The role of the family in the development of a healthy lifestyle in urban adolescents

by

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Submitted in partial fulfilment in accordance with the requirements for the degree

MAGISTER EDUCATIONAL PSYCHOLOGY

in the

Faculty of Education

Department of Educational Psychology

University of Pretoria

Supervisor

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PRETORIA

JUNE 2018

DECLARATION

I, Mariëtte van Zyl, student number 97049248, hereby declare that this dissertation, "*The role of the family in the development of a healthy lifestyle in urban adolescents,*" submitted in accordance with the requirements for the Magister Educationis (Educational Psychology) degree at University of Pretoria, is my own original work and has not previously been submitted to any other institution of higher learning. All sources cited or quoted in this research paper are indicated and acknowledged with a comprehensive list of references.

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June 2018

ABSTRACT

It has been found that 50% of the South African population is overweight, 9.8% suffers from diabetes and 47.1% is physically inactive. Consequently, unhealthy lifestyles characterised by too little exercise and the consumption of large amounts of fat and refined sugar expose adolescents to an increased risk of health problems. Exposure to either healthy or unhealthy living is provided primarily by parents and, therefore, the family environment is a key role player in the development of a suitable lifestyle. The focus of this study was to understand how the family, as a unit, may create a lifestyle that includes a healthy diet and the physical exercise that are beneficial to all the members of the family.

I followed a qualitative method approach and used a multiple case study design to explore the complexity of family functioning. The six dimensions (problem solving, communication, roles, affective responsiveness, affective involvement and behaviour control) of the McMaster Model were employed to conceptualise family behaviour. I relied on criterion sampling to select three families comprising of two-parent households with siblings of whom one child was an adolescent. The requisite data was generated from semi-structured interviews, photovoice messages and lifestyle journals. I used deductive thematic analysis to identify and interpret themes within the data. The findings in the study indicated that effective family functioning, as described by the six dimensions of the McMaster Model, contribute to healthier lifestyle choices. Family meal times, in the form of rituals, provided a special setting for families to deal with family problems, and discuss roles and personal development. The families incorporated values with standards for behaviour and used cell phone applications to monitor and support lifestyle choices.

"For I know the plans I have for you, declares the Lord, plans to prosper you and not to harm you, plans to give you hope and a future" – Jeremiah 29:11. Thank you, Heavenly Father, that you constantly provided me with the possibilities and resources required to complete my studies and research.

"Feelings of worth can flourish only in an atmosphere where individual differences are appreciated, mistakes are tolerated, communication is open, and rules are flexible – the kind of atmosphere that is found in a nurturing family" – Virginia Satir. Janus, my best friend and soul mate, thank you for believing in me from the beginning. I appreciate you as a husband because you give love, understanding and guidance when I need it the most. My two beautiful daughters, thank you that you patiently gave me the time to focus on my studies and research. I hope that you are inspired to continuously learn and grow as individuals.

"Motivation is what gets you started, commitment is what keeps you going" – Unknown. Prof Salomé, thank you for your commitment in this research. Your guidance and advice enabled me to persevere.

LIST OF TABLES

CHAPTER 1

OVERVIEW, RATIONALE, RESEARCH DESIGN AND METHODOLOGY

1.1 INTRODUCTION

In this mini-dissertation I report on a study I conducted to examine the role of the family in the development of a healthy lifestyle in urban adolescents. In this first chapter I provide a brief introduction and background to the study, and describe the methodology that I followed.

In 2016, the World Health Organisation (WHO) indicated that 51.9% of the South African population is overweight, 9.8% suffers from diabetes and 47.1% is physically inactive. In addition, Peer and Ganie (2016) confirm that one in five boys and a quarter of the girls in South Africa are overweight or obese. The statistics provided by the WHO (2016) are regarded by some researchers to be the result of unhealthy lifestyles characterised by too little exercise and the consumption of large amounts of fat and refined sugar (Mokabane, Mashao, Van Staden, Potgieter, & Potgieter, 2014). In South Africa, 43% of the deaths recorded annually are due to unhealthy lifestyle choices (Spires et al., 2016). According to Spires et al. (2016) non-communicable diseases are placing a burden on the South African health system and negatively affecting quality of life of almost all men, women and children.

The family unit is fundamental in the establishment of healthy/unhealthy lifestyle choices in children, Adamo & Brett, 2013; Peters, Parletta, Campbell, & Lynch, 2014; Ray & Roos, 2012; Spear et al., 2007). Parent-child interaction, parental feeding practices and knowledge about nutrition affect family members' food preferences and levels of physical activity (Basset, Chapman, & Beagan, 2007; Golley, Hendrie, Slater, & Corsini, 2010; Peters et al., 2014; Scaglioni, Salvioni, & Galimberti, 2008). In addition, peer interaction and television viewing are systemic influences to consider in the development of a healthy lifestyle (Elsabach, Soliman, & Hassan, 2016; Golan & Crow, 2004). The objective of this study was to explore the factors which adolescents regard important in supporting a healthy lifestyle and the extent to which family functioning supported, or did not support, the development of a healthy lifestyle.

1.2 BACKGROUND OF THE STUDY

Non-communicable diseases are defined as chronic diseases such as cardiovascular diseases, cancers and diabetes that stem from genetic, physiological and environmental behaviours (WHO, 2018). The South African government wants to lower the risk of non-communicable diseases. For example, the Minister of Finance introduced a tax on sugar-sweetened beverages in the February 2016 Budget Speech, effective 1 April 2017 (Gordhan, 2016). This announcement derived from the need to reduce the excessive sugar intake by the majority of South Africans (Department of National Treasury, 2016). According to *the South African healthy eating guidelines*, meals should include a variety of products such as proteins, fruit, vegetables, starch and dairy products (Department of Health, 2012). The aim should be to consume lean type of meats, limit fat intake and consume five portions of fruit and vegetables daily (Department of Health, 2012). Small lifestyle changes may impact positively on health. It is, therefore, key to optimise healthy eating and physical activity for the whole family (Friedland, 2011).

According to Roman et al. (2016), families in South Africa may be described as diverse. In keeping with the notion of a modern society and diversity, it is essential that family functioning is viewed with a new perspective as families comprise "a broad spectrum and fluid reshaping of relational household patterns" and "a variety of family arrangements" (Walsh, 2012, p. 3). The complexity of familial relations and influences may be understood in the context of the interconnectedness of each member of the family (Ryan, Epstein, Keitner, Miller, & Bishop, 2005). In addition, family members endeavour to build relationships both inside and outside the family regardless of the numerous challenges experienced in society (Walsh, 2012). Accordingly, Walsh (2012) steers away from describing a family as normal as no family is immune from problems.

Reciprocal influences in the family system have been identified as a key determinant in health-related decisions (Davids et al., 2015). Life cycle changes affect the family with Bissonnette and Contento (2001) arguing that, in adolescence, children begin to understand at an abstract level the healthiness of food products. Consequently, parents then become less responsible for their children's food decisions than was formerly the case (Bassett et al., 2007). The family context provides a platform for adolescents to develop the autonomy to make their own food choices. The decision about food is an actively co-constructed process between adolescents and parents (Adamo & Brett, 2013; Basset et al., 2007; Scaglioni et al., 2008). For example, Golan and Crow (2004) showed that families that eat meals together tend to demonstrate healthier eating patterns, possibly because the parents model healthier food choices. On the other hand, Patrick

and Nicklas (2005) found that busy parents are less likely to prepare healthy meals because they rely heavily on fast or frozen foods. Unfortunately, large quantities of fast food tend to contain high levels of sugar and fat, thus making these very unhealthy choices for family meals. Unhealthy foods are often blamed for the current high occurrence of non-communicable diseases such as type 2 diabetes, obesity, fatty liver diseases and heart disease (Mokabane et al., 2014; Rossouw, Grant, Viljoen, 2012).

I have seen children at the age of three diagnosed with type 2 diabetes. As a parent myself, I want to contribute to the health and wellbeing of my children despite the controversy in modern society about what to include in my children's diets and which food products to avoid. For example, Vorster, Kruger, Wentzel-Viljoen, Kruger, and Margetts (2014) argue that honey is regarded as a healthier replacement for sugar. However, honey contains the free sugars which are directly related to an increase in obesity. Accordingly, the focus of this study was, firstly, to explore how family functioning either supported or did not support health and wellbeing in adolescents and, secondly, how parents influenced the food choices of adolescents. Donald, Lazarus, and Lolwana (2012) state that the relationship between family members affects healthy living and, thus, the functioning of the whole family unit (Ryan et al., 2005) is a key determinant in lifestyle choices. The McMaster Model may be used to understand the structure as well as the organisational and transactional patterns of the family (Ryan et al., 2005). The six dimensions in the McMaster Model, which include problem solving, communication, roles, affective responsiveness, affective involvement and behaviour control, have the significant impact on the emotional and physical health of family members (Ryan et al., 2005). In this study I employed the six dimensions of the McMaster Model to explore how family functioning contributed to the development of a healthy lifestyle.

1.3 RATIONALE OF THE STUDY

The rationale in the study was to explore the level of systemic support and commitment among family members in generating a healthy lifestyle. According to Adamo and Brett (2013) and Scaglioni et al. (2008), exposure to healthy/unhealthy living is predominantly provided by parents and, thus, the family environment is a key role player in the establishment of a lifestyle. However, in modern society the family often experiences various challenges, for example, some children refuse to eat certain food types or food textures and, thus, it becomes difficult for parents to prepare a healthy meal that includes all five of the food groups (Green et al., 2015). Another challenge is choosing a diet that meets the needs of family members, for example, a high-quality protein and fat diet (Atkins, 2003) or an individualised diet that is determined according to blood type

(D'Adamo & Whitney, 2001). Misperceptions about what healthy lifestyles include further complicate lifestyle choices (Adamo & Brett, 2013; Corder et al., 2010). In other words, the family, which is an important component in the establishment of a healthy lifestyle, is often exposed to various systemic influences. Accordingly, I used the six dimensions of the McMaster Model to research the steps that family members took to solve problems related to lifestyle issues, the way they communicated about food and exercise and how roles were allocated between family members. Furthermore, I studied the range of emotions which family members experienced about their lifestyles, the extent to which they were involved in the interests and activities of other family members and the standards they set in monitoring behaviour related to food and exercise (Ryan et al., 2005). It was hoped that the findings of the study would contribute to existing theory related to systemic family functioning as well as provide informative measures that will enable families to establish a healthy and sustainable lifestyle.

