6.2.2. Parenting approaches and the relationship with child and adolescent decision making

At the centre of the familial environment is parenting (Wolff & Crockett 2011). A number of approaches to explain parenting and styles of parenting in this environment have been identified (Wood et al. 2003; Aunola & Nurmi 2005). These approaches include (i) parenting dimensions, such as behaviour control, affection and psychological control (Aunola & Nurmi 2005); and (ii) parenting styles, such as authoritative, authoritarian and permissive parenting, as proposed by Baumrind (1991, 1989) (Brand, Hatzinger, Beck & Holsboer-Trachsler 2009). Additionally, Maccoby and Martin (1983) proposed indulgent and neglectful parenting, in addition to the parenting styles proposed by Baumrind (Aunola & Nurmi 2005).

When examining parenting, Baumrind's (1991, 1989) typology of parenting styles is often considered. However, parenting is very complex, and focusing only on parenting styles as identified by Baumrind (1991, 1989) may be considered very limiting. One important reason for this could be the role of societal norms. Previous

research has found that there are contradictions in the perceptions of Baumrind's authoritative parenting (Sorkhabi 2005). Individualistic societies have viewed authoritative parenting as yielding the most desirable developmental outcomes for children and adolescents, but collectivist societies differ from this view (Chao 2001; Sorkhabi 2005). Another consideration could be that approaches to parenting are often seen as behaviours that parents display with regard to child rearing. This creates a certain context in which uniform behaviours are exhibited and thought to have the desired outcome on the development of children and adolescents (such as showing warmth, affection, and appropriate child monitoring and supervision) (Brand et al. 2009; Udell, Bannon & McKay 2008; Lee, Daniels & Kissinger 2006).



Considering the approaches to parenting as opposed to parenting styles, allows one to examine the associations between decision making styles and parenting in more depth, and would add to the current knowledge that exists in the field of decision making and parenting. Wolff and Crockett (2011) view the role of parents and parenting as critical in decision making, particularly when considering its influence on engagement in decision making. Parenting has been found to also nurture the development of certain decisional making styles in children and adolescents (Udell, Bannon & McKay 2008).

Decision making often takes place in a social context, very often the parental home of children and adolescents (Wolff & Crockett 2011). The social context often plays an important role when deciding which decision making styles to engage. Research suggests that the social context allows an individual to move between a primary and a secondary decision making style (Driver, Brousseau & Hunsaker 1990; Gati et al.

2010). The primary decision making style is considered as the dominant one, being the most prevalent when making decisions. Brown and Mann (1990) and Udell, Bannon and McKay (2008) emphasise the importance that the familial environment plays in the development of adolescent decision making abilities. In addition, the way in which adolescents develop their decision making is often based on their parents' decision making strategies (Öztürk, Kutlu & Atli 2011). The parental home allows for engagement in decision making styles as an outcome of the beliefs, attitudes and parental approaches, and is fundamental for socialisation and development (Fuemmeler et al. 2012; Putallaz et al. 1998; Vandeleur, Perrez & Schoebi 2007). Positive parental approaches in the context of child development can be seen as promoting pro-psychosocial development and adjustment (Fuemmeler et al. 2012). Negative parenting approaches, however, could hinder this development in later life (Betts et al. 2013; Whittaker & Cornthwaite 2000). Positive parenting approaches are behaviours and approaches in the parent-child relationship that involve warmth, nurturing, assistance and monitoring (Lee, Daniels & Kissinger 2006), while negative parenting approaches often involve reduced supervision and monitoring, as well as inconsistent or harsh forms of discipline (Barry, Frick & Grafeman 2008). These approaches to parenting are also considered important in the development of child and adolescent decision making.

6.3. The current study

Research focusing on decision making styles of children and adolescents has been associated with parenting (Udell, Frick & Grafeman 2008; Fuemmeler et al. 2012). With the plethora of decision making styles and the complexity of parenting, a comprehensive review was needed to establish these associations. Therefore, the

objective of this study was to systematically review and describe previous research that examined the association between decision making styles and parenting approaches. In the review, decision making styles were categorised into (i) adaptive and (ii) maladaptive decision making styles, and the approaches of parenting were categorised into (i) positive and (ii) negative parenting. In addition, the review aimed to recognise some of the gaps and limitations in the existing body of literature. The results presented in this review provide the foundation for future research in parenting, as well as judgment and decision making of children and adolescents. The findings presented also serve to inform parenting interventions that focus on the process of decision making rather than the behavioural outcomes.

6.4. Methods

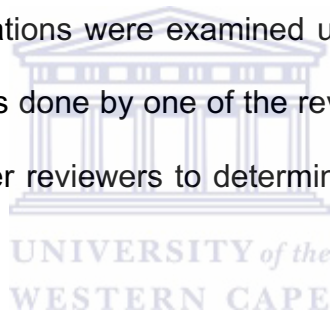
A systematic review was conducted to establish the relationship between parenting approaches and decision making styles among children and adolescents. The terms and definitions in the context of this systematic review are given in Table 6.1.

Table 6.1 *Terms and definitions*

Term	Definition
Decision Making	“Process of choosing between different alternatives while in the midst of pursuing a goal” (Cenkseven-Önder, 2012; Miller & Byrnes, 2001).
Decision Making Styles	How individuals differ when considering alternatives in making a decision as well as the process involved in decision making (Hardin & Leong, 2004; Scott & Bruce, 1995).
Parenting Approaches	Strategies or ways used by parents in the rearing and caring for their children / offspring (Kitamura et al., 2014).

6.4.1. Search strategy

A search was conducted in September 2014 using the following databases and journals: Science Direct, Ebscohost (Academic Search Complete, PsycArticles, Medline, SocIndex and ERIC), BioMed Central, PubMed, Directory of Open Access Journals (DOAJ) and SAGE Journals from January 2004 to October 2014. The review consisted of studies that examined the relationship between decision making styles and perceived parenting approaches. The terms used in the search included *decision making, decision making styles, choice making styles, decision making approaches, parenting, parenting styles, parenting approaches, authoritative parenting, authoritarian parenting, permissive parenting and uninvolved parenting*. Titles and abstracts of publications were examined using the inclusion criteria. The retrieval of full text articles was done by one of the reviewers, and the same process was then followed by the other reviewers to determine whether the articles met the inclusion criteria.



6.4.2. Inclusion criteria

The following criteria were considered for inclusion in the systematic review: the study should have (i) been published in or translated into the English language; (ii) been published between 2004 and 2014; (iii) used either children, adolescents or youth as part of the sample; and (iv) examined the relationship between parenting approaches and decision making styles; and (v) could be either cross-sectional or longitudinal.

6.4.3. *Methods of the review*

An initial search and review of the abstracts and articles were conducted by the first author. The initial search yielded 17 632 articles for the keywords *decision making* and *parenting*. The searches thereafter yielded 36 964 articles for *decision making styles, choice making styles, decision making approaches, parenting styles, parenting approaches, authoritative parenting, authoritarian parenting, permissive parenting* and *uninvolved parenting*. Subsequent to the searches, the titles were reviewed for eligibility and a sample of 60 studies was identified. Seventeen additional studies were obtained from other sources and reference lists of other articles, that produced a total of 77 articles. Next, all duplicates were removed, reducing the sample to 35 articles. These articles were independently read and assessed, and 15 articles were finally selected for inclusion in the methodological quality appraisal.



6.4.4. *Methodological quality appraisal*

The methodological quality for the studies was assessed using an instrument (Table 6.2) adapted from previous systematic reviews by Louw, Morris and Grimmer-Somers (2007), Wong, Cheung and Hart (2008), Roman and Frantz (2013) as well as Davids and Roman (2014). The final sample consisted of 14 articles which were included in the systematic review (Table 6.3). Figure 6.1 outlines the process involved in the systematic review.

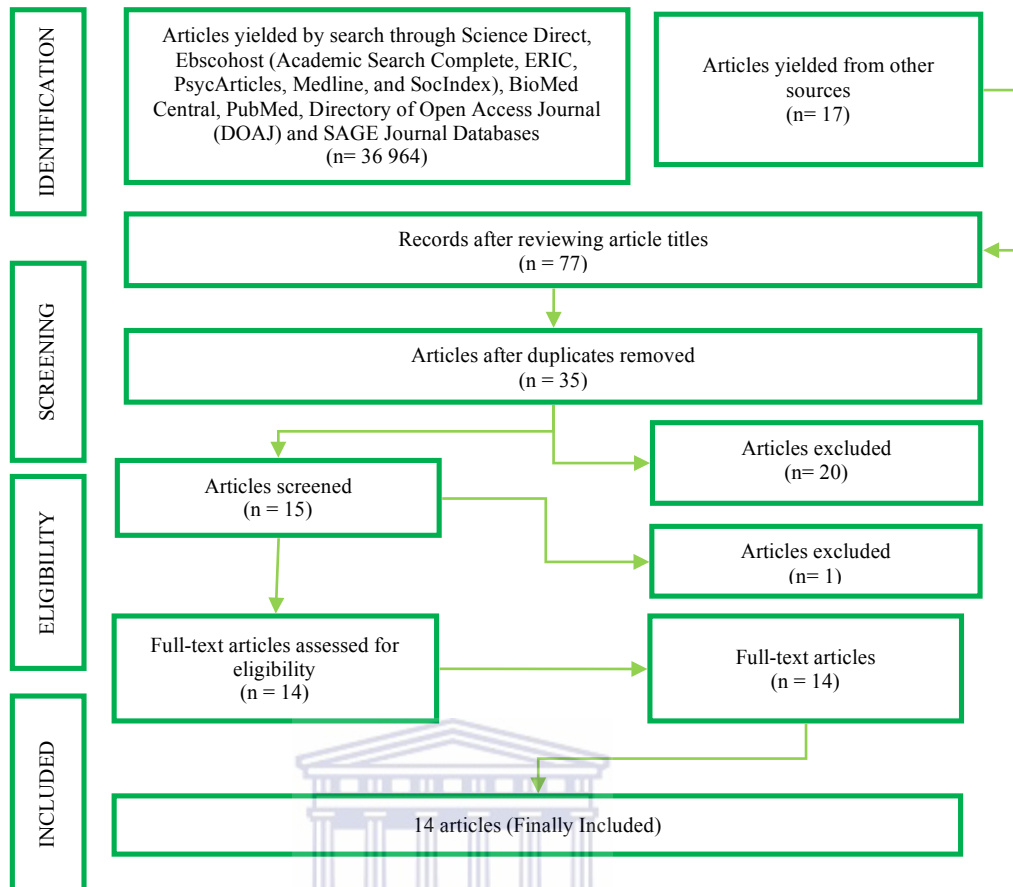


Figure 6.1 Schematic representation of systematic review

Table 6.2 Methodological Quality Appraisal Tool

Q1	<i>Sampling method: Was it representative of the population intended in the study?</i>	
	A. Non-probability sampling (including: purposive, quota, convenience and snowball sampling)	0
	B. Probability sampling (including: simple random, systematic, stratified, cluster, two-stage and multi-stage sampling)	1
Q2	<i>Was a response rate mentioned within the study? (Respond no if response rate was below 60%)</i>	
	A. No	0
	B. Yes	1
Q3	<i>Was the measurement tool valid and reliable?</i>	
	A. No	0
	B. Yes	1
Q4	<i>Was the data source primary or secondary?</i>	
	A. Primary data source	1
	B. Secondary data source (survey, not designed for the purpose)	0
Q5	<i>Was Decision Making Approaches or Styles examined in the study?</i>	
	A. No	0
	B. Yes	1
Q6	<i>Was the relationship or association between Parenting Approaches and Decision Making explored?</i>	
	A. No	0
	B. Yes	1
Scoring: Total score divided by total number of items multiplied by 100 (expressed as a percentage)		
Methodological Appraisal Score		
<i>Bad</i>	<i>Satisfactory</i>	<i>Good</i>
0 – 33 %	34 – 66 %	67 – 100 %

Table 6.3: Methodological Appraisal

Author(s)	Q1	Q2	Q3	Q4	Q5	Q6	%	Decision
Cheung, Cheung & Wu (2014)	0	0	1	1	1	1	67	Included
Commendador (2011)	0	1	1	1	1	1	83	Included
Doğan & Kazak (2010)	0	0	1	1	1	1	67	Included
Euser, Evans, Greaves-Lord, Huizink & Franken (2013)	1	1	1	1	1	1	100	Included
Germeijs & Verschueren (2009)	0	1	1	1	1	1	83	Included
Keller & Whiston (2008)	0	1	1	1	1	1	83	Included
Koumoundourou, Tsaousis & Kounenou (2011)	1	1	1	1	1	1	100	Included
Lease & Dahlbeck (2009)	0	0	1	1	1	1	67	Included
Michael, Most & Cinamon (2013)	0	0	1	1	1	1	67	Included
Parishani & Nilforooshan (2014)	1	0	1	1	1	1	83	Included
Pérez & Cumsille (2012)	0	1	1	1	1	1	83	Included
Smits et al. (2008)	0	1	0	1	0	0	33	Excluded
Sovet & Metz (2014)	0	1	1	1	1	1	83	Included
Wolff & Crockett (2011)	1	1	1	0	1	1	83	Included
Yang, Kim, Laroche & Lee (2014)	0	1	1	1	1	1	83	Included



6.4.5. Data extraction

After the methodological quality appraisal, the studies that met the criteria for the categories of 'satisfactory' to 'good' were reviewed, and a data extraction table (Table 6.4) was drawn up, using Davids and Roman's (2014) data extraction tool. The information in the data extraction table included author, geographical location of study, study design, participant information, instruments used, decision making style, and the relationship between decision making styles and parenting approaches (Table 6.4).



Table 6.4: Data Extraction Table

Author	Geographical location	Study design	Participants	Instruments used	Parenting approach(es)	Decision making style(s)	Associations / relationships between parenting approach(es) and decision making style(s)
Cheung, Cheung & Wu (2014)	Hong Kong, China	Cross-sectional	229 undergraduate university students (ages 18 – 26 years). 57% female.	<u>Parenting:</u> Parental Styles Scale (Buri 1991) <u>Decision making:</u> Career Decision making Difficulties Questionnaire (Osipow & Gati 1998) 4 items for Career Indecision	Authoritarian parenting	Indecision in career decision making process	Authoritarian parenting was found to have a positive effect on indecision in the career decision making process for both males and females.
Parishani & Nilforooshan (2014)	Ishfahan, Iran	Cross-sectional	400 high school students.	<u>Parenting:</u> Parenting styles scale <u>Decision making:</u>	Authoritarian, authoritative and permissive parenting	Indecision in career decision making process	Authoritative parenting was negatively associated with indecision in the career

				Career Indecision Scale (Osipow & Gati 1998)			decision making process. A predictor for indecision was authoritarian parenting.
Sovet & Metz (2014)	Normandy (France) and Korea	Cross-sectional	575 French high school students (ages 14 -19 years). 67% female. 613 Korean high school students (ages 14 – 17). 63% female.	<u>Parenting: Parenting Style Index</u> (Steinberg, Mounts, Lomborn & Dombusch 1991) <u>Decision making: Career Decision Difficulties Questionnaire</u> (Gati et al. 1996)	Parental Involvement, Psychological Autonomy-granting and Strictness / supervision	Difficulties in career decision making process	[Korean Sample] - Strictness / supervision subscale was negatively associated with difficulties in the career decision making process; this suggests that as parental control and monitoring increases, difficulties which arise in the decision making process decreases. - Involvement and



Psychological
Autonomy-
granting
subscales
were positively
associated
with difficulties
in the career
decision
making
process, this
suggests that
as parental
acceptance,
warmth and
encouragemen
t of self-
direction
increases,
difficulties
which may
arise in the
decision
making
process will
increase.

[French
Sample]
- Involvement
and autonomy-
granting



subscales were negatively associated with difficulties in the career decision making process, this suggests that as involvement and autonomy granting among parents increases difficulties in the career decision making process decreases.

Involvement and autonomy granting among parents for the Korean sample were the only subscales that significantly predicted

							difficulties in the career decision making process.
Yang, Kim, Laroche & Lee (2014)	Canada & China	Cross-sectional	285 Canadian and 305 Chinese family sets (parents-children triads and dyads). Adolescent mean age for Canadians = 15.8 years and Chinese 15.5 years.	Parenting: Paulson's (1994) Demandingness and Responsiveness Scale Decision making: 19 items used from previous research assessing decision making approaches (Palan & Wilkes 1997)	Authoritative, authoritarian, permissive and neglectful parenting	Unilateral and bilateral influence strategies in decision making	Authoritative and permissive parenting was associated with bilateral influence strategies in decision making, while neglectful parenting was related to unilateral influence strategies for both Canadian and Chinese participants.
Euser et al. (2013)	South Holland	Longitudinal Study (2 Wave)	110 native Dutch adolescents (ages 12 – 20 years). 59 males.	Parenting: EMBU-C (Egna Minnen Beträffande Uppfostran, a Swedish acronym for My Memories of	Mother & Father rearing behaviors (Rejection, Emotional Warmth, Overprotection)	Risky decision making process in decision making (Maladaptive decision making)	- Parental rearing behaviors were significantly correlated to risky decision making

Upbringing)

Decision making:
Automatic response mode version of the Balloon Analogue Risk Task (BART)

processes.
- Risky decision making processes were associated with parental rejection and overprotection.

- 9% of variance was explained by risk taking in the decision making process for by parental rearing behaviors.
- The only significant predictor of risk taking in the decision making process was parental rejection.



Michael, Most & Cinamon (2013)	Israel	Cross-sectional	160 Jewish students.	<u>Parenting:</u> Career-related	Parental instrumental	Self-efficacy in career	Parental instrumental
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			Ages 16 -18 years. 66 were deaf / hard-of-hearing, 94 hearing participants.	parental support scale (Turner et al. 2003) <u>Decision making:</u> Career Decision making Self-efficacy Scale (Fouad, Smith & Enochs 1997)	development and emotional support	decision making process	development and emotional support were positively associated with self-efficacy in the career decision making process.
Pérez & Cumsille (2012)	Santiago de Chile	Cross-sectional	391 adolescents in grades 8 – 11 (ages 13 – 17).	<u>Parenting:</u> - Parental psychological control: 7 items developed by Barber et al. (2007) - Parental behavior control: Measure developed based on scales by Darling & Toyokawa (1997)	Parental control (Psychological control & behavioral control)	Independence in decision making process	- Psychological control was associated with reduced independence in adolescent decision making processes within a personal domain, however behavioral control was associated with less adolescent

Decision making:
Items developed asking adolescents to rate parental involvement in decision making processes for a number of tasks / issues



decision making in decision making processes both within a personal and prudent domain of decision making.

- Parental behavioral control (both mother and father) was associated with independence in decision making processes within the prudential domain of decision making.
- Adolescents who had low levels of fearfulness, in



the presence of parental behavior control had an opposite association with decision making in prudential domains of decision making, this means that the decision making process involved less independence in choice making.

Commendador (2011)	Big Island of Hawaii and Maui (US)	Cross-sectional	112 female adolescents from diverse ethnically diverse backgrounds (ages 14 – 17 years).	<u>Parenting:</u> Parental control scale – Maternal <u>Decision making:</u> Flinders Adolescent Decision Making Questionnaire	Parental control	Decisional complacency	- A positive association was found between parental control and the Flinders Decisional Coping Complacency style.
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							- no significant associations were found between parental control and decisional coping styles.
Wolff & Crockett (2011)	United States	Longitudinal	7748 children (ages 7 – 11 years in first wave). 49.7% females.	<u>Parenting:</u> - Parental support: 5 items regarding relationship with each parent - Parental Autonomy-granting: child was asked if they were allowed to make 6 decisions everyday on their own <u>Decision making:</u> 4 items about decision making process as outlined by	Parental Support & Parental Autonomy-granting	Deliberative decision making	- Deliberative decision making was positively associated with maternal and paternal support and was not significantly associated with parental autonomy-granting. - Interaction between deliberative decision making processes and autonomy-granting was found for

Beyth-Marom & Fischhoff (1997)

participants who reported drug use (those given more autonomy by parents, saw a 1 unit increase in deliberative decision making processes).
 - Deliberative decision making processes were negatively related to maternal support in the presence of delinquency, however no significant findings were found for paternal support.



Koumoundourou, Tsoulos & Kounenou	Greece	Cross-sectional	289 Greek adolescents (ages 14 – 18)	<u>Parenting:</u> Parental Authority	Parenting authority styles	Difficulties in career decision	[Males] - Associations between
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(2011)			years). 123 males and 166 females.	Questionnaire (Bari 1991) <u>Decision making:</u> Career Decision Making Difficulties Questionnaire (Gati & Saka 2001)		making process	difficulties in the career decision making process and permissive parenting as well as authoritarian parenting were found. [Females] - Associations between difficulties in the career decision making process and authoritarian parenting were found
Doğan & Kazak (2010)	Turkey	Cross-sectional	152 students with a mean age of 18.98 years.	<u>Parenting:</u> Parents Attitudes Scale (Kuzgun & Eldeleklioğlu 2005) <u>Decision</u>	Democratic, protective-demanding and authoritarian parenting	Vigilant, panic, cop-out and complacency decision making styles	Protective-demanding and authoritarian parenting was positively associated with



making:
Adolescent
Decision
Making
Questionnaire



complacency
decision
making style.
Authoritarian
parenting was
associated
with cop-out
decision
making, while
democratic
parenting was
associated
with vigilant
decision
making.
Authoritative,
democratic
and protective-
demanding
parenting was
negatively
associated
with panic
decision
making.
Authoritarian
parenting was
also negatively
associated
with vigilant
decision
making.

Germeijs & Verschueren (2009)	Flanders, Belgium	Longitudinal	281 Grade 12 learners with a mean age of 17.30 years.	<p>Parenting: Inventory of Parent and Peer Attachment (Armsden & Greenberg 1987)</p> <p>Decision making: Career Decision making Self-efficacy Scale (Betz, Klein & Taylor 1996)</p>	Parental security of attachment	Self-efficacy in career decision making process	Higher perceived maternal and paternal security of attachment was positively associated with self-efficacy in the career decision making process.
Lease & Dahlbeck (2009)	Arkansas, USA	Cross-sectional	257 undergraduate college students with a mean age of 22.20 years.	<p>Parenting: Parental Authority Questionnaire (Buri 1991)</p> <p>Decision making: Career Decision making Self-efficacy Scale – Short Form (Betz, Klein & Taylor 1996)</p>	Authoritative, authoritarian and permissive parenting	Self-efficacy in career decision making process	Authoritarian parenting predicted self-efficacy in the decision making regarding careers for females only.

Keller & Whiston (2008)	Midwestern State, Texas	Cross-sectional	282 6 th and 7 th grade students with a mean age of 12.85 years. 57.1% females.	<u>Parenting:</u> Parent Career Behavior Checklist (Keller & Whiston 2008) <u>Decision making:</u> Middle School Self-efficacy scale	Parental support and action	Self-efficacy in career decision making process	Parental support and action were positively associated with self-efficacy in the decision making process.
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6.5. Results

An outline of the studies that were considered for inclusion in the methodological appraisal phase of the systematic review can be found in Table 6.3. From the initial 35 studies retrieved, 15 were methodologically appraised. The criteria that had to be satisfied in the methodological quality assessment included sampling methods, measurement tool, the data sources used, whether decision making styles or processes were examined, and whether the relationship between decision making styles and parenting approaches was discussed. Of the 15 studies that formed part of the methodological appraisal, 14 scored 'good' (67 – 100%) and one had a low score (0 – 33%). Thus 14 studies were included in the final review.

6.5.1. Overview of reviewed studies

The final sample of 14 studies included in the systematic review consisted of eleven cross-sectional studies (Cheung, Cheung & Wu 2014; Parishani & Nilforooshan 2014; Sovet & Metz 2014; Yang, Kim, Laroche & Lee 2014; Michael, Most & Cinamon 2013; Pérez & Cumsille 2012; Commendador 2011; Koumoundourou, Tsaousis & Kounenou 2011; Doğan & Kazak 2010; Lease & Dahlbeck 2009; Keller & Whiston 2008) and three longitudinal studies (Euser et al. 2013; Wolff & Crockett 2011; Germeijs & Verschueren 2009). The geographical location of the studies was four studies in the United States (Commendador 2011; Wolff & Crockett 2011; Lease & Dahlbeck 2009; Keller & Whiston 2008), three studies in Europe (Belgium, South Holland and Greece) (Euser et al. 2013; Koumoundourou, Tsaousis & Kounenou 2011; Germeijs & Verschueren 2009), three studies in Asia (Cheung, Cheung & Wu 2014; Parishani & Nilforooshan 2014; Michael, Most & Cinamon 2013), one study in South America (Chile) (Pérez & Cumsille 2012) one study from Turkey, which is

between Europe and Asia, (Doğan & Kazak 2010), and two intercontinental studies, one between Europe and Asia (France and Korea) (Sovet & Metz 2014) and the other between the United States and Asia (Canada and China) (Yang et al. 2014). The ages of the participants in the studies ranged from 7 to 26 years.

6.5.2. *Decision making styles*

As a myriad of decisional making styles were examined in the 14 studies, the various definitions of decision making processes were categorised into either adaptive or maladaptive decision making styles, based on the definitions presented in Table 6.5. The results presented in Table 6.5 suggest that the maladaptive style was the most prevalent of the studies in the review (Cheung, Cheung & Wu 2014; Parishani & Nilforooshan 2014; Sovet & Metz 2014; Yang, Kim, Laroche & Lee 2014; Koumoundourou, Tsaousis & Kounenou 2011; Euser et al. 2013; Pérez & Cumsille 2012; Commendador 2011; Doğan & Kazak 2010). Based on the decision making styles presented in Table 6.4, seven studies reported using the adaptive decision making style (Yang et al. 2014; Michael, Most & Cinamon 2013; Wolff & Crockett 2011; Doğan & Kazak 2010; Germeijs & Verschueren 2009; Lease & Dahlbeck 2009; Keller & Whiston 2008) (Table 6.5). The styles which were categorised into the maladaptive style were related to (i) difficulties in the career decision making process (Koumoundourou, Tsaousis & Kounenou 2011; Sovet & Metz 2014); (ii) risky decision making (maladaptive processes in decision making) (Euser et al. 2013); (iii) a lack of independence in decision making processes (Pérez & Cumsille 2012); (iv) decisional complacency (Commendador 2011; Doğan & Kazak 2010); (v) decisional panic, and (vi) cop-out (Doğan & Kazak 2010); (vii) indecision (Cheung, Cheung &

Wu 2014; Parishani & Nilforooshan 2014); and (viii) unilateral influences in decision making (Yang et al. 2014).



Table 6.5: Associations between decision making styles and parenting approaches

Decision Making Process	Decision Making Style	Association with parenting approach
Adaptive Decision Making:		
<p>Adaptive decision making often involve processes which bring about the best possible courses of action in the life domain in which the decision needs to be taken (Avsec 2012). When considering adaptive decision making some of the common synonyms that accompany this style of decision making are “methodical, systematic, [and] independent” (Phillips 1997).</p>	<p>Wolff & Crockett (2011) and Doğan & Kazak (2010): the process of decision making involved thinking through all the possible alternatives before a behavioral outcome was selected. This process / style of decision making included: (i) considering possible alternatives as well as consequences, (ii) appraising the “desirability” of the possible consequences as well as (iii) considering the impact of each possible course of action and (iv) collating all the steps taken and re-evaluating the options that would yield the most desirable outcome for the decision maker.</p>	<p>Positively associated:</p> <ul style="list-style-type: none"> ▪ Parental support (Wolff & Crockett 2011) (+PA) ▪ Democratic parenting (Doğan & Kazak 2010) (+PA) <p>Negatively associated:</p> <ul style="list-style-type: none"> ▪ Authoritarian parenting (Doğan & Kazak 2010) (-PA)
	<p>Yang et al. (2014): the process of decision making considered the individual as being someone who can successfully make decisions that have positive outcomes. The bilateral influence strategies employed in the decision making process involved reasoning and bargaining as part of the process of selecting an alternative with the most desirable outcome.</p>	<p>Positively associated:</p> <ul style="list-style-type: none"> ▪ Authoritative (+PA) and permissive (-PA) parenting for both Chinese and Canadian participants
	<p>Michael, Most & Cinamon (2013), Germeijs & Verschueren (2009), Lease & Dahlbeck (2009) and Keller & Whiston (2008): the decision making process was</p>	<p>Positively associated:</p> <ul style="list-style-type: none"> ▪ Parental instrumental development and emotional support (Michael, Most & Cinamon 2013) (+PA)

defined in light of the use of self-efficacy which considered the levels of confidence, gathering and appraising of information, planning as well as considering alternatives as part of the problem solving process in decision making.

- High perceived maternal and paternal security of attachment (Germeijs & Verschueren 2009) (+PA)
- Predicted authoritarian parenting for females only (Lease & Dahlbeck 2009) (-PA)
- Parental support and action (Keller & Whiston 2008) (+PA)

Maladaptive Decision Making:

In maladaptive decision making stress is common. The presence of stress leads to diminished attempts to consider alternatives when faced with a situation in which a decision needs to be taken (Okwumabua, Wong & Duryea 2003). Maladaptive decision making furthermore brings about indecisiveness and a lack of interest and concern about the best course of action that needs to be taken in the decision making process (Friedman & Mann 1993; Okwumabua, Wong & Duryea 2003).

Sovet & Metz (2014) and Koumoundourou, Tsaousis & Kounenou (2011): in these studies, the difficulties in the decision making process considered the following as being present (i) lack of motivation, (ii) general indecisiveness about the course of action to take, (iii) dysfunctional beliefs about the satisfaction of the decisional process at hand, (iv) lack of sufficient information about the course of action to be taken.

Sovet & Metz (2014):

Negatively associated

- Parental strictness (Korean adolescents) (-PA)
- Parental involvement (French adolescents) (+PA)
- Autonomy-granting (French adolescents) (+PA)

Positively associated

- Parental involvement (Korean adolescents) (+PA)
- Autonomy-granting (Korean adolescents) (+PA)

Koumoundourou, Tsaousis & Kounenou (2011):

Positively associated:

- Authoritarian parenting (both genders) (-PA)
- Permissive parenting (Males only) (-PA)

Cheung, Cheung & Wu (2014) and Positively associated:

<p>Parishani & Nilforooshan (2014): in these studies, the challenges of indecision in the decision making process were considered as having an impact on the decisional outcomes taken by the individual.</p>	<ul style="list-style-type: none"> ▪ Effect on authoritarian parenting (Cheung, Cheung & Wu 2014) (-PA) <p>Negatively associated:</p> <ul style="list-style-type: none"> ▪ Authoritative parenting (Parishani & Nilforooshan 2014) (+PA)
<p>Yang et al. (2014): the process of decision making involved unilateral influence strategies that included the use of emotion and persuasion on the part of the decision maker.</p>	<p>Positively associated:</p> <ul style="list-style-type: none"> ▪ Neglectful parenting (-PA)
<p>Euser et al. (2013): the decision making process was considered as one in which the decision maker engaged in risks in the process of making a decision.</p>	<p>Positively associated:</p> <ul style="list-style-type: none"> ▪ Parental rejection (-PA) ▪ Overprotection (-PA)
<p>Pérez & Cumsille (2012): the decision making process examined was similar to the buck-passing decision making style, since it considered both the independence in the decision making process as well as the possible involvement of others (specifically, parents).</p>	<p>Positively associated:</p> <ul style="list-style-type: none"> ▪ Parental control (Behavior and psychological control) (-PA)
<p>Commendador (2011): this study used one of the previous decision making styles as proposed by Janis and Mann, in which the process of making a decision was taken in the absence of sufficient knowledge and information about the possible courses of action and where the predetermined outcome was not certain.</p>	<p>Positively associated:</p> <ul style="list-style-type: none"> ▪ Parental control (-PA)
<p>Doğan & Kazak (2010): the decision</p>	<p>Positively associated:</p>

making process had maladaptive forms of decisional coping strategies. The decision making process was synonymous with (i) dismissing information regarding risks and alternatives (complacency), (ii) panic arises as a result of having to make a decision (decisional panic), and (iii) either delay in making a decision or passing the responsibility onto another individual (cop-out).