1.4 WORKING ASSUMPTIONS

Against the background of the McMaster Model the first assumption made was that the family was the only source which would enable the research questions to be answered. The second assumption was that the family has the ability, as a system, to create a lifestyle that benefits all its members (Ryan et al., 2005) while the last assumption was that adolescents have the autonomy to decide which food groups to include in their diets (Bassett et al., 2007).

1.5 RESEARCH QUESTIONS

The primary question that guided the study was the following:

- *What is the role of the family in helping urban adolescents to develop a healthy lifestyle?*

The following secondary questions which were identified to guide the study included:

- *How do parents and their adolescent children describe a healthy lifestyle?*
- *How can overall family functioning support the development of a healthy lifestyle in their adolescent children?*
- *What do adolescent children regard to be the most important influences the family has in supporting a healthy lifestyle?*

1.6 STUDY OBJECTIVES

The objectives of the study were as follows:

Objective 1: *Explore how urban systemic family functioning contributed to a healthier lifestyle among adolescents.*

Objective 2: *Drawing from the background of the McMaster Model, understand the extent to which urban family members, as a unit, created a setting for handling issues and tasks related to their lifestyle.*

Objective 3: *Determine the extent to which urban adolescents' understanding of healthy living influenced their choices in terms of food and exercise.*

Objective 4: *Determine how urban parents and adolescents felt about the importance of creating healthier lifestyles, including physical exercise and a healthy diet.*

The key theoretical concepts and how they were used in the study are now outlined.

1.7 KEY THEORETICAL CONCEPTS

1.7.1 Family functioning

Children acquire their beliefs, attitudes, values and behaviours within the context of the family and, thus, the family may be said to play an important role in individual development (Botha & Booysen, 2013; Ogwo, 2013). Over time, families have become diverse in their household patterns, therefore promoting relational processes stemming from the interrelatedness between family members (Patterson, 2002; Walsh, 2012). The family may be viewed as a system that continuously influences the members of the family (Ryan et al., 2005). Rules and norms are established in the reciprocal relationship, thus guiding expectations about roles, actions and consequences (Walsh, 2012). The ways in which a family "communicate with each other, relate to one another, maintain relationships, make decisions and solve problems together" describe family functioning (Walker & Shepherd, 2008).

Family functioning, according to the McMaster Model, underpins a systems approach and includes the way in which family members may effectively execute certain tasks (Ryan et al., 2005). Lebow and Stroud (2012) and Ryan et al. (2005) imply that basic tasks in this context refer to fundamental tasks such as providing shelter or food for family members. The family's ability to handle problems over the course of the developmental stages on

both the individual and family levels refers to the developmental tasks (Ryan et al., 2005), while the handling of a crisis situation that arises in the family due to illness, accidents or job changes describes the hazardous task area (Ryan et al., 2005). The six dimensions of the McMaster Model (as summarised below) contributed significantly to this study as they facilitated an understanding of how the family members negotiated and executed the tasks within the family system (Lebow & Stroud, 2012), as well as how family members co-constructed physical health within the family system (Ryan et al., 2005).

Problem solving is defined by Lebow and Stroud (2012, p. 506) as the "family's ability to resolve instrumental and affective problems efficiently and easily". Effective family functioning occurs when the family is able to discuss the majority of problems that arise and execute all seven stages contained in the problem-solving dimension (Ryan et al., 2005). These seven stages include "identifying the problem, communicating with appropriate people about the problem, developing viable alternative solutions, deciding on one of the alternatives, acting on the decision, monitoring the action and evaluating the effectiveness of the action and the problem solving process" (Ryan et al., 2005, pp. 27–28).

Communication reflects the patterns of communication within the family and refers to the verbal exchange of information in both the instrumental and affective areas (Ryan et al., 2005). Family functioning may be viewed as healthy when the family communicates clearly and directly in both the instrumental and affective areas (Ryan et al., 2005). Conversely, family functioning may be lessened by masked and indirect communication patterns (Ryan et al., 2005).

Roles include the repetitive patterns of behaviour by family members in respect of executing the following five functions within the family (Lebow & Stroud, 2012), namely, the provision of resources, nurturance and support, adult sexual gratification, personal development and maintenance and the management of the family system (Ryan et al., 2005). In addition, Lebow and Stroud (2012) are of the opinion that family functioning is reliant on both role allocation and role accountability to ensure that no family member is overburdened by functions.

Affective responsiveness is the extent to which a family responds with a full range of the feelings experienced in emotional life (Ryan et al., 2005; Lebow & Stroud, 2012). Conversely, family functioning is viewed as least effective when a limited range of responses exists (Ryan et al., 2005). Two categories of emotions are specified, namely, the welfare emotions which include affection, warmth, love, support and tenderness and

emergency emotions inclusive of fear, anger, sadness, depression and disappointment (Ryan et al., 2005, p. 34).

The degree to which a family shows interest in certain activities of individual family members and the way in which family members express such interest includes the fifth dimension, ***affective involvement*** (Ryan et al., 2005). Six styles are identified that encompass involvement, namely, lack of involvement, involvement devoid of feelings, narcissistic involvement, empathic involvement, over-involvement and symbiotic involvement (Ryan et al., 2005). The family functions effectively at the empathic involvement level (Ryan et al., 2005).

The last dimension is termed ***behaviour control*** and refers to the rules and standards the family sets both inside and outside of the family. Rules and standards apply to dangerous situations, the meeting and expressing of psychobiological needs and drives, and interpersonal socialising behaviour (Ryan et al., 2005). Family functioning is considered effective when behaviour control is applied in a reasonable and flexible manner (Lebow & Stroud, 2012).

1.7.2 Healthy Lifestyle

Baron et al. (2009, p. 434) refer to a healthy lifestyle as "a way of living in which we avoid behaviours potentially harmful to our health". Individuals possess the ability to choose a healthy lifestyle. For example, statistics indicate that 70% of the development of a healthy lifestyle is within the control of individuals because they may choose healthy food products and physical exercise (Friedland, 2011; Thirlaway & Upton, 2009). On the other hand, maintaining a healthy lifestyle may be influenced by certain psychological aspects. For example, the relation between food choices, exercise and self-determination has been studied by Schösler, De Boer and Boersema (2014) as well as Hagger and Chatzisarantis (2008). The concept of self-determination provides an understanding of an individual's level of motivation to engage in healthy behaviour (Hagger & Chatzisarantis, 2008; Opie 2015). However, a distinction should be made between internalised and externalised motivation. For example, Patrick and Williams (2012) as well as Ryan and Deci (2002) argue that internalised motivation cause an individual to be more committed to and persisted to healthier choices. Conversely, external motivation in the form of reward or avoidance techniques is detrimental to healthy choices (Patrick & Williams, 2012).

Other aspects that influence a healthy lifestyle include time constraints, limited access to information about health and conflicting media reporting may cause individuals to remain

oblivious to healthy living (Friedland, 2011). In the context of this study healthy food referred to proteins, carbohydrates and mono-unsaturated fats (Friedland, 2011). In addition, a healthy diet is assumed to include fresh vegetables and fruit, fish, fibre and a reasonable amount of protein. A healthy diet in the context of this study was one that excludes refined sugar and white flour (Friedland, 2011). Physical exercise in the context of the study included physical activity such as cardiovascular training, muscle conditioning, weight/resistance training and/or flexibility training (Friedland, 2011).

1.7.3 Adolescents

An adolescent is defined as a person who is transitioning to adulthood. Development is marked by changes within the physical, cognitive and psychosocial domains of the adolescent (Papalia, Olds, & Feldman, 2006). According to Bezuidenhout and Dietrich (2008), adolescence involves rapid physical growth, experimentation with various aspects of life, establishment of a personal identity and making choices with regard to the future. Choices are related to the cognitive development of the adolescent. According to Berk (2009) thoughts of adolescents become more abstract and idealistic. As a result, functional changes of cognition explain the reasoning and decision making abilities of the adolescent in that the child is able to draw conclusions and test hypotheses (Papalia et al., 2006). The decision-making process influence lifestyle choices. Adolescents obtain information about health related aspects and use their individual decision-making style to make sense of the information (Albert & Steinberg, 2011; Davids et al., 2015). Consequently adolescents seek independence in deciding what they wish to eat (Contento, Williams, Michela, & Franklin, 2006).

Independent choices may lead to habit formation in adolescents. For example, having financial autonomy to buy food products at the school tuck shop may lead to regular unhealthy food choices and habitual patterns (Verstraeten, Van Royen, Ochoa-Aviles, Penafiel, Holdsworth, Donoso & Kolsteren (2014). Thus parents become less in control of adolescents' choices. Therefore, parents may find the development of cognition a challenge due to the evolvement of negotiating new boundaries in the family home and, at the same time maintaining a trusting bond with the adolescent (McGoldrick & Shibusawa, 2012; Ryan et al., 2005). Open communication in the family plays a fundamental role in the intellectual development of the child as it increases the ability to connect with the self and others (McGoldrick & Shibusawa, 2012). Basset et al., 2007 argue that parents who create opportunities for children to freely choose and prepare their meals assist the child to develop autonomy. According to Roman, Schenck, Ryan, Brey, Henderson, Lukelelo,

Minnaar-McDonald and Saville (2015) child-parent relationships grounded in trust, warmth, love and nurturance facilitate self-determination.

1.7.4 Urban

The term “urban” may be defined according to various attributes such as the area within the jurisdiction of a municipality, the size of the population in the specific area, or the existence of certain characteristics, for example paved roads, electricity and/or sewerage (UNICEF, 2012). Rural and urban areas differ in family sizes and household income. According to Vorster, Venter, Wissing and Margetts (2005), urban households have higher incomes and family sizes are larger than rural areas. As such, urban households have more access to fresh fruit, vegetables and protein than rural areas. Despite access to healthier food options, individuals in urban areas are more susceptible to obesity and non-communicable diseases (Vorster et al., 2005). The high statistics in overweight is explained by Heidelberger and Smith (2016) in that lower levels of physical activity in urban areas are caused by concerns for safety in streets.