- Authoritarian parenting (with complacency and cop-out) (-PA)
- Protective-demanding parenting (with complacency) (-PA)

Negatively associated with:

- Authoritarian and protective-demanding parenting (with decisional panic) (-PA)
 - Democratic parenting (with decisional panic) (+PA)
-

Note

+PA= Positive Parenting Approach
- PA= Negative Parenting Approach



6.5.3. Parenting approaches

In the review, the complexity of parenting is displayed in the number of parenting approaches examined in the various studies (Table 6.4). The parenting approaches were grouped into being either positive or negative, based on the definition of the approaches used in the studies examined (Table 6.6). Nineteen parenting approaches were identified in the 14 studies reviewed; the negative parenting approach was the most prevalent approach in the reviewed studies (Cheung, Cheung & Wu 2014; Parishani & Nilforooshan 2014; Yang et al. 2014; Euser et al. 2013; Pérez & Cumsille 2012; Koumoundourou, Tsaousis & Kounenou 2011; Commendador 2011; Doğan & Kazak 2010; Lease & Dahlbeck 2009), and positive parenting the least prevalent (Parishani & Nilforooshan 2014; Yang, Kim, Laroche & Lee 2014; Michael, Most & Cinamon 2013; Wolff & Crockett 2011; Doğan & Kazak 2010; Germeijs & Verschueren 2009; Keller & Whiston 2008). The studies by Parishani and Nilforooshan (2014), Yang et al. (2014), Sovet and Metz (2014) and Doğan and Kazak (2010) included both positive and negative parenting approaches.

Based on the parenting approaches presented in Table 6.4 and the definitions of the approaches (Table 6.6), 9 parenting approaches were categorised as positive parenting approaches, namely: (i) authoritative parenting (Parishani & Nilforooshan 2014; Yang et al. 2014), (ii) parental involvement and (iii) autonomy granting (Sovet & Metz 2014), (iv) parental instrumental development and (v) parental emotional support (Michael, Most & Cinamon 2013), (vi) parental support (Wolff & Crockett 2011; Keller & Whiston 2008), (vii) democratic parenting (Doğan & Kazak 2010), (viii) attachment (Germeijs & Verschueren 2009) and (ix) parental action (Keller & Whiston 2008). Ten approaches presented in the studies reviewed were categorised

as being negative parenting approaches, namely: (i) authoritarian parenting (Cheung, Cheung & Wu 2014; Parishani & Nilforooshan 2014; Yang et al. 2014; Koumoundourou, Tsaousis & Kounenou 2011; Doğan & Kazak 2010; Lease & Dahlbeck 2009), (ii) parental strictness (Sovet & Metz 2014), (iii) permissive parenting (Yang et al. 2014; Koumoundourou, Tsaousis & Kounenou 2011), (iv) neglectful parenting (Yang et al. 2014), (v) parental rejection and (vi) overprotection (Euser et al. 2013), (vii) psychological control and (viii) behaviour control (Pérez & Cumsille 2012) which are forms of (ix) parental control were presented in the study by Commendador (2011), and (x) protective-demanding parenting (Doğan & Kazak 2010).



Table 6.6: Positive and negative parenting approaches

Parenting Approach	Author(s)	Parenting approach definition
Positive Parenting Approaches Parenting approaches that are often related to pro-social or socially acceptable outcomes for children (Davids & Roman 2014), and involves nurturing, assistance, and monitoring in the parent-child relationship (Lee, Daniels & Kissinger 2006).	Parishani & Nilforooshan (2014) and Yang et al. (2014)	<i>Authoritative parenting:</i> Parenting that is characterized by the display of warmth and support, while maintaining firm control (Yang et al. 2014).
	Sovet & Metz (2014)	<i>Parental involvement:</i> An approach to parenting where there is a display of warmth and acceptance (Vignoli et al. 2005; Sovet & Metz 2014). <i>Autonomy granting:</i> Parenting approaches that allow for independence and self-exploration of alternatives.
	Michael, Most & Cinamon (2013)	<i>Parental instrumental development:</i> Parenting that is characterized by providing and assisting children with information that would benefit them (Michael, Most & Cinamon 2013). <i>Parental emotional support:</i> The display of support, emotionally by parents, with regard to concerns the child may have (Michael, Most & Cinamon 2013).
	Wolff & Crockett (2011)	<i>Parental support:</i> Parenting that is characterized by “involvement, closeness, warmth, communication, and nurturance” (Holmbeck, Paikoff & Brooks-Gunn 1995; Wolff & Crockett 2011).
	Doğan & Kazak (2010)	<i>Democratic parenting:</i> Parenting that allows children and adolescents to display autonomy in child rearing (Doğan & Kazak 2010).
	Germeijs & Verschueren (2009)	<i>Security of attachment:</i> The quality of attachment displayed within the parent-child relationship (Germeijs & Verschueren 2009).
	Keller & Whiston (2008)	<i>Parental support:</i> The display of psychosocial support by parents (Keller & Whiston 2008). <i>Parental action:</i> Parenting behaviors related to events in the lives of children and adolescents (Keller & Whiston 2008).
Negative Parenting Approaches Parental behaviors and approaches that hinder positive psychosocial	Cheung, Cheung & Wu (2014); Parishani & Nilforooshan	<i>Authoritarian parenting:</i> A parenting style in which there is an expectation of obedience from children and adolescents, where the aim is to achieve control by use of punishment (Baumrind 1971;

development in children and adolescents (Betts et al. 2013), and child rearing that often takes place in the presence of poor monitoring and supervision, inconsistent or harsh forms of discipline (Barry, Frick & Grafeman 2008).

(2014); Yang et al. (2014); Koumoundourou, Tsaousis & Kounenou (2011); Doğan & Kazak (2010) and Lease & Dahlbeck (2009)	Koumoundourou, Tsaousis & Kounenou 2011).
Sovet & Metz (2014)	<i>Parental strictness</i> : Parenting that is synonymous with demanding parents, the use of punitive disciplining styles and that is restrictive (Chua 2011; Sovet & Metz 2014).
Yang et al. (2014) and Koumoundourou, Tsaousis & Kounenou (2011)	<i>Permissive parenting</i> : One of Baumrind's (1971) parenting styles where there is a display of little to no control over children and adolescent's behavior in the presence of warmth displayed to children (Koumoundourou, Tsaousis & Kounenou 2011).
Yang et al. (2014)	<i>Neglectful parenting</i> : Parents who display this type of parenting often offer no form of structure or monitoring for children and adolescents, which comes across as being neither demanding nor responsive (Yang et al. 2014).
Euser et al. (2013)	<i>Parental rejection</i> : When parents display hostility and punishment, and were blaming the child by the parent is common (Euser et al. 2013). <i>Overprotection</i> : Parenting where there is a display of excessive parental control (Euser et al. 2013).
Pérez & Cumsille (2012)	<i>Psychological control</i> : A form of parental control in which manipulation is common and it interferes in the emotional and psychological development of the child or adolescent (Barber 1996; Pérez & Cumsille 2012). <i>Behavior control</i> : Parental control where attempts are made to control the child and adolescent behavior (Barber 1996; Pérez & Cumsille 2012).
Commendador	<i>Parental control</i> : Parenting where there are attempts made to

(2011)	monitor children by setting strict rules (Roche et al. 2005; Commendador 2011).
Doğan & Kazak (2010)	<i>Protective-demanding parenting</i> : Parenting which is synonymous with high levels of control with the aim of children and adolescents conforming to the views of parents (Doğan & Kazak 2010).



6.5.4. Associations between decision making styles and parenting approaches

The studies in this systematic review analysed the relationships between decision making styles and the approaches to parenting. When considering the associations from the perspective of an adaptive and maladaptive decision making style, six studies found a positive association between the adaptive decision making style and positive parenting approaches (Yang et al. 2014; Michael, Most & Cinamon 2013; Wolff & Crockett 2011; Doğan & Kazak 2010; Germeijs & Verschueren 2009; Keller & Whiston 2008) (Table 6.4 & 6.5). Maladaptive decision making, was positively associated with ten negative parenting approaches in seven studies (Cheung, Cheung & Wu 2014; Yang et al. 2014; Euser et al. 2013; Pérez & Cumsille 2012; Commendador 2011; Koumoundourou, Tsaousis & Kounenou 2011; Doğan & Kazak 2010) (Table 6.4 & 6.5). For Korean participants, maladaptive decision making was positively associated with positive parenting approaches, and negatively associated with negative parenting approaches. Positive parenting approaches were also negatively associated with maladaptive decision making for French participants in one of the intercontinental studies (Sovet & Metz 2014). The findings for the Korean and French studies suggested that society, whether western or non-western, could play a role in the association between parenting approaches and decision making styles. The role of society may also be contradictory, because the intercontinental study by Yang et al. (2014) found no differences between the western and non-western societal groups. The results indicate that the positive association between maladaptive decision making and negative parenting approaches was the most common association established in the review (Table 6.5).

6.6. Discussion

Situations often arise in which a decision needs to be made. The process of arriving at the best course of action for the situation is defined as the decision making style (Scott & Bruce 1995; Leykin & DeRubeis 2010). Individuals differ in their decision making styles (Riaz, Riaz & Batool 2012; Williams & Esmail 2014). The decision making style often is thought of as the way individuals make sense of the information that is available for the choices as part of the decision making process (Albert & Steinberg 2011). The decision making style that individuals engage in before selecting an alternative, operate on a continuum from adaptive to maladaptive decision making styles when considering the plethora of decision making styles proposed by theorists and researchers (Galotti et al. 2006). When considering decision making styles of children and adolescents, parents play an important role (Udell, Bannon & McKay 2008). The approaches to parenting used by parents – positive or negative in nature – are associated with a number of developmental outcomes (Betts et al. 2013). This review, therefore, aimed to examine and describe previous studies that considered the associations between decision making styles and parenting approaches; because decision making is often thought to take place in a social context, which usually is the parental home of the children and adolescents (Wolff & Crockett 2011).

6.6.1. Overview of studies

The aim of this review was to examine the relationship between decision making styles and parenting approaches. There were some interesting points when one considered the demographic details of the participants in the studies in the review. The age of participants ranged from 7 to 26 years of age, with studies on emerging

adolescence and adolescence being most prevalent. This developmental age group is commonly associated with risk-taking and maladaptive approaches to decision making (Reyna & Farley 2006). The participants from the studies in the review were largely representative of the United States of America, Europe, Asia, and South America. Some continents have very little research available on the associations examined, as can be seen from the lack of studies in the systematic review that were from Africa and Australia.

6.6.2. How do children and adolescents make decisions?

A number of theorists, over the years, have proposed an array of decision making styles (Gati et al. 2010). These styles include Janis and Mann's (1977) conflictual model of decision making. The model proposes decision making styles that operate from vigilant to defensive avoidant decision making. Vigilant decision making is where a systematic process is followed in order to arrive at a decision which will yield the best possible outcome for the individual. Defensive avoidant forms of decision making are characterised by the possibility of delaying making a decision, shifting responsibility for making a decision or having insufficient time to make a decision.

In contrast, the styles proposed by Harren (1979), which were later extended by Scott and Bruce (1995), indicated that the different approaches that individuals use when making a decision could range from a rational and thorough investigation of possible alternatives to forms of decision making based on emotion, the assistance of others, avoidance of taking action, and spontaneity. Johnson (1978) proposed decision making styles that focus specifically on the way individuals gather information, and how they understand it. More recent studies examining decision

making styles have also been proposed by Leykin and DeRubeis (2010). They identify nine decision making styles that range from a methodical and systematic approach, to examining alternatives, to those which are dependent, spontaneous, avoidant and anxious forms of decision making.

The examination of some of the decision making styles that exist provides an understanding of the plethora of decision making styles that exist in literature. However, one of the common trends in the various forms of decision making styles does exist. It is to establish whether the processes that the decision maker uses are ones that could yield the best course of action (adaptive decision making) or whether they will hinder attempts to achieve the best course of action (maladaptive decision making). In this review, the decision making styles were categorised into either adaptive or maladaptive decision making styles (Cenkseven-Önder 2012; Janis & Mann 1977; Parker, Bruine de Bruin & Fischhoff 2007), because a number of overlapping styles have been found (Leykin & DeRubeis 2010).

The literature presents a number of decision making styles that can be categorised into either adaptive or maladaptive decision making styles. Adaptive decision making is thought of as being the process that contributes to successful outcomes in a number of the decision maker's life domains (Avsec 2012). Furthermore, it is seen as a systematic and rigorous selecting of alternatives aimed at achieving the best outcome. On the other hand, maladaptive decision making styles are those with diminished attempts to consider alternatives when faced with a situation, or with attempts that do not always have the best course of action in mind (Okwumabua,

Wong & Duryea 2003). When considering the decision making styles in this review, the most prevalent style was the maladaptive form.

Maladaptive decision making styles have important implications for child and adolescent development. These implications can be detrimental to development. Research suggests that some of the implications of maladaptive decision making on children and adolescents are the development of low self-esteem (Leykin & DeRubeis 2010; Avsec 2012), depressive symptomology (Di Fabio 2006; Avsec 2012), and negative life events (Parker, Bruine de Bruin & Fischhoff 2007; Avsec 2012). These include engaging in risky behaviour and risk-taking (Reyna & Farley 2006; Williams & Esmail 2014), diminished health promoting behaviour (Commendador 2007), low life satisfaction (Cenkseven-Önder 2012), and increased perceived stress (Thunholm 2004). In addition, some researchers have found links to diminished physical and psychological well-being (Reyna and Farley 2006) and some have found greater dependence on others (Parker, Bruine de Bruin & Fischhoff 2007), increased experience of regret (Parker, Bruine de Bruin & Fischhoff 2007), less decisional competence (Commendador 2011) and diminished health behaviour (Steinberg 2004; Wolff & Crockett 2011). There is no doubt that maladaptive decision making styles have a number of implications for the developing child and adolescent.

6.6.3. Understanding parenting approaches and the relationship with child and adolescent outcomes

From a developmental perspective, parenting plays an important role in the development of children and adolescents (Aunola & Nurmi 2005; Lansford et al.

2005; Roopnarine, Krishnakumar, Metindogan & Evans 2006). Parenting has a number of interacting factors (such as personal stresses or societal demands) that could play a role in their approaches to parenting (Belsky 1984; Thomson et al. 2014). Of interest have been the effects of parenting on the development of parent-child relationships (Aunola & Nurmi 2005; Chan & Koo 2011; Betts et al. 2013; Arnett 2014).

The approaches that parents often use could be seen as either promoting pro-social behaviour and development (positive parenting approaches) (Kaiser, McBurnett & Pfiffner 2011; Davids & Roman 2014) or as hindering the development of pro-social development and favouring diminished adaptive development in youngsters (negative parenting approaches) (Betts et al. 2013; Dallaire et al. 2006; Whittaker & Cornthwaite 2000). The effects of these approaches are important because they have implications on development throughout the lifespan (Thomson et al. 2014). A number of parenting approaches exist in the literature (Wood et al. 2003; Aunola & Nurmi 2005) that were categorised into positive and negative parenting approaches for the purposes of this review.

The most prevalent parenting approach presented in this review was negative parenting. Negative parenting approaches have a number of adverse implications for child and adolescent development that include conduct disorder, behavioural problems, diminished autonomy, delinquency, onset of risky sexual behaviour, indecisive decision making, diminished self-esteem, and lower levels of well-being and scholastic achievement (Baumrind 1989; Ferrari & Olivette 1993; Leung, Lau & Lam 1998; Petersen, Bush & Supple 1999; Jewell & Stark 2003; Aunola & Nurmi

2005; Roche et al. 2005; Supple & Small 2006). In contrast, positive parenting approaches have been associated with the most desirable and socially accepted outcomes for child and adolescent development (Baumrind 1991; Aunola & Nurmi 2005; Rinaldi & Howe 2012; Davids & Roman 2014).

6.6.4. Decision making styles as an outcome of parenting approaches

Parenting approaches, over the centuries, have been associated with a number of developmental outcomes for children and adolescents (Davids & Roman 2014; Aunola & Nurmi 2005; Lansford et al. 2005). According to western research, the approaches to parenting that are associated with positive developmental outcomes are those that promote parental warmth and autonomy (Betts et al. 2013; Aunola & Nurmi 2005; Supple & Small 2006). Approaches to parenting that lack displays of warmth, and which hinder autonomous development and freedom, are associated with detrimental developmental outcomes for children and adolescents (Jewell & Stark 2003; Aunola & Nurmi 2005; Roche et al. 2005; Supple & Small 2006). The results presented in this review support this commonly held opinion in Western research, as a positive association was found between maladaptive decision making and negative parenting. The results indicate that, when parents engage in approaches that are deemed negative, this has detrimental outcomes for child and adolescent decision making, as the child or adolescent will be prone to engage in maladaptive decision making themselves.

Engaging in maladaptive decision making has a number of negative implications for the developing child. These implications include diminished behaviour that affects health and well-being, creates depressive symptomology, negative life events as a

result of poor decision making, and engaging in risky behaviour and risk-taking (Di Fabio 2006; Jewell & Start 2003; Roche et al. 2005). These associations, however, are not deemed universal and applicable across different societal groups (Supple & Small 2006; Maiter & George 2003).

Western societies that promote parental warmth and autonomy have been most prevalent in the studies reviewed. One intercontinental study, between French and Asian participants, found negative parenting approaches associated with maladaptive decision making, whereas positive parenting was positively associated with maladaptive decision making for Asian participants. This contradictory association suggests that society (whether western or non-western) may play an important role in the association between parenting approaches and decision making styles. However, it also leaves room to question whether these findings are always true from a cross-societal, cross-continental perspective, since Yang et al. (2014) found no significant differences between adolescents from the United States and Asia.

Western societies promote parenting that display warmth and promote autonomy, while parenting in Asian (non-western or ethnic minority groups) societies promotes more restrictive and authoritarian parenting (Supple & Small 2006; Maiter & George 2003; Parke 2000). The ideal on which western society is based is that of personal development and independence, while non-western societies are based on the development of the group and interdependence (Supple & Small 2006; Aunola & Nurmi 2005; Bush, Peterson, Cobas & Supple 2002). From a societal perspective, this could partially explain the contradictory associations of both negative and

positive parenting with maladaptive decision making. Society, western or non-western in nature, plays an important role in the behavioural and social development of individuals (Ferguson et al. 2013; Roets, Schwartz & Guan 2012; Ferguson 2000).

Society influences the understanding that individuals have of numerous experiences in societal contexts. This can be seen in the results presented in the review (Hofstede 2007). The differences in the way individuals engage in social experiences, as a result of society, can affect parenting and the approaches that parents use in the parent-child relationship (Ferguson et al. 2013; Bornstein & Cote 2006; Parmar, Harkness & Super 2004). The contradictory findings in the two intercontinental studies mentioned can be explained by western and non-western societal differences. The contradictory findings can be the result of either enculturation or acculturation. Enculturation is the socialisation process where the family or parental home environment clings to the societal norms and values in which the parents were raised (Choi et al. 2013). This was at work in the review by Pérez and Cumsille (2012), in which parents from the non-western society clung to the societal norms and values with regard to parenting. Holding those values and norms explained the association of positive parenting approaches with maladaptive decision making, which were different for the participants from the western society in the study. On the other hand, acculturation relates to adapting to mainstream societal values and practices, which are common owing to the influence of globalisation (Choi et al. 2013). Yang et al.'s (2014) findings can be explained by acculturation. With increasing globalisation, non-western societies tend to adapt to mainstream western norms and values with regard to parenting, that explains the

similarity found in the associations between parenting approaches and decision making styles for both the western and non-western societies examined in the study.

The study by Commendador (2011) examined the associations between parenting approaches and decision making styles of females only. Commendador (2011) found a positive association between maladaptive decision making and negative parenting approaches in that study, which is similar to findings in this review, except that this review included studies with both males and females (Euser et al. 2013; Pérez & Cumsille 2012; Koumoundourou, Tsaousis & Kounenou 2011). In the review, no gender differences were found in the associations between parenting approaches and decision making styles, while other studies have found significant differences between decision making styles and gender (Roman & Davids 2013; Sari 2008). The similarities in the review can be due to males and females being equally capable of considering alternatives and making sense of the decisional alternatives available to them (Brown, Adballah & Ng 2011). The review considered only the decision making processes or styles, and not the behavioral outcomes that are often associated with gender roles ascribed by society (Brown, Adballah & Ng 2011). This could be a reason why gender did not play a significant role in the review.

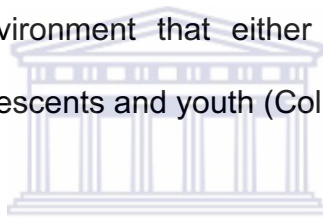
Reviewing the association between decision making styles and parenting is important, particularly as individuals are confronted daily with the task of making decisions. The current systematic review contributes to the existing body of knowledge by providing a summary of study designs, geographical locations and participant demographical details of studies examining the association between decision making styles and parenting approaches. It also highlights some of the gaps

and limitations in literature that can inform future research to advance adolescent development research.

Studies considering decision making are often concerned with the behavioural outcome of child and adolescent decision making. The current review presents the prevalent decision making styles in child and adolescent research studies, which would assist in policy and programme development in best-practice guidelines for advancing adaptive decision making for children and adolescents. The review also provides an inclusive understanding of the processes that adolescents engage in as part of decision making. Adolescence is synonymous with behavioural decisions that are often thought to be detrimental to pro-social development (Monahan, Rhew, Hawkins & Brown 2013). In providing an understanding of the processes that adolescents engage in as part of decision making styles, the review addresses some of the concerns highlighted by Galotti and colleagues (2006) who have questioned the role that decision making styles play in the information-gathering process. The review provides a glimpse of the many decision making styles that exist in the literature and often overlap one another; however, for the first time, the current review provides clear categories of different decision making styles. These categories are on a continuum of adaptive (e.g. deliberative and vigilant decision making styles) to maladaptive styles (e.g. difficulties in decision making process, decisional panic and indecision).

The review also presents the global trends of the developmental association between decision making styles and parenting approaches of children and adolescents. This is important in reviewing adolescent decision making. Albert and

Steinberg (2011) have suggested that future research should consider the role of environmental factors such as peers and parents in decision making. The current review provides a comprehensive understanding of the association of decision making styles and parenting (in the parental home environment). It addresses the gaps in understanding adolescent decision making as alluded to by Albert and Steinberg (2011). The current review, moreover, adds to the understanding about the role that the social environment plays in decision making (Gardner & Steinberg 2005), more specifically decision making styles – by examining the associations from both a global and cross-societal perspective. This contribution is useful when considering current debates about child and adolescent development in light of complex changes in the environment that either promote or hinder pro-social development for children, adolescents and youth (Coll, 2015).



When considering the role of parental environment, it is known that negative parenting approaches are associated with developmental outcomes that can be detrimental for children and adolescents. The review confirms that negative parenting approaches are associated with maladaptive decision making styles. These findings warrant future research considering: (a) instrument development with scales for adaptive and maladaptive decision making styles, and (b) the associated parenting approaches either to confirm or refute the findings presented in the research.

One of the key findings in the review is that maladaptive decision making styles are associated with negative parenting. Even though it might be considered as not presenting new findings, most studies have focused on the behavioural outcomes

(such as delinquent or risk behaviour) of negative parenting. However, the review presents the relationship of negative parenting and the process of making a decision. The findings presented in the review are important for parenting interventions, as they provide motivation for the development of parenting interventions that focus on the interaction of parents with their children and adolescents. Contemporary studies suggest that parents are largely focused on the behavioural outcomes of decision making, where the current review presents the importance of the decision making process.

The important role of parenting is discussed in the context of decision making, and the approaches that are associated with decision making styles throughout child and adolescent development. The review also provides practitioners, academics and policy makers with insight into the processes of decision making and the role that parents play, which contributes to programme and intervention development, as well as research and policies that could aid in the promotion of adaptive decision making styles by children and adolescents.

6.7. Limitations and recommendations

Parenting is only one of many social contexts in which decision making styles can be examined. Studying the associations of decision making styles to parenting only can be considered a limitation, since there are a number of contextual factors to consider. This could be considered as a recommendation for future research. Another limitation is that the review was not able to examine the relationships that sons and daughters have with their maternal and paternal parenting figures. Future research could attempt to examine the associations between decision making styles

and (i) personality, (ii) genetics, (iii) other familial and social environments (other than the parental home environment), (iv) socio-economic status, as well as (v) individualistic versus collectivistic societies. As more reviews become available examining child and adolescent decision making, they will assist in better understanding the relationships that exists between adaptive and maladaptive decision making.

6.8. Conclusion

Parenting approaches play an important role in the social development of children and adolescents. In particular, the various approaches to parenting have been associated with a number of psychosocial as well as behavioural outcomes. This review examined the associations between decision making styles and parenting approaches. The results indicate that there are distinct associations between decision making and parenting. Both adaptive and maladaptive decision making have been associated with parenting approaches, while maladaptive decision making styles were the most prevalent. The review suggests that maladaptive decision making was associated with negative parenting approaches. Maladaptive decision making has been associated with detrimental developmental outcomes for both children and adolescents.

The current review provides a comprehensive understanding of the associations between decision making styles and parenting approaches – from a global perspective – where western and non-western societies were found to play an important role in the associations. Gender and age had no significant role in the associations presented. The review provides an understanding of the associations

between decision making styles and parenting approaches, as well as bridging the gaps in literature and proposing recommendations for future research. The review also provides clear categories for delineating decision making styles into either adaptive or maladaptive decision making. The findings presented confirm that negative parenting is associated with maladaptive decision making, and the review reveals the need for future research with regard to the development of instruments and interventions for both research and practice. Moreover, the review adds to current debates and knowledge on children and adolescents' decision making processes. It confirms the important role that parents play in the development of styles of decision making.

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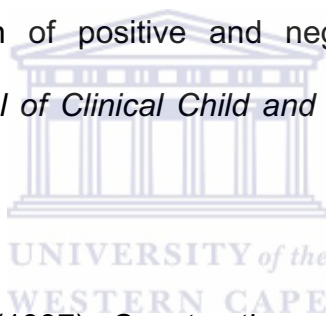
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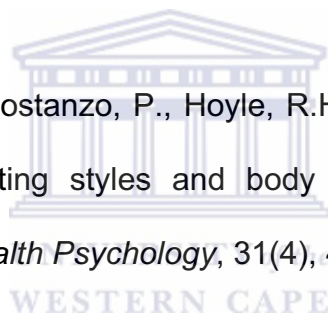
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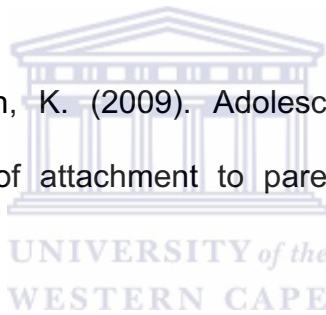
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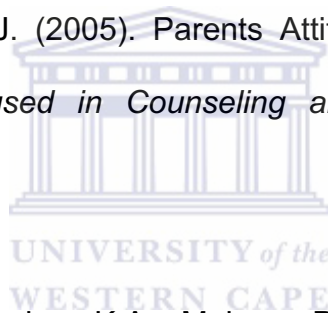
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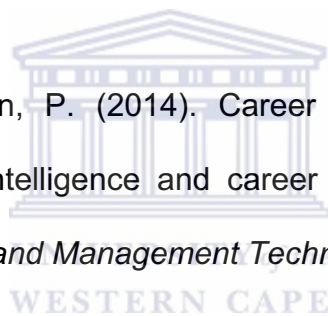
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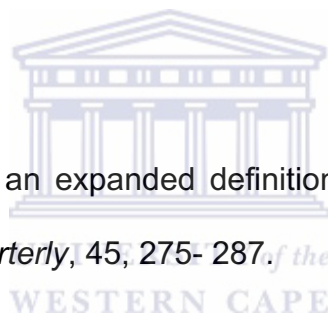
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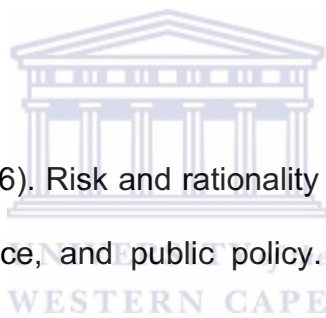
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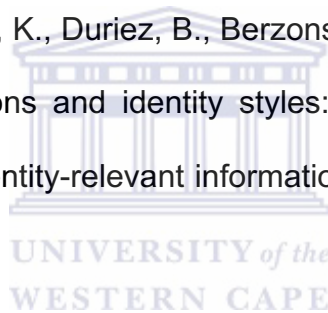
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CHAPTER SEVEN

**THE EFFECT OF FAMILY STRUCTURE ON DECISION MAKING, PARENTING
STYLES AND HEALTHY LIFESTYLE BEHAVIOUR OF ADOLESCENTS IN
RURAL SOUTH AFRICA**

7.1. Introduction

The previous three chapters formed part of Stage One of the research study and addressed the overall Objective 1. This chapter forms part of the second stage of the study in addressing Objective 2 which was *to determine the prevalence of the types of perceived parenting styles, types of adolescent decision making styles and healthy lifestyle behaviours of adolescents in the rural Western Cape*. In addition to this, the chapter examines any significant differences in the basis of family structure which might be a confounding variable in addressing the main aim of the study as presented in Chapter Three. This chapter has been accepted and published in the African Journal for Physical Health Education, Recreation and Dance.

7.2. The effect of family structure on decision making, parenting styles and healthy lifestyle behaviour of adolescents in rural South Africa

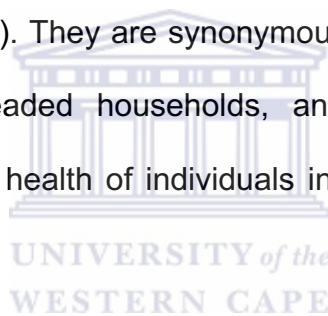
Globally, the environment in which individuals find themselves determines whether individuals are deemed healthy or not (Pelser, 2012). In attempts to determine present-day threats to health and well-being, as well as looking at the ways to improve health, it becomes important to identify and understand the environments in which individuals find themselves in (Pelser, 2012). According to the World Health Organisation, when considering this, some of the poorer social settings can be considered as being responsible for 25 per cent of preventable health risk factors

(United Nations Environment Project, 2002). The social environment, as well as the health status of a community, play a pivotal role in improving the quality of life, from a South African perspective, the Reconstruction and Development Programme aimed at improving the quality of life of individuals, particularly that of the poor (African National Congress, 1994).

When considering the environment and its role in health and well-being, research has focused largely on the processes in urban communities, and very little is known about the processes that take place in rural communities (De Marco & De Marco, 2010). In a review of literature examining rural communities and their outcomes, it is stated that few studies have assessed the effects and outcomes of rural communities over the past 50 years (De Marco & De Marco, 2010). Of the few studies that have examined community outcomes on individuals from an urban-rural perspective, it has been found that this perspective affects a number of aspects related to health and well-being (De Marco & De Marco, 2010; Macintyre, Ellaway & Cummins, 2002; Mujahid et al., 2007; Pickett & Pearl, 2001).

Although research has paid great attention to developmental outcomes and effects on the health of individuals in urban areas, an understanding of the outcomes in rural areas remains limited. With the growing number of studies focusing primarily on urban areas, it leads to question whether the findings with regard to developmental outcomes and health can be applicable to individuals in rural areas (Burke, O'Campo & Peak, 2006). This interest becomes important in a country like South Africa, where the focus in light of the Reconstruction and Development Programme is aimed at improving the quality of life of individuals regardless of being in an urban or rural

community. The need for more focus on the health and well-being of individuals in rural communities, comes with the understanding that rural communities are diverse, and are difficult to define and group into various rural communities (Berlan-Darque & Collomb, 1991). There is no homogeneity in the area layout or structure as can be found in urban cities (De Marco & De Marco, 2009). Rural communities also differ in the access and availability of resources (such as community health centres, community health workers) in comparison to urban areas, and these differences also play a pivotal role in hindering or promoting desirable health outcomes (Rural Poverty Research Centre, 2004). Rural communities have been considered as being areas in which poverty is rife, and have been associated with ill-health (Malmström, Sundquist & Johansson, 1999). They are synonymous with unemployment, teenage pregnancy, single mother-headed households, and limited resources and are considered detrimental to the health of individuals in those areas (De Marco & De Marco, 2010).



The geographic location or area (urban versus rural) that individuals find themselves in often has an effect on the development, particularly of children and adolescents (Ingoldsby et al., 2006). When considering the developmental outcomes on children and adolescents associated with upbringing in different areas (urban versus rural) the following outcomes have been noted: (i) the associated risks of early onset of antisocial behaviour (Ingoldsby et al., 2006), (ii) negative related outcomes on educational attainment (Garner & Raudenbush, 1991), (iii) the presence of emotional and behavioural problems (Caspi et al., 2002), (iv) scarcity of health resources as well as teenage pregnancies, and with limited or no child supervision (De Marco & De Marco, 2009). Even after considering the limited literature available on this topic,

it becomes important for researchers to also be cognisant of the familial environment and social relations (De Marco & De Marco, 2010).

The family is considered the foundation for socialising children into well-adjusted adults (Amoateng & Heaton 2007; Cheal, 2002; Muncie, Wetherell, Dallos & Cochrane, 1995). Research focusing on the effect of family structure on human development has become of particular interest (Biblarz & Gottainer, 2000; Magnuson & Berger, 2009; Manning & Lamb, 2003). 'Family structure' refers to the marital status of a family (Manning & Lamb, 2003) or the type of family in which a child is raised (Strohschein et al., 2009). The family structure can include married biological parents, step- or foster parents, as well as single parents. Family structure indicates the number of possible caregivers in a family, as well as the quality of a child's family life (Manning & Lamb, 2003). Family structure is generally indicated as single or two-parent households, with the focus often being on single parent households (Davids & Roman, 2013).

Single parents are more likely to be socially isolated, work longer hours, and provide lower emotional and parental support than families with married parents (Jackson, Brooks-Gunn, Huang & Glassman, 2000; Weinraub & Wolf, 1983). Single parents have to juggle the responsibilities of being a caregiver and provider to their children (Magnuson & Berger, 2009). The time that single parents spend with their children seems to be limited, because the household duties and responsibilities are not shared but are addressed by the parent alone. There is a lack of support and assistance with the responsibilities in the household. Children raised in single parent households have less parental attention and supervision than children who are

reared in households with married parents (Barrett & Turner, 2006; Cookston, 1999; Davids & Roman, 2013; Hoffmann, 2006; Levin, Kirby & Currie, 2012; Magnuson & Berger, 2009). Single parent households more often have to battle with unemployment, poverty, and a lack of resources (Roman, 2011). Weiss (1984) adds that single parents, who battle with poverty, will often remain impoverished, in comparison to households with married parents who tend to be more upwardly mobile. In comparison to single parent households, married parent's households seem to have a higher socioeconomic status (Rosenfeld, 2010). Married parents' households are seen as being more 'attractive', because each parent brings his/her own resources that are used collectively, and a division of labour (responsibilities) exists in the household (Stoleru, Radu, Antal & Szigeti, 2011). Furthermore, children from married parents' households tend to be more emotionally and psychologically well-adjusted than children from other family structures (Goodman & Greaves, 2010; Musick & Meier, 2010; Waite & Lehrer, 2003; Waldfogel, Craigie & Brooks-Gunn, 2010).

Thirty-five per cent of South African children are reared in households where both parents are present, while 40 per cent are reared by their mothers and 2.8 per cent by their fathers (Holborn & Eddy, 2011). Similar results were obtained by Davids and Roman (2013). Roman (2011) suggests that often there is a belief that households where both parents are present provide a more 'stable environment' than single parent families. However, that may not necessarily be the case. The South African single parent household is usually headed by a mother (Holborn & Eddy, 2011; Roman 2011; Ellis & Adams, 2009), and over half of all children under the age of

eighteen will spend some time in a single parent household (Magnuson & Berger, 2009).

Family structure has also been found to play a pivotal role in deciding the children's accessibility to healthcare (Gorman & Braverman, 2008). Children from single parent families are more likely to have limited or scarce access to preventative health and medical care than those from two parent families (Heck & Parker, 2002). Research also suggests that single parents are not always able to access the necessary healthcare needed to promote health and well-being (Fairbrother, Kenney, Hanson & Dubay, 2005). Families play a vital role in the global health and well-being of children (Gorman & Braverman, 2008). The status of their health and well-being is often achieved through access to adequate health care. This health care is considered to be a key element in health promotion, because it enhances preventative measures of health and well-being (Federal Interagency Forum on Child and Family Statistics, 2007).

According to the World Health Organisation (WHO, 2004) 60 per cent of an individual's quality of life, health and well-being is dependent on his/her behaviours and lifestyle choices. Although adolescence is considered a relatively healthy phase of life, there are health needs from biological, social and psychological factors faced by adolescents which affect health in later life (Lee & Loke, 2011; Patton et al., 2012). During adolescence an individual may engage in health-risk behaviours which include smoking, having unprotected sex and adopting a sedentary lifestyle. This includes poor eating habits and low physical activity (Wang et al., 2009). These life changes and involvement in health-risk behaviours often lead to a rise in mortality

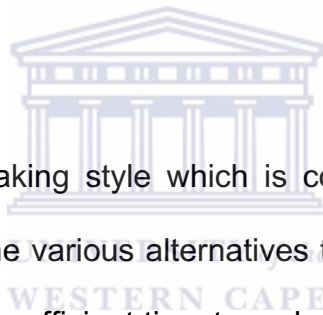
rates and the development of risks. This leads to non-communicable diseases and ill-health in later life (Patton et al., 2012; Wang et al., 2009). Wang et al. (2009) allude to the distinction between health-risk and healthy lifestyle behaviours. The health-risk behaviours are those actions that magnify an individual's vulnerability to ill-health and negative health related consequences (Engle, Castle & Menon, 1996). The healthy lifestyle behaviours are considered as the actions and behaviours which an individual employs that increase health, well-being and self-actualisation (Pender, 1996).

The healthy lifestyle behaviours of an individual are defined as the activities that form an important part of an individual's lifestyle and the determinants of the individual's health status (Lee & Loke, 2011). Wang, Ou, Chen and Duan (2009) believe that healthy lifestyle behaviours are important, especially for the health habits formed early in an individual's life. These healthy lifestyle behaviours include activities such as taking ownership of individual health responsibilities, engaging in healthy nutritional habits and behaviours and participating in regular physical activity. It also includes the psychological well-being of an individual which consist of stress management, interpersonal relations and spiritual behaviour and actions (Lee & Loke, 2011). International public health institutions have focused on the importance of healthy lifestyles over the past few decades (Chen, James & Wang, 2007). According to Umeh (2009), healthy lifestyle behaviours are dependent on a decision made to adopt a healthy lifestyle.

Adolescents often find themselves faced with situations in which they need to make decisions which are important to their daily activities and life. These situations can

include health related situations which are centred on individual health and well-being. Crucial to adolescent risk behaviour is decision making when situations are faced that have detrimental consequences to the health behaviours of the adolescent (Steinberg, 2004). When individuals need to make decisions, there are particular approaches to follow. These approaches are identified by Mann and Janis as decision making styles, which are: (i) vigilance, (ii) hypervigilance and (iii) defensive avoidance (Burnett, 1991). These styles differ in the individuals' convictions from optimism in solving the conflicting situation to no optimism where the decision is put off for a later stage or where the responsibility is passed to another person (Burnett, 1991). Theorists who have focused on decision making styles when faced with a conflicting situation in which a decision needs to be taken, are Janis and Mann (1977) (Commendador, 2011). They have identified a number of decision making styles, which operate on a continuum of adaptive to maladaptive approaches. The decision making styles proposed from a conflict model of decision making are defined as follows. The vigilance decision making style, often associated with adaptive forms of decision making, is present when an individual has optimistic feelings about finding alternative solutions or answers to a particular conflicting decision that needs to be made (Brew, Hesketh & Taylor, 2001; Burnett 1991). The vigilance decision making style also operates on the premise that there is sufficient time to follow steps which are considered essential, but do not necessarily follow chronological order, in making a good decision (Brown, Abdallah & Ng, 2011). Janis and Mann have proposed seven steps that are essential in making a good decision these are (Burnett, 1991; Chambers & Rew, 2003; Commendador, 2011): (i) considering a number of alternatives as solutions, (ii) considering the aims and objectives that need to be satisfied as well as considering whether it is consistent

with the individual's values and beliefs, (iii) considering the pro's and cons of each alternative, whether positive or negative in nature, (iv) gathering and examining new information that is available concerning the various solutions, (v) collating all the solutions and information gathered and making sense of it, as well as considering the course of action to be taken even if it does not fully satisfy the initial expected response, (vi) considering the pro's and cons of all the possible solutions, even the ones that were initially considered unacceptable, before making a decision, and finally (vii) considering a plan of action as to the way forward for the selected solution that will be executed, and considering the actions to be taken owing to the possible risks that might appear (Burnett, 1991; Chambers & Rew, 2003; Commendador, 2011).



Hypervigilance, a decision making style which is considered a maladaptive form, exists when optimism about the various alternatives to the decision are present, but there are beliefs that there is insufficient time to make a thorough search for possible alternatives (Commendador, 2003). This can be accompanied by panic and stress, and an alternative which is objectionable in nature, is considered (Brown, Abdallah & Ng, 2011; Burnett, 1991).

The other forms of decision making styles are termed defensive avoidance decision making styles. These are present with an individual who is pessimistic about the alternatives to a decision and often can be characterised as either the (a) procrastination decision making style, where the individual delays or postpones making the decision or (b) buck-passing decision making style, where the responsibility is passed on to someone else (Brown, Abdallah & Ng, 2011).

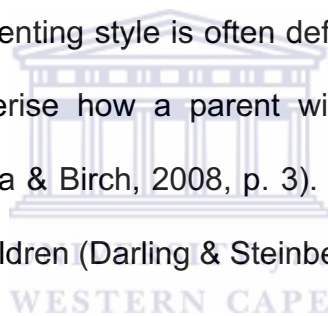
Adolescents who are likely to think through the options and consequences of making a decision are less likely to choose health-threatening behaviours (Byrnes, 2005).

Other theorists have postulated that individuals differ in the way in which they make decisions. Harren identified three decision making styles, namely rational-, intuitive- and dependent (Tinsley, Tinsley & Rushing, 2002). Scott and Bruce added to Harren's decision making styles avoidant- and spontaneous decision making styles (Curşeu & Schruijer, 2012; Riaz, Riaz & Batool, 2012). Johnson proposed styles of making decisions which were based on two elements: (i) how information was gathered and (ii) how information was analysed. This determines the four proposed decision making styles, namely spontaneous-internal, spontaneous-external, systematic-internal and systematic external (Hardin & Leong, 2004; Tinsley, Tinsley & Rushing, 2002). Styles of decision making have also used maximising and satisfying of conflictual decision making situations, in which Simon proposed a maximising and satisficing decision making styles (Parker, Bruine de Bruin & Fischhoff, 2007). A more recent approach to decision making styles has been proposed by Leykin and DeRubeis (2010) in which nine styles were identified which covered approaches to decision making in its broadest sense: respected-, confident-, spontaneous-, dependent-, vigilant-, avoidant-, brooding-, intuitive- and anxious decision making.

Decision making during adolescence is important as it assists with the many challenges that are common to this developmental phase. There is often an assumption that independent decision making styles develop during adolescence, but Öztürk, Kutlu and Atli (2011) believe that it starts during pre-adolescence, owing

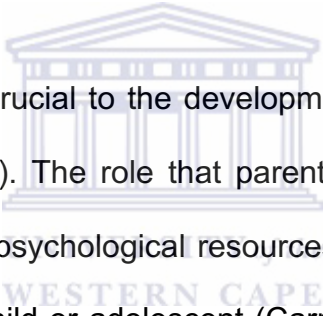
to the prevailing familial environment experienced. The way in which adolescents make decisions is often developed based on the decision making strategy used by their parents (Öztürk, Kutlu & Atli, 2011). Wolff and Crockett (2011) state that decision making often occurs in a social context where parents are present. Parents shape decisions that discourage behaviour that will be detrimental to health (Wolff & Crockett, 2011).

Parents play a crucial role in socialising and shaping adolescents' values and belief systems (Spera, 2005; White, Roosa, Weaver & Nair, 2009). This socialisation process occurs in the parent-child relationship and via the parenting style of the parents (Akinsola, 2011). Parenting style is often defined as a "typology of attitudes and behaviours that characterise how a parent will interact with a child across domains of parenting" (Ventura & Birch, 2008, p. 3). These styles foster the context in which parents raise their children (Darling & Steinberg, 1993).



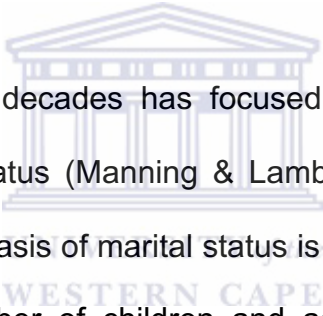
Three commonly accepted parenting styles, authoritarian, authoritative and permissive, have been associated with different outcomes for children. These three styles are differentiated by parental control and acceptance, as well as by warmth and interactions (Fuemmeler, et al., 2012). An authoritarian parent is low on acceptance and high on control, while an authoritative parent is high on both control and acceptance, and a permissive parent is high on acceptance and low on control (Swartz et al., 2008). The authoritarian parent sets strict rules and standards to which children must adhere, with little warmth shown towards the children (Swartz et al., 2008). Authoritative parents display warmth and respect towards their children; they have rules in place and explain to their children the reasons behind the rules

and limitations set (Keshavarz & Baharudin, 2006; Spera, 2005). The permissive parent displays nurturance and warmth to the children, but there are few to no rules and limits imposed (Swartz, 2008). Parenting styles and practices have been specifically linked to the development of autonomous behaviour in adolescence (Pérez & Cumsille, 2012). Adolescent autonomy plays a crucial role in decision making, therefore, it can be suggested that parenting plays an important role in decision making of adolescents. Furthermore, the health and well-being of adolescents have been found to be related to parental support, as well as to the parent-child relationship (Holmbeck, Paikoff & Brook-Gunn, 1995; Manning & Lamb, 2003).



The role that parents play is crucial to the development of adolescents, particularly their health (Ford et al., 2009). The role that parents play is influential since they provide economic, social and psychological resources that assist in maintaining the health and well-being of the child or adolescent (Carr & Springer, 2010). This is not always achieved, due to a number of factors, which could be accounted for by the parenting approaches employed, as well as a range of other social factors (Ford et al., 2009). Therefore, it is important to take into consideration the variations in parenting between mother and father figures. Mothers and fathers often differ in their parenting styles. Sometimes the styles of both mother and father will complement each other, and at other times there can be conflicting parenting styles in the family home. Gamble, Ramakumar and Diaz (2007) allude to the differences that exist between mother and father parenting. They suggest that both parents should be considered individually as they both have their unique contributions to make in the development and socialisation of the adolescent. The experiences, beliefs,

environmental contributors, parental behaviours and upbringing of both the mother and father figures are unique, and these differences have an impact on co-parenting in the home and the parent-child interaction (Gamble, Ramakumar & Diaz, 2007). Cabrera, et al. (2000) and Gamble, Ramakumar and Diaz (2007) note the importance of the agreement and disagreement between mothers and fathers in the familial home. The differences in mother and father agreement across various parenting dimensions and situations assist in the parenting styles employed by mothers and father (Gamble, Ramakumar & Diaz, 2007). These variations in parenting styles, make an important contribution in the development of the adolescent (Gamble, Ramakumar & Diaz, 2007).



Research over the past few decades has focused largely on the role of family structure in light of marital status (Manning & Lamb, 2003). The notion of seeing family structure solely on the basis of marital status is no longer adequate, especially considering the growing number of children and adolescents who are reared in homes where cohabiting occurs (Manning & Lamb, 2003). This study therefore aims to address the following: (i) to describe the prevalence of perceived parenting styles, decision making styles and healthy lifestyle behaviours for adolescents in rural South Africa, as well as (ii) to compare perceived parenting styles, decision making styles and healthy lifestyle behaviours in one and two parent families. The aims of the current study are in line with what scholars are currently examining when considering healthy lifestyle behaviours, which attempt to establish the conduits towards healthy lifestyle behaviours by examining family structure (single and two-parent families), and context (perceive maternal and paternal parenting in the home environment) and

striving towards health (decision making styles and healthy lifestyle behaviours) (Carr & Springer, 2010).

7.3. Methodology

A cross-sectional comparative group design was used to establish the decision making styles, parenting styles and healthy lifestyle behaviours of adolescents in rural South Africa, and to compare the aforementioned based upon family structure, i.e., single and two-parent families.

7.3.1. Participants

To obtain a heterogeneous group of participants, schools in the Overberg Education District (a rural area) which forms part of the Western Cape Education Department were stratified on the basis of socioeconomic status. Four schools were then randomly selected in the education district based on socioeconomic status of the school (using school fees as an indicator of socioeconomic status). The Western Cape Education Department granted permission to conduct the study. The principals and teachers then granted permission for the study to be conducted at their schools. Grade 9 learners were invited to participate, based on providing informed assent, and their parents providing informed consent. No names were used at any time during the data collection process, and in this way they were assured that their identities would remain anonymous and their information confidential. Participants were also given the opportunity to withdraw from the study at any time without any negative consequences.

The final sample consisted of 457 participants 46.2 per cent (n= 209) male and 53.8 per cent (n= 243) female (Table 7.1). The participants who lived in two-parent families constituted 69.4 per cent (n= 301) of the sample, while 30.6 per cent (n= 133) lived in single-parent families. The mean age for participants was 16.31 (*SD* = 1.45) years.

Table 7.1 Demographic details of participants

		Total Sample	Single	Two Parent
Gender	Male	209 (46.2%)	57 (43.5%)	140 (46.8%)
	Female	243 (53.8%)	74 (56.5%)	159 (53.2%)
Age	Mean Age	16.31	16.13	16.31
		(<i>SD</i> = 1.45)	(<i>SD</i> = 1.29)	(<i>SD</i> = 1.54)
Family structure		-	133 (30.6%)	301 (69.4%)

7.3.2. Measuring instrument

A self-reported questionnaire was used to collect data from the participants. The questionnaire consisted of four sections, namely, (i) demographical characteristics (age, gender, home language, and family structure), (ii) the Parental Style and Dimension Questionnaire (PSDQ) (Robinson, Mandleco, Frost Oslén & Hart, 2001), (iii) Health-Promoting Lifestyle Profile II Questionnaire (Walker & Hill-Polerecky, 1996), and (iv) the Melbourne Decision Making Questionnaire (Mann, Burnett, Radford & Ford, 1997). The Parental Style and Dimension Questionnaire was a 32 item self-report questionnaire based on the three parenting styles as outlined by Baumrind (Robinson, Mandleco, Frost Oslén & Hart, 2001). The parenting styles outlined in the questionnaire were both for mothers and fathers, and participants responded on a 4 point Likert scale (1= *not at all like him / her* and 4= *a lot like him / her*). The Health-Promoting Lifestyle Profile II was a 52-item questionnaire using a 4 point Likert scale, where the composite score was used to assess self-reported

frequencies in healthy lifestyle behaviours (1= *never* to 4= *always*) (Walker & Hill-Polerecky, 1996). The Melbourne Decision Making Questionnaire was a 22-item questionnaire which was based on the foundations of Janis and Mann's conflict model of decision making. The questionnaire assessed the four decision making styles, namely, vigilance, hypervigilance, buck-passing and procrastination, and was assessed on a 3 point Likert scale (0= *not true for me* and 2= *true for me*) (Mann, Burnett, Radford & Ford, 1997). The Cronbach alpha scores for the (i) Parental Style and Dimension Questionnaire was .85, (ii) the Health-Promoting Lifestyle Profile II was .86 and (iii) the Melbourne Decision Making Questionnaire was .60.

7.3.4. Data analysis

Groups of single and two-parent families were created, based on recoding the variables. The descriptive statistics for the sub-scales of *parenting styles*, *decision making styles* and *healthy lifestyle behaviours* were analysed. Multivariate analysis of variance (MANOVA) was conducted to compare the different groups, as it allowed for more than one dependent variable to be measured. Since no significant multivariate differences were found, no univariate analysis of variance (ANOVA) was conducted (Field, 2009). The group differences were based on the adolescents' perspectives.

7.4. Results

The descriptive statistics for parenting styles, decision making styles and healthy lifestyle behaviours for single and two parent families are presented in Table 7.2. The results suggest that the highest mean score obtained for maternal parenting styles was for authoritative parenting ($M= 3.09$, $SD= .50$). This was similar for single

($M= 3.10$, $SD=.54$) and two-parent families ($M= 3.09$, $SD=.49$). The authoritative paternal parenting style was the most prevalent ($M= 2.84$, $SD= .61$). Authoritative parenting was also prevalent in single ($M= 2.76$, $SD= .61$) and two-parent families ($M= 2.87$, $SD= .61$). Vigilant decision making ($M=1.43$, $SD=.35$) was the most prevalent decision making style for the total sample, for both single ($M= 1.43$, $SD= .36$) and two-parent families ($M= 1.43$, $SD= .34$). The composite score for healthy lifestyle behaviours for the total sample ($M= 2.74$, $SD= .39$) was similar for single ($M= 2.73$, $SD= .42$) and two-parent families ($M= 2.74$, $SD= .38$).



Table 2 Descriptive Statistics and Main Effects of Family Structure: Parenting Styles, Decision Making Styles and Healthy Lifestyle Behaviours

Scales / Sub-Scales	Total Sample		Single Parent Families		Two Parent Families		F
	Mean	SD	Mean	SD	Mean	SD	
Perceived Parenting Styles¹							
Maternal Authoritative Parenting	3.09	.50	3.10	.54	3.09	.49	.42
Maternal Authoritarian Parenting	2.42	.56	2.36	.60	2.45	.53	3.13
Maternal Permissive Parenting	2.46	.56	2.44	.58	2.47	.56	.04
Paternal Authoritative Parenting	2.84	.61	2.76	.61	2.87	.61	.30
Paternal Authoritarian Parenting	2.35	.60	2.26	.64	2.39	.59	1.68
Paternal Permissive Parenting	2.43	.55	2.37	.55	2.45	.55	.03
Decision Making Styles²							
Vigilant Decision Making	1.43	.35	1.43	.36	1.43	.34	.23
Hypervigilant Decision Making	1.16	.34	1.19	.37	1.14	.33	2.09
Procrastination	.96	.38	.97	.37	.94	.38	.39
Buck-Passing	.78	.41	.79	.41	.76	.40	.31
Healthy Lifestyle Behaviours³							
Healthy Lifestyle Behaviours	2.74	.39	2.73	.42	2.74	.38	1.31

¹ Participants responded on a 4 point Likert scale, 1= not at all like him / her and 4= a lot like him / her

² Participants responded on a 3 point Likert scale: 0= not true for me and 2= true for me

³ Participants responded on a 4 point Likert scale, 1= never and 4= always

The results for multivariate analysis (MANOVA) (Table 7.2) which was used for comparing parenting styles, decision making styles and healthy lifestyle behaviour for adolescents in single and two-parent families, using Hotelling's trace statistic, suggests that there were no significant main effects for family structure on

perceptions of parenting styles, decision making styles and healthy lifestyle behaviours for adolescents, $T = .05$, $F(11,285) = 1.31$, $p > .05$.

7.5. Discussion

The aim of the study was to (i) establish the prevalence of perceived parenting styles, decision making styles and engagement in healthy lifestyle behaviour of adolescents in rural South Africa and (ii) to compare this on the basis of family structure.

Engaging in healthy lifestyle behaviours, is important, particularly with the increase in contemporary health risks which often is associated with the environment in which individuals find themselves (Pelser, 2012). Research has suggested over the years that there has been a great inclination for studies to focus primarily on urban area, with rural communities often left under-researched (Berlan-Darque & Collomb, 1991; De Marco & De Marco, 2010; De Marco & De Marco, 2009; Mujahid et al., 2007). Debates in urban-rural studies have often asked the questions around how applicable research findings in urban areas are to those in rural areas which often are very diverse in nature (Burke, O'Campo & Peak, 2006). This study adds to the current debates particularly regarding the role that a rural community plays within the context of parenting styles, decision making styles and engagement in healthy lifestyle behaviours from the perspective of family structure as it is one of the first studies on the African continent to examine this.

The effects of family structure on the perceived parenting styles and decision making styles of adolescents on the engagement in healthy lifestyle behaviours within a rural

community are important as it assess the psychosocial as well as environmental effects on engagement in healthy lifestyle behaviours. Rural communities are often synonymous with ill health, which have detrimental effects on the health status of individuals and the health determinants of the community (such as limited access to community health centres, increased sedentary lifestyles and limited to no access to primary health care) (Mitura & Bollman, 2003; Mitura & Bollman, 2004; Pampalon, Martinez & Hamel, 2006). Rural communities are often faced with poverty. These communities from a parenting perspective often have parents that display low parental warmth (Pinderhughes et al., 2001).

Parenting styles and the role it plays in child and adolescent emotional and behavioural development is an important component of parent-child relationships (Suzuki & Kitamura, 2011). The three parenting styles proposed by Baumrind differ in terms of parental control and acceptance as well as warmth and interactions displayed by the parent (Fuemmeler et al., 2012; Davids & Roman, 2014). The results of the current study suggest that authoritative parenting has been the most prevalent perceived maternal and paternal parenting style perceived in both single and two-parent families. Authoritative parents often display warmth and affection towards their children. There is considerable research that associates authoritative parenting with favourable child and adolescent developmental outcomes, both nationally (Davids & Roman, 2014; Kritzas & Grobler, 2005; Latouf & Dunn, 2010) and internationally (Newman, Harrison, Dashiff & Davies, 2008; Manning & Lamb, 2003; Pearson et al., 2009; Kitamura et al., 2014). Pinderhughes et al. (2001) propose that parents in rural areas often display low parental warmth; however this

study found that parents displayed warmth and parental control by displaying authoritative parenting.

The role parenting plays in adolescent decision making is an important one to consider since, during this transitional phase there is a great need for autonomy which means more adolescent yearning for independent decision making (Halpern-Felsher & Cauffman, 2001). Parenting has also been associated with adolescent decision making regarding health behaviour (Morton et al., 2010). Decision making among adolescents is always considered to involve risky decision making, because adolescence is a period of experimentation (Reyna & Farley, 2006). Adolescence is furthermore a period in which health behaviours are adopted which have implications for health in later life as it can either promote health or hinder this process (Morton et al., 2010; Williams, Holmbeck & Greenley, 2002). The results for the current study, however, found vigilance to be the most prevalent decision making style. Vigilance is a decision making style in which a number of steps are followed leading to the most desirable outcome. Ultimately, the individual feels competent and optimistic about the decision making process and behavioural outcome (Brown, Abdallah & Ng, 2011). Individuals in rural communities often have to travel far distances to access health care facilities (De Marco & De Marco, 2010). These communities often have limited access to (i) clean drinking water, (ii) decent housing and safe recreational areas, (iii) close and available access to health care and health services (Macintyre, Ellaway & Cummins, 2002) which hinders the promotion of health and well-being within a rural community. Therefore it is interesting to note that adolescents in the rural community made use of vigilant decision making, which will assist them in decision making and aid with pro-social behaviour and engagement in more healthy

alternatives. This is interesting to note, especially since adolescent decision making is often associated with risk-taking and frequent negative outcomes. Vigilant decision making has often been associated with positive outcomes (Deniz, 2006), as well as with satisfaction in life. This promotes health and well-being of the adolescent (Bacanli, 2000), instead of health risk behaviours.

Health risk behaviours are prevalent during adolescence, and often there seems to be an increase in engaging in behaviours which are detrimental to their health and overall well-being (Lohaus, Vierhaus & Ball, 2009). Reitz, Deković, Meijer and Engels (2006) account for the decrease in healthy lifestyle behaviours as being due to the role of authoritative parents, because during childhood authoritative parents exercise control and suggestions that encourage participation in healthy lifestyle behaviours. The findings in this study, however, are different to the results showing adolescents engaging less in healthy lifestyle behaviours (Levin, Kirby & Currie, 2012; Salmon, Tremblay, Marshall & Hume, 2011; Tremblay et al., 2011; Viner et al., 2012). Adolescents in the current study often engaged in healthy lifestyle behaviours. This leads one to question whether parents still play an important role in controlling and monitoring involvement in health behaviours.