1.8 RESEARCH DESIGN

The research design used in the study was consistent with the interpretivist epistemological paradigm. The design guided the research methods I used to select the participants and generate, analyse and interpret the requisite data. The sections below contain a discussion of the key principles of the interpretivist paradigm and outline the reasons why this paradigm was deemed appropriate for the purposes of the study (Terre Blanche, Durrheim, & Painter, 2006).

1.8.1 Paradigmatic approach: Interpretivist paradigm

According to Sefotho (2015), the role of epistemology in research is to guide the researcher in understanding the way in which people create knowledge about life in general. Life is constructed within a certain context. Creswell (2013) indicated that optimum contextual information is obtained when the researcher is within close contact with the participants. The interpretivist, epistemological paradigm (Terre Blanche et al., 2006), afforded me such closeness with my participants in order to better document their subjective experiences with regard to healthy living.

In line with what Cohen, Manion, and Morrison (2011, p. 17) point out, the interpretive paradigm encouraged me to “understand the subjective world of human experiences” which, in the case of this study, related to experiences in relation to food and exercise.

For example, I explored how each family experienced and made sense of the challenges encountered in respect of food and exercise. Jansen (2014) aligned the interpretivist paradigm with phenomenology and hermeneutics as it focuses on human behaviour that is influenced by the social context, norms and standards. Human behaviour causes individuals to take action and assign meaning to their actions (Jansen, 2014). For example, in the study I explored the steps the families took to overcome lifestyle related challenges. Creswell (2013) emphasised the importance of paying attention to the processes of interaction between participants and how they make meaning of their interactions.

Terre Blanche et al. (2006) note the challenge of listening to the personal experiences of the participants and, simultaneously, remain aware of one's own presence. The skills that I applied, and which complemented my interaction with the participants included respect, active listening and bracketing, as discussed by Egan (2010) and Terre Blanche et al. (2006). It was, for example, extremely important for me to use bracketing as a technique to temporarily separate my own attitudes and ideas about healthy eating, exercise and family functioning from those of the participants (Terre Blanche et al., 2006). During the course of the study I developed a deeper understanding of my participants by using the open and general methods of enquiry residing in qualitative research (Creswell, 2013) and which, of course, have a strong link with the interpretivist paradigm (Nieuwenhuis, 2014a).

1.8.2 Methodological paradigm: Qualitative approach

I used the qualitative approach in this study to explore and interpret the feelings and experiences of the participants as they related to food and exercise (Terre Blanche et al., 2006). I established a relationship with the participants through our face-to-face interactions in their own homes (Nieuwenhuis, 2014a; Theron & Malindi, 2012). I soon discovered that each family experienced their lifestyles differently to the others. During the study I developed an understanding of how the family members influenced each other's perspectives about family rules, food preferences and routines, as discussed by Sullivan (2010).

Creswell (2013) points out that qualitative research may be a time-consuming process and, indeed, I experienced this in my study. I spent an hour with each family to enable them to establish trust in the relationship and, as advised by Theron and Malindi (2012), to allow sufficient time for the research activities. Due to school holidays and examinations the semi-structured interviews were limited to one hour, while feedback from the participants about the themes which had been identified was delayed. Table 1 below

presents the initial planning stages of the study. It should be noted that the data generation had to be postponed to May and June 2017 due to an additional ethical clearance process at both the University of Pretoria, Faculty of Health Sciences and the school governing body of the secondary school where I recruited my participants.

Table 1 Research process

Activity	Time Frame
Ethical clearance	July – September 2016
Writing Chapter 1	July 2016
Submit Chapter 1 to supervisor	30 July 2016
Writing Chapter 2 Incorporate feedback on Chapter 1	August 2016
Submit Chapter 2 to supervisor	31 August 2016
Writing Chapter 3 Incorporate feedback on Chapter 2	September 2016
Submit Chapter 3 to supervisor	3 October 2016
Incorporate feedback on Chapter 3	November 2016
Data generation	February - March 2017
Data analysis	April – June 2017
Writing Chapter 4	July 2017
Submit Chapter 4 to supervisor	31 July 2017
Writing Chapter 5 Incorporate feedback on Chapter 4	August 2017
Incorporate feedback on Chapter 5 Language and Technical editing	September 2017
Finalisation of mini-dissertation	October 2017
Submission of mini-dissertation	November 2017
Article finalisation and submission	February – April 2018

Validity may be an issue of concern in qualitative research. Validity includes the "degree to which the interpretations and concepts used have mutual meaning for both the participant and the researcher (Maree & Van der Westhuizen, 2014, p. 38). However, this may be addressed by ensuring crystallisation (Jansen, 2014). Crystallisation is the use of several sources and methods to compare findings adding to the trustworthiness of the study (Nieuwenhuis, 2014b). In the present study I used various data gathering techniques (described in Section 1.10), such as photovoice messages, semi-structured interviews and lifestyle journals to ensure crystallisation (Jansen, 2014). An advantage of qualitative research is its ability to capture detail around complex issues (Creswell, 2013). In this study I also captured the emotions and involvement of family members in respect of maintaining a lifestyle when one family member had been diagnosed with diabetes.

1.8.3 Research design: Multiple case studies

I used a multiple case study research design (Yin, 2003) within a strategic framework (illustrated below) for the study to address the research questions (see Section 1.4), to

select participants and to generate and analyse the requisite data (Nieuwenhuis, 2014b; Terre Blanche et al., 2006). Figure 1.1 below provides an overview of the research design used in the study.

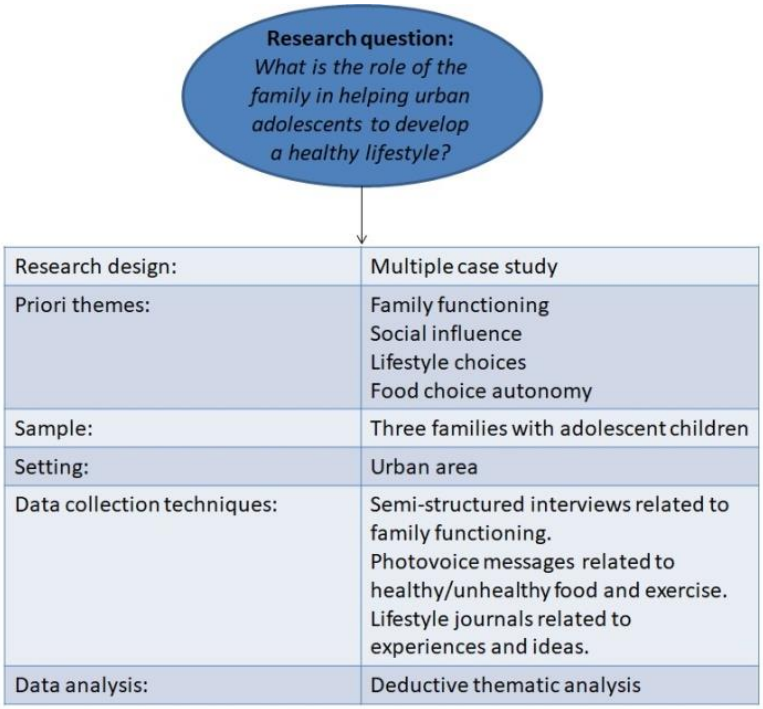


Figure 1 Strategic framework

A multiple case study design enabled me to explore the diversity between families with regard to their lifestyle choices, because it provided me with information about the dynamics of the family as a whole and how the parents supported their children in establishing a healthy lifestyle. The trustworthiness of the study was established through the verification of my findings (Nieuwenhuis, 2014b). The unit of the study was a family consisting of parents and children with three families being compared. I captured how the families experienced and described their challenges related to food and exercise and how they interacted with one another to address those challenges (Cohen et al., 2011; Nieuwenhuis, 2014b). It is anticipated that the case study may benefit all the research participants as it provided them with an opportunity to share their views (Nieuwenhuis, 2014b). However, it must be noted that a weakness of the case study relates to the inability to transfer the findings of the study to other populations, contexts and settings (Terre Blanche et al., 2006). However, the focus of this study was to understand a specific issue (healthy/unhealthy lifestyle) that was central to the understanding of the context (family functioning) (Nieuwenhuis, 2014b).

1.8.4 Research setting

I conducted the study in Centurion, Gauteng Province in South Africa. Centurion is an urban city and forms part of the City of Tshwane Metropolitan Municipality (www.agami.co.za). I chose an urban area because it was convenient for me to recruit participants in an area close to my home while it also saved time and costs.

1.8.5 Sampling and selection of participants

To find the participants for the study, I employed criterion sampling (Cooper & Schindler, 2003) to select three families from a school in Centurion that was accessible to me. The selection criteria for my study included the following:

- A two-parent household (Walsh, 2012) with children of whom one child was an adolescent. According to Fraenkel and Capstick (2012), two-parent families have to plan and direct family time, co-parent children and manage work/school schedules. In addition, two-parent households are able to collaboratively provide the required resources and share responsibilities in the home (Stoleru, Radu, Antal & Szigeti, 2011; Walsh, 2012). In the study I was interested in how the parents and children supported each other in the establishment of a lifestyle while taking into account household challenges and family resources.
- The second criterion was no family member should have been diagnosed with an eating disorder such as bulimia nervosa or anorexia nervosa. The focus in the study was on lifestyle choices regarding healthy/unhealthy food and physical exercise. According to the National Institute for Mental Health (2016), eating disorders, such as bulimia nervosa or anorexia nervosa, are not about lifestyle choices but refer to a serious disturbance in terms of the way in which an individual consumes food. In this study I acknowledge that an individual function within a whole (the family) however, I endeavoured to explore the systemic experiences of the whole family with regards to lifestyle choices, and avoided the exploration of serious eating disturbances.

Table 2 below provides a summary of the participants in the study:

Table 2 Participants in the study

Family	Name of participant[1]	Relationship in the family
Family A	Jean	Father
	Esther	Mother
	Kallie	Son (23 years)
	Samantha	Daughter (14 years)
Family B	Willie	Father
	Maryke	Mother
	Lizl	Daughter (13 years)
	Teresa	Daughter (11 years)
	Herman	Son (10 years)
Family C	Phillip	Father
	Kate	Mother
	Joshua	Son (18 years)
	Elzaan	Daughter (14 years)
	Hein	Son (2 years)

Family A consisted of a father, mother, a son completing his tertiary education and a daughter in Grade 9. The parents both earned salaries and co-parented their children. No member of the family had been diagnosed with an eating disorder. **Family B** comprised a father, mother and three children of whom two were adolescents. The parents both earned salaries and co-parented their children. The 13-year-old daughter had been diagnosed with diabetes. **Family C** included a father, mother, son in Grade 12, daughter in Grade 9 and an adopted son aged two. The father had been diagnosed with diverticulitis[2] which meant that he had to avoid pips and peels and ensure he stayed well hydrated.

[1] Pseudo names were used for the participants

[2] Diverticulitis refers to related digestive conditions that affect the large intestine (colon) when the diverticula (pockets) become inflamed (www.nhsinform.scot).

1.8.6 Data generation procedures

The data collection comprised several phases which commenced with institutional procedures to obtain ethical clearance to conduct the study from both the Faculty of Education Ethics Committee at the University of Pretoria and the Faculty of Health Sciences Research Ethics Committee and to obtain permission from the school governing board to recruit participants at the secondary school in question. I selected a sample by publishing an information document that contained the screening form and a short video clip on the school communicator page (see annexure A). Three families responded to the information on the school communicator page and submitted their screening forms to me (see annexure B). I used criterion sampling (as described in Section 1.7.5) (Cooper & Schindler, 2003) to establish whether the three families met the criteria of the study and I then recruited the three families as participants. The participants were interviewed on two occasions, with each interview lasting approximately 60 minutes. During the interviews all the members of the families (as described in Table 1.3 above) were present. In the first contact session I discussed the purpose and requirements of the study, addressed questions about the study and discussed the ethical principles pertinent to the study. The participants signed the consent and assent forms (see annexure C). Due to time constraints I also explained the photovoice messages and lifestyle journal activities to the participants. The participants were requested to capture photographs of their physical activities, meals, snacks and drinks for a period of two weeks ending 10 June 2017. One individual in the family was responsible for sending the photographs via WhatsApp to a designated mobile phone. I then downloaded the photographs onto a password protected computer. Family members also wrote personal reflections about their experiences related to their lifestyles in an A5 journal for a period of two weeks ending 30 June 2017. The second contact sessions were held on 1 June 2017 (family C), 21 June 2017 (family B) and 22 June 2017 (family A). In these sessions I conducted a debriefing with the participants about their experiences as described in the photovoice messages and lifestyle journal activities. This was followed by a semi-structured interview about family functioning (Ryan et al., 2005). I transcribed the interviews verbatim and requested the participants to review the content to ensure that an accurate account of their responses had been captured.

1.9 RESEARCH METHOD

In order to conduct the study I employed several data collection instruments which included semi-structured interviews, photovoice messages and journals (Creswell, 2014; Hucker, 2001). I supplemented my data instruments with field notes that I captured in

informal discussions with the participants (Creswell, 2014). Table 3 below describe each data collection instrument used in the study in detail.

Table 3 Data collection instruments

Data collection instrument	Data the instrument provided	Research question the instrument addressed
Semi-structured interviews	The semi-structured interviews delivered the majority of data. The focus was on family functioning with regard to: *Problem solving:* Type of issues the family experienced in establishing a healthy lifestyle and the steps the family followed to address lifestyle problems. *Communication:* The level of communication and understanding among family members about their lifestyle. *Roles:* How family tasks were carried out through role allocation and whether family members took role accountability for their tasks. *Affective responsiveness:* How the family responded emotionally to lifestyle stimuli. *Affective involvement:* The extent to which family members were involved and showed an interest in each other's lifestyle related activities. *Behaviour control:* The standards and expectations that family members employed to manage their lifestyle behaviour.	What is the role of the family in helping urban adolescents to develop a healthy lifestyle? How can overall family functioning support the development of a healthy lifestyle in the adolescent children? What do adolescents regard to be the most important influences the family has in supporting a healthy lifestyle?
Photovoice messages	The photovoice messages provided information about what the family regarded as healthy/unhealthy food choices and their level of physical activity.	How do parents and their adolescent children describe a healthy lifestyle?
Lifestyle journal	The lifestyle journal provided information about the experiences of family members as related to food and exercise.	How do parents and their adolescent children describe a healthy lifestyle?

1.9.1 Semi-structured interviews

According to Seidman (2013), interviewing is a natural form of enquiring about feelings and social experiences. I was interested in the way in which the participants created meaning from their lived experiences (Seidman, 2013) and I also explored the challenges the family experienced as a unit in relation to developing a healthy lifestyle. The semi-structured interview process was used to answer the primary research question: "What is

the role of the family in helping urban adolescents to develop a healthy lifestyle?" I also used these interviews to generate the data required to answer the secondary research question: "How may overall family functioning support the development of a healthy lifestyle in their adolescent children?"

I conducted a 60-minute interview with all the members of the family in their homes. The interview guide included the six dimensions (problem solving, communication, roles, affective responsiveness, affective involvement and behaviour control) of the McMaster Model (Ryan et al., 2005). These predetermined questions guided me to generate a level of descriptive data about family functioning (Harding, 2013; Nieuwenhuis, 2014a). However, I was also flexible in terms of enquiring about any given topic that had arisen during the interview and I probed for additional information (Creswell, 2014; Harding, 2013). For example, during the interview with family C I enquired about the level of autonomy the parents allowed their adolescent children in choosing their own food. The interviews with all three families were recorded to ensure an accurate, detailed account of the discussions (Hamilton & Corbett-Whittier, 2013). After the interviews had been conducted I debriefed the participants and gave them an opportunity to share their experiences and thoughts about the questions that had been posed (Hamilton & Corbett-Whittier, 2013). The personal reflections provided during the debriefing were not included in the data analysis.

1.9.1.1 Challenges

I experienced certain challenges during the study. Firstly, as noted by Seidman (2013), time management proved to be a concern in the study because the three families were extremely busy and, thus, we had to plan the semi-structured interviews carefully to accommodate school examinations, business travel and sports events. The second challenge, as mentioned by Creswell (2014), is the fact that researchers may have their own opinions about the research topic and these opinions may influence the responses of the participants. I acknowledge that I did have my own views about family functioning and what a healthy lifestyle entailed. However, during the interviews, I separated my personal views from the views of the participants, by applying bracketing (Terre Blanche et al., 2006). In addition, I remained professional throughout the process and, as Shaw (2010) recommended, I used a reflective diary in which to capture my thoughts.

The reflective diary contributed to the transparency and trustworthiness of the study. The following are examples of the notes I included in my reflective diary: *5 June 2017: "My personal view about a healthy lifestyle is to eat all the food products that are available but*

in moderation. I belief [sic] knowledge about portion sizes, hidden sugars and salt in food is important". 9 June 2017: "Eat regularly. All meals and snacks need to include low GI and protein products". 15 June 2017: "I belief [sic] individuals need to be daily physically active which includes any type of physical activity such as walking, swimming or even working in the garden". 18 June 2017: "With regard to family functioning I belief [sic] that roles in the home are not subjected to a specific gender and that clear rules in the home is important". The reflective journal also added value to the data analysis process as it enabled me to keep an audit trial of all the activities in question (Shaw, 2010).

1.9.2 Photovoice messages

Research (Adamo & Brett, 2013; Corder et al., 2010; Friedland, 2011) indicates that there are many ways in which individuals conceptualise a healthy lifestyle. The rationale for the use of the photovoice instrument was to understand what a particular family regarded as a healthy lifestyle. Visual materials such as photovoice messages are becoming more popular among qualitative researchers (De Lange, Mitchell, & Stuart, 2007). Photovoice researchers, Wang and Burris (1997) describe the purpose of photovoice as enabling the participants to record and reflect their community's strengths and concerns, to encourage communication about issues and, lastly, to initiate change. The process of photovoice entails that the researcher describing and sharing the plan behind the photovoice project to the participants with a third party practitioner presenting training in the fundamentals of photography, safety and ethics. Thereafter, the participants enter the community to take photographs of their concerns in the community. The photographs are displayed and the participants share what the photographs meant to them. At this point policy makers are invited to the discussions so that they may understand the issues and concerns in the community. As the final step in the process, the researchers conduct a debriefing in order to determine whether they are able to continue with the implementation of the action plan or whether they should continue to generate more photographs and discussions (Catalani & Minkler, 2010; Kuratani & Lai, 2011). To date the goals of the photovoice method has not changed although the process may be adapted to minimise the costs incurred in a study (Mahoney, 2017; Walton, Schleien, Brake, Trovato, Oakes & Tyler, 2012).

In the study I deviated from the standardised photovoice process because of the small scale study of 14 participants. Although personal stories may be shared by using a camera (Olivier, Wood, & De Lange, 2007), technology has advanced and nowadays mobile phones may be used to take photographs. In this study, I requested the participants to use their mobile phones to capture photographs of their physical exercise and meals. In other words, I deviated from the standard photovoice process in that I did

not provide training about photography techniques although we did discuss the ethical implications of the photographs (discussed in Section 1.9).

Photographs are a creative way in which to draw attention to reality although researchers may find it difficult to interpret the photographs (Creswell, 2014). Ebersöhn and Eloff (2007) advise researchers to pre-determine the information they require from the photographs as it will simplify the data analysis process. The photovoice messages activity was used in order to answer the secondary research question: "How do parents and their adolescent children describe a healthy lifestyle?" Accordingly, both parents and children were asked to generate objective data, firstly, by sending pictures via WhatsApp (social communication application) of what they had consumed for breakfast, lunch and dinner for two weeks. Secondly, the family members were requested to send photographs of the snacks they consumed between meals and, thirdly, they were requested to send photographs of their physical exercise during the two weeks. For example, a photograph of the family's breakfast and one of a family member exercising on the treadmill.

The content of the photographs reflected personal information about the context of the participants and made me more aware of the ethical implications of the data than had previously been the case (Ebersöhn & Eloff, 2007). Karlsson (2007) suggested photographs should be treated with the utmost care as photographs are identifiable and may, therefore, not be used in a research report without prior consent (Gibson & Riley, 2010). I requested the participants to take photographs in which their identities were not revealed and I also requested written consent to publish the photographs in the final report. Karlsson (2007) cited a disadvantage in respect of photographs in that participants may manipulate the photographs which then reflect an unreal context (Karlsson, 2007). In this study I briefed the participants about both the activity and the expectation of their role in taking photographs. Another concern which has been voiced is too many photographs may be received, thus complicating the categorisation and analysis process (Cohen et al., 2011; Ebersöhn & Eloff, 2007). However, in this study the participants sent photographs only relevant to the activity and I uploaded the photographs onto Dropbox (cloud storage) for safekeeping and for data analysis.