The process of acquiring various skills to assist in decision making is considered to be a constant learning endeavour. This process of learning and developing the necessary skills for decision making is thought to be due to the role that parents play (Öztürk, Kutlu & Atli, 2011; Sovet & Metz, 2014). Brown and Mann (1990) have thought the familial environment in which parenting takes place to be significant in fostering decision making skills and abilities. The results show that perceived

authoritative parenting was most prevalent in the study. When considering the role of parenting as proposed by Brown and Mann (1990), it could aid in understanding why the sample participated largely in vigilant decision making styles. First, authoritative parenting is often associated with positive outcomes for children and adolescents (Lease & Dahlbeck, 2009). Secondly, adolescents tend to make use of the decision making styles and processes of their parents (Öztürk, Kutlu & Atli, 2011). The prevalence of authoritative parenting and vigilant decision making also influences adolescents' frequent engagement in healthy lifestyle behaviours. Adolescent decision making takes place within a particular social context which is shaped and constructed by parents (Wolff & Crockett, 2011). The social context in which authoritative parenting and vigilant decision making are present can be seen as a protective factor for adolescents in this rural community. These protective factors promote engagement in healthy lifestyle behaviours, which are less prevalent in rural communities in which there is a lack of social and health services which is associated with poor health care and recreational facilities (Morland et al., 2002; De Marco & De Marco, 2009). The environments which parents create encourage healthy lifestyle behaviours and discourage behaviours that are detrimental to health and well-being (Wolff & Crockett, 2011).

Authoritative parenting, vigilant decision making and frequent engagement in healthy lifestyle behaviours were the most prevalent family structure characteristics among adolescents in rural South Africa. No significant differences were found on the basis of family structure. These findings are consistent with previous studies conducted in South Africa that compared single and two-parent families and found no significant differences (Roman, 2011; Myburg, Poggenpoel & Du Plessis, 2011). However, in a

more recent study comparing the goals and aspirations of adolescents from single and two-parent families, there were significant differences found (Davids & Roman, 2013). Research internationally has examined the associations between single and two-parent families and found differences in the outcomes on children and adolescents which can be detrimental to their health, well-being and development (Brown, 2010). Researchers have often debated that studying family structure alone allows for a narrow and limited view, as it provides insight into only one aspect of the living arrangement of children and adolescence (Brown, 2010). This in itself cannot be sufficient when considering the pro-social outcomes in various family structures (Brown, 2010). The focus should be on how the family as a unit functions, rather than on the number of individuals that make up the familial unit. What needs to be considered is the family functioning in the familial environment and not the 'living arrangement' in isolation (Brown, 2010; Heard, 2007). Familial functioning is considered an important factor for child and adolescent health and well-being (Brown, 2010; Heard, 2007). However, when considering the contradictory findings of the role of family structure in relation to parenting, decision making and engagement in healthy lifestyle behaviours in current literature and the findings in this study, it leaves one to question the applicability once more of urban research findings to rural areas which often differ from urban areas (Berlan-Darque & Collomb, 1991; Burke, O'Campo & Peak, 2006; De Marco & De Marco, 2010; De Marco & De Marco, 2009; Mujahid et al., 2007). The aim of this study was to examine the prevalence of perceived parenting styles, decision making styles and engagement in healthy lifestyle behaviours of adolescents in rural South Africa, and it is recommended that future research examine a comparison between urban and rural adolescents to determine whether the proposed view of applicability of urban

research is similar to or different from rural research findings. Furthermore, future research should consider family functioning, instead of family structure only, which focuses largely on the 'living arrangement' within the family, rather than how the family functions as a unit. The findings of this study could provide insight and guidance for youth development programmes and policies aimed at improving engagement in healthy lifestyle behaviours to improve health and well-being. Policies and programmes often neglect paying attention to (i) enhancing decision making skills or styles, which is important in the decision making process as well as (ii) the role that these decision making styles play in enhancing participation in healthy lifestyle behaviours of young persons.

7.6. Conclusion

The study found that authoritative parenting, vigilant decision making and frequent engagement in healthy lifestyle behaviours were the most prevalent family structure characteristics among adolescents in rural South Africa, and no statistically significant differences were found on the basis of family structure. An important contribution was made by examining the prevalence of parenting styles, decision making styles and engagement in healthy lifestyle behaviours of adolescents in rural South Africa. Most notably, it is one of the first studies to examine and compare parenting styles, decision making styles and healthy lifestyle behaviours on the basis of single and two-parent families in Africa.

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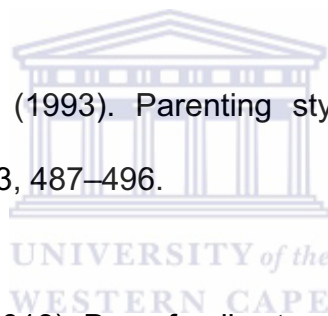
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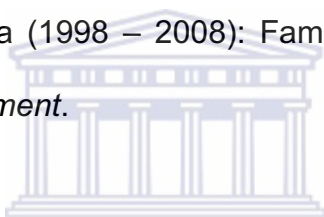
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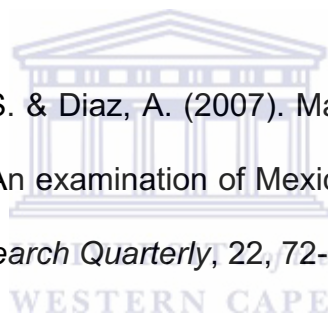
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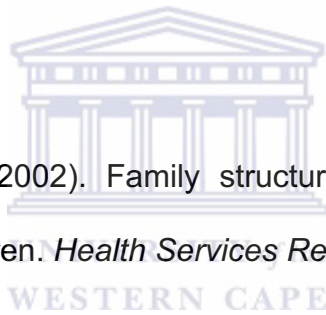
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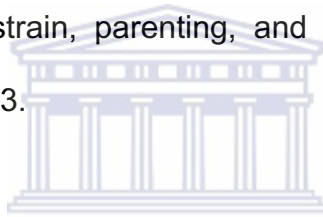
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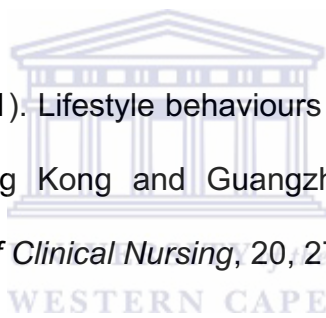
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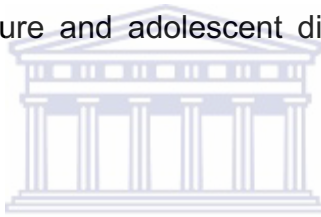
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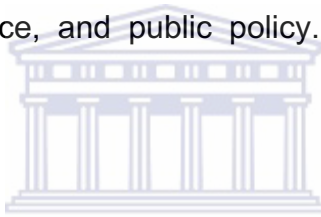
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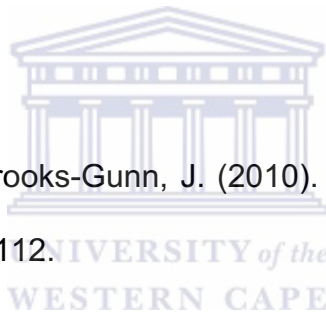
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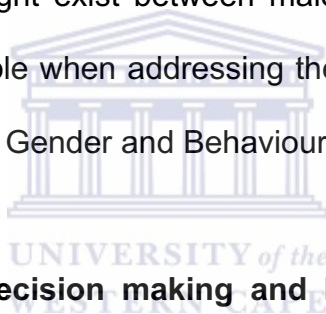
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CHAPTER EIGHT

PERCEIVED PARENTING, DECISION MAKING AND HEALTHY LIFESTYLE BEHAVIOURS: ARE MALE AND FEMALE LEARNERS SIGNIFICANTLY DIFFERENT?

8.1. Introduction

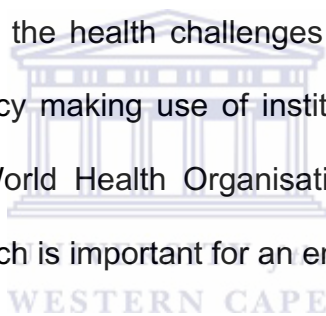
The current chapter together with the previous chapter address Objective 2 of the study which aimed to determine the prevalence of the types of perceived parenting styles, types of adolescent decision making styles and healthy lifestyle behaviours of adolescents in the rural Western Cape. This chapter also aims to establish any significant differences that might exist between male and female adolescents and might be a confounding variable when addressing the overall aim of the study. This chapter has been submitted to Gender and Behaviour and is currently under review.



8.2. Perceived parenting, decision making and healthy lifestyle behaviours: Are male and female learners significantly different?

Lack of growth in global health funding and initiatives over the past decade has been accounted for by the global economic crisis, and the economic BRICS (Brazil, the Russian Federation, India, China and South Africa) alliance is one of the only economies that has seen growth regardless of the economic crisis (Harmer, Xiao, Missoni & Tediosi, 2013). These emerging economies have been recognised as playing an important part in global health (Harmer et al., 2013). Considering the role of emerging economies, research has focused largely on economic growth and development, and less focus has been paid to the potential to improve global health (Acharya et al., 2014), particularly as the BRICS economies sustained growth in global health initiatives as alluded to by Harmer and colleagues (2013). Health

related problems in emerging economies (BRICS), has seen an increase in non-communicable diseases that are associated with lifestyle-related behaviour (Acharya et al., 2014). These economies could face dire consequences if left unattended, and could cripple their economic growth and development. However, one of the strategies of emerging economies framed in Institutional Theory is the important role of accessing agencies and institutions for the betterment of the economy (Hoskisson, Eden, Lau & Wright, 2000). The growing health concerns for an emerging economy like South Africa sought alliances with institutions (governmental departments, organisations, and schools) that are integral in social and organisational behaviour with the overall aim of reducing transaction and information costs (Hoskisson et al., 2000). In addressing some of the health challenges South Africa implemented the Integrated School Health Policy making use of institutions like the Departments of Education and Health, the World Health Organisation and schools that assist in reducing transaction costs which is important for an emerging economy.



The Integrated School Health Policy aims to promote favourable health and the development of learners and their communities (Departments of Health and Education, 2012). Health awareness and literacy of learners have been promoted within the school setting by means of access to information and providing the necessary skills in Life Orientation lessons. The Curriculum and Assessment Policy Statements (CAPS) for Life Orientation for Grades 7 to 9 mentions that one of the specific aims of Life Orientation is to “guide learners to make informed and responsible decisions about their health, environment, subject choices, further studies and careers” (Department of Basic Education, 2011: 7). How South African

learners make decisions and the role that the environment plays in decision making remains unclear because it has not been examined in previous research.

Decision making is important particularly within the school setting and relates to subject choice, completing prescribed tasks and homework, and behaving in accordance with the school's ethos. The CAPS for Life Orientation focuses on 'development of the self in society'. Consequently, the Life Orientation curriculum focuses specifically on developing life skills with regard to informed choices that promote positive healthy lifestyles (Department of Basic Education, 2011).

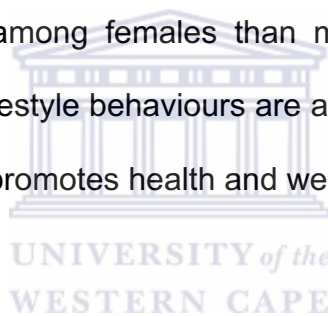
8.2.1. Healthy lifestyle behaviours

The behaviours and lifestyle choices that individuals engage in are estimated to make up 60 per cent of their perceived quality of health and well-being (World Health Organisation, 2004). The quality of health and well-being of learners is particularly important when considering the focus of the Life Orientation curriculum, which is aimed at promoting positive lifestyle choices. Learners in secondary school are in the developmental phase of adolescence, which is synonymous with lifestyle choices that can hinder positive health behaviours. Some of the behaviours that adolescents adopt that hinder health and well-being include smoking, poor nutritional habits, risky sexual behaviours and infrequent engagement in physical activity (Wang, Ou, Chen & Duan, 2009).

Healthy lifestyle behaviours have become an important public health concern over the past few decades (Chen, James & Wang, 2007). The rising mortality rates can be attributed to the lifestyle changes and health-risk behaviours adopted by

adolescents. These lifestyle-related behaviours also act as contributory factors for increasing non-communicable diseases and ill-health in later life (Patton et al., 2012; Wang et al., 2009). Non-communicable diseases such as cardiovascular disease, diabetes, cancer and depression, are often the result of choices emanating from poor lifestyle-related behaviour.

Gender is important when considering engagement in healthy lifestyle behaviours (Griffin et al., 2000; Windle et al., 2010). It has been found that females are more prone to poor health-related outcomes than males (McDonough & Walters, 2001). One's overall health is also affected by the perceived stress of life events that is found to be more common among females than males (McDonough, Walters & Stroschein, 2002). Healthy lifestyle behaviours are also dependent on the decisions made to adopt a lifestyle that promotes health and well-being (Umeh, 2009).

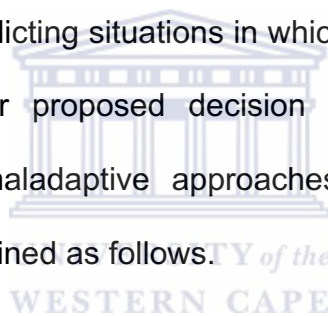


8.2.2. Decision making

During adolescence, learners often find themselves having to make decisions on an almost daily basis. These decisions are of importance for their health and well-being. For example, instances where decision making promotes risky learner behaviour, such as decisions to engage in sedentary behaviour, could have dire consequences for the health and well-being of the adolescent (Steinberg, 2004). Individuals often differ in their approaches to effective decision making. The varied approaches to decision making are known as decision making styles. A number of decision making styles have been proposed by various theorists over the years (Burnett, 1991). Of particular relevance to the current article are the decision making styles of Janis and Mann (1977), namely (i) vigilance, (ii) hypervigilance, and (iii) defensive avoidance

(Burnett, 1991). These decision making styles differ in the decision makers' (or learners') belief and optimism (as well as the lack thereof) of finding a satisfactory solution to the decision making situation at hand (Burnett, 1991). In some of these decision making styles the decision maker postpones making a decision or passes the responsibility of making a decision on to another person (Burnett, 1991); for example, where learners defer the decision making to engage in scholastic tasks to a later period, or otherwise get peers to make the decision regarding the task on their behalf.

Janis and Mann (1977) have been the pioneers in decision making styles when individuals are faced with conflicting situations in which a decision needs to be made (Commendador, 2011). Their proposed decision making styles function on a continuum of adaptive to maladaptive approaches to decision making. These decision making styles are defined as follows.

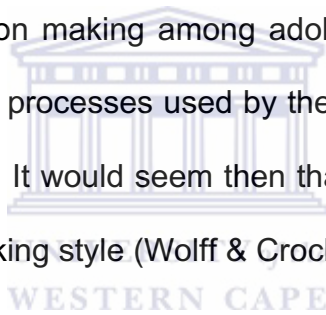


- a) Vigilant decision making is often related to adaptive forms of decision making and can be caused by optimism about finding alternative solutions to a conflicting situation (Brew, Hesketh & Taylor, 2001; Burnett 1991). Vigilant decision making operates on the premise that there is sufficient time to engage in processes which are deemed necessary when making a good decision (Brown, Abdallah & Ng, 2011). This is applicable when a learner selects a research topic for his/her science project after examining all the possible alternatives, and knows that he/she is competent to complete the task and that there is sufficient time to do so.

- b) The hypervigilant decision making style, considered as being a maladaptive form of decision making, is a process where the decision maker is optimistic about the various alternatives to the decision that needs to be made. There is a belief that there is insufficient time to make a thorough search of possible alternatives (Commendador, 2003). In the school setting, it could be a learner who has examined the possible alternatives for a science project, but feels that there is not sufficient time to fully satisfy the decisional task at hand, which can cause stress and panic.
- c) Defensive avoidant decision making occurs when the decision maker feels pessimistic about the alternatives to making a decision, and is categorised as having either (a) the procrastinating decision making style, where the decision maker postpones making a decision or (b) having the buck-passing decision making style, where the responsibility is passed onto someone other than the decision maker (Brown, Abdallah & Ng, 2011). Using the example of the learner with the science project, this can be seen in two situations: (i) where the learner does not examine the alternatives and defers making a decision to a later stage or (ii) when the learner gets his/her peers to decide on the best alternative for the science project.

Decision making of learners during adolescence is important, as it assists with scholastic tasks, such as subject choices, as well as with the many challenges that are common to this developmental phase. Gender plays an important role in decision making (D'Acromont & Van der Linder, 2006; de Acedo Lizárraga, de Acedo Baquedano & Cardelle-Elawar, 2007). The gender differences in decision making

raise questions as to the gender norms and stereotypes that society prescribes. Gender norms and stereotypes form part of the values and expectations of individuals, based on the socialisation process. Female decision making processes involve considering alternatives which would yield the least outcome of risk, while males tend to engage in decision making that involves risk-taking (Weber & Johnson, 2009). However, the findings of gender differences are ambiguous (Lin et al., 2014; Weber & Johnson, 2009; Spicer & Sadler-Smith, 2005; Hatala & Case, 2000). The ambiguous findings in research suggest that in some instances gender differences exist in the decision making process, while in others there are not any differences (Lin et al., 2014; Weber & Johnson, 2009; Spicer & Sadler-Smith, 2005; Hatala & Case, 2000). Decision making among adolescents has been found to be related to the decision making processes used by their parents (Öztürk, Kutlu & Atli, 2011; Wolff & Crockett, 2011). It would seem then that parenting plays an important role in a learner's decision making style (Wolff & Crockett, 2011).



8.2.3. *Parenting styles*

The process of socialisation takes place in the parent-child relationship and by means of the parenting style that the parents employ (Akinsola, 2011). Parenting styles can be defined as the “typology of attitudes and behaviours that characterise how a parent will interact with a child [learner] across various domains of parenting” (Ventura & Birch, 2008: 3). The context in which learners (children) are reared is guided by the parenting styles used by the parent(s) (Darling & Steinberg, 1993).

Authoritarian, authoritative and permissive parenting styles are the three commonly discussed parenting styles in literature, and have been associated with a number of

developmental outcomes for learners. The styles are differentiated by the display of parental control and acceptance, as well as warmth and interaction by parents (Fuemmeler et al., 2012).

Authoritarian parenting is synonymous with low acceptance and high control. These parents set strict rules and standards that learners (children) must adhere to, and there is little display of warmth (Swartz et al., 2008). The authoritative parent displays high parental control and acceptance (Swartz et al., 2008). This parent displays warmth and respect towards learners, for whom there would be rules put in place and explanations for the rules (Keshavarz & Baharudin, 2006; Spera, 2005). Permissive parenting, however, is high on acceptance and low on control (Swartz et al., 2008). These parents display nurturance and warmth towards learners, but there are little to no rules or limits imposed on learners (Swartz et al., 2008). Learners who have authoritative parents perform well academically (Akinsola, 2011; Kordi & Baharudin, 2010), while permissive and authoritarian parents are associated with academic under-achievement (Dehyadegary et al., 2012) of their children. When considering some of the differences that are expressed by males and females, it becomes important to consider the role of socialisation – and the differences stressed upon males and females by their parents (Shields, 2002; Chaplin, Cole & Zahn-Waxler, 2005). The differences stressed to males and females may be seen by the attention that is shown to children of different genders by parents of different genders (male-female learner versus maternal-paternal parental figure) (Kerr, Lopez, Olson & Sameroff, 2004; Chaplin, Cole & Zahn-Waxler, 2005).

The differences in parenting, when considering gender, have been noted in research when fathers show differences in attention to male and female children (Kerr et al., 2004; Fivush, 1998; Lytton & Romney, 1991). Research has examined the association of maternal parenting and developmental outcomes of children; however it is often assumed that paternal parenting is the same (Simons & Conger, 2007). Gender differences in children and adolescents are often explored in literature, but gender differences of parents are not found as often (Fivush, Brotman, Buckner & Goodman, 2000; Kerr et al., 2004).

Understanding how South African learners make decisions about healthy lifestyle behaviours and the role that parents play is important. It would assist both the Departments of Health and Education in addressing concerns around health promotion in the school setting, and minimise the burden of non-communicable diseases. Consequently, this study is important from an educational perspective, as it focuses on effective decision making. The overarching aim of the education system is to promote learners who are competent in effective decision making that will encourage holistic health and well-being. The CAPS for Life Orientation encourages good decision and choice making, but whether there is sufficient knowledge provided as to how South African learners make decisions, their lifestyle choices and the roles of parenting and gender in these processes, is still unclear. This study could add to current debates among scholars internationally, regarding the role of gender in adolescent decision making styles, as well as contributing to the limited available studies considering decision making styles in Africa. It would assist in comparing differences in decision making across cultures as outlined in a review considering decision making from an international perspective by Davids and

colleagues (2015). This study therefore: (i) examines the perceived parenting styles, decision making styles and healthy lifestyle behaviours of learners at secondary schools as well as (ii) determining whether significant differences exist between male and female learners in terms of perceived parenting styles, decision making styles and healthy lifestyle behaviours.

8.3. Methodology

A cross-sectional comparative group design was used to establish the decision making styles, parenting styles and healthy lifestyle behaviours of learners in the Overberg Education District, and these variables were compared on the basis of gender.



8.3.1. Participants

Schools in the Overberg Education District were stratified on the basis of socioeconomic status to obtain a heterogeneous sample. Four schools were randomly selected in the education district on the basis of socioeconomic status (i.e., school fees were an indicator of socioeconomic status). Permission was granted by the Western Cape Education Department to conduct the study in the secondary schools. The school principals and teachers then granted permission to conduct the study at the identified schools. The Grade 9 learners were invited to participate, on providing informed assent and their parents' informed consent. Confidentiality and anonymity were maintained throughout the study. Participants were informed that they could withdraw from the study at any time without any negative consequences. The final sample consisted of 457 participants 46.2 per cent (n= 209) male and 53.8

per cent (n= 243) female (Table 8.1). The mean age of the participants was 16.31 (*SD* = 1.45) years.

Table 8.1 Demographic details of participants

		Total Sample
Gender	Male	209 (46.2%)
	Female	243 (53.8%)
Age	Mean Age (years)	16.31 (<i>SD</i> = 1.45)

8.3.2. Measuring instrument

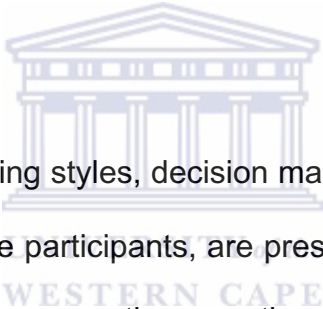
A self-report questionnaire was used to collect data from the participants. The questionnaire comprised the following: (i) a demographical characteristics section, (ii) the Parental Style and Dimension Questionnaire (PSDQ) (Robinson, Mandleco, Frost Oslen & Hart, 2001), (iii) the Health-Promoting Lifestyle Profile II Questionnaire (Walker & Hill-Polerecky, 1996), and (iv) the Melbourne Decision Making Questionnaire (Mann, Burnett, Radford & Ford, 1997). The Parental Style and Dimension Questionnaire is a 32-item self-report questionnaire based on the three parenting styles as outlined by Baumrind (Robinson, Mandleco, Frost Oslen & Hart, 2001). Participants responded on a 4-point Likert scale for mothers and fathers (1 = *not at all like him/her* to 4 = *a lot like him/her*). The Health-Promoting Lifestyle Profile II is a 52-item questionnaire also using a 4-point Likert scale, where the composite score was used to assess self-reported frequency of engaging in healthy lifestyle behaviours (1 = *never* to 4 = *always*) (Walker & Hill-Polerecky, 1996). The Melbourne Decision Making Questionnaire is a 22-item questionnaire which was based on the foundations of Janis and Mann's conflict model of decision making that assessed decision making styles on a 3-point Likert scale (0 = *not true for me* to 2 = *true for me*) (Mann, Burnett, Radford & Ford, 1997). The Cronbach alpha scores for the (i) Parental Style and Dimension Questionnaire was .85, (ii) the Health-

Promoting Lifestyle Profile II was .86 and (iii) the Melbourne Decision Making Questionnaire was .60.

8.3.3. Data analysis

The participants were grouped according to gender for analysing the effect on the outcome variables. Descriptive statistics were used for the sub-scales of *parenting styles*, *decision making styles* and *healthy lifestyle behaviours*. A multivariate analysis of variance (MANOVA) was conducted to compare the different groups (Field, 2009). The group differences for males and females were based on the participants' self-reported responses.

8.4. Results



Descriptive statistics for parenting styles, decision making styles and healthy lifestyle behaviours for male and female participants, are presented in Table 8.2. The results show that maternal authoritative parenting was the most prevalent ($M= 3.09$, $SD= .50$) parenting style across male ($M= 3.10$, $SD= .51$) and female ($M= 3.08$, $SD= .49$) groups. Similarly, for fathers, the most prevalent was the authoritative parenting style ($M= 2.84$, $SD= .61$) across male ($M= 2.90$, $SD= .56$) and female ($M= 2.80$, $SD= .64$) groups. The least prevalent maternal parenting style was authoritarian parenting ($M= 2.42$, $SD= .56$), which was similar for both males ($M= 2.44$, $SD= .54$) and females ($M= 2.41$, $SD= .57$). This was similar for fathers ($M= 2.35$, $SD= .60$), for males ($M= 2.42$, $SD= .56$) and females ($M= 2.30$, $SD= .62$).

Vigilant decision making ($M= 1.43$, $SD= .35$) was the most prevalent decision-making style for the total sample, as well as for both male ($M= 1.41$, $SD= .36$) and

female participants ($M= 1.45$, $SD= .33$). Buck passing was the least prevalent decision making style ($M= .78$, $SD= .41$), for males ($M= .77$, $SD= .38$) and females ($M= .78$, $SD= .43$).

Based on the composite score for healthy lifestyle behaviours, the results suggest that the total sample often engaged in healthy lifestyle behaviours ($M= 2.74$, $SD= .39$). This was similar for male ($M= 2.78$, $SD= .38$) and female participants ($M= 2.71$, $SD= .40$).

The results of the multivariate analysis (MANOVA) show that there were no significant effects in regard to gender on perceptions of parenting styles, decision making styles and healthy lifestyle behaviours of participants, $T = .05$, $F(11,295) = 1.37$, $p > .05$.



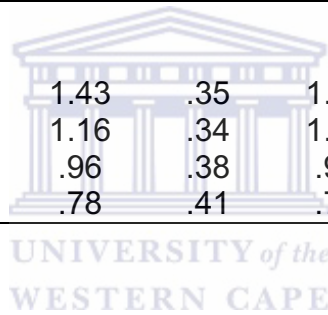
Table 8.2 Descriptive Statistics: Parenting Styles, Decision Making Styles and Healthy Lifestyle Behaviours

Scales / Sub-Scales	Total Sample		Males		Females	
	Mean	SD	Mean	SD	Mean	SD
Perceived Parenting Styles¹						
Maternal Authoritative Parenting	3.09	.50	3.10	.51	3.08	.49
Maternal Authoritarian Parenting	2.42	.56	2.44	.54	2.41	.57
Maternal Permissive Parenting	2.46	.56	2.47	.56	2.43	.56
Paternal Authoritative Parenting	2.84	.61	2.90	.56	2.80	.64
Paternal Authoritarian Parenting	2.35	.60	2.42	.56	2.30	.62
Paternal Permissive Parenting	2.43	.55	2.48	.57	2.38	.52
Decision Making Styles²						
Vigilant Decision Making	1.43	.35	1.41	.36	1.45	.33
Hypervigilant Decision Making	1.16	.34	1.11	.33	1.20	.34
Procrastination	.96	.38	.93	.36	.99	.40
Buck-Passing	.78	.41	.77	.38	.78	.43
Healthy Lifestyle Behaviours³						
Healthy Lifestyle Behaviours	2.74	.39	2.78	.38	2.71	.40

¹ Participants responded on a 4 point Likert scale, 1= not at all like him / her and 4= a lot like him / her

² Participants responded on a 3 point Likert scale: 0= not true for me and 2= true for me

³ Participants responded on a 4 point Likert scale, 1= never and 4= always



8.5. Discussion

The school setting has always been considered to play a pivotal role in the development of learners, particularly when considering the promotion of positive health and well-being (St Leger, 2001; Hill et al., 2015). From the perspective of Institutional Theory, the school plays an important role for emerging economies like South Africa in minimising transaction and information cost (Hoskisson et al., 2000), particularly when considering that the BRICS alliance health growth was not affected by the economic crisis (Harmer et al., 2013). Singh (2008) has alluded to the importance that the school environment plays in promoting positive lifestyle-related health that has consequences on health in later life. Schools are also considered important in promoting healthy lifestyle behaviours, because a large percentage of the learners' time is spent at school. The pivotal role that schools play in promoting positive health and the rise in health-related issues among learners gave rise to the Integrated School Health Policy (Departments of Health and Education, 2012). The Integrated School Health Policy aims to promote health and well-being of learners both within the school setting and in the surrounding communities (Departments of Health and Education, 2012). The Curriculum and Assessment Policy Statements (CAPS) for Life Orientation for Grades 7 to 9 addresses some of the goals as set out in the Integrated School Health Policy and the Health Promoting Schools framework. Its focus is on assisting learners to make informed decisions with regard to their health, school environment and scholastic development (Department of Basic Education, 2011). Decision making among learners is important, because they are faced with a number of situations in which decisions need to be made, such as subject choices and engaging in scholastic tasks. Decision making tasks are an important developmental activity during adolescence. Learners at secondary schools

are in the developmental phase of adolescence, which is synonymous with health-related behaviour that can be detrimental to healthy lifestyles (Wang, Ou, Chen & Duan, 2009).

Health behaviour is a result of the environment in which individuals find themselves (Pelsler, 2012). The results of this study show that learners often engage in healthy lifestyle behaviours that promote health and well-being. The learners' engagement in healthy lifestyle behaviours could have been the result of an encouraging school environment (Themane & Osher, 2014). These outcomes could be considered as resulting of the health-promoting endeavours of both the policy and implementation framework of these schools, as well as from the health-promoting interventions within schools (Hill et al, 2015). In the study, the school environment becomes important in promoting healthy behaviour. In addition, the teachers provide health education and develop effective skills in decision making about engaging in healthy lifestyle behaviours. Engaging in healthy lifestyle behaviours is a result of a conscious decision to engage in behaviour that promotes health (Umeh, 2009).