1.9.3 Lifestyle journal

A journal serves the purpose of capturing the unique voice of each participant (Creswell, 2014) and, according to Hamilton and Corbett-Whittier (2013), provides deeper insight into the way in which the participants think and feel. In the study I gave each family member

an A5 soft-cover book and requested them to record in this journal their ideas, feelings and experiences regarding food and exercise. The participants were requested to write daily entries for a period of two weeks after which they handed their journals back to me. I was interested in how the parents created healthier environments and whether the children accepted or rejected these efforts. For example:

> *Today I made chicken and vegetables for dinner. When we sat in front of the television to eat dinner my children commented that they would have preferred oven chips and fish fingers. I am so frustrated because I know they must eat healthily but they just don't enjoy the food I make.*

At the end of the lifestyle journal activity I met with each family individually and, before we started with the semi-structured interview, I debriefed them about the lifestyle journal activity and how they had experienced the activity. All three families complied with the request to keep a journal, except for two members of family A. All three families explained they had found the activity difficult for two reasons. Firstly, it was not easy to write about their feelings and experiences in relation to their lifestyles and, secondly, they sometimes forgot to write in the journals due to busy time schedules. Hamilton and Corbett-Whittier (2013) raised a concern about the analysis of the data if incomplete journals are submitted to the researcher. In other words, the lifestyle journal may not yield sufficient information and, therefore, I combined the data analysis of the lifestyle journal with the photovoice messages and the semi-structured interviews (Gibson & Riley, 2010).

1.9.4 Data analysis

De Vos, Strydom, Fouché, and Delport (2011, p. 399) refer to the data analysis in qualitative research as "a process of inductive reasoning, thinking and theorising which is far removed from structured, mechanical and technical procedures to make inferences from empirical data of social life". According to Schwandt (2007), the process involves sorting, organising and reducing the data to manageable pieces of information and then exploring ways in which to reassemble these pieces of information. Braun and Clarke (2006, p. 79) describe thematic analysis as "a method for identifying, analysing and reporting patterns (themes) within the data". The flexibility of thematic analysis was an advantage in this study as it enabled me to analyse the data deductively (Braun & Clarke, 2006).

I used deductive thematic analysis to draw conclusions about existing theory (Shaw, 2010). As pointed out by Braun and Clarke (2006), researchers may find it difficult to

decide on which themes to focus in the data. Accordingly, I used deductive/theory driven data analysis for the purposes of this study (Maree & van der Westhuizen, 2014). I used systems theory, in particular the six dimensions (problem solving, communication, roles, affective responsiveness, affective involvement and behaviour control) of the McMaster Model (Ryan et al., 2005) to develop the predetermined priori codes about family functioning and systemic influences on the establishment of a healthy lifestyle (Nieuwenhuis, 2014b; Yin, 2003). The steps I followed to conduct thematic analysis are outlined in the table below (Braun & Clarke, 2006; Creswell, 2014; Nieuwenhuis, 2014b):

Table 4 Steps of thematic analysis

Steps in thematic analysis	Description
Step 1: Organised the data	The data was prepared for analysis by transcribing the semi-structured interviews and scanning the photographs and lifestyle journals.
Step 2: Immersed self in the data	I read through the data several times to acquire a sense of the information. I also reflected about the meaning of the data.
Step 3: Coding	I matched themes in the new data with themes which had emerged in the literature review. Clusters of information were grouped together and a word that represented a category was written in the margin. The language of the participants was used to label terms in the data.
Step 4: Searched for themes	The coding process was used to search for and generate possible themes.
Step 5: Defining and naming themes	Re-occurring patterns and themes were identified and aligned with the original data set, thus leading to the interpretation phase.
Step 6: Participants verified themes	The themes which had been identified were shared with the participants for their comments and either agreement or disagreement.
Step 7: Produced the report	I decided how the description of the themes would be presented in the study.

During the data analysis process I deductively identified both lifestyle choices (American Heart Association, 2017; Department of Health, 2012; Friedland, 2011; Thirlaway & Upton, 2009) and systemic influences (Bassett et al., 2007; Berk, 2009; Friedland, 2011; Imber-Black, 2012; Ryan et al., 2005; Viswanathan, 2017) as themes in the study. Table

5 below presents the inclusion and exclusion criteria used during the deductive data analysis to describe each theme:

Table 5 Inclusion and exclusion criteria to describe identified themes

Theme one: Lifestyle choices		
Sub-theme	**Inclusion criteria**	**Exclusion criteria**
Physical exercise	Cardiovascular training such as walking, running, swimming, flexibility or strength training of the family members.	Sedentary behaviour of family members such as sitting, lying down, watching television.
Healthy food consumption	Meal plans of the family included: • Fruit and vegetables • Protein • Dairy products • Fats and oils • Starchy food	Meal plans of the family excluded: • Sweets • Sugared drinks • Junk food Meal plans of non-family members
Perception of healthy food items	Data included views of family members about what constituted healthy food items	Data excluded the views of friends and extended family members about what constituted healthy food items were
Level of physical activity versus food consumed	Amount of energy that a family member consumed versus the amount of energy the family members used during exercise	Amount of energy that a friend, extended family and/or community members consumed versus the amount of energy the friend, extended family and/or community members used during exercise
Theme two: Systemic influences		
Sub-theme	**Inclusion criteria**	**Exclusion criteria**
<u>Family functioning:</u> Problem solving Communication Roles • Planning, preparation and availability of food Affective responsiveness Affective involvement Behaviour control • Family values	Data related to family problems and the steps the family followed to overcome such problems. Included communication about food and exercise. Provision of resources, nurturing support, personal development and maintenance of family related to lifestyle. Data related to the time available for both preparing and planning healthy food and physical exercise. Included welfare emotions and emergency emotions in the family. Included involvement in the interests of family members. Included standards and rules relating to the lifestyle in the family. Included values in the family.	Data excluded problems of friends, extended family members and/or community members. Excluded communication not related to food and exercise. Data not related to the provisioning of resources, nurturing support, personal development and maintenance of friends, extended family and/or community members. Data not related to the time allocated for preparing and planning unhealthy food. Excluded welfare emotions and emergency emotions of non-family members. Excluded involvement in interests of non-family members. Excluded standards and rules relating to the lifestyle of non-family members. Data excluded values of non-family members.
Family rituals	Included rituals by family members	Excluded rituals with friends, extended family and/or community members.

Autonomy	Included decisions about food by family members	Excluded food choices by other members of the family.
Friendship	Food and exercise choices with friends	Excluded food and exercise choices with family members
Use of mobile applications	Included the use of apps on a cellphone	Excluded the use of paper-based methods
Medical conditions	Data related to any medical reason that influenced the lifestyle choices of family members	Data excluded non-medical conditions and medical conditions of friends, extended family and/or community members

1.10 ETHICAL CONSIDERATIONS

Based on the views of qualitative research and because I was entering the natural environment of the participants I carefully considered ethical guidelines (Nieuwenhuis, 2014a). Ethical principles, such as voluntary participation and confidentiality, foster an open and supportive relationship between the researcher and the participants (King, 2010). Throughout the research project I applied the principles stipulated by the University of Pretoria (UP) Code of Ethics for Research (1999) document to ensure that I remained professional and ethical in the study.

Firstly, I applied for and received approval for the research project from the Research Ethics Committee of the Faculty of Education and from the Faculty of Health Sciences Research Ethics Committee to conduct the research. Following the granting of this approval I continued with the recruitment of participants. I explained the research process and the purpose of the study to the participants until they were comfortable with the study. I encouraged questions about the study and addressed all such questions until the participants were satisfied. I paid close attention to the best interest of the children who participated in the study to ensure that no harm befell them (Human-Vogel, 2007). For example, during the school examinations the interviews were arranged at times convenient to the children to allow them to prepare for their examinations. Additional ethical principles are elaborated upon below:

1.10.1 Social responsibility

Research in the Faculty of Education is aligned with national needs and priorities and, as a researcher in the study, I hoped that the findings from this study would contribute to one of the Faculty's research focus areas, namely, food, nutrition and wellbeing (http://www.up.ac.za/en/faculty-of-education/article/15740/research). In addition, it was hoped that the findings from this study would contribute to educating families about healthy lifestyle choices and, in so doing, decrease the risk of non-communicable diseases in South Africa (Spires et al., 2016).

1.10.2 Beneficence and non-maleficence

Beneficence includes the benefits of the study to both the participants and society (Terre Blanche et al., 2006). It was anticipated that the findings from the study may be used to provide informative measures to families to support them in the development of a healthy lifestyle. Quality of life and wellbeing are integrated with healthy eating and physical exercise (Corbin, Lindsey, & Welk, 2001; Thirlaway & Upton, 2009). Dodge, Daly, Huyton, and Sanders (2012, p. 230) define wellbeing in terms of "individuals (who) have the psychological, social and physical resources they need to meet a particular psychological, social and/or physical challenge". According to Ryan et al. (2005) and Walsh (2012), psychological, physical and social resources are provided within a family context, thus family functioning is a key role player in establishing optimal health and wellbeing. In addition, it was hoped the study might build on existing theory related to systemic family functioning.

The non-maleficence principle in the context of research requires the researcher to consider the risks of the study to the participants. Furthermore, it requires that the researcher ensure that no harm befalls the participants as either a direct or an indirect consequence of the research (Terre Blanche et al., 2006). Throughout the research process I minimised potential harm to the participants by explaining the nature and expectations of the study. I also communicated in a clear and direct manner to minimise deception (Hamilton & Corbett-Whittier, 2013; Health Professions Act 59 of 1974). In addition, I focused primarily on generating data relevant to the study (Health Professions Act 59 of 1974). As King (2010) recommends, time was allocated to debrief the participants, and their personal views were not included in the data analysis. I refrained from discrimination and I kept a reflective journal about my own views regarding family functioning and healthy lifestyles (Shaw, 2010).

1.10.3 Voluntary participation and informed consent/assent

The participants took part in the study voluntarily and they also had the right to withdraw from the study at any time without any consequences (King, 2010). I included the issue of voluntary participation in the informed consent and assent forms and explained to the participants that they were entering into the study freely. I explained that they were free to decline participation or to withdraw from the study at any time (Health Professions Act 59 of 1974). Up to this point in the study no one of the participants has indicated that they wanted to withdraw from the study. However, in such an event their data would be removed from the study and there would be no consequences for them (King, 2010).

Prior to their signing the informed consent and assent forms I discussed the benefits and discomforts of the study (Health Professions Act 59 of 1974). A possible discomfort may have arisen from the use of cellular phone data to WhatsApp the photographs to me.

The focus in the study was on the family, thus implying that information was also sought from the children in the family. In a South African context consent is given when the participant is 18 years or older but, until a child reaches the age of 18, it is incumbent on researchers to seek the assistance of parents/legal guardians or care-givers to assist with parental permission for children under the age of 18 (Human-Vogel, 2007). For the purposes of this study I requested the parents to give permission for the children to participate and requested that they sign the informed consent forms. I used a language that was understood by both the children and the parents and I minimised any uncertainties about their consent (Health Professions Act 59 of 1974). In addition, I requested informed consent and assent from both the parents and the children for the voice recordings during the interviews and the use of photographs in the report (Terre Blanche et al., 2006; Olivier et al., 2007).

1.10.4 Respect for the participant

Trust manifests in the relationship when the researcher interacts with integrity and respect (Hamilton & Corbett-Whittier, 2013). I entered the homes of the participants with respect and adhered to the family routines and schedules. I did not engage in psychological therapy with the participants, as this was excluded from my role as researcher (King, 2010).

1.10.5 Anonymity and confidentiality

Anonymity in a study is ensured when identifiable information such as the names and addresses about the participants is not disclosed in any way other than to the researcher (Cohen et al., 2011). One of the aims in research is to ensure that all identifiable information remains anonymous even though, in qualitative research, the researcher is interested in the personal and in the in-depth information. In this study the use of the data was discussed with the participants and a level of confidentiality was negotiated until the participants were comfortable with the agreement (King, 2010). It was agreed that no photographs would be published that revealed the identity of the participants and that pseudonyms would be used for the members of the family (Hammersley & Traianou, 2012). The participants and I lived in the same residential area (Centurion) and, thus, we agreed that we would not greet each other in public places. Throughout the study I kept

all personal information provided confidential and only when it was necessary, for example, during the data analysis, did I discuss information with my supervisor (King, 2010).

1.11 ENSURING RIGOUR IN THE QUALITATIVE STUDY

Creswell (2014) highlights that it is incumbent on the researcher to ensure that the findings are both valid and reliable through trustworthiness, authenticity and credibility. Various methods were employed to ensure quality in the study.

1.11.1 Credibility

The aim of credibility is to demonstrate that the study is conducted in a way that represented the participant(s) in an accurate manner (De Vos et al., 2011). Accordingly, I requested the participants to review and verify their interview transcriptions to ensure that their views had been captured correctly (De Vos et al., 2011). I received confirmation from the three families that their comments had been captured correctly. Following the data analysis, I requested the participants to comment on the themes which had been identified in the data (Nieuwenhuis, 2014b). Two of the families responded that they were in agreement with the themes identified and commented: *"Daar is nie iets wat ons sou verander aan die temas nie. Dit is regtig interessant want dit help mens om meer objektief na jou eie leefstyl en gewoontes te kyk"*[3] and *"Stem saam"*[4]. However, one family disagreed with the theme "Balance between exercise and food consumption" by stating: *"Nee wat, hierdie is nie ons nie".*[5] Credibility is achieved when the participants are of the opinion that the information reflected has been accurately captured in the final report (Creswell, 2014).

1.11.2 Authenticity

Transparency, according to Shaw (2010) and Nieuwenhuis (2014b), is an essential component of all the research activities and contributes to the trustworthiness of the study. Personal reflection is, thus, an important research activity to ensure transparency (Shaw, 2010). Nieuwenhuis (2014b) argues that any preconceived ideas of the researcher may impact negatively on the transparency of research and recommends the use of a reflective

[3] There is nothing about the themes that we would change. It is really interesting because it helps a person to view your own lifestyle and habits more objectively.
[4] Agree
[5] No, this is not us.

journal to help to keep a check on such ideas. Accordingly, in this study I noted my reflections about how the raw data was interpreted and presented in the findings (Shaw, 2010).

1.11.3 Transferability

According to De Vos et al. (2011), in qualitative research the transferability of results may be problematic because it is not possible to transfer the results to other settings. However, the problem may be countered using multiple sources of information (De Vos et al., 2011). Accordingly, I used multiple cases and more than one data generation method to strengthen the usefulness of the results in other settings (De Vos et al., 2011). Triangulation fosters the validity of a study as it includes the use of multiple sources to generate the requisite data (Shaw, 2010). Thus, during the data analysis I coded the multiple data sources and requested a peer to verify the results of the codes. Credibility and quality in the findings become evident when similar themes are identified in the data analysis (Creswell, 2014).

1.12 LIMITATIONS

One of the limitations of the study was that the findings in the study are not transferable to rural areas as the participants were selected from an urban area. Lifestyle may include other factors such as regulating alcohol intake, sleep and the avoidance of smoking and drug use (Thirlaway & Upton, 2009). The main focus of this study was on food choices and physical exercise and I did not include any of the aforementioned factors as this would have been outside of the scope of a mini-dissertation.

1.13 POSSIBLE CONTRIBUTIONS

It is hoped that the findings of the study may build on existing theory related to systemic family functioning and provide informative measures to educational psychologists to support families in the development of a healthy lifestyle. Consequently, the findings may lead to a decrease in the incidence of non-communicable diseases in South Africa. The findings may be used to enhance the life skills orientation module at secondary schools.

1.14 RESEARCH STRUCTURE

The outline of the study was as follows:

Chapter 1 Overview of the study, rationale, research design and methodology

Chapter 2 Literature review and conceptual framework

Chapter 3 Findings of the qualitative study

Chapter 4 Summary of the findings, discussion, recommendations and limitations

1.15 CONCLUSION

In Chapter One I discussed the overview and rationale of the study. I described the fundamentals of the research design inclusive of the interpretivist and qualitative approaches. I elaborated on the selection of participants in a particular setting and gave an outline of the data collection and data analysis processes, aligned with the data collection instruments. I concluded the chapter by explaining the ethical principles important to the present study and how rigour was ensured in the study. In the next Chapter I present the conceptual framework and literature discussion.

2.1 INTRODUCTION

Chapter One contained a report on the planning and execution of the study. This chapter discusses in greater detail the theoretical constructs that informed the study by means of the conceptual framework that guided the study, as well as the literature that informed it.

Friedland (2011) argues that healthy behaviour begins with the choices which individuals make and it has been demonstrated that parents may influence such choices early on by exposing their children to situations that encourage healthy/unhealthy behaviour (Lloyd, Lubans, Plotnikoff, & Morgan, 2014; Scaglioni et al., 2008). This chapter presents a conceptual framework illustrating the cause and effect of systemic relationships in the development of a healthy lifestyle (Ryan et al., 2005). The role of the family in developing a healthy lifestyle is the focal point and thus I draw attention to the family life cycle and how transitioning to adolescence may influence family functioning (McGoldrick & Shibusawa, 2012). The chapter also discusses existing literature on how family functioning may either support or hinder the level of autonomy a child has when exercising choices in healthy behaviour. I followed a systemic perspective with particular focus on the micro-system. The micro-system includes the immediate setting in which the adolescent lives and the relationships in their immediate surroundings (Keenan & Evans, 2010). Therefore, I discuss the vulnerability of adolescents to both peer group influence and messages in the media. The chapter then concludes with an exploration of existing literature on healthy and unhealthy behaviour with reference to the consumption of food and physical exercise. The next section presents a conceptual framework which was used to organise the literature discussion.

2.2 CONCEPTUAL FRAMEWORK

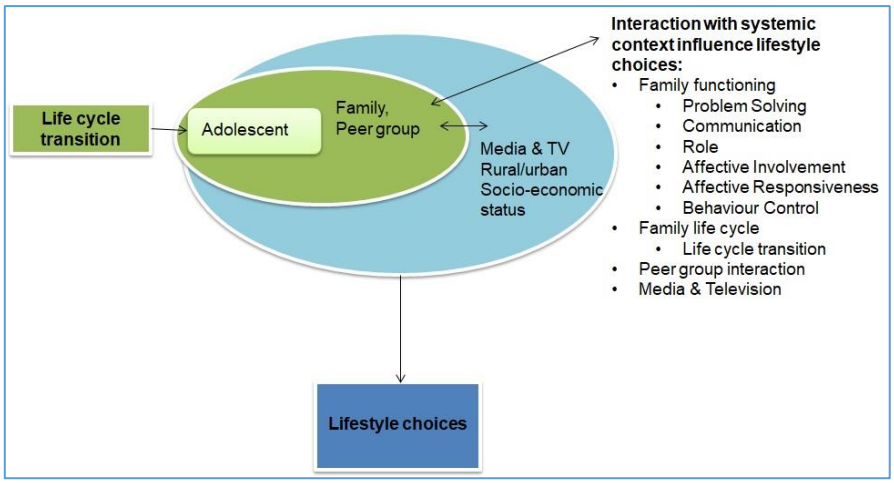


Figure 2 Conceptual framework

The conceptual framework was rooted in a family life cycle perspective (McGoldrick & Shibusawa, 2012) to inform our understanding of how developmental changes affect family functioning and the onset of either healthy or unhealthy lifestyle behaviour (Berge, Loth, Hanson, Croll-Lampert & Neumark-Sztainer, 2011). It is believed that exploring the phenomenon of systemic influences on the development of a healthy lifestyle may enhance healthcare professionals' knowledge in terms of lifestyle redesign (Gosling, Stanistreet, & Swami, 2008; Thirlaway & Upton, 2009). The conceptual framework depicts the interaction between the family context and other systems that either directly or indirectly influence both the diet and the level of physical exercise of the adolescent. In particular, attention was paid to the interaction between the adolescent and the family, peer group and the media and, thus, the framework draws on systems theory (Bronfenbrenner, 1986) to engage with the various influences at different systemic levels in the establishment of a particular lifestyle. Setting and socio-economic status are included to acknowledge that other factors may also influence the food choices and physical activity of adolescents.