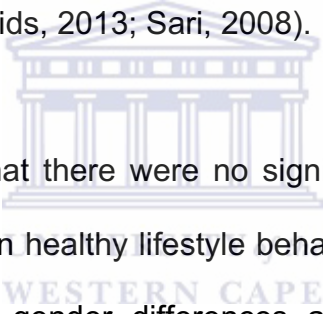
The most prevalent decision making style used by learners was the vigilant decision making style. This is similar to another South African study conducted with senior learners (Masureik et al., 2014). Vigilant decision making styles are associated with positive outcomes (Brew, Hesketh & Taylor, 2001; Chambers & Rew, 2003; Brown, Abdallah & Ng, 2011; Commendador, 2011). The positive outcomes are a result of the processes that a learner engages in before arriving at an alternative which would yield a more desirable outcome (Commendador, 2003; Byrnes, 2005). Byrnes (2005) pointed out that learners who considered a number of alternatives and the

consequences of making a decision were less likely to engage in poor health behaviours that hindered the promotion of good health. When considering the results in the current study, the most prevalent decision making style was vigilant decision making that is associated with examining a number of alternatives. Learners often engage in healthy lifestyle behaviours. The study did not examine the associations between the variables but rather compared the differences on the basis of gender; taking this into consideration, the findings presented by Byrnes (2005) could explain why learners often engaged in healthy lifestyle behaviours. Learners in the study engaged in vigilant decision making that could be as a result of the information and decision making skills provided by teachers in Life Orientation that helped develop competent learners who engaged in healthy lifestyle behaviours. The current study did not examine the role that Life Orientation teachers played in learners' decision making skills, but there is a recommendation for future research to enhance the understanding of the role that the teacher plays. The decision making styles and strategies that learners display are often considered as a developmental outcome that emanates from the decision making styles used by their parents (Öztürk, Kutlu & Atli, 2011).

In the present study, the parents were perceived as being mainly authoritative. Authoritative parents raise children who display academic achievement and reflect pro-social developmental outcomes (Spera, 2005; Keshavarz & Baharudin, 2006; Pérez & Cumsille, 2012; Davids & Roman, 2014). In considering the role that parents play in socialisation, the gender roles that are ascribed to male and female learners also become prevalent (Kerr, Lopez, Olson & Sameroff, 2004; Chaplin, Cole & Zahn-Waxler, 2005). The gender roles that are ascribed to learners are often important as

part of development, particularly when examining gender differences from a developmental trajectory (Golan, Hagay, & Tamir, 2014)

In examining developmental gender differences of learners, the study found no significant differences. These findings add to the current debate regarding the role of gender in development, which is often ambiguous and contradictory. For example, on the one hand studies suggest that gender differences do exist in decision making (Lease & Dahlbeck, 2009), healthy lifestyle behaviours (Griffin et al., 2000; Windle et al., 2010) and parenting (Kerr et al., 2004; Chaplin, Cole & Zahn-Waxler, 2005), whereas, on the other hand other, studies have suggested no differences on the basis of gender (Roman & Davids, 2013; Sari, 2008).



The current study suggests that there were no significant differences in male and female learners' engagement in healthy lifestyle behaviours. The findings add to the current body of literature on gender differences as well as elaborating on the contradictory findings when examining gender differences. However, Griffin and colleagues (2000) found that males often engaged in behaviours that were detrimental to health and well-being, which are different to the findings in the current study. To add to the discussion around the contradictory nature of gender differences in development, the learners in the current study had both authoritative maternal and paternal parenting, which is often an outcome of pro-social adolescent development (Simons & Conger, 2007). This suggests that there was no display of differences in parenting when considering both the gender of the parents and the gender of the learners, which is interesting, particularly when considering that the literature suggests that there are differences in how parents carry out their roles

(Shields, 2002; Chaplin, Cole & Zahn-Waxler, 2005). Some studies suggest that there are differences in male and female decision making (Lease & Dahlbeck, 2009), but the current study suggests that there are no significant differences between male and female learners. Brown, Adballah and Ng (2011) suggest that the reason for the similarity in male and female learners' decision making styles with regard to vigilant decision making, could be the fact that both male and female learners are equally capable of making decisions and considering alternatives in the decision making process. The similarities in decision making styles can be explained by developmental theorists, such as Piaget (2006; 1972), who places secondary school learners' developmentally in adolescence where formal operations take place in decision making and cognition. Formal operations in cognitive development are where learners engage in abstract thinking, and problem-solving skills are developed that help to find hypothetical alternatives and solutions to decisions (Shaffer & Kipp, 2014; Steinberg, 2007), which are common to cognitive development in adolescence and not necessarily explained by gender differences.

The findings of the present study provide particular insight into learners engaging in healthy lifestyle behaviours, as well as the most prevalent decision making style and the perceived parenting style. More importantly, it is one of the first studies on the African continent combining parenting styles, decision making and healthy lifestyle behaviours from the perspective of the school setting. From an educational perspective, the study alludes to the important role that teachers play in providing information and assisting in critical skill development, particularly with regard to decision making. The decision making skills that learners are encouraged to exercise in the classroom setting also extend to decisions around healthy lifestyle behaviours,

as seen in this study. The important role that parents play, as participators in the school environment, also becomes important in the parenting styles used, which are associated with learner goal-directed and autonomous behaviours. The findings presented in this study have implications for parents, as well as for teachers and principals. The findings serve to assist parents to become more aware of their approaches to parenting and the effect of parenting outcomes on developmental trajectories. Teachers and principals alike are also informed as a result of this study of the important role that the school environment plays in the development of learners. This is important particularly when considering the role of decision making in light of the CAPS for Life Orientation that focuses on the learner becoming actively involved in decision making and promoting pro-social development (Departments of Health and Education, 2012). The current study furthermore contributes to the current understanding of how learners make decisions, which is often unclear when examining literature, but it also provides insight into gender differences of parenting styles and learners' differences that would assist scholars internationally to gain a comprehensive understanding of decision making and gender differences when comparing studies across cultures and geographical locations.

8.6. Conclusion

Authoritative parenting styles, vigilant decision making and engaging in regular healthy lifestyle behaviours, were the most prevalent behaviour of learners. The study found no significant main effects for male and female learners on the outcome variables. The current study, however, makes an important contribution to the existing body of knowledge, as it is one of the first studies in South Africa and in

Africa which examines gender differences of learners' perceived parenting styles, decision making styles and engaging in healthy lifestyle behaviours.

8.7. References

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CHAPTER NINE

A MODEL EXAMINING THE RELATIONSHIP BETWEEN PARENTING AND DECISION MAKING ON HEALTHY LIFESTYLE BEHAVIOURS OF ADOLESCENTS IN RURAL WESTERN CAPE, SOUTH AFRICA

9.1. Introduction

Chapters Seven and Eight formed part of the second stage of the research study, while the current chapter forms part of the third stage of the study. The current chapter also addresses Objective 3 (*to establish the relationships between perceived parenting styles, adolescent decision making styles and healthy lifestyle behaviours of adolescents in the rural Western Cape*), 4 (*to determine the goodness-to-fit indices for a model which best examines the relationships between perceived parenting styles and adolescent decision making styles on healthy lifestyle behaviours of adolescents in the rural Western Cape*) and 5 (*to establish the significant differences that exists between mother and father models examining the relationship between perceived parenting styles and adolescent decision making styles on healthy lifestyle behaviours of adolescents in the rural Western Cape*). This chapter has been submitted and accepted for publication in the African Journal for Physical Health Education, Recreation and Dance.

9.2. A model examining the relationship between parenting, and decision making on healthy lifestyle behaviours of adolescents in rural Western Cape

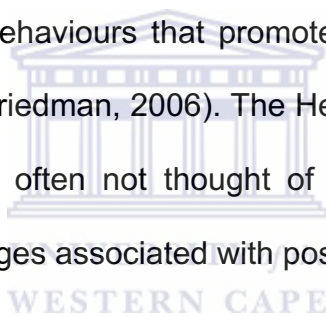
Pender's (1996) Health Promotion Model attempts to examine the factors that are important in individuals' attempts to engage in behaviours that promote health and well-being (Michie et al., 2014). The behaviours that typically promote positive health and well-being include engagement in physical activity (whether as competitive sport

or recreationally), healthy nutritional diets, and lifestyles with the absence of substance abuse (Davis et al., 2014). Lifestyle related behaviours such as physical activity have been associated with numerous health benefits and the promotion of positive health which minimises the prevalence of ill health (Yao & Rhodes, 2015). The model is grounded in the Social Cognitive, Self-efficacy and Expectancy Value theories. Common to these theories and the Health Promotion Model is the role of self-efficacy (Wu & Pender, 2002; Taymoori, Lubans & Berry, 2010; Michie et al., 2014). The Health Promotion Model proposes that the actions, cognitions and environment play a role in healthy lifestyle behaviours that individuals engage in (Wu & Pender, 2002). The model has three main constructs that form the basis of the theoretical assumptions associated with engaging in healthy lifestyle behaviours. These constructs are: (i) individual characterises and experiences, (ii) behaviour-specific cognitions and affect, and (iii) behavioural outcomes (Michie et al., 2014). These constructs all play a role in the belief that behavioural changes are results of the behaviour-specific cognitions and decision making to take action, which is similar to reciprocal determinism as proposed by Bandura's Social Cognitive Theory (Taymoori, Lubans & Berry, 2010).

In unpacking the three constructs that are central to the Health Promotion Model, the construct that examines the role of individual characteristics and experience can be considered as the factors that are inherent of the individual. These include factors such as the age, gender, genetics, developmental phase as well as previous experiences that will inform future action and behaviour (Wu & Pender, 2002; Srof & Velsor-Friedman, 2006; Taymoori, Lubans & Berry, 2010). The second construct that examines the behaviour-specific cognitions and affects of the individual includes the

(a) perceived benefits and (b) barriers of action to health behaviour, (c) individual perceived views of self-efficacy, (d) interpersonal and (e) situational influences, (f) commitment of action towards health behaviour, (g) competing demands and preferences and (h) activity related affect (Wu & Pender, 2002; Srof & Velsor-Friedman, 2006; Dehdari, Rahimi, Aryaeian & Gohari, 2013; Michie et al., 2014). The third construct of the model considers the behavioural outcomes related to engagement in health promoting behaviour (Wu & Pender, 2002).

The Health Promotion Model affords the opportunity to examine the direct and indirect factors, by considering the three main constructs of the model that are important when considering behaviours that promote health and well-being (Wu & Pender, 2002; Srof & Velsor-Friedman, 2006). The Health Promotion Model provides a number of factors that are often not thought of when considering behavioural outcomes or behavioural changes associated with positive health.



9.2.1. Current study

The Health Promotion Model provides a good theoretical framework for examining healthy lifestyle behaviours of adolescents. When considering the three constructs that are central to the model, it could be used to examine the role of factors such as parenting, decision making styles and healthy lifestyle behaviours of adolescents. The developmental phase of adolescents can be considered as being the construct which examines individual characteristics and experiences, while parenting can be the situational influences in which the adolescent is raised. The decision making styles can be the process of arriving at an alternative which would be the consideration of the perceived benefits and barriers to action. Parenting and decision

making styles would therefore form part of the behaviour-specific cognitions and affects as part of the Health Promotion Model. The adolescent engagement in healthy lifestyle behaviours, would be the behavioural outcome as proposed in the model. The current study therefore used Pender's (1996) Health Promotion Model as a framework to examine the effect of parenting styles and decision making styles on adolescents' engagement in healthy lifestyle behaviours by means of Structural Equation Modelling.

9.2.2. Parenting

Parenting can be considered as being an all-encompassing network of development for children (Bornstein, 2001). The complexity of parenting as part of a network of development can be seen as parents forming part of, as well as influenced and shaped by, the larger social environment (Bornstein, 2001). The environment in which parenting takes place can be one which either promotes behaviours related to health promotion, such as sport participant, or one which hinders this. The role of parenting in the development of child-rearing is largely shaped by socialisation (White, Roosa, Weaver & Nair, 2009). Adoption of health related behaviour (such as physical activity in the form of sport participation) of children and adolescents is shaped and influenced by socialisation within the familial home environment (Inoue et al., 2015). Children and adolescents alike are exposed to socialisation within the familial home environment, largely by means of the parent-child relationship (Rinaldi & Howe, 2011). Typically the parent-child relationship is displayed by a number of parenting approaches and styles employed by the parent. These approaches have been displayed in literature by (i) parenting dimensions; these include dimensions such as affection, behaviour and psychological control (Aunola & Nurmi, 2005) and

(ii) parenting styles that are comprised of a number of parental dimensions. The parenting styles as proposed by Baumrind (1989, 1991) are authoritative, authoritarian and permissive parenting. These three parenting styles have been associated with a number of developmental outcomes for children and adolescents. Recently, parenting styles have been differentiated by means of two constructs, namely responsiveness and demandingness (Collins, Duncanson & Burrows, 2014). Responsiveness is the level of acceptance, warmth and involvement displayed by the parent in the parent-child relationship (the involvement displayed could be in activities which promote positive health through parent-child engagement in sport and recreational activities) (Ventura & Birch, 2008; Collins, Duncanson & Burrows, 2014). Demandingness is the extent to which there is a display of control and supervision in parenting (Ventura & Birch, 2008; Collins, Duncanson & Burrows, 2014). In light of the two constructs the three parenting styles are differentiated as follows: (i) authoritative parenting is high on both responsiveness and demandingness and displays autonomy granting, (ii) authoritarian parenting is low on responsiveness and high on demandingness and a diminished display of autonomy granting, while (iii) permissive parenting is high on responsiveness and autonomy granting as well as a low display of demandingness (Rodríguez, Donovanick & Crowley, 2009; Raya, Ruiz-Olivares, Pino & Herruzo, 2013; Collins, Duncanson & Burrows, 2014).

Authoritative parenting is displayed when parents set rules, but the parent is cognisant of respecting the child or adolescent's independence as well as maturity, and provides the reasons why these rules are enforced (Yap, Pilkington, Ryan & Jorm, 2014). Authoritarian parenting can be identified when parents display strict

control in the parent-child relationship with limited displays of emotional support and responsiveness (Winsler, Madigan & Aquilina, 2005). Permissive parenting occurs when the parent exhibits parenting that is non-punitive and is accepting of the child or adolescent's behaviours and desires (Guastello, Guastello & Briggs, 2014).

Research considering the important role of parenting in the socialisation and development of children and adolescents, has generally been considered with the role of only one parent, and this has often been considered as a limitation when reviewing parenting studies (Rinaldi & Howe, 2011). Research has focused largely on the mother-child relationship (Cabrera et al., 2000) and has often excluded fathers as part of the study. Considering the role of maternal parenting alone is somewhat limiting (Bornstein & Sawyer, 2005) and leads one to question the applicability of such findings. The role that fathers play as part of parenting, regardless of the increasing number of single headed families (largely headed by mothers or maternal parenting figures such a grandmother) is important in socialisation and development of health promotion behaviours (Parke & Buriel, 2006). The important role that fathers play in the associations of health promoting behaviours such as engagement in physical activity has been highlighted in a meta-analysis review (Yao & Rhodes, 2015).

Parenting styles and practices have been specifically linked to the development of autonomous behaviour in adolescents (Pérez & Cumsille, 2012). Adolescent autonomy plays a crucial role in decision making, therefore, it can be suggested that parenting plays an important role in decision making of adolescents.

9.2.3. *Decision making*

Central to the familial home environment is parenting, which often sets the context for socialisation and development (which are related to health related behaviours). Parenting is also thought to play an important role in the decisions that adolescents make as a result of the social context in which they take place (Wolff & Crockett, 2011; Udell et al., 2008). Decision making styles have been defined as the process that involves arriving at an alternative, when one is confronted with a decisional situation (such as participating in physical activity or not) (Scott & Bruce, 1995; Leykin & DeRubeis, 2010). It has also been viewed as being the differences which exist in how individuals make sense of information related to a decisional situation and how they make sense of it to arrive at an alternative (these decisional styles could inform the decisions to engage in physical activity or not that would have implications for health promotion) (Albert & Steinberg, 2011; Davids, Roman & Leach, 2015). Over time a number of decision making styles have been proposed in literature (Phillips & Ogeil, 2011). Janis and Mann (1977) have been the pioneers when considering decision making styles in conflictual situations that require a decision to be made. They have proposed four styles of decision making, namely, vigilance, hypervigilance and defensive avoidant decision making, which is made up of procrastination and buck-passing (Brown, Abdallah & Ng, 2011; Cenkseven-Önder, 2012). These proposed styles of decision making differ in their belief that there is sufficient time to find alternatives, and a thorough and independent search for decisional alternatives if there is not. Vigilant decision making has been defined as being an adaptive form of decision making that involves a thorough and independent search for alternatives with the belief that there is sufficient time available to find the best alternative for the decisional situation by evaluating each

possible alternative (Doğan & Kazak, 2010; Cenkseven-Önder, 2012). Hypervigilant decision making takes place when a decision needs to be taken, but there are concerns about time available to find an alternative, which often creates stress and panic even though the decision maker is optimistic about finding an alternative (Brown, Abdallah & Ng, 2011). The defensive avoidant decision making which is made up of procrastination sees the decision maker postponing making a decision for a later point in time (Burnett, 1991), while buck-passing occurs when the decision maker leaves the responsibility of making a decision to someone else (Burnett, 1991; Cenkseven-Önder, 2012). The decision making style has been associated with different developmental outcomes, whether adaptive or maladaptive in nature (Blakemore & Robbins, 2012). Decision making styles are therefore important during adolescence when one considers alternatives selected which are related to healthy lifestyle behaviours.



9.2.4. Healthy lifestyle behaviours

The behavioural outcomes that individuals engage in are often associated with the decisional process or style (Umeh, 2009). The outcome can be both positive and negative in nature depending on the decision making styles of the individual (Avsec, 2012). This is similar to the behavioural outcomes of adolescents with regard to health-related behaviour. It can be assumed that adaptive forms of decision making styles would be associated with behaviours that promote positive health (such as sport participation), while the opposite can be assumed for maladaptive decision making. The developmental phase of adolescence is often synonymous with behaviours that are detrimental to health and well-being. The health-related behaviours that are common during adolescence may include experimentation and

use of tobacco, alcohol and other substances, sedentary lifestyles such as a lack of engagement in physical activity, and poor nutrition that would increase the risks of obesity (Khuwaja, Qureshi & Fatmi, 2007; Proimos & Klein, 2012; Khowaja et al. 2010; Sawyer et al., 2012). These health-related behaviours that are common during adolescence add to the current burden on non-communicable disease both in South Africa, Africa and internationally (World Health Organisation (WHO), 2005; WHO, 2008; Catalano et al., 2012; Proimos & Klein, 2012; Sawyer et al., 2012). Recognising the social determinants of health, more specifically associated with healthy lifestyle behaviours, would assist in addressing the United Nations General Assembly's motion that non-communicable diseases are on the rise, and measures to establish how to prevent them from affecting the lives of children and adolescents are of a major concern (United Nations, 2011; Proimos & Klein, 2012). The view of the United Nations are also important because the developmental periods of childhood and adolescence are phases in which prevention strategies can be implemented (in the parental home environment and by means of decision making within the home context) to lessen the increasing burden of non-communicable diseases internationally as these phases of development are commonly associated with the onset of behaviours that continue into adulthood (Catalano et al., 2012; Proimos & Klein, 2012). Behaviours that promote positive health and well-being of children and adolescents become of importance from a public health perspective. The improvement of healthy lifestyle behaviours would assist in health promotion, particularly in areas where research has provided insight into the current status of communities such as urban settings, although the view of rural settings remains limited (De Marco & De Marco, 2010). With the majority of research being conducted in urban settings, the applicability of findings for implementation and design of

interventions to promote positive health and well-being in rural settings might be questioned (Burke, O'Campo & Peak, 2006). Research considering the importance of rural-specific factors associated with health and well-being is needed, taking into consideration the multiplicity of rural communities. Some of the common differences between urban and rural settings are that (i) rural communities often have limited access to health care facilities (Rural Poverty Research Centre, 2004), and are synonymous with poverty, limited resources, and single family structures, which put a strain on the promotion of health and well-being (De Marco & De Marco, 2010). Healthy lifestyle behaviours of adolescents in rural communities are important when addressing the global concern related to non-communicable diseases, as both urban and rural communities are presented with their own unique problems which place strain on health-related behaviour (De Marco & De Marco, 2010; Mujahid et al., 2007).



Jackson, Henderson, Frank and Haw (2012) state that a number of health-related behaviours which often can be detrimental, are established during adolescence and are often continued into adulthood, affecting health and well-being in later life. As adolescence is a period of development that is prevalent in behaviours that diminish health which are often established and maintained throughout adulthood, it is vital to establish the healthy lifestyle behaviours of adolescents. Particularly in South Africa where young persons' constitute a large portion of the population (Reddy et al., 2010). Furthermore, the decision making styles involved in making these lifestyle choices too become important. However, limited research has focused specifically on how adolescents make decisions in relation to healthy lifestyle behaviour (Umeh, 2009). Since decision making takes place within a particular social context, which

ascribes to the rules of society, decision making by adolescents is largely influenced and shaped by their parents (Wolff & Crockett, 2011). Therefore the aim of the current study was to develop and test a model framed within Pender's (1996) Health Promotion Model, which looks at the interaction effects of perceived parenting styles and adolescent decision making styles on healthy lifestyle behaviours of adolescents in the rural Western Cape by means of Structural Equation Modelling. Using the Health Promotion Model as a theoretical framework and guided by literature, the following hypotheses are made:

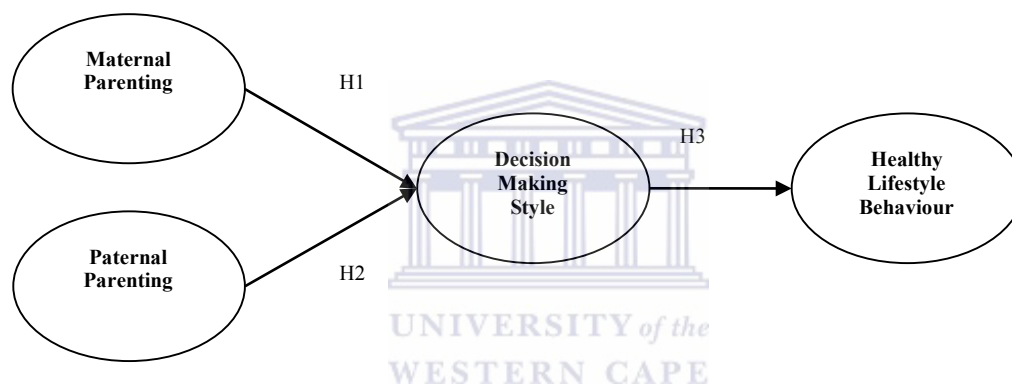


Figure 9.1 Conceptual model

H1: Maternal parenting will positively influence the adolescent's decision making style.

H2: Paternal parenting will positively influence the adolescent's decision making style.

H3: The adolescent's decision making style will positively influence the behavioural outcomes related to healthy lifestyle behaviour.

Health-related behaviours associated with ill-health being common in adolescence put a strain on the increasing number of non-communicable diseases that are a growing public health concern. The current study may assist in establishing the role

of parenting and decision making on the behavioural outcome of engaging in healthy lifestyle behaviour such as participating in sport and recreational activities framed within the Health Promotion Model. The study will therefore contribute to the existing body of knowledge using Structural Equation Modelling and providing some of the factors that could aid as protective or preventative factors in the current increasing public health concerns. It may also assist in the development as well as implementation of interventions that aim to address the role of social determinants in health related behaviour in attempts to promote positive health.

9.3. Methodology

9.3.1. Research design

The current study forms part of a larger Community Engagement study that used a mixed methodological sequential exploratory design that included (i) reviewing past empirical studies as well as (ii) establishing differences in possible confounding variables. This paper presents the findings of the final stage of the larger study that was informed partly by reviewing past empirical studies in establishing both the measurement and structural model by means of Structural Equation Modelling.

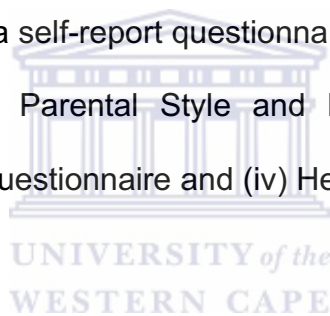
9.3.2. Sample

The sampling technique employed was stratified random sampling among schools in the Overberg Educational District, Western Cape, South Africa. The schools were stratified on the basis of socio-economic status (with school fees as an indicator). Four schools were randomly selected after seeking and obtaining ethical approval for the project at the University of the Western Cape and permission was granted by the Western Cape Education Department to conduct research in the selected schools.

The school principals and teachers were asked for permission to conduct the study at the identified schools. Upon approval, Grade 9 learners were invited to participate in the study, based on providing informed assent, and their parents' informed consent. Confidentiality and anonymity was maintained throughout the study. The participants were informed that they could withdraw from the study at any time without any negative consequences. The final sample consisted of 457 Grade 9 learners, of whom 53.8 per cent (n= 243) were female and 46.2 per cent (n= 209) were male, with a mean age of 16.31 (SD= 1.45) years.

9.3.3. Instruments

The data was collected using a self-report questionnaire made up of four sections: (i) demographic details, (ii) the Parental Style and Dimension Questionnaire, (iii) Melbourne Decision Making Questionnaire and (iv) Health-Promoting Lifestyle Profile II Questionnaire.



The Parental Style and Dimension Questionnaire assessed the perceived parenting styles, categorising the parenting styles into three parenting styles as outlined by Baumrind (1991), namely authoritative (which were made up of the following items and sub-scales: parental dimensions of connection, regulation and autonomy granting), authoritarian (which were made up of the following items and sub-scales: parental dimensions of physical coercion, verbal hostility and punitive) and permissive parenting (which were made up of the following items and sub-scale: parental dimension of indulgent) for both maternal and paternal parental figures (Robinson, Mandleco, Frost Oslén & Hart, 2001). The Melbourne Decision Making Questionnaire assessed the participants' decision making styles when faced with a

decisional situation namely, vigilant, hypervigilant, procrastination and buck-passing decision making styles (Mann, Burnett, Radford & Ford, 1997). The Health-Promoting Lifestyle Profile II assessed the engagement in healthy lifestyle behaviours, using the composite score of the frequency of engaging in the following health promoting behaviours: physical activity, nutrition, health responsibility, spiritual growth, interpersonal relationships and stress management (Walker & Hill-Polerecky, 1996).

9.3.4. Data analysis

The data collected from the self-reported questionnaire was entered into the Statistical Package for the Social Sciences (SPSS) Version 22 and initial analyses were conducted to check for errors and missing data, as well as computing subscale variables. The SPSS dataset was then uploaded into Analysis of Moment Structures (AMOS) Version 23 where an initial Confirmatory Factor Analysis was conducted followed by the Structural Equation Modelling. Using the Health Promotion Model as a framework for the proposed hypotheses, it was tested by means of Structural Equation Modelling. The fit indices were used to indicate the goodness of fit of the model. The following fit indices were used as cut-offs to indicate a good fit: Chi-square value (X^2/ df) less than 3.0, GFI (Goodness of Fit Index) and CFI (Comparative Fit Index) should be greater than .95, and a RMSEA less than .05 (Schumacker & Lomax, 2010).

9.4. Results

Structural Equation Modelling consists of two phases as outlined by Nusair and Hua (2010): In the first phase, a confirmatory factor analysis was made use of to assess

and measure the adequacy of the measurement model that was proposed. During this phase the following was assessed: (i) construct reliability as well as item reliability when reliability was satisfied, (ii) the construct validity was assessed by means of convergent and discriminant validity. After the reliability and validity were assessed, the measurement model was evaluated. The second phase of Structural Equation Modelling consisted of evaluating the structural model (Nusair & Hua, 2010). During this phase the model fit for both the measurement model and structural model was evaluated using the goodness-of-fit indices.

9.4.1. Preliminary analysis: Confirmatory factor analysis

The latent constructs of the proposed model were exposed to a Confirmatory Factor Analysis using the Analysis of Moment Structures (AMOS) Version 23. The Confirmatory Factor Analysis was performed to determine the proposed theoretical model as well as the construct reliability and convergent and discriminant validity (see Table 9.1). The convergent and discriminant validity was assessed by conducting a correlation matrix. In Table 9.1 the correlation matrix suggests that maternal parenting styles and decision making styles are correlated ($r = .196$; $p < 0.01$), while paternal parenting styles are correlated with decision making styles ($r = .137$; $p < 0.01$) and healthy lifestyle behaviours ($r = .195$; $p < 0.01$). In assessing the measurement model using the data collected and the proposed theoretical model a Chi-square value (X^2/df) = 1.817 was obtained. That was an indication that the data fit the measurement model. The goodness-of-fit indices also indicated a good model fit: Goodness of Fit Index (GFI) = .966, Comparative Fit Index (CFI) = .990, and Root Mean Square Error of Approximation (RMSEA) = .042.