In conclusion, in the context of the adolescent lifestyle behaviour derives from the interaction between the adolescent and his/her environment (McGoldrick & Shibusawa, 2012). In addition, the developmental changes which occur due to progression through the life course (Thirlaway & Upton, 2009) may cause challenges in the family functioning, for example, adaptations in the way in which families communicate about food and exercise (McGoldrick & Shibusawa, 2012). The aim in this study was to explore and understand the impact of the above mentioned systemic influences in order to make a

contribution to the existing theoretical knowledge about systemic family functioning and to support families in the establishment of healthy lifestyles (Thirlaway & Upton, 2009).

2.3 THEORETICAL FOUNDATION

In view of the fact that the focus of the study was on family interaction and the cause and effect of relationships, it was decided that systems theory would constitute the theoretical foundation of the study. According to Bronfenbrenner (1986), development occurs first within the family context and, secondly, as a result of environmental influences. Hence, "structure, organisation, and transactional patterns" (Ryan et al., 2005, p. 9) are established by the family and are viewed as underlying reasons for the behaviour of family members. Becvar and Becvar (2009) assert that the focus of a relationship is placed on individuals who share responsibility and create patterns distinctive of the relationship. These patterns describe what is happening as a result of the events of the relationship and, thus, changes within or outside of the family system will affect the behaviour of all family members. Accordingly, in terms of the McMaster Model, family difficulties are viewed as an interconnected phenomenon between the members of the family system, thus placing the focus on all the members of the family (Ryan et al., 2005). Knowledge about the self, the environment and the context is built up through complex processes between the individual and the environment (Patten et al., 2006; Chen, 2003). The functioning of the whole depends on the interaction between all parts of the system and, thus, an understanding of the relationship between the parts is important (Donald et al., 2012).

According to Patrick and Nicklas (2005), the individual, the family and the community all influence children's eating patterns. An integrated and systemic approach, thus, supports an understanding of the interaction between individuals within a family and, subsequently, enhancing the understanding of how the interaction between these individuals influences their choices in relation to food and physical exercise. It is, thus, essential to understand the complexity of how problem solving, communication, roles, affective responsiveness, affective involvement and behaviour control are managed and maintained within the family (Walsh, 2012). The above-mentioned dimensions contribute as a whole to the health of the family and, therefore, they cannot be viewed in isolation (Ryan, et al., 2005).

2.4 FAMILY CONTEXT

The sections that follow discuss the relevant literature on the way in which parental factors, the family life cycle and family functioning all influence the establishment of a healthy/unhealthy lifestyle.

2.4.1 Parental factors

2.4.1.1 Parental modelling

Children observe their parents on a daily basis and, according to Moletsane (2004), copy and learn behaviour in this way. Parental modelling is, thus, a systemic factor which contributes to the decisions children which make (Moletsane, 2004). Papalia et al. (2006) support this argument and state that individuals constantly learn social behaviour by observing and imitating models, such as parents. Like social behaviour, children acquire knowledge about nutrition through observing the practices of their parents and, consequently, they tend to choose the foods to which they are continuously exposed. Accordingly, parents play an important role in the establishment of a healthy lifestyle as they provide opportunities for physical activity and food choices in the home. Children may demonstrate less resistance to physical activity if they see that their parents exercise. For example, Friedland (2011) states that the way in which children use their energy is influenced by their exposure to opportunities to be physically active which may also lead to a positive attitude to physical activity.

With reference to food choices, Golan and Crow (2004) found in a study about eating habits that children choose the foods that are similar to those chosen by their parents. Modelling is also most beneficial when it is accompanied by positive reinforcement of the desired behaviour and verbal encouragement. However, the challenge is that some parents tend to model unhealthy behaviour. Verstraeten et al. (2014) studied the perspectives of parents, school staff members and adolescents in order to develop a conceptual framework for the eating behaviour of adolescents. They found that parents acknowledged that, although they attempted to establish rules about healthy eating, they themselves were inconsistent in the way in which they followed the rules, thereby portraying a poor example in terms of consuming healthy food (Verstraeten et al., 2014). Research indicates that a combination of parent modelling and nutritional knowledge enhance healthier choices. For example, Keenan and Evans (2009) assert that children may change poor eating patterns if their parents model healthy eating and share nutritional knowledge with their children. In summary, quality parent modelling and

sharing of nutritional knowledge are essential aspects to the development of a healthy lifestyle.

2.4.1.2 Parental knowledge

Parental knowledge about food labels and exercise plans is beneficial to the establishment of a healthy lifestyle. For example, Peters et al. (2014) found that mothers who are knowledgeable about health and nutrition were able to make a positive contribution to the health of their children. However, this study by Peters et al. (2014) focused primarily on children aged two to five years while the focus of this study was on understanding the impact of parental knowledge during the adolescent phase. In their study, Johnson, Wardle, and Griffith (2002) found that knowledge about dietary guidelines and the fat content of common foods were associated with healthier food choices.

The information that is available on product labels may influence parents. In their study Tandon, Wright, Zhou, Rogers, and Christakis (2010) demonstrated that parents were influenced by the nutrition information on menus subsequently tended to purchase meals with lower calories. On the other hand, parents who are misinformed about food negatively influenced their children's perceptions about and preferences for food and increased their intake of excess sugar and fat (Adamo & Brett, 2013; Thirlaway & Upton, 2009). The World Health Organisation (2016) warns against high levels of sugar and fat as this constitutes a risk of obesity. Limited knowledge about the effect of junk food in a diet also causes health problems. Junk food such as the hamburgers and french fries that are available in tuck shops at schools contain high levels of salt and this results in the child often consuming sugar-sweetened beverages (Grimes, Riddell, Campbell, & Nowson, 2012; Verstraeten et al., 2014).

However, it would appear that knowledge about healthy food is not enough because the time available to prepare healthy meals influence healthy eating. For example, in their study, Sedibe et al. (2014) revealed that adolescent girls were able to describe healthy food as food with less fat and more health benefits. On the other hand, knowledge about the benefits of healthy food may be negatively influenced as a result of the perception that healthy food takes a long time to prepare (Bukman et al., 2014). Furthermore, it has been found that, although urban, adolescent girls are aware of the importance of eating breakfast daily, very few of the participants ate breakfast due to busy time schedules (Sedibe et al., 2014). As a result, the participants had often requested their friends to buy "fat" cakes, sweets or potato crisps before school (Sedibe et al., 2014). In conclusion, within the family context, children choose their food based on the knowledge their parents

share with them about food as well as on what they observe about the lifestyles in their home. The complexity of creating a healthy lifestyle is exacerbated by the fact that the family context is continuously exposed to other influences, such as time available to prepare healthy meals, peer influences and developmental changes within individuals and transitions in the family.

2.5 THE FAMILY LIFE CYCLE

It is my experience that the family is not isolated from changes but is rather influenced by circumstances in and around the family. McGoldrick and Shibusawa (2012) assert that the family is a system moving through time, thus focusing attention on the transitions in the family life cycle. In terms of a life cycle, one of these transitions is the "evolutionary factor of time on human development" (McGoldrick & Shibusawa, 2012, p. 376). A point in case is the onset of adolescence (Berk, 2009). Specific to this study was the fact that developmental stages, both on the individual level and the family level, initiate changes in the relationships, boundaries and roles which are also known as the family patterns (Logan, Jackson, Teufel-Prida, & Wirick, 2015; McGoldrick & Shibusawa, 2012).

Family patterns that are continuously changing due to life cycle transitions were particularly relevant in the present study. For example, Thirlaway and Upton (2009) point out that there is an association between lifestyle choices and life cycle changes. Similarly, Neulinger and Simon (2011) found that consumption patterns change as the family progresses through the various stages. According to Neulinger and Simon (2011), families with no children and families with young children tend to exhibit the most health-conscious eating habits, while families with older children exhibit lower levels of health-conscious living. One reason for this may be that, in early childhood, it is primarily the parents who decide which food products children consume (Peters et al., 2014). However, in the adolescent phase new family patterns evolve due to changes in the way in which adolescents reason about themselves, food and exercise as they begin to develop their own lifestyles (Berk, 2009; Davids et al., 2015). Thirlaway and Upton (2009) reason that aging adults tend to exercise less and consume lower quality food because of changes in the roles and responsibilities in the home. In other words, the child's newly developed independence causes a shift in existing parent-child relationships, thus leading to changes in the family patterns and causing possible tension in the functioning of the family (Donald et al., 2012; McGoldrick & Shibusawa, 2012). Accordingly, Berge, Wall, Larson, Loth, & Neumark-Sztainer (2013) point out that family functioning becomes an important factor to consider in the establishment of a healthy/unhealthy lifestyle as it is associated with eating, physical activity and weight status among adolescents.

2.5.1 Family functioning

The way in which family members relate to each other differs for each family. Walker and Shepherd (2008) maintain that family functioning includes the practices family members use to solve problems and communicate as well as how they relate to one another and maintain relationships as a unit. The transitioning phase of a child exposes the family to various challenges because, according to Davids et al. (2015) and Mash and Wolfe (2010), the transitioning phase involves a re-negotiation of problem solving, communication, boundaries and roles in the lifestyle of the family. Consequently, lifestyle-related behaviours, such as increased TV viewing and decreased consumption of fruit and vegetables, often manifest with the onset of adolescence (Ray & Roos, 2012). On an individual level the integrated and complex biological process that follows a sequence of physical changes affects the wellbeing of the child, thus impacting on health related behaviour (Berk, 2009; Papalia et al., 2006; Patton & Viner, 2007). During puberty the adolescent's emotional wellbeing is affected by feelings of awkwardness about changes in physical appearance due to legs, arms, hands and feet that may appear longer and out of proportion to the torso (Berk, 2009; Papalia et al., 2006). Adolescents develop awareness about their instant weight gain and changes in both body size and shape and, consequently, a perception about an ideal body type may surface (Berk, 2009; Kerig, Ludlow, & Wenar, 2012). Parental criticism and remarks of losing weight may further contribute to their body dissatisfaction (Rodgers & Chabrol, 2009).