Table 9.1 Construct correlation matrix

	1	2	3
1. Maternal Parenting	-		
2. Paternal Parenting	.204**	-	
3. Decision Making Styles	.196**	.137**	-
4. Healthy Lifestyle Behaviour	.034	.195**	-.014

9.4.2. Hypotheses testing: Structural equation model

A number of models were tested examining the interaction between the constructs. Model 1 examined the bi-directional interaction of maternal and paternal parenting on adolescent decision making as well as adolescent decision making on healthy lifestyle behaviours, while Model 2 examined the bi-directional interaction between maternal and paternal parenting on healthy lifestyle behaviours and healthy lifestyle behaviours on adolescent decision making, Model 3 looked at the uni-directional interaction between maternal and paternal parenting and adolescent decision making, as well as adolescent decision making on healthy lifestyle behaviours, and Model 4 examined the bi-directional interaction between maternal and paternal parenting and adolescent decision making, as well as the bi-directional interaction with healthy lifestyle behaviours, the bi-directional interaction was also examined between adolescent decision making and healthy lifestyle behaviours. The fit indices of the various models (Model 1: $X^2/df = 1.837$, GFI= .966, CFI= .990, RMSEA= .043; Model 2= $X^2/df = 2.046$, GFI= .959, CFI= .987, RMSEA= .048; Model 3= $X^2/df = 1.815$, GFI= .966, CFI= .990, RMSEA= .042; Model 4= $X^2/df = 1.730$, GFI= .969, CFI= .991, RMSEA= .040) suggests that Model 3 was a slightly better fit. The results of the structural equation model are presented in Figure 9.2 for Model 3. The goodness of fit indices of the structural model indicated a good fit (Chi-square value (X^2/df) = 1.815, Goodness of Fit Index (GFI) = .966, Comparative Fit Index (CFI) =

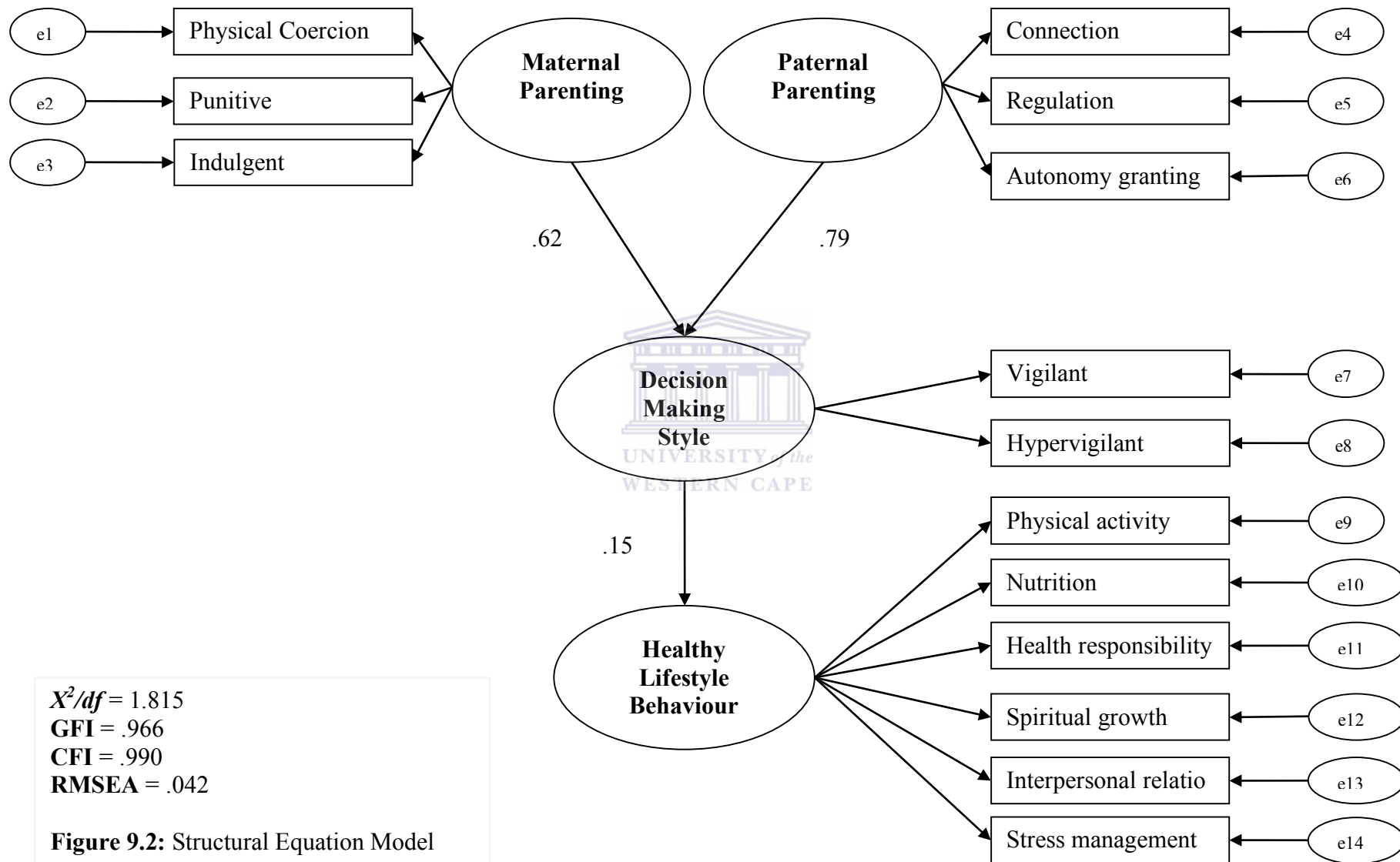
.990, and Root Mean Square Error of Approximation (RMSEA) = .042). In testing the proposed hypotheses an analysis of the path coefficient and p -value was performed to test the causal relationships in the model, the hypothesis were supported by the analysis (see Table 9.2).

Table 9.2 Hypothesis Testing

Construct	Hypothesis	Estimate	p	Hypothesis
Maternal Parenting Styles (PS_Mo) → Decision Making Styles (DSM)	H ₁	.618	.010**	Hypothesis Supported
Paternal Parenting Styles (PS_Fa) → Decision Making Styles (DSM)	H ₂	.786	.002**	Hypothesis Supported
Decision Making Styles (DSM) → Healthy Lifestyle Behaviours (HLB)	H ₃	.148	.020**	Hypothesis Supported

** $p < 0.05$





$\chi^2/df = 1.815$
 GFI = .966
 CFI = .990
 RMSEA = .042

Figure 9.2: Structural Equation Model

9.5. Discussion

Parents are viewed as playing an important role in the socialisation and development of children and adolescents alike. The developmental outcomes of parenting are largely related to what exists in the parent-child relationship. Studies suggest that the parent-child relationship is vital for the developing child as it can either act as a way of promoting pro-social development or the opposite. Similarly, parenting plays a role in the decision making that children and adolescents engage in, and how they make decisions or the process thereof influences the behavioural outcomes. If these behavioural outcomes (such as engaging in physical activity) were associated with the promotion of health and well-being, it could be suggested that the Health Promotion Model would be an apt theoretical framework in which to examine the effects of parenting and decision making on healthy lifestyle related behaviour of adolescents.



9.5.1. Parenting

Central to the parent-child relationship are the parenting styles that are displayed by parents. The parenting style displayed has been associated with a number of developmental outcomes, which can be either positive or negative in nature depending on the style exhibited. Parenting is also important for both the social as well as emotional development of children and adolescents (Nijhof & Engels, 2007). Baumrind (1991) has proposed that the parenting styles differ on two dimensions, namely responsiveness and demandingness, and these therefore create the parenting styles. 'Responsiveness' would be the display of warmth, acceptance and involvement in the parent-child interactions, while 'demandingness' would be the display of control and demands as well as supervision (Aunola, Stattin & Nurmi,

2000). The results presented in the study suggest that authoritarian and permissive parenting loaded for maternal parenting. Authoritarian parents would be demanding, yet not responsive in the parent-child interaction, while the permissive parent would display responsiveness but lack demandingness (Aunola, Stattin & Nurmi, 2000). Authoritarian parenting has often been associated with children and adolescents who lack independence and confidence in their decision making, and often find it difficult to cope with events when stress arises (Nijhof & Engels, 2007). Children and adolescents who have permissive parents have been associated with having a sense of low self-control, externalised behavioural problems and a diminished sense of independence (Shaffer, 2000; Nijhof & Engels, 2007). When considering the paternal parenting, the results suggest that authoritative parenting loaded. Authoritative parenting would be exhibited where there are both levels of responsiveness and demandingness in the parent-child relationship (Aunola, Stattin & Nurmi, 2000). Authoritative parenting has been associated, developmentally, with children who are independent and have high self-esteem (Nijhof & Engels, 2007). These children and adolescents are better able to make and evaluate decisions independently (Nijhof & Engels, 2007). It is interesting to note that the paternal parenting is associated with pro-social development, as the role of paternal parenting has been associated with psychological well-being among adolescents (Yin, Li & Su, 2012; Roman et al., in press). The paternal parenting figure has also been associated with healthy lifestyle behaviours such as engagement in physical activity of children and adolescents (Yao & Rhodes, 2015). The important role that paternal parenting plays in the development of children and adolescents has previously been noted in South African studies (Sylvester & Bojuwoye, 2011; Nduna, 2014). The authoritative paternal parenting has also been linked to greater independence which

is important for the decision making of adolescents. Adolescent decision making is largely linked to parenting, as decision making often takes place within a social context that is shaped by the parent (Wolff & Crockett, 2011). Parents either encourage or discourage certain decisions with regard to expected behavioural outcomes (Wolff & Crockett, 2011).

9.5.2. Decision making

The decision making process or style that children and adolescents engage in is shaped by parenting and the parents' engagement in decision making (Udell et al., 2008). The parental home can therefore be seen as being instrumental in the development of certain decision making styles. Decision making styles have been defined as the differences which exist from individual to individual in how they gather information regarding a situation that requires a decision to be made, as well as how the individual makes sense of the information gathered (Albert & Steinberg, 2011). Literature presents a number of decision making styles. Janis and Mann (1977)'s proposed decision making styles afford one the opportunity to consider the process of arriving at a decision considering the constructs of time, independence and rigour as part of the decisional process. Janis and Mann (1977) have proposed four decision making styles, namely vigilant, hypervigilant and defensive avoidant, which is made up of both procrastination and buck-passing as part of the decision making process (Scott & Bruce, 1995; Cenkseven-Önder, 2012). Davids, Roman and Leach (2015) have categorised vigilant decision making as being an adaptive decision making style associated with the pro-decisional outcomes, while hypervigilance and the other defensive avoidance decision making styles could be classified as being maladaptive styles of decision making having the opposite outcome. The results

presented in the current study suggest that vigilant and hypervigilant decision making styles loaded onto the construct of decision making styles. The question that arises is how both an adaptive and a maladaptive decision making style would load onto the construct of decision making styles. The understanding of decision making styles presented by both Driver et al (1990) and Gati et al (2010) could be an explanation for the loadings on the continuum of decision making styles. They propose that individuals have two types of decision making styles or processes that they engage in, a primary decision making style as well as a secondary one. The primary decision making style is the dominant style that the individual engages in, while the secondary one is the less dominant one (Driver et al., 1990; Gati et al., 2010). Some have viewed the process of making a decision as something that is often stable over time (Scott & Bruce, 1995; Schwartz et al., 2002; Raffaldi, Iannello, Vittani & Antonietti, 2012), while others believe that there is a difference in the decision making styles (Driver et al., 1990; Galotti et al., 2006). The differences in the decision making styles, can therefore be assumed as being both a primary and secondary decision making style. Decision making styles have been associated with a number of behavioural outcomes, particularly in adolescents. The decision making process that adolescents engage in is a crucial factor when adolescents are faced with situations that require a decision to be made that could be detrimental to their health and well-being (Steinberg, 2004; Wolff & Crockett, 2011). Adaptive decision making has been associated with behaviours related to positive health and development, while the contrary has been found for maladaptive decision making (Byrnes, 2005).

9.5.3. *Healthy lifestyle behaviours*

The decision making style that adolescents engage in, becomes important particularly when considering which behaviour to engage in. It could be a behaviour that would be detrimental to health and development or it could be the opposite which promotes positive health (such as participation in physical activity and healthy nutritional habits). Adolescence is a developmental phase that is commonly associated with behaviours that hinder the promotion of health, and is usually a period synonymous with engagement in risky behaviours (Cattelino et al., 2014). Literature suggests that some of the common health risk behaviours that surface during adolescence are the use of tobacco, alcohol and other substances as well as engaging in lifestyle related behaviours that promote a sedentary lifestyle (Khuwaja, Qureshi & Fatmi, 2007; Proimos & Klein, 2012; Khowaja et al. 2010; Sawyer et al., 2012). These health risk behaviours subsequently increase the risks of non-communicable diseases, and add to the global burden of non-communicable disease. Interestingly, the results in the current study suggest that adolescents frequently engage in healthy lifestyle behaviours, which is contrary to what literature suggests regarding adolescence (Sawyer et al., 2012). Frequent engagement in healthy lifestyle behaviours (for example active lifestyles, balanced nutritional diets, and stress management) by children and adolescents is often associated with positive developmental outcomes, including the absence of obesity, cardiovascular diseases, depression, and poor self-esteem, and generally it increases the overall quality of life experienced (De Lepeleere et al., 2013). The results presented in this study suggest that adolescents engaged in frequent healthy lifestyle behaviours (such as participation in sport and recreational activities) that promoted positive health and development. The positive results are interesting, especially as these

adolescents come from a rural community. Often persons in rural communities are associated with diminished health and well-being because of their limited access to healthcare and the number of socio-economic challenges that they face (Rural Poverty Research Centre, 2004; De Marco & De Marco, 2010).

9.5.4. Testing the model

The three constructs of the Health Promotion Model are: (i) individual characteristics and experiences, (ii) behaviour-specific cognitions and affect and (iii) behavioural outcomes (Michie et al., 2014). The current study aimed to use Pender's Health Promotion Model as a theoretical framework guiding the model hypotheses. The (i) individual characteristics and experiences, will be the developmental phase of adolescence, while (ii) the behaviour-specific cognitions and affect will be maternal and paternal parenting in relation to decision making styles and these will have an effect on (iii) the behavioural outcome will be engaging in healthy lifestyle behaviours (such as participation in sport). The results presented in the study suggest that the constructs examined in the study had a good fit to the proposed theoretical framework of the Health Promotion Model. Similar to the model, the results suggest that both maternal and paternal parenting were associated with adolescent decision making styles. This finding is also supported by previous empirical studies that sought to examine the associations between parenting and decision making. Parenting approaches, both positive and negative in nature, were associated with decision making styles (Keller & Whiston, 2008; Lease & Dahlbeck, 2009; Germeijs & Verschueren, 2009; Doğan & Kazak, 2010; Koumoundourou, Tsaousis & Kounenou, 2011; Wolff & Crockett, 2011; Commendador, 2011; Pérez & Cumsille, 2012; Michael, Most & Cinamon, 2013; Euser et al., 2013; Yang et al., 2014; Sovet &

Metz, 2014; Parishani & Nilforooshan, 2014; Cheung et al., 2014; Davids, Roman & Leach, 2015). The results presented in the study suggest that the adolescent's decision making styles had an effect on the engagement in healthy lifestyle behaviours (also considering engagement in physical activity). In examining the model, an interesting finding was that paternal parenting was associated with the effect on both the adolescent's decision making style and the engagement in healthy lifestyle behaviour, while maternal parenting was only associated with the adolescent's decision making. The finding highlights the important role that fathers play in the parent-child relationship in the development of children and adolescents (Marsiglio, Amato, Day & Lamb, 2000; Martin, Ryan & Brooks-Gunn, 2010; Fagan & Lee, 2012). The results in the study also suggest the important role of parents, more specifically paternal parental figures and in the study, in the engagement of healthy lifestyle behaviours. This finding adds to current studies that propose the important role of the paternal parenting figure in child and adolescent participation in health related behaviours such as physical activity engagement (Yao & Rhodes, 2015). Parenting, both positive and negative, has been associated with a number of healthy lifestyle behaviours, such as physical activity, nutrition, psychosocial functioning and well-being, and sleep duration (Rew et al., 2013; Davids & Roman, 2014; Kwon & Wickrama, 2014; Nicholls et al., 2014; Philips et al., 2014).

9.6. Conclusion

The decisional process that adolescents engage in, often as a result of parenting, can be associated with the behavioural outcomes related to healthy lifestyle behaviours. The Health Promotion Model is an apt theoretical framework in which to

examine constructs such as parenting styles and decision making styles and their effect on adolescent engagement in healthy lifestyle behaviours.

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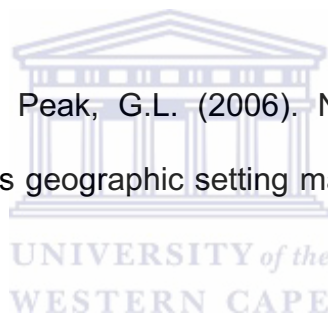
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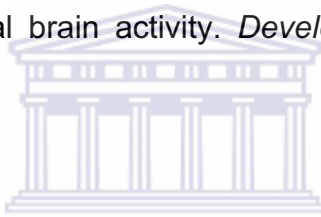
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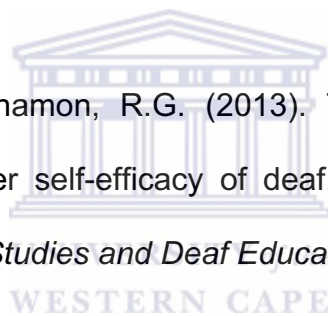
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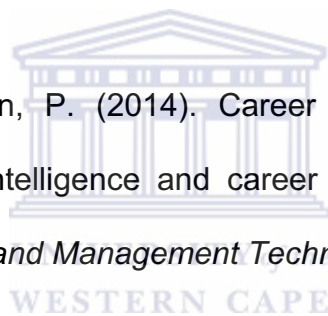
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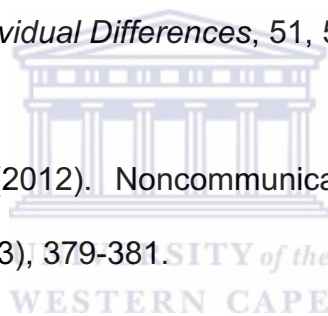
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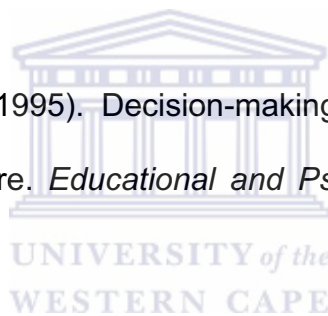
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CHAPTER TEN

INTEGRATION OF FINDINGS, RECOMMENDATIONS & CONCLUSION

10.1. Introduction

The current study aimed to develop and test a model that examined the interaction effects of perceived parenting styles and adolescent decision making styles on healthy lifestyle behaviour of adolescents in the rural Western Cape. In order to achieve this aim, the study employed a mixed methodological sequential exploratory design that made use of both (i) systematic literature reviews and (ii) cross-sectional quantitative data both of which were presented in the previous nine chapters of the thesis by addressing and satisfying the objectives of the study.

Each of the chapters previously presented (Chapters 4-9) addressed the objectives of the study in attempts to satisfy the overall aim. In this chapter, the overall aim is discussed in relation to the hypotheses which were presented at the outset of the study. These hypotheses were:

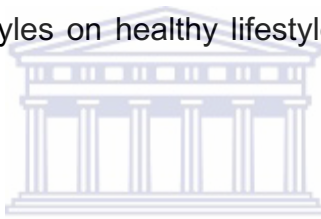
- **Hypothesis 1:** A relationship exists between the perceived authoritative parenting style and the vigilant decision making style of adolescents in the rural Western Cape.

- **Hypothesis 2:** A relationship exists between the perceived authoritative parenting style and healthy lifestyle behaviours of adolescents in the rural Western Cape.

- **Hypothesis 3:** A relationship exists between the vigilant decision making style and healthy lifestyle behaviours for adolescents in the rural Western Cape.

- **Hypothesis 4:** The model demonstrates the interacting effect of the relationship between the perceived authoritative parenting style and the vigilant decision making styles of adolescents on the healthy lifestyle behaviours of adolescents in the rural Western Cape.

- **Hypothesis 5:** There is a significant difference between the model looking at the interacting effect of perceived (i) mother and (ii) father parenting styles and decision making styles on healthy lifestyle behaviours of adolescents in the rural Western Cape.



10.2. Locations, places, and environments: Perspectives of rural communities

The phenomena of location and environment have been considered by the geographical sciences as affording individuals a deeper understanding of human actions and behaviours which allow for meaning making within a particular 'location' or 'environment' (Spina & Menec, 2015; Norton, 2009). Studying human actions and behaviours from this perspective allows one to move towards a deeper understanding of how the environment (together with both the physical, social and cultural factors) plays a role in decisions regarding certain actions, behaviours or cognitive perspectives of understanding (Roberson & Wilkie, 2010). Understanding human actions and experiences in a particular location or environment, it also becomes important to gain insight into significant differences or similarities between environments as well as the meanings associated and ascribed to various

phenomena (Spina & Menec, 2015). One such environment, which is often under-researched, is rural communities.

Rural communities are characterised by certain living conditions, lifestyles and cultural patterns (Perpar, 2007) which are often different from those of urban communities. One of the common characteristics of rural communities is the geographic distance, or spatial disparities, in accessing essential services, which contributes to a number of other characteristics common to rural communities (Dean & Sharkey, 2011; Lobao & Saenz, 2002). Rural communities face a number of challenges which have implications on the health status of children and adolescents. Some of these challenges have been described as (Edwards, 2015; Janzen et al., 2015; Sanders, Erickson, Call, McKnight & Hedges, 2015; Spina & Menec, 2015; Su, Pratt, Salinas, Wong & Pagán, 2013; Dean & Sharkey, 2011; Biddle, Sekula, Zoucha & Puskar, 2010; Perpar, 2007; Chan, Hart & Goodman, 2006; Lobao & Saenz, 2002; Rautiainen & Reynolds, 2002; Warner & Leukefeld, 2001; Miller & Price, 1998): (i) the lack of access to adequate healthcare services and resources which often is an outcome of (ii) the large distances and spatial disparities between the communities and the healthcare services; (iii) the limited and inadequate public transportation available to access healthcare adds to the burden of accessing equitable health-related information and services; (iv) economic challenges due to poverty, low wages and unemployment further strain attempts to access possible promotion of health; (v) spatial gaps common to rural communities also hinder access to social and support service; (vi) this is coupled with dubious safety in rural areas where agricultural machinery and equipment pose a health threat and an increase in injuries and ill-health due to pesticide, (vii) often limited mental health care facilities and support

services to promote positive mental health and well-being, as well as (viii) inadequate sanitary conditions and the lack of clean running water supplies.

10.3. Rural health status: Children and adolescents

The challenges that are associated with rural communities and health have implications on the health status of children and adolescents. Patterson, Moore, Probst and Shinogle (2004) have reported that adolescents in rural communities have a lower health status than those in urban areas. Adolescence is a developmental phase where adolescents are already susceptible to preventable health issues which pose a threat for health and well-being in later life (Curtis, Waters & Brindis, 2011; Levine & Coupey, 2003). The health status of adolescents in rural areas as presented in literature suggests the need for more focus on healthy lifestyle behaviours which can promote positive health and well-being. Contrary to supporting health promotion to combat the health issues of adolescents, only limited research exists which examines healthy lifestyle behaviour, particularly among the adolescents in rural communities (Rew, Arheart, Horner, Thompson & Johnson, 2015).

The actions and behaviours that are aimed at promoting a lifestyle that constitutes good health and overall well-being are known as healthy lifestyle behaviours (Leddy, 2003). Studies examining healthy lifestyle behaviours of adolescents remain scarce, particularly in rural settings (Rew, Arheart, Horner, Thompson & Johnson, 2015). Commonly, rural settings have been associated with diminished health status, where healthy lifestyle behaviour ought to play a rather important role (Hartley, 2004). Whether or not to engage in these healthy lifestyle behaviours is largely dependent

on the decision making of the adolescent (Umeh, 2009). Decision making among children and adolescents is a by-product of the societal norms and beliefs, which are central to the social environment in which parenting takes place (Wolff & Crockett, 2011).

10.4. Parenting: The initial social environment

The strategies and behaviours that parents make use of as part of the process of parenting, are important when examining the socialisation and development of children across a number of environments (Achtergarde et al., 2015). Parenting is central to the development and socialisation of children and adolescents alike (Spera, 2005). Often it is within the parent-child relationship that the socialisation process is initiated, and most often is displayed by means of the parenting dimension or style used (Akinsola, 2011). Parenting is often examined using either (i) parenting dimensions or (ii) parenting styles. The parenting dimensions that are displayed within the parent-child relationship include the display of warmth and nurturance as well as parental control, which is made up of both behavioural and psychological control (Aunola & Nurmi, 2005). Parenting styles, are often a constellation of the parenting dimensions displayed, and can be helpfully analysed using Baumrind's typology of parenting styles. Baumrind (1991) has proposed three parenting styles, namely authoritative, authoritarian, and permissive parenting. In addition to the styles proposed by Baumrind (1989), Maccoby and Martin (1983) have proposed 'indulgent' and 'neglectful' parenting styles. The results in the current study have indicated that when examining the prevalence of perceived maternal and paternal parenting styles, the most prevalent parenting style was authoritative parenting. This parenting style has been associated with two characteristics, namely (i) good

communication in the parent-child relationship that promotes and protects the autonomous development of the child or adolescent and (ii) the display of parental authority as part of the parent-child relationship when the parent deems it is required (Uji, Sakamoto, Adachi & Kitamura, 2014; Piko & Balázs, 2012). Central to authoritative parenting is good communication which is associated with positive developmental outcomes for children and adolescents (Uji, Sakamoto, Adachi & Kitamura, 2014), even though research has suggested that it is largely in Western research that authoritative parenting is associated with positive developmental outcomes. The opposite is considered for Asian societies, Watabe and Hibbard (2014) have suggested that findings are generalised for developmental outcomes for Asian societies, and these societies, even though they are somewhat similar, have their own unique characteristics even though it is very subtle and is associated with an array of outcomes as the differences in individual and contextual characteristics which are pivotal in the development and outcomes of children and adolescents (Smith & Moore, 2012).

Authoritative parents are thought to find a balance between displays of responsiveness, often by means of warmth and support, and demandingness, which could be through behavioural control (Watabe & Hibbard, 2014; Piko & Balázs, 2012). These parents display acts of nurturance and rational communication (Watabe & Hibbard, 2014). These parents are examples of parenting that includes both the rational and emotional dimensions of rearing (Piko & Balázs, 2012). Maternal and paternal authoritative parenting has been associated with positive mental health development and outcomes for children and adolescents (Uji, Sakamoto, Adachi & Kitamura, 2014). Overall, research suggests that authoritative

parenting has yielded the best developmental outcomes (Piko & Balázs, 2012). The pro-social developmental outcomes for children and adolescents are the behavioural displays which take into consideration other individuals in society, such as sharing, supporting and helping, and children and adolescents who display these pro-social behaviours have positive personal and social characteristics (Padilla-Walker, Carlo, Christensen & Yorgason, 2012).

The first and second hypotheses of the study were that a relationship exists between authoritative parenting and (i) the vigilant decision making style as well as (ii) engagement in healthy lifestyle behaviours for adolescents in the rural Western Cape. The first and second hypotheses are accepted for paternal parenting only because no significant associations were established for maternal parenting; positive associations were established between paternal authoritative parenting and (i) vigilant decision making styles (which are an adaptive form of decision making, yielding positive outcomes) as well as hypervigilant decision making (see Chapter 9). The results presented in the current study showed vigilant decision making as being the most prevalent decision making style, which was followed by hypervigilant decision making. Hypervigilant decision making has also been associated with paternal authoritative parenting. Even though it was not the most prevalent decision making style, judgement and decision making theorists propose that when decision making takes place in a social setting, like the familial home environment in which parenting takes place, an individual moves between a primary and secondary decision making style (Gati et al., 2010; Driver, Brousseau & Hunsaker, 1990). Where the primary decision making style is the more dominant style, in the study it would be considered that vigilant decision making would be the primary style as it

was the most prevalent, and hypervigilant decision making was the secondary decision making style (Gati et al., 2010; Driver, Brousseau & Hunsaker, 1990). In addition, positive associations were established between paternal authoritative parenting and (ii) engagement in healthy lifestyle behaviours (which promote overall health and well-being) (see Chapter 9). Interestingly, the authoritative parenting style was the most prevalent perceived parenting style as suggested by the results. Therefore it comes as no surprise that the vigilant decision making style was the most prevalent in the process of decision making in the study (see Chapters 7 & 8). The adolescents in the study frequently engaged in healthy lifestyle behaviours (see Chapters 7 & 8). These prevalence's displayed within the current study (see Chapters 7 & 8) as well as the significant associations (see Chapter 9) support the notion of Baumrind (1991) and other researchers both in South Africa (Roman et al., 2015; Davids & Roman, 2014; Latouf & Dunn, 2010; Kritzas & Grobler, 2005) and internationally who have proposed authoritative parenting to have positive developmental outcomes for children and adolescents (Kitamura et al., 2014; Padilla-Walker, Carlo, Christensen & Yorgason, 2012; Pearson et al., 2009; Carlo, McGinley, Hayes, Batenhorst & Wilkinson, 2007). The systematic reviews conducted in the current study also suggested that authoritative parenting, which was categorised as being a positive parenting approach in the study, was positively associated with healthy lifestyle behaviours (Kwon & Wickrama, 2014; Nicholls et al., 2014; Ray et al., 2013; Rew et al., 2013; Johnson et al., 2012; Ray & Roos, 2012; Oliver et al., 2011; Lohaus, Vierhaus & Ball, 2008; Wong, 2006; Schmitz et al., 2002; see Chapters 4 & 5). It was also positively associated with adaptive decision making in previous empirical studies (Yang et al., 2014; Michael, Most & Cinamon, 2013; Wolff & Crockett, 2011; Doğan & Kazak, 2010; Germeijs & Verschueren, 2009;

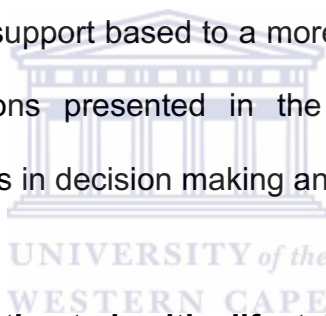
Keller & Whiston, 2008; see Chapter 6). The reported associations between authoritative parenting presented in the current study were only significant for paternal authoritative parenting and not maternal parenting (see Chapter 9). Examining the parenting styles of both maternal and paternal parental figures is an important contribution of the current study, as difference in parenting on the basis of gender is less frequently examined in research studies (Kerr, Lopez, Olson & Sameroff, 2004).

10.5. The foregrounding of paternal parenting

The availability of research focusing on paternal parenting varies greatly, with the United States, Canada, Western Europe and Japan providing understanding of paternal parenting that reflects depth and breadth, while areas such as Bangladesh and Malaysia add to the existing body of knowledge but remain shallow and narrow (Seward & Stanley-Stevens, 2014). There are places where understanding the concept of paternal parenting remains limited to scarce, such as the African continent (Seward & Stanley-Stevens, 2014; Shwalb, Shwalb & Lamb, 2013). The current study, therefore, addresses one of the limitations that exist in African literature focusing on the role of paternal parenting as highlighted by Shwalb, Shwalb and Lamb (2013). The current study alludes to the important contribution of paternal parenting in the development of children and adolescents, particularly the associations with decision making styles and engagement in healthy lifestyle behaviours.

Paternal parental roles, traditionally, have been considered as being largely culturally biased where they are viewed as being the breadwinner in the familial environment,

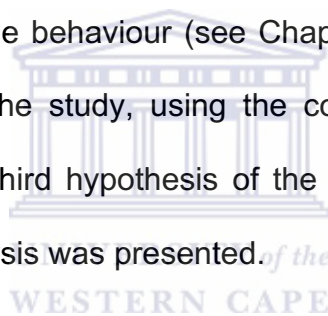
and where there is seldom direct participation in the process of parenting (Stykes, 2015; Hamadani & Tofail, 2014; Shirani, Henwood & Coltart, 2012). This traditionally held notion of paternal parenting in literature has been challenged, as a growing interest has emerged in the important role that paternal parents play in the lives of children and adolescents as well as the development outcomes (Stykes, 2015; Yin, Li & Su, 2012). Paternal parents play a significant role in the adjustment and development of children and adolescents (Overbeek, ten Have, Vollebergh & de Graaf, 2007) as the findings in the current study have suggested. The significant associations of paternal authoritative parenting in the current study indicate the shift in the initial socially constructed view of paternal parenting considered as changing from economic and financial-support based to a more 'involved' role (Kotila & Kamp Dush, 2013). The associations presented in the current study allude to the involvement of paternal parents in decision making and healthy lifestyle behaviours.



10.6. Decision making in relation to healthy lifestyle behaviours

The Health Promotion Model, as a theoretical framework, suggests that the behaviour-specific cognitions and affects are important in the behavioural outcome of individuals to engage in healthy lifestyle behaviours (Dehdari et al., 2014). Even though research focusing specifically on healthy lifestyle behaviours of adolescents remains limited (Rew, Arheart, Horner, Thompson & Johnson, 2015) in the context of the study and guided by theoretical understanding, it is suggested that decision making styles as a cognitive process of arriving at an alternative will affect the engagement in healthy lifestyle behaviours of adolescents.

Pender's (2006) Health Promotion Model suggests that the behaviour-specific cognitions and affects are central to the engagements in healthy lifestyle behaviours, of which decision making styles would be the behaviour-specific cognition in the current study. The third hypothesis of the study was that a relationship existed between the vigilant decision making style and healthy lifestyle behaviours for adolescents in the rural Western Cape. The results in the current study showed that a relationship existed between the decision making styles and engagement in healthy lifestyle behaviour, but this association was not significant as part of the correlation matrix (see Chapter 9). The path analysis as part of the model testing however suggests that the decision making styles had an interaction effect on the engagement of healthy lifestyle behaviour (see Chapter 9). Therefore, because the initial analysis presented in the study, using the correlation matrix suggested an insignificant association, the third hypothesis of the study was not accepted, even though a significant path analysis was presented.



The healthy lifestyle behaviours of adolescents are those behaviours that form an important part of the lifestyle which adolescents lead, as well as the determinants of the health status (Lee & Loke, 2011). Wang, Ou, Chen and Duan (2009) believe that these healthy lifestyle behaviours are important, especially for the health habits employed early in an individual's life. For adolescents particularly, the healthy lifestyle behaviours that they engage in, are important, as this is a predictor for non-communicable diseases. Non-communicable diseases as a result of lifestyle related behaviours which hinder positive health and well-being, have been reported as a public health concern globally (Hanson & Gluckman, 2015; Alleyne et al., 2013), often as a result of the limited engagement in healthy lifestyle behaviours during the

developmental phase of adolescence (Silva et al., 2014). The healthy lifestyle behaviours that promote positive health and well-being, and decrease the possibility of non-communicable disease, early mortality and morbidity, include activities that direct taking ownership of individual health responsibility, engaging in healthy nutritional habits and behaviours, and partaking in physical activity. They also include the psychological well-being of an individual that consists of stress management, interpersonal relations, spiritual behaviour and actions (Lee & Loke, 2011). Public health institutions have internationally focused more attention on healthy lifestyles over the past few decades, in an attempt to minimise the global burden of lifestyle related diseases (Chen, James & Wang, 2007). According to Umeh (2009), healthy lifestyle behaviours are dependent on the decision made to adopt a healthy lifestyle. Therefore, even though an insignificant association was established between healthy lifestyle behaviours and decision making, it would be recommended for future research to examine these associations using previous empirical studies to review, as this was a limitation of the current study. Theoretically, the Health Promotion Model suggests as part of its constructs that decision making will have an effect on the healthy lifestyle behaviours of adolescents.

10.7. Adolescents' engagement in healthy lifestyle behaviour in rural communities

Adolescence is a developmental period where a number of lifestyle related habits and behaviours are established, which continue into later life, and more often than not contribute to the burden of disease (Pound & Campbell, 2015; Viner, 2013). Understanding the lifestyle related behaviours and habits established during this

developmental period becomes important not only for the present health status, but the continuation of these behaviours into adulthood. Research suggests that the current initiatives put in place to promote health and well-being of adolescents may not be understood or implemented among adolescents that may have detrimental implications for their health (Groft, Hagen, Miller, Cooper & Brown, 2005; Pittman, Wold, Wilson, Huff & Williams, 2000).

In public health there is evidence that health inequalities exist, as well as a number of environmental, structural and cultural factors that are important when examining adolescent health related behaviour (Pound & Campbell, 2015). Therefore the overall aim of the current study was to develop and test a model that examined the interaction effects of perceived parenting styles and adolescent decision making styles on healthy lifestyle behaviour of adolescents in the rural Western Cape. The health inequalities that are common in rural communities were taken into consideration as well as the factors that are associated with better understanding adolescent healthy lifestyle behaviour in the study which was framed in Pender's (2006) Health Promotion Model. This model provided a theoretical framework to understand the motivations or factors that are important in individuals' engagement in health promoting behaviours (Michie et al., 2014). The model proposes three central constructs in understanding engagement in healthy lifestyle behaviours. These three constructs are (i) individual characteristics and experiences (in the current study, this was considered to be the developmental phase of adolescence), (ii) behaviour-specific cognitions and affect (which was the perceived parenting styles and decision making styles) while the final construct was (iii) the behavioural outcome of healthy lifestyle behaviours (see Chapter 2).

The Health Promotion Model proposes the importance of the individual characteristics and experiences as providing motivation for healthy lifestyle behaviours, while the behaviour specific cognitions and affect are important in determining the health promoting / healthy lifestyle behaviour (Dehdari et al., 2014; Michie et al., 2014). As the current study proposed a model examining the interactions between the studied variables (namely, perceived parenting styles, decision making styles and engagement in healthy lifestyle behaviours; see Figure 3.1 in Chapter 3 for diagrammatical representation of model) the Health Promotion Model was used as a theoretical framework guiding the proposed and tested model as well as being informed by empirical findings on the associations between the variables in the study (see Chapters 4, 5 & 6). The fourth hypothesis of the study was that the model (which was developed and tested) would demonstrate the interacting effects of the relationship between the perceived authoritative parenting style and the vigilant decision making styles of adolescents on the healthy lifestyle behaviours of adolescents in the rural Western Cape.

The fourth hypothesis in the study was accepted only for perceived paternal parenting because the path analyses in the model tested, which was guided by the Health Promotion Model, suggested that both maternal parenting (which was made up of physical coercion, punitive and indulgent parenting that are dimensions of both authoritarian and permissive parenting, and not authoritative parenting) and paternal parenting (which was made up of connection, regulation and autonomy granting that are dimensions of authoritative parenting) were significant in the decision making styles employed by adolescents (which had vigilant decision making as the primary

style of decision making, and hypervigilant decision making as the secondary). The path analyses suggested that decision making styles used by adolescents had a significant role in engagement in healthy lifestyle behaviours of the adolescents in the rural Western Cape (see Chapter 9). This interaction which was demonstrated as being significant in the model's path analyses, was also supported by empirical findings that have associated parenting approaches with decision making styles (Keller & Whiston, 2008; Lease & Dahlbeck, 2009; Germeijs & Verschueren, 2009; Doğan & Kazak, 2010; Koumoundourou, Tsaousis & Kounenou, 2011; Wolff & Crockett, 2011; Commendador, 2011; Pérez & Cumsille, 2012; Michael, Most & Cinamon, 2013; Euser et al., 2013; Yang et al., 2014; Sovet & Metz, 2014; Parishani & Nilforooshan, 2014; Cheung et al., 2014; Davids, Roman & Leach, 2015; see Chapter 6). The results presented in the path analyses only accepted the fourth hypothesis for paternal authoritative parenting. As the fourth hypothesis was only significant for paternal authoritative parenting, it is suggested that the fifth and final hypothesis, which was that there would be a significant difference between the model looking at the interacting effects of perceived (i) maternal and (ii) paternal parenting styles and decision making styles on healthy lifestyle behaviours of adolescents in the rural Western Cape. The fifth hypothesis, which suggests that significant differences would be found for maternal and paternal parenting styles, was accepted because the construct matrix results suggest that the paternal parenting style was associated with the effect on both the adolescents' decision making style and engagement in healthy lifestyle behaviour, while maternal parenting styles were only associated with the effect on the adolescents' decision making style. These results, presented once more, alluded to the emergence of the involvement of paternal parenting, and how the role of paternal parents had shifted

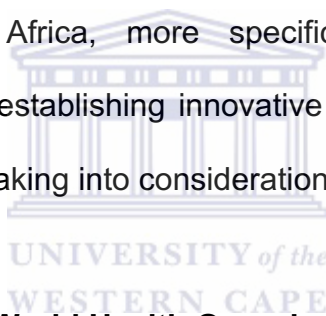
from one which was to provide financial and material support to one that included emotion and involvement. Paternal parenting therefore is important in the decision making styles that adolescents engage in as part of the decision making process.

As previously mentioned, socialisation of children and adolescents often takes place in the familial home environment (Schroeder & Mowen, 2014; Schaffer, Clark & Jeglic, 2009). The familial home environment is the context in which parenting often takes place, and the process of socialisation is commonly established from the parent-child relationship (Akinsola, 2011; Wolff & Crockett, 2011). Research has paid close attention to the important role that maternal parental figures play in the development and well-being of children, and sometimes the role of paternal parents is forgotten or scarcely reported in literature (Rinaldi & Howe, 2012; Cabrera, Tamis-LeMonda, Bradley, Hofferth & Lamb, 2000). Paternal parental figures play a vitally important role in the development and well-being of children and adolescents (Smith, Tandon, Bair-Merritt & Hanson, 2015; Coley & Hernandez, 2006), as the model which was developed and tested in this study suggested. The paternal parenting roles as proposed by the traditionally held notion of only providing financial and material support has been extended to include direct involvement in upbringing and child rearing through role modelling, emotional and psychological support, and discipline (Smith, Tandon, Bair-Merritt & Hanson, 2015; Dubowitz, Lane, Ross & Vaughan, 2004). Paternal parental involvement has been reported to be a contributory factor to the promotion of health and well-being among children and adolescents (Smith, Tandon, Bair-Merritt & Hanson, 2015). The role that paternal parents play in the health of children and adolescents is interesting to note, and supports the findings presented in the current study where the tested model

proposed paternal authoritative parenting, in which parental involvement and warmth are central, to be associated with frequent engagement in healthy lifestyle behaviours.

Confounding variables are those predictor variables that could potentially have an effect on the findings of an outcome variable (Field, 2013). The current study examined the significant differences that might have existed between (i) family structure (see Chapter 7) and (ii) participant gender (see Chapter 8) which might have played a significant role in the suggested findings in the model. Family structure, as a potential confounding variable, was examined as the familial home environment is central to socialisation. Children and adolescents reared in single parent households are often exposed to less parental monitoring and supervision, because single parents have to juggle the responsibilities of caregiving and the provision of needs, more than those in two parent households (Barrett & Turner, 2006; Davids & Roman, 2013). This could have influenced the findings presented in the model. The gender of the participants was also considered as a confounding variable in the study as literature suggests that maternal and paternal parental figures employ variations in parenting depending on the gender of the child or adolescent, and has been associated with different developmental outcomes (Kerr et al., 2004; Fivush, 1998). The findings presented in the current study for (i) family structure and (ii) participant gender, as possible confounding variables, suggested no significant main effects which would allow one to deduce that family structure and gender, as possible confounding variables in the study, had no effect on the findings presented for the model examined.

The model proposes the important role that paternal authoritative parenting plays in the decision making styles of adolescents in the rural Western Cape and their engagement in healthy lifestyle behaviours. The findings presented in the current study are interesting to note, as the role of authoritative parenting and the associated outcomes on the development of children and adolescents remains somewhat unclear in literature when employed by paternal parental figures (Karre & Mounts, 2012). It is important to frame the findings of the study in the context of current developments both locally and internationally. One of the current strategies proposed by the World Health Organisation sheds light on the importance of adolescent health from a global perspective. Understanding how the findings presented in the current study would guide South Africa, more specifically the rural under-served communities, would assist in establishing innovative initiatives to work towards the strategy of adolescent health taking into consideration the important role of parents.



10.8. Perspectives from the World Health Organisation: The Global Strategy for Women's, Children's and Adolescents' Health (2016-2030)

The results presented in the current study suggest that paternal parenting plays an important role in the decision making styles of adolescents and their engagement in healthy lifestyle behaviour. The findings presented in the current study come at an interesting time as the time frame of the Millennium Development Goals comes to an end, and the ushering in of the Sustainable Development Goals provides direction and insight for the next 15 years. In considering the Sustainable Development Goals, the World Health Organisation also provides perspectives focusing specifically on women, children and adolescents, by presenting The Global Strategy. The strategy provides perspectives on the improvement of health and well-being globally, and the

present study findings can be considered using the strategy as a lens in assessing how it has aligned itself, in terms of adolescents, with the proposed objectives. The Global Strategy (World Health Organisation, 2015) highlights three objectives and targets in achieving health and well-being. These objectives and targets, aligned with the current research study, are as follows:

- End preventable deaths
 - Target: “Reduce by one third preventive mortality from non-communicable diseases and promote mental health and well-being”
- Ensure health and well-being
 - Target: “Achieve universal health coverage . . .”
- Expand enabling environments
 - Target: “Enhance scientific research, upgrade technological capabilities and encourage innovation.”

The three objectives as outlined are important as we see the dawn of the Millennium Development Goals, and the ushering in of the Sustainable Development Goals, particularly in addressing the third goal of the Sustainable Development Goals which refers to *ensuring healthy lives and promote well-being for all ages*. The current study aimed to develop and test a model that examined the associations between perceived parenting styles and decision making styles on healthy lifestyle behaviours of adolescents in rural Western Cape.

The current study addresses the first objective of the Global Strategy by examining the engagement in healthy lifestyle behaviours of adolescents. Lifestyle related behaviours are predisposing factors for non-communicable diseases (Proimos & Klein, 2012; Mayosi et al., 2009), and there has been an increase in non-communicable disease worldwide, therefore it has become not only a public health concern in South Africa, Sub-Saharan Africa but rather a global public health concern (Hanson & Gluckman, 2015; Alleyne, Stuckler & Alwan, 2010; Mayosi et al., 2009).

The second objective of the Global Strategy highlights the need to ensure overall health and well-being by achieving universal health coverage. Health related research has largely focused on the health status of urban populations (Katz et al., 2013), and rural adolescents are often either non-existent or under-researched, particularly those related to healthy lifestyle behaviours which promote positive health and well-being (Rew, Arheart, Horner, Thompson & Johnson, 2015; Atav & Spencer, 2002). In the current study the healthy lifestyle behaviours of adolescents in rural Western Cape are examined, achieving health coverage through research not only among urban adolescents but also adolescents in rural communities that are often under-researched.

The third and final objective of the Global Strategy was aimed at expanding environments which enable health and well-being. This can be done through the promotion of scientific research and the promotion of innovation. The current study, as one based on empirical research, addresses this objective, by not only considering the healthy lifestyle behaviours of adolescents but examining the

perceived role of parents and adolescent decision making in healthy lifestyle behaviours. This demonstrates innovation by means of scientific research.

Universally, in order to achieve the Global Strategy by the year 2030, action areas have been identified that can assist in achieving the objectives as outlined in the Strategy. The current study highlights the following action areas as proposed: (i) community engagement, (ii) research and innovation, and (iii) multi-sectional action. The study forms part of a collaborative initiative between the University of the Western Cape and under-served communities in the rural Western Cape, with the aim of enhancing health and well-being in the community and enabling a healthy environment by collaborative action of community members. In so doing the study accounts for community engagement as highlighted in the Global Strategy. Moreover, the study uses innovative techniques to examine the healthy lifestyle behaviours of these adolescents by considering both perceived parenting styles and decision making styles as part of the research project, and addresses the action area of research and innovation. The study registered as a Child and Family Studies project, extends beyond the nature of social sciences by becoming inter-disciplinary or multi-sectional, as it takes into consideration social sciences as well as public health issues in promoting positive health and well-being for adolescents in rural Western Cape.

10.9. Recommendations

Recommendations for future research as presented here, are a result of taking the presented research study in its entirety into consideration as well as some of the limitations that have emerged during the research process. These recommendations

are suggested taking into consideration (i) methodology, (ii) instrumentation and (iii) research study perspectives.

Methodological recommendation:

- Systematic reviews that will be conducted in the future to extend what was examined in the current study, should take into consideration the inclusion of grey literature, as well as possible biases in the review sample selection, analysis and interpretation.

Instrumentation recommendation:

- South Africa, known for its diversity, presents a challenge when using and adapting instrumentation for research and psychometric purposes. This can be accounted for by the linguistic scope of the country that has eleven official languages, and also has a diverse cultural background made up of various cultural groups dependent on geographic, linguistic and ethnic factors. Therefore it is recommended that an instrument be developed or well adapted for the South African population which examines decision making styles, as the Cronbach alpha score presented for the instrument used, could be improved for future research if a revised version is developed in the future. Owing to the diversity of South Africa, it is recommended that a parenting instrument be developed specifically for South Africa, as the instrument used in the current study has presented high Chronbach alpha scores, but the complexity of parenting is often limited to one dimension only which is that of parenting styles. An instrument that is culturally sound, and more inclusive of the concept of parenting would also add to current research developments in

parenting both in South Africa, the African continent and the global community as a whole.

Research foci recommendations:

- One of the recommendations for future research, that would strengthen what is presented in this study would be a review of existing empirical studies that have examined the associations between decision making styles and engagement in healthy lifestyle behaviours. It would address one of the limitations of this study, and would also assist in understanding the decision making processes involved in healthy lifestyle behaviours which would assist in lessening the current global burden of lifestyle related diseases.
- Future research that attempts to use model testing in examining engagement in healthy lifestyle behaviours should take into consideration mediating variables such as self-esteem, motivation, and satisfaction of life, in better understanding the factors related to engagement in positive lifestyle related behaviours, and adding to the existing body of knowledge.
- It is recommended that future research studies take into consideration factors that promote positive healthy lifestyle behaviours in contexts other than the familial home as examined in this study. It could be extended to environments such as schools and work environments that act either as a promoting or hindering environment in the promotion of overall health and well-being.

- Additional perspectives of examining parenting, decision making and healthy lifestyle behaviours in future research should include factors such as socio-economic status, personality, and individual versus collectivist cultures.
- It is recommended that future research studies examine the perspectives of parenting, decision making and healthy lifestyle behaviours taking into consideration racial and cultural differences that might arise, due to the diverse cultural landscape and historical background of a country like South Africa.
- In addressing the goals and objectives as outlined in the World Health Organisation's Global Strategy focusing on child and adolescent health interventions that focus on parenting, should consider the dimension examined in the current model to improve the decision making processes of children and adolescents that are vigilant or adaptive in nature to promote engagement in healthy lifestyle behaviours of children. The interventions should not focus only on maternal parental figures but also take into consideration the important role of paternal parental figures in developing the child and adolescent.

10.10. Limitations

The study limitations that have presented themselves in the current research study, have been seen in each of the phases presented in the study (namely, (i) systematic review component, and (ii) quantitative study component) as well as publication limitations:

Systematic Review:

- The systematic reviews conducted in the current study failed to address the following criteria, which according to Shea et al (2007) are essential in assessing the methodological quality of systematic reviews: (i) they lacked the inclusion of grey literature, (ii) failed to assess homogeneity of findings as part of synthesising overall findings presented in each review (for example by means of a Chi-square test for homogeneity), and (iii) had no assessment for publication biases (such as the use of Egger regression test).
- The systematic reviews in the current study examined the associations between (i) parenting approaches and healthy lifestyle behaviours and (ii) parenting approaches and decision making styles. However, if a systematic review examines the associations between healthy lifestyle behaviours and decision making styles, it would have allowed for an interaction between all the variables examined in the model that was developed and tested, even though literature examining healthy lifestyle behaviour and decision making processes remains limited.

Quantitative Study:

- Few parenting instruments are reliable and valid for the South African population, as previous studies have been conducted accounting for the reliability and validity of the Parenting Styles and Dimensions Questionnaire, it was one of the few instruments available to assess parenting. Even though considering only parenting styles in examining the construct of parenting is

limiting, it also could be considered as a recommendation for the development of instruments to assess the complexity of parenting suitable for a diverse population like South Africa.

- Even though an alternative questionnaire was used to assess decision making styles the Cronbach alphas were not as high as expected.
- The model testing failed to consider possible mediating variables in the study, such as self-efficacy or motivation, which could have had a mediating effect on the decision making styles and engagement in healthy lifestyle behaviours as proposed in the model. This could also serve as a possible recommendation for future research to use the variables examined in the current study, but to consider possible mediating variables that might be important in decision making towards engagement in healthy lifestyle behaviours.
- Another limitation presenting itself is the lack of considering the demographic, geographic and socio-political characteristics of the studied rural area. These characteristics might be different for other areas, which might present different findings than what was established in the current study.
- South Africa's diverse cultural landscape and historical background in relation to racial categories have not been fully explored in the current study, even though this was not one of the study objectives this presents itself as a limitation due to the different findings that might present it's self on the basis of culture and race.

- The current study made use of a cross-sectional design, however due to the limited research available if a longitudinal design were employed it would have yield more insight into the variables studied. Additionally, if a rich qualitative methodology component were added, this too would have provided more insight.

Publications:

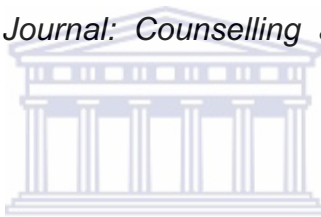
- Few South African and African journals are available that examine healthy lifestyle behaviours, and as a result a number of the publications have been published and submitted in the African Journal for Physical Health Education, Recreation and Dance, even though this journal has an impact factor of 4.03 according to ResearchGate. It would have added more value if there were more South African or African journals that published on the topical area examined. However, the systematic reviews were submitted to international journals and the reviews took into consideration a larger audience, not only limited to a South African and African sample.
- In line with publication limitations, if a chapter was submitted for publication that examined participant differences on the basis of socio-economic status (which was used as a criteria for stratified random sampling in the current study) it would have added to the current body of knowledge which exist – yet it would also warrant possible repetition of the mean scores presented in two of the chapters.

10.11. Conclusion

The findings presented in the current study highlight the important role that parenting plays in adolescent decision making and engagement in healthy lifestyle behaviour as presented by empirical findings in the reviews conducted. The study also highlights the important role that paternal parenting plays in the decision making of adolescents and their engagement in healthy lifestyle behaviours.

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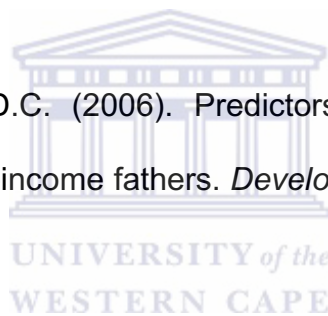
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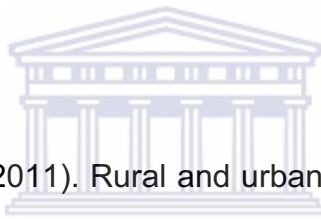
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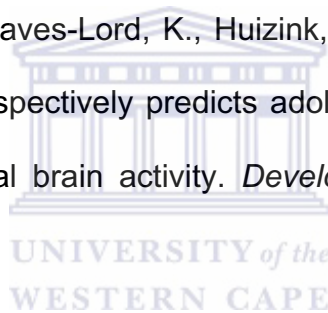
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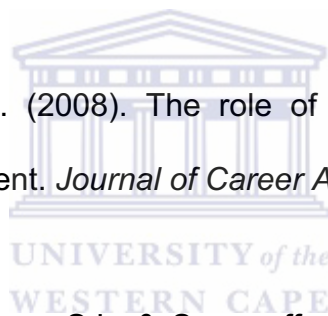
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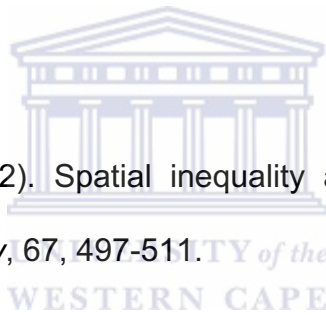
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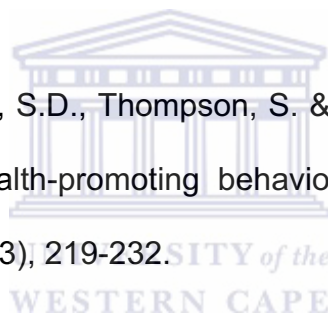
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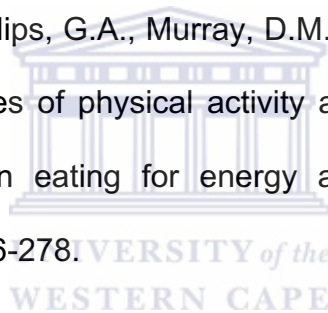
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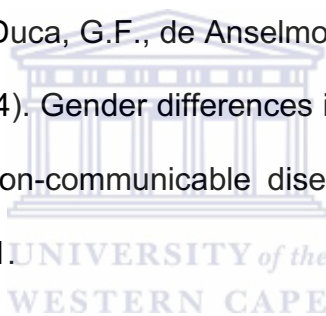
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Appendix Section

Appendix I: Information Sheet / Letter



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: 071 671 5654
E-mail: davidse.psych@gmail.com

INFORMATION SHEET

Project Title: A model examining the relationship between parenting styles and decision making styles on healthy lifestyle behaviours of adolescents in rural Western Cape



What is this study about?

This is a research project being conducted by Eugene Lee Davids at the University of the Western Cape. We are inviting you to voluntarily participate in this research project because you are a Grade 9 learner at a secondary school in the rural Western Cape. The purpose of this research project is to determine and examine the interaction between perceived parenting styles, adolescent decision making and healthy lifestyle behaviours of Grade 9 learners, to assist in developing a model.

What will I be asked to do if I agree to participate?

You will be asked to complete a questionnaire. This questionnaire will ask you questions about:

- You, how you make decisions and your healthy lifestyle behaviours.

- Your parents, specifically, the relationship they have with you.

This questionnaire will be completed at school, with permission of your parents, principal and teachers at a time which is not disruptive to your learning. Completion of the questionnaire will be less than 35 minutes.

Would my participation in this study be kept confidential?

We will do our best to keep your personal information confidential. To help protect your confidentiality, the information you provide will be totally private; no names will be used so there is no way that you can be identified as a participant in this study. The information will be treated with anonymity and confidentiality. Your name will not be reflected on the questionnaire. The information obtained from the survey will be collated with the information from other completed surveys. Therefore there will be no way to connect you to the survey questionnaire.

What are the risks of this research?

There are no known risks in participating in the study.

What are the benefits of this research?

Information about this topic is limited. This research is not designed to help you personally, but the results may help the investigator learn more about the perceived parenting styles, decision making styles and healthy lifestyle behaviours of learners in secondary schools. Since information about this particular research in South Africa is relatively limited, this study will increase the knowledge for (1) parents, (2)

teachers/school, (3) practitioners and (4) the broader society. Furthermore, this study will highlight the pivot role that parenting styles and decision making styles play in the healthy lifestyle behaviours we engage in.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part in the study. If you decide to participate in this research study, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalised or lose any benefits to which you otherwise qualify.

Is any assistance available if I am negatively affected by participating in this study?

Every effort has been taken to protect you from any harm in this study. If however, you may feel affected you can be referred to your nearest community resource for assistance.

What if I have questions?

This research is being conducted by Eugene Lee Davids in the Social Work Department at the University of the Western Cape. If you have any questions about the research study itself, please contact the study co-ordinator: Prof Roman at: 0219592277/2970 or email: nroman@uwc.ac.za.

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Professor Jose Frantz – Dean of the Faculty of Community and Health Sciences

Tel No: 021 959 2631/2746

Email address: jfrantz@uwc.ac.za

***This research has been approved by the University of the Western Cape's
Senate Research Committee and Ethics Committee.***



Appendix II: Parent's Consent Form



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: 071 671 5654

E-mail: davidse.psych@gmail.com

CONSENT FORM FOR PARENTS

Title of Research Project: A model examining the relationship between parenting styles and decision making styles on healthy lifestyle behaviours of adolescents in rural Western Cape

The study has been described to me in a language that I understand and I freely and voluntarily agree to allow my child to participate in the study. My questions about the study have been answered. I understand that my child's identity will not be disclosed and that my child may withdraw from the study without giving a reason at any time and this will not negatively affect my child in any way.

Parent's name	
Parent's signature	
Witness	
Date	

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study coordinator:

Study Coordinator's Name: Prof N Roman

University of the Western Cape

Private Bag X17, Belville 7535

Telephone: 021 959 2277/2970 / Email: nroman@uwc.ac.za

Appendix III: Assent Form for Participant



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: 071 671 5654

E-mail: davidse.psych@gmail.com

ASSENT FORM FOR PARTICIPANTS

Title of Research Project: A model examining the relationship between parenting styles and decision making styles on healthy lifestyle behaviours of adolescents in rural Western Cape

The study has been described to me in a language that I understand and I freely and voluntarily agree to participate. My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason at any time and this will not negatively affect me in any way.

Participant's name	
Participant's signature	
Witness	
Date	

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study coordinator:

Study Coordinator's Name: Prof N Roman

University of the Western Cape

Private Bag X17, Belville 7535

Telephone: 021 959 2277/2970 / Email: nroman@uwc.ac.za

Appendix IV: Questionnaire (used as part of results in Chapters 7-9)

Questionnaire

Please complete the following by circling the correct response.

Section A

Gender	Male		Female		
Age					
Grade					
Race	Coloured	Black / African	White	Indian / Asian	
Home language	Afrikaans	English	isiXhosa	Other	
Who do you live with	Both Parents	Mother Only	Father Only	Caregiver / Guardian	Alone
Are your parents	Married	Living together but not married	Single, do not live together and are not married	Single because he / she is widowed	Single because he / she is divorced

Section B: Decision Making Styles

The next section consists of two parts, Part I and II, that looks at the decisions you make.

Part I:

Instructions

People differ in how comfortable they feel about making decisions. Please indicate how you feel about making decisions by ticking the response which is most applicable to you.

	True for me	Sometimes true	Not true for me
(1) I feel confident about my ability to make decisions	[]	[]	[]
(2) I feel inferior to most people in making decisions	[]	[]	[]
(3) I think that I am a good decision maker	[]	[]	[]
(4) I feel so discouraged that I give up trying to make decisions	[]	[]	[]
(5) The decisions I make turn out well	[]	[]	[]
(6) It is easy for other people to convince me	[]	[]	[]

that their decision rather than mine is the correct one [] [] []

PART II

Instructions:

People differ in the way they go about making decisions. Please indicate how you make decisions by ticking for each question the response which best fits your usual style.

When making decisions -	True for me	Sometimes true	Not true for me
1. I feel as if I'm under tremendous time pressure when making decisions	[]	[]	[]
2. I like to consider all of the alternatives	[]	[]	[]
3. I prefer to leave decisions to others	[]	[]	[]
4. I try to find out the disadvantages of all alternatives	[]	[]	[]
5. I waste a lot of time on trivial matters before getting to the final decision	[]	[]	[]
6. I consider how best to carry out the decision	[]	[]	[]
7. Even after I have made a decision I delay acting upon it	[]	[]	[]
8. When making decisions I like to collect lots of information	[]	[]	[]
9. I avoid making decisions	[]	[]	[]
10. When I have to make a decision I wait a long time before starting to think about it	[]	[]	[]
11. I do not like to take responsibility for making decisions	[]	[]	[]
12. I try to be clear about my objectives before choosing	[]	[]	[]
13. The possibility that small things might go wrong causes me to swing abruptly in my preferences	[]	[]	[]

14 If a decision can be made by me or another person I let the other person make it [] [] []

When making decisions -

True for me Sometimes true Not true for me

15 Whenever I face a difficult decision I feel pessimistic about finding a good solution [] [] []

16 I take a lot of care before choosing [] [] []

17 I do not make decisions unless I really have to [] [] []

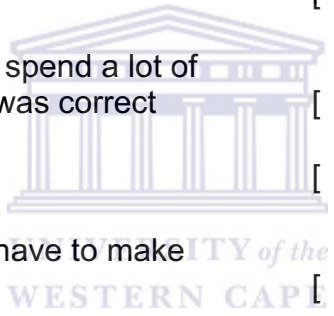
18 I delay making decisions until it is too late [] [] []

19 I prefer that people who are better informed decide for me [] [] []

20 After a decision is made I spend a lot of time convincing myself it was correct [] [] []

21 I put off making decisions [] [] []

22 I cannot think straight if I have to make decisions in a hurry [] [] []



Section C: Parenting Styles

The following questions are about the attitudes and behaviours of your parents or guardians. If you stay with someone other than your mother, who is a female still complete the mother / female parenting form, if you stay with someone other than your father, who is male still complete the father / male form. If you do not stay with both your parents / guardians complete only the relevant form and leave the other section blank.

MOTHER / FEMALE PARENTING FIGURE FORM				
<i>This questionnaire lists various attitudes and behaviours of parents. As you remember your MOTHER would you place a tick in the most appropriate box next to each question.</i>				
Was responsive to my feelings or needs	Not at all like her	Not like her	Somewhat like her	A lot like her
Used physical punishment as a way of disciplining me.	Not at all like her	Not like her	Somewhat like her	A lot like her
Took my desires into account before asking me to do something.	Not at all like her	Not like her	Somewhat like her	A lot like her
When I asked why I had to conform, [she stated]: because I said so, or I am your parent and I want you to.	Not at all like her	Not like her	Somewhat like her	A lot like her
Explained to me how she felt about my good and bad behaviour.	Not at all like her	Not like her	Somewhat like her	A lot like her
Spanked me when I was disobedient.	Not at all like her	Not like her	Somewhat like her	A lot like her
Encouraged me to talk about my troubles.	Not at all like her	Not like her	Somewhat like her	A lot like her
Found it difficult to discipline me.	Not at all like her	Not like her	Somewhat like her	A lot like her
Encouraged me to freely express myself even when I disagreed with them.	Not at all like her	Not like her	Somewhat like her	A lot like her
Punished me by taking privileges away from me with little if any explanations.	Not at all like her	Not like her	Somewhat like her	A lot like her
Emphasized the reasons for rules.	Not at all like her	Not like her	Somewhat like her	A lot like her

Gave comfort and understanding when I was upset.	Not at all like her	Not like her	Somewhat like her	A lot like her
Yelled or shouted when I misbehaved.	Not at all like her	Not like her	Somewhat like her	A lot like her
Gave praise when I was good.	Not at all like her	Not like her	Somewhat like her	A lot like her
Gave into me when I caused a commotion about something.	Not at all like her	Not like her	Somewhat like her	A lot like her
Exploded in anger towards me.	Not at all like her	Not like her	Somewhat like her	A lot like her
Threatened me with punishment more often than actually giving it.	Not at all like her	Not like her	Somewhat like her	A lot like her
Took into account my preferences in making plans for the family.	Not at all like her	Not like her	Somewhat like her	A lot like her
Grabbed me when I was being disobedient.	Not at all like her	Not like her	Somewhat like her	A lot like her
Stated punishments to me and did not actually do them.	Not at all like her	Not like her	Somewhat like her	A lot like her
Showed respect for my opinions by encouraging me to express them.	Not at all like her	Not like her	Somewhat like her	A lot like her
Allowed me to give input into family rules.	Not at all like her	Not like her	Somewhat like her	A lot like her
Scolded and criticized me to make me improve.	Not at all like her	Not like her	Somewhat like her	A lot like her
Spoiled me.	Not at all like her	Not like her	Somewhat like her	A lot like her
Gave me reasons why rules should be obeyed.	Not at all like her	Not like her	Somewhat like her	A lot like her
Uses threats as punishment with little or no justification.	Not at all like her	Not like her	Somewhat like her	A lot like her
Had warm and intimate times together with me.	Not at all like her	Not like her	Somewhat like her	A lot like her
Punished me by putting me off somewhere alone with little if any explanations.	Not at all like her	Not like her	Somewhat like her	A lot like her

Helped me to understand the impact of my behaviour by encouraging me to talk about the consequences of my own actions.	Not at all like her	Not like her	Somewhat like her	A lot like her
Scolded and criticized me when my behaviour didn't meet their expectations.	Not at all like her	Not like her	Somewhat like her	A lot like her
Explained the consequences of my behaviour.	Not at all like her	Not like her	Somewhat like her	A lot like her
Slapped me when I misbehaved.	Not at all like her	Not like her	Somewhat like her	A lot like her

FATHER / MALE PARENTING FIGURE FORM

This questionnaire lists various attitudes and behaviours of parents. As you remember your FATHER would you place a tick in the most appropriate box next to each question

Was responsive to my feelings or needs	Not at all like him	Not like him	Somewhat like him	A lot like him
Used physical punishment as a way of disciplining me.	Not at all like him	Not like him	Somewhat like him	A lot like him
Took my desires into account before asking me to do something.	Not at all like him	Not like him	Somewhat like him	A lot like him
When I asked why I had to conform, [he stated]: because I said so, or I am your parent and I want you to.	Not at all like him	Not like him	Somewhat like him	A lot like him
Explained to me how he felt about my good and bad behaviour.	Not at all like him	Not like him	Somewhat like him	A lot like him
Spanked me when I was disobedient.	Not at all like him	Not like him	Somewhat like him	A lot like him
Encouraged me to talk about my troubles.	Not at all like him	Not like him	Somewhat like him	A lot like him
Found it difficult to discipline me.	Not at all like him	Not like him	Somewhat like him	A lot like him
Encouraged me to freely express myself even when I disagreed with them.	Not at all like him	Not like him	Somewhat like him	A lot like him

Punished me by taking privileges away from me with little if any explanations.	Not at all like him	Not like him	Somewhat like him	A lot like him
Emphasized the reasons for rules	Not at all like him	Not like him	Somewhat like him	A lot like him
Gave comfort and understanding when I was upset.	Not at all like him	Not like him	Somewhat like him	A lot like him
Yelled or shouted when I misbehaved.	Not at all like him	Not like him	Somewhat like him	A lot like him
Gave praise when I was good.	Not at all like him	Not like him	Somewhat like him	A lot like him
Gave into me when I caused a commotion about something.	Not at all like him	Not like him	Somewhat like him	A lot like him
Exploded in anger towards me.	Not at all like him	Not like him	Somewhat like him	A lot like him
Threatened me with punishment more often than actually giving it.	Not at all like him	Not like him	Somewhat like him	A lot like him
Took into account my preferences in making plans for the family.	Not at all like him	Not like him	Somewhat like him	A lot like him
Grabbed me when I was being disobedient.	Not at all like him	Not like him	Somewhat like him	A lot like him
Stated punishments to me and did not actually do them.	Not at all like him	Not like him	Somewhat like him	A lot like him
Showed respect for my opinions by encouraging me to express them.	Not at all like him	Not like him	Somewhat like him	A lot like him
Allowed me to give input into family rules.	Not at all like him	Not like him	Somewhat like him	A lot like him
Scolded and criticized me to make me improve	Not at all like him	Not like him	Somewhat like him	A lot like him
Spoiled me.	Not at all like him	Not like him	Somewhat like him	A lot like him
Gave me reasons why rules should be obeyed.	Not at all like him	Not like him	Somewhat like him	A lot like him
Uses threats as punishment with little or no justification.	Not at all like him	Not like him	Somewhat like him	A lot like him

Had warm and intimate times together with me.	Not at all like him	Not like him	Somewhat like him	A lot like him
Punished me by putting me off somewhere alone with little if any explanations.	Not at all like him	Not like him	Somewhat like him	A lot like him
Helped me to understand the impact of my behaviour by encouraging me to talk about the consequences of my own actions.	Not at all like him	Not like him	Somewhat like him	A lot like him
Scolded and criticized me when my behaviour didn't meet their expectations.	Not at all like him	Not like him	Somewhat like him	A lot like him
Explained the consequences of my behaviour.	Not at all like him	Not like him	Somewhat like him	A lot like him
Slapped me when I misbehaved.	Not at all like him	Not like him	Somewhat like him	A lot like him

Section D: Lifestyle Profile II

Instructions: This section contains statements about your *present* way of life or personal habits.

Please respond to each item as accurately as possible, and try not to skip any item. Indicate the frequency with which you engage in each behaviour by circling:

N for never, **S** for sometimes, **O** for often, or **A** for always

	Never N	Sometimes S	Often O	Always A
1. Discuss my problems and concerns with people close to me.				
2. Choose a diet low in fat, saturated fat, and cholesterol.				
3. Report any unusual signs or symptoms to a physician or other health professional.				
4. Follow a planned exercise program.				
5. Get enough sleep.				
6. Feel I am growing and changing in positive ways.				
7. Praise other people easily for their achievements.				
8. Limit use of sugars and food containing sugar (sweets).				

9. Read or watch TV programs about improving health.				
10. Exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber).				
11. Take some time for relaxation each day.				
12. Believe that my life has purpose.				
13. Maintain meaningful and fulfilling relationships with others.				
14. Eat 6-11 servings of bread, cereal, rice and pasta each day.				
15. Question health professionals in order to understand their instructions.				
16. Take part in light to moderate physical activity (such as sustained walking 30-40 minutes 5 or more times a week).				
17. Accept those things in my life which I cannot change.				
18. Look forward to the future.				
19. Spend time with close friends.				
20. Eat 2-4 servings of fruit each day.				
21. Get a second opinion when I question my health care provider's advice.				
22. Take part in leisure-time (recreational) physical activities (such as swimming, dancing, bicycling).				
23. Concentrate on pleasant thoughts at bedtime.				
24. Feel content and at peace with myself.				
25. Find it easy to show concern, love and warmth to others.				
26. Eat 3-5 servings of vegetables each day.				
27. Discuss my health concerns with health professionals.				
28. Do stretching exercises at least 3 times per week.				
29. Use specific methods to control my stress.				
30. Work toward long-term goals in my life.				
31. Touch and am touched by people I care about.				
32. Eat 2-3 servings of milk, yogurt or cheese each day.				
33. Inspect my body at least monthly for physical changes/danger signs.				

34. Get exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators, parking car away from destination and walking).				
35. Balance time between work and play.				
36. Find each day interesting and challenging.				
37. Find ways to meet my needs for intimacy.				
38. Eat only 2-3 servings from the meat, poultry, fish, dried beans, eggs, and nuts group each day.				
39. Ask for information from health professionals about how to take good care of myself.				
40. Check my pulse rate when exercising.				
41. Practice relaxation or meditation for 15-20 minutes daily.				
42. Am aware of what is important to me in life.				
43. Get support from a network of caring people.				
44. Read labels to identify nutrients, fats, and sodium content in packaged food.				
45. Attend educational programs on personal health care.				
46. Reach my target heart rate when exercising.				
47. Pace myself to prevent tiredness.				
48. Feel connected with some force greater than myself.				
49. Settle conflicts with others through discussion and compromise.				
50. Eat breakfast.				
51. Seek guidance or counselling when necessary.				
52. Expose myself to new experiences and challenges.				

Appendix V: Journal peer-review - Reviewer comments (Chapter Four)

The manuscript which is presented as Chapter Four in this thesis entitled *A systematic review of the relationship between parenting styles and children's physical activity* was submitted to the African Journal for Physical Health Education, Recreation and Dance. The reviewer(s) feedback to the main author, and the author's engagement and response to the feedback is presented below:

Reviewer(s) feedback / comments / correspondence:

Dear author, the following comments were made by the reviewers to consider for possible publication in the journal:

- This is a good study. It was however badly written up.
- Many areas of the article require revision as can be seen in the comments made in the text.
- The article may be accepted after satisfactory adjustments.

Regards,

Special Edition Editor

Author's response and engagement regarding reviewer(s) feedback / comments / correspondence:

Dear Editor,

Thank you for considering my manuscript for review for the special edition of the African Journal for Physical Health Education, Recreation and Dance. I have addressed the reviewer(s) comments and hope that I have done so to the reviewer(s) satisfaction.

Kind regards,

Eugene Lee Davids

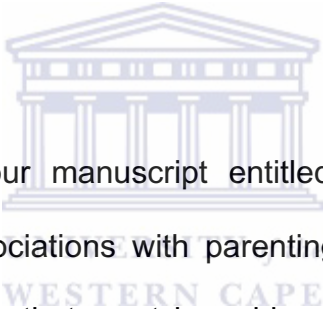


Appendix VI: Journal peer-review - Reviewer comments (Chapter Six)

The manuscript which is presented as Chapter Six in this thesis entitled *Decision making styles: A systematic review of their associations with parenting* was submitted to the Adolescent Research Review. The reviewer(s) feedback to the main author, and the author's engagement and response to the feedback is presented below:

Reviewer(s) feedback / comments / correspondence:

Dear Mr Davids,



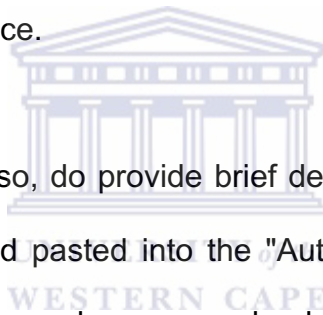
Thank you for submitting your manuscript entitled "Decision making styles: A systematic review of the associations with parenting". The reviewers have made recommendations for revisions that must be addressed before your article will be considered further for publication in the Adolescent Research Review. The reviewers and I are quite impressed by your work, but would like some clarifications before determining whether to pursue it for publication in our Journal.

Before you resubmit, do be sure to read and carefully consider the reviewers' comments provided below. In addition and to expedite the review of your manuscript, do be sure to comply with the following instructions.

It would be most appreciated if you could resubmit within 30 days. (If that time frame is inconvenient, do be sure to let the editor know well in advance of the 30 day due

date that will be recorded automatically in the electronic manager.) When you do resubmit, please do include a brief letter that describes how you have addressed each of the revision requests. That letter (along with my close reading of your manuscript) will determine whether the manuscript qualifies for external review or if the manuscript may be accepted as is. Do know, of course, that the provision of revisions does not guarantee the eventual acceptance of the manuscript.

Your revised version cannot be submitted in ps or pdf. In the event that your revised version is accepted, your manuscript will be sent to production without delay only if we have those source files on hand. Submissions without source files will be returned prior to final acceptance.

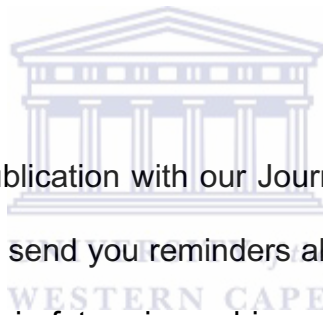


If you already have not done so, do provide brief descriptions of all authors. These descriptions should be cut and pasted into the "Author Biographies" or "Research Interests and Affiliation" section when you upload your manuscript. These short statements are published along with articles; they generally should include authors' professional affiliations, academic backgrounds, and research interests. For example: Jane Author is an Assistant Professor at the University of Illinois. She received her doctorate in _____ from _____. Her major research interests include _____.

In addition, if you have not already done so, we will need a statement regarding "Author Contributions" (placed on the acknowledgment page when you upload materials). Please see the journal's instructions to authors. For example, we suggest the following kind of format (please use initials to refer to each author's contribution):

AB conceived of the study, participated in its design and coordination and drafted the manuscript; JY participated in the design and interpretation of the data; MT participated in the design and coordination of the study and performed the measurement; ES participated in the design of the study and performed the statistical analysis; FG conceived of the study, and participated in its design and coordination and helped to draft the manuscript. All authors read and approved the final manuscript.

Should you have any questions, do feel free to contact me via e mail. I very much appreciate your cooperation in helping the process run as smoothly and efficiently as we possibly can.



If you decide not to pursue publication with our Journal, please do be so kind as to let me know so that I need not send you reminders about revision due dates and not try to save room for your work in future journal issues. In this regard, know that the journal has the practice of asking for revisions only when we are quite certain that the results will be positive. If we are uncertain, I will state so in my own review, provided below.

Given the importance of your work to the study of adolescence, I certainly hope that you intend to revise. I would welcome the opportunity to work with you and look forward to the receiving your revised manuscript soon. Thank you again for considering the Adolescent Research Review.

Sincerely yours,

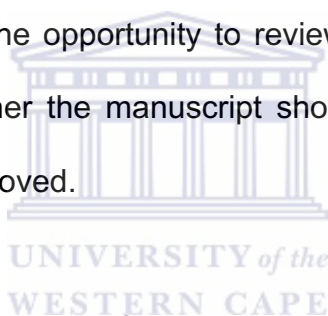
Roger J. R. Levesque

Editor in Chief

Adolescent Research Review

COMMENTS FOR THE AUTHOR:

Reviewer #1: Thank you for the opportunity to review this interesting manuscript. I was asked to focus on whether the manuscript should be pursued for publication and, if so, how it could be improved.

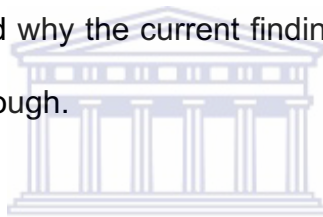


I am torn about the first issue until the following issues could be addressed, in terms of improvement. My sense is that the authors could address the issues. I focus on three.

First, the writing is overall good, but it does need improvement. Notably, the punctuation and grammar is often off. There are numerous places in need of commas that just do not have them. Also, there are huge paragraphs with many thoughts in them; those need to be cut into two or three paragraphs that are very clear. Otherwise readers will get lost. Lastly, in this regard, there are loads of paragraphs that would benefit from closing sentences, especially in the front end of the paper.

Second, this one is more of a substantive point. The author uses "culture" in too loose a way. This will be problematic for readers who actually know more about cultural issues. I think the author refers to society, not culture. At any rate, this needs to be reconsidered.

Third, the author needs to make sure that the study makes an important contribution. When I read the conclusion, I am reminded that a key finding, if not the key finding, is that maladaptive parenting associates with maladaptive decisions by youth. I am not sure what is ground-breaking here. The author needs to make the case as to why the study is important and why the current findings are important. The currently study does not do that well enough.



Reviewer #2: ADRR-D-15-0003
UNIVERSITY of the
WESTERN CAPE
Supplemental comments from the editor-in-chief:

Given that this manuscript was considered an invited review, I sent it to one reviewer and requested that they focus on what could be improved. As you will see, the comments are positive and do raise important points. In addition to addressing those, please also address these:

For manuscripts that survive initial review, the journal does NOT have page limits, but please use your pages wisely. Know that I am absolutely fine with having you take the additional space you need. The overall goal is to ensure that readers get the best picture possible of what you studied, why, what you found, and its significance

to the developmental understanding of adolescence. The overall standard for acceptance continues to be the extent to which the manuscript makes an original and substantive contribution to the study of adolescence. Abstract: line before last: it does not seem to be wise to emphasize that no studies exist in Africa and Australia. It would be different if those from other continents were robust and large in number; but that is not the case. Some continents have very little research. Clear?

Please use American Standard English as your default (your word processing program should allow for that). So, use categorized... center ...behaviors...

Page 3, the three paragraphs here are examples of those that need strong closing sentences.



Page 4, the paragraph here is an example of one that could be expanded into multiple paragraphs in order to get key points across.

Line 20, you need an "and" before (ii)

Throughout (and this is a journal style issue) do change relation/s to relationship/s unless you are referring to family relations (as in kinship).

THROUGHOUT THE MANUSCRIPT:

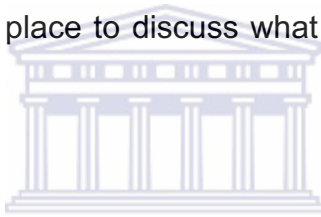
Please use double quotations rather than single quotations as the default (see, e.g., page 5, line 50 or so of the pdf).

Page 6, please redo the presentation of the current study section. Line 7, remove the colon. You also may want to add a few sentences so that it becomes a full paragraph.

Line 10, remove the (i), then have it appear as its own paragraph.

Line 30 and line 43, also remove the enumeration. Clear?

Regarding what you have on page 6 (before the methods): This is not the place to discuss contributions. It is the place to discuss what you will study and its potential importance.



Language about contributions need to come in the discussion section. So, this page needs considerable revision. If this is not clear, please do let me know.

Generally, if a sentence begins with an adjective or phrase, it needs to be separated by a comma. For example, page 10: Often, situations...

Also, generally, words like "therefore" need to be separated by commas.

You have a lot of places in the main text that need commas. There also are numerous typos. Please do revisit this as the journal does not use a copy editor; we have a typesetter, which means that we need to do the heavy lifting in this regard.

Page 14: the conclusion needs to highlight key contributions that readers will find persuasive as important substantive contributions. Please revisit.

Acknowledgement. The "Authors' Contributions" we need a statement to the effect that all authors read and approved the final manuscript. This typically goes at the end: All authors read and approved the final version of this manuscript.

I think that covers it from my side of things. Know that I am looking forward to reading your revisions.

Cordially,

Roger J. R. Levesque

Editor in Chief

Adolescent Research Review



Author's response and engagement regarding reviewer(s) feedback / comments / correspondence:

Dear Prof Levesque,

Thank you for the invitation to have my manuscript considered for possible publication in the Adolescent Research Review.

I have attached to this my manuscript entitled *“Decision Making Styles: A Systematic Review of the Associations with Parenting”*. I have addressed the reviewers’ comments and hope that I have done so to their satisfaction. Below is an outline of how I have addressed the revisions suggested by the reviewers:

Reviewer 1:

The first reviewer made three important comments regarding the manuscript. The first revision suggested by the reviewer pertained largely to punctuation and grammar. In addressing this comment the manuscript was sent for language editing after all the recommended changes were made.

The second comment to consider as part of the revision process was regarding the use of the term “culture”, which the reviewer suggested rather read “society”. In consulting literature on the use of the terms Roets, Schwartz and Guan (2012) have mentioned that the terms “culture” and “society” are often used interchangeably. However, they also mentioned that the term “society” allows one to consider the findings not only limited to the cultural values of the groups examined but also to examine a number of differences which could be related to economic, political or social understandings which are often excluded when using the term “culture”. I have therefore changed all instances of “culture” to “society” in the manuscript. This was a valuable suggestion when taking the understanding of Roets, Schwartz and Guan (2012) into consideration.

The third comment made by the reviewer was regarding the important contribution of the manuscript as well as how “ground-breaking” the key findings are to the field studied. I have addressed the first part of the third comment of the reviewer, by moving the section related to the significant contributions of the review to the discussion section, as it was better suited there based on the second reviewers comments as well. The second part of the reviewers third comments for revision was related to how “ground-breaking” the key finding was. I would like to challenge the comment regarding the key findings not being “ground-breaking”, as the nature of systematic reviews are using secondary findings to assist in the understanding and synthesizing answers to the research question. In the current study the question was: *What is the relationship between decision making styles and parenting approaches in existing literature?* Furthermore, the aim of systematic reviews are to provide summaries of secondary studies that are accurate and that synthesizes the findings presented in the available body of knowledge as well as informs future research by highlighting the gaps within current literature (Stewart, 2014). Systematic reviews, however, are evidence based answers to questions proposed that use secondary findings to generate answers. The review contributes to what currently exists within literature by making the distinction of adaptive and maladaptive decision making styles, when considering the vast number of decision making styles that exist within literature. The review also addresses the question regarding the relationship between decision making styles and parenting approaches by synthesizing the findings of 14 studies to reach an answer that is based on evidence, which is key in a systematic review. Wright, Brand, Dunn and Spindler’s (2007) also mentions that the findings and conclusions reached within a systematic review are dependent on the findings presented within the studies reviewed.

Therefore, I am in disagreement with the reviewer's comment that one of the key findings is not "ground-breaking" enough.

Reviewer 2:

The second reviewer made a number of important comments which were related to: (i) linguistic, grammatical and punctuation errors in the manuscript, (ii) highlighting the key contributions of the review and (iii) presentation of findings in the abstract. I have addressed these comments for revision by: (i) Submitting the manuscript to a language editor to correct any linguistic, grammatical or punctuation errors. (ii) The initial contributions section was moved to the discussion section as suggested in the reviewers comments, and I have also reviewed the significant contributions that the review makes to the study of research on adolescent development and parenting. (iii) The suggestions regarding the presentation of findings in the abstract were also applied by presenting the results regarding the geographical locations of the studies as being accounted for by the limited research that exist within some continents when considering the associations examined within the review.

Thank you for taking time out to review the manuscript and for providing me with valuable comments and suggestions.

Kind regards,

Eugene Lee Davids

References

Roets, A., Schwartz, B., & Guan, Y. (2012). The tyranny of choice: A cross-cultural investigation of maximizing-satisficing effects on well-being. *Judgment and Decision Making*, 7(6), 689-704.

Stewart, R. (2014). Changing the world one systematic review at a time: A new development methodology for making a difference. *Development Southern Africa*, 31(4), 581-590.

Wright, R.W., Brand, R.A., Dunn, W., & Spindler, K.P. (2007). How to write a systematic review. *Clinical Orthopaedics and Related Research*, 455, 23-29.



Appendix VII: Journal peer-review - Reviewer comments (Chapter Seven)

The manuscript which is presented as Chapter Seven in this thesis entitled *The effect of family structure on decision making, parenting styles and healthy lifestyle behaviour of adolescents in rural South Africa* was submitted to the African Journal for Physical Health Education, Recreation and Dance. The reviewer(s) feedback to the main author, and the author's engagement and response to the feedback is presented below:

Reviewer(s) feedback / comments / correspondence:

Dear author, the following comments were made by the reviewers to consider for possible publication in the journal:



Your article is too long. Try to shorten your introduction and discussion, respectively. Also update your references and restructure your methodology. This article is publishable:

- Abstract:

What is your conclusion?

- Introduction:

Too long, keep it between 2-2 and a half pages.

Some references are too old (as indicated on manuscript).

- Methodology:

Have separate headings for 'ethics' and 'data collection procedures'.

Report on own Cronbach alpha scores and not previous research.

- Results:

Where is the reporting of MANOVA results?

- Discussion:

Too long.

Regards,

Editor-in-Chief



Author's response and engagement regarding reviewer(s) feedback / comments / correspondence:

Dear Editor,

Manuscript Revision: African Journal for Physical, Health Education, Recreation and Dance

Thank you for considering my manuscript for review and publication in the African Journal for Physical Health Education, Recreation and Dance.

I have attached to this my manuscript entitled "*The effect of family structure on decision making, parenting styles and healthy lifestyle behaviour of adolescents in rural South Africa*". I have addressed the reviewer(s) comments and hope that I have done so to his/her satisfaction. Below is an outline of how I have addressed the revisions suggested by the reviewer(s):

The reviewer(s) made three important comments regarding the manuscript. The first revision suggested by the reviewer pertained largely to the manuscript length and some references being out-dated. In addressing this comment I have reduced the page numbers of both the introduction and discussion as indicated by the reviewer. In my attempts to decrease the page numbers, I have reduced the introduction from 9 pages to 3 and a half pages, additionally the discussion was also reduced to 3 pages. The references as indicated by the reviewer as out-dated were removed and replaced by more current references, with the exception of two references which were related largely to theoretical unpinning's in the field of Judgement and Decision Making where more current references were not available.

The second comment made by the reviewer suggested including my own Cronbach alpha scores as well as presenting the insignificant main effects of family structure in tabular form. In addressing this, I have removed the section where I mention previous Cronbach alpha scores published with the scores which were obtained within the current study. Additionally, I have also added the main effect (F) in Table 2 of the manuscript to satisfy the suggestion made by the reviewer regarding the presentation of the MANOVA results.

The third comment made by the reviewer was regarding the methodology section. It was suggested that a separate section be included for research procedure and ethical considerations. In addressing this comment, I added separate sections for both research procedure and ethical considerations.

Thank you for taking time out to review the manuscript and for providing me with valuable comments and suggestions.

Kind regards,

Eugene Lee Davids



Appendix VIII: Journal peer-review - Reviewer comments (Chapter Nine)

The manuscript which is presented as Chapter Nine in this thesis entitled *A model examining the relationship between parenting, and decision making on healthy lifestyle behaviours of adolescents in rural Western Cape* was submitted to the African Journal for Physical Health Education, Recreation and Dance. The reviewer(s) feedback to the main author, and the author's engagement and response to the feedback is presented below:

Reviewer(s) feedback / comments / correspondence:

Dear author, the following comments were made by the reviewer(s) to consider for possible publication in the journal:



- Abstract:

Were the associations established by Social Learning Theory or socialisation?

- Manuscript body:

I have indicated repetition in the manuscript.

What about the role of grandmothers in parenting as this is common in South Africa? Consult recent alternative styles of parenting such as the conscious parenting or transformative approach.

Current study section – specify the three constructs

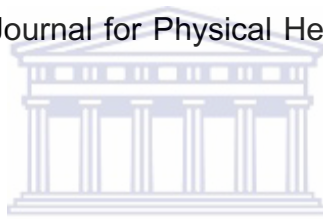
Regards,

Special Edition Editor

Author's response and engagement regarding reviewer(s) feedback / comments / correspondence:

Dear Editor,

Manuscript Revision: African Journal for Physical Health Education, Recreation and Dance



Thank you for considering my manuscript for review for the special edition of the African Journal for Physical Health Education, Recreation and Dance. I have addressed the reviewer(s) comments and hope that I have done so to the reviewer(s) satisfaction. Below is an outline of how I have addressed the revisions suggested by the reviewer(s):

- Repetition of sections

I have removed the sections that the reviewer(s) have indicated as being repetitive and have highlighted it on the manuscript.

- Grammatical errors

The manuscript has gone for language editing to address any grammatical errors which were present in the manuscript.

- Asked to relate constructs in current study section with constructs in the theory

The paragraph directly after the comment made by the reviewer(s) explains the relationship between the constructs in the study with the theoretical constructs. I have highlighted this section in the revised version of the manuscript.

- Why grandmothers weren't considered

The study focused on maternal and paternal parental figures, and not considering the role of grandmothers which are common parental figures in South Africa could be considered as a limitation of this study, and can be possible recommendation for future research.

- Recent constructs of parenting: 'conscious parent' and 'transformative approach'?

The reviewer has asked that more recent constructs of parenting styles be considered such as the 'conscious parent' and the 'transformative approach'. I am not in agreement with the comments made by the reviewer, as the construct of 'conscious parent' has been discussed by Dr Tsabary in her 'self-help' book that would be deemed more of pop-culture literature rather than academic. This concept has only been researched by one researcher using the Triple P programme of parenting (Rahmqvist, Wells & Sarkadi, 2014).

Thank you for taking time out to review the manuscript and for providing me with valuable comments and suggestions. I hope that the revised manuscript would satisfy the criteria for publication in your journal.

Kind regards,

Eugene Lee Davids