Body dissatisfaction may be related to unhealthy lifestyle behaviour. For example, Mash and Wolfe (2010) argue that adolescents with a negative body image may engage in smoking or substance use to control their impulses to eat. Another point in case is that some adolescents control their diets by restricting their caloric intake because of a drive to be thin (Mash & Wolfe, 2010). In the social context adolescents are susceptible to the images of slender models portrayed in the media which may result in an increased need to be thin and to control their diets (Rodgers & Chabrol, 2009). The problem with constant food control is that individuals often lose weight quickly with short-term improvements in self-image but then any subsequent loss of control may result in the individual feeling like a failure (Herman & Polivy, 2005; Mash & Wolfe, 2010). A feeling of loss of control during the transition stage may cause unhealthy behaviour such as developing anorexia nervosa (Olivier, 2008). Anorexia nervosa influences family functioning in a negative way and the anorexics often find it difficult to communicate positive emotions in the family home (Balottin, Mannarini, Mensi, Chiappedi, & Gatta, 2017; Kerig et al., 2012). It is also worth noting that a family that is too rigid may minimise opportunities for the child with anorexia

nervosa to develop autonomy (Kerig et al. 2012). Ebersöhn et al. (2015) assert taking responsibility for circumstances by using a certain skill set is regarded as being autonomous. In further detail the skill set include goal setting, monitoring, problem-solving and networking (Ebersöhn et al., 2015). Autonomy develops through reciprocal interaction between family members (Berk, 2009).

Belsey (2005) argues that positive family functioning provides a buffer against negative systemic influences and is also a source of emotional and material support. However, it would seem that research about the relationship between family functioning and body weight regulation is limited in the South African context (Berg et al., 2013). However, in this study both the principles of systems theory and the dimensions of the McMaster Model (problem solving, communication, roles, affective responsiveness, affective involvement and behaviour control) provided insight into the way in which the functioning of the family influenced the establishment of a healthy/unhealthy lifestyle (Bronfenbrenner, 1986, Ryan et al., 2005). In particular, the study explored the way a family sets standards about food and the level of physical exercise that is encouraged in the family and the consequences when rules are broken. Furthermore, the study explored how the family functioned as a unit in terms of establishing a healthy lifestyle and attempted to understand the challenges they experienced with regard to their lifestyle (Berge et al., 2013). The sections below discuss the six dimensions (problem solving, communication, roles, affective responsiveness, affective involvement and behaviour control) separately and how each dimension relates to eating and physical exercise.

2.5.1.1 Problem solving dimension

Walsh (2006) describes problem solving in the family context as the ability of family members to resolve problems in such a manner that effective family functioning remains both intact and stable. A family is required to progress through all seven stages of problem solving if the problem solving is to be regarded as effective. These stages include identifying the problem, communicating with the appropriate person, developing alternatives, deciding on alternatives, acting on the decision made, monitoring the action and evaluating the effectiveness of the problem-solving strategy (Ryan et al., 2005, p. 27). Thus, in the last stage, evaluating effectiveness, the family members evaluate the effectiveness of their problem-solving strategy and discuss the lessons they have learned from their experiences (Ryan et al., 2005). Problem solving abilities are important in developing a lifestyle in view of the constant decisions that need to be taken between the various diets and food products that are available. For example, the amount of time

available to prepare healthy meals or picky eaters who complicate meal structures due to their limited food selection (Opie, 2015; Green et al., 2015).

During the transition phase problems may arise during family discussions because adolescents are becoming more autonomous and they are starting to make their own decisions (Kerig et al., 2012). This study considered the relevance of the decision-making process because adolescents make their own food choices (Davids et al., 2015) which may include using their pocket money to buy unhealthy food at school (Verstraeten et al., 2014). The social interaction between parents and the adolescents contribute to the development of autonomy and decision-making abilities on the part of adolescents (Sawyer et al., 2012; Wolff & Crockett, 2011). However, what must also be borne in mind is the vulnerability of the adolescent to peer pressure at school and the possibility of making irrational decisions about food and drinks. The results of a study conducted by Vorster et al. (2014) revealed that adolescents in the Western Cape tended to consume a large number of sugar-sweetened beverages due to peer pressure and the availability of such drinks. The parents are in a difficult position because, as McGoldrick and Shibusawa (2012) argue, they have to negotiate new rules and standards with regard to boundaries between the home environment and peers.

On the other hand, allowing adolescents to express themselves fosters the problem solving and goal setting skills which play a vital role in the development of autonomy (Ebersöhn, Loots, Eloff, & Ferreira, 2015; Ryan & Deci, 2002). Consequently, parents become less responsible for their teenagers' food decisions while the teenagers become more autonomous in their food choices, thus adopting a high quality diet (Bassett et al., 2007; Kremers, Brug, De Vries, & Engels, 2003). Conversely, parents who make choices on behalf of their children may promote unhealthy eating habits (Adamo & Brett, 2013).

The way in which parents approach a child to resolve problems about eating healthy food was an important aspect in this study. Bova and Arcidiacono (2014) investigated the effects of argumentative strategies and revealed that children were the most likely to eat nutritious food when the parent had convinced them that certain food types were beneficial to their health. In their study, Bassett et al. (2007) found that parents complained that they sometimes resorted to strategies such as nagging to convince their teenagers to consume healthier food (Basset et al., 2007). Another way in which to resolve conflict about healthy eating is to make sure that healthy food options are available and accessible in the home, thus promoting autonomous food choices (Bassett et al., 2007). On the other hand, the food choices for certain meals may be controlled by the parents with, for example, adolescents exercising autonomy in choosing their own

food for breakfast, lunch and snacks but with dinners being controlled by mothers and/or grandmothers (Basset et al., 2007).

It is, thus, clear that lifestyle problems may best be resolved when parents establish an environment of trust and encourage adolescents to consider parental advice in their decision-making process (Bassett et al., 2007). In addition, allowing the child to search independently for alternatives to the problems may lead to the establishment of a healthy lifestyle (Davids et al., 2015; Doğan & Kazak, 2010). Forward and backward open communication between parents and adolescents simultaneously enhances problem solving abilities and leads to effective family functioning (Walsh, 2003; Walsh, 2012). The effect of clear and direct communication was explored in this study.

2.5.1.2 Communication dimension

Communication, including in the family context, is regarded as the verbal exchange of information (Ryan et al., 2005) with family members conveying messages about their attitudes and feelings to each other on a daily basis (Bova & Arcidiacono, 2014). This study explored the communicative interaction between family members in view of the findings of a study by Berg, Wall, Larson, Loth, and Neumark-Sztainer (2011), which found a correlation between healthy family communication and the consumption of nutritious meals and participation in physical exercise. However, the study by Berg et al. (2013) was conducted in the St. Paul metropolitan area of Minnesota and not in South Africa.

Meal times are often an ideal time for families to interact. According to Godfrey, Rhodes, and Hunt (2013), family meal times provide a setting for family members to generate discourse about food. The social interaction between parents and children provides an ideal opportunity for family members to indicate their likes and dislikes in relation to food products while also creating a platform for accepting, rejecting and managing food (Wiggins, 2013). As with social interaction the quality of communication between family members also contributes to either healthy or unhealthy behaviour. Chen and Kennedy (2005) argue that poor family communication is associated with higher body weight in Chinese-American children. Likewise, a relationship between anorexia nervosa and poor communication in families has been found to arise from a low expression of affect (Golan & Crow, 2004). On the other hand, a tendency to suppress the expression of negative feelings may result in the overeating of comfort food such as chocolates and crisps (Evers, Stok, & De Ridder, 2010). Comfort food may increase a child's risk of becoming overweight. According to Rossouw et al. (2012), overweight in adolescents may have

negative long-term effects such as the development of type 2 diabetes or cardiovascular disease (Friedland, 2011).

The family environment may function as a protective factor because, as Walsh (2012) stated, clear communication about feelings facilitates family adaptation in the transitioning to adolescence. Ogwo (2013) agrees that parents who communicate to children in a clear manner about personal matters nurture a sense of wellbeing. Clear and direct communication in both its instrumental and affective aspects (McMaster Model) within the family is associated with healthy family functioning (Ryan et al., 2005). In contrast, indirect and masked communication may steer the family away from a mutual understanding and result in ineffective family functioning (Ryan et al., 2005). For example, as demonstrated by Hart, Cornell, Damiano, and Paxton (2015), the way in which parents communicate about the appearance of their children may influence the children's opinion of themselves. Negative messages about the child's body weight tend to lead to increased dissatisfaction about physical appearance. On the other hand, as Levine (2005) indicated, positive messages about physical appearance may assist the child to form a healthy perception about his/her body. Negative messages may also create further communication problems as, for example, adolescents may feel unable to approach their parents and have clear and open communication about their issues with their peers (Ogwo, 2013). Consequently, adolescents may spend more time with their peers distancing themselves from the family system. Therefore roles in the family are important as parents may need to set boundaries between peer interaction and the family system (Ryan et al., 2005).

2.5.1.3 Roles dimension

Effective family functioning is dependent on the repeated execution of instrumental, affective and mixed component tasks within the family (Ryan et al., 2005). Related to a healthy lifestyle is the provision of resources, such as food, which may be regarded as an instrumental task within the family (Ryan et al., 2005). The composition of families may impact on the provision of healthy food. For example, Davids and Roman (2013) state that, in the main, two-parent households are able to provide adequately for the needs of their children although, on the other hand, Roman (2011) asserts that single-parent households often face numerous challenges such as unemployment, poverty and a lack of resources. It is easier to make healthy lifestyle choices when healthy food is available (Sedibe et al., 2014). Other family factors also influence the lifestyle choices family members make. In their study Elsabach et al. (2016) found the main barrier to exercise was a lack of time while Sedibe et al. (2014) cited limited income as a barrier to providing

healthy meals in rural areas. For example, rural families used money they received from family members in the city to buy monthly groceries however, when food was finished in the month they could only buy maelie-meal and frozen chicken and wait until the end of the next month (Sedibe et al., 2014).

Lifestyle choices are also influenced by the roles of family members. According to Bassett et al. (2007), mothers are usually responsible for grocery shopping and their grocery lists tend to include food that is, at least partially, based on the likes and dislikes of family members. However, Bassett et al. (2007) found in their study that, in the main, adolescents were excluded from grocery shopping trips because they often requested unhealthy snacks which resulted in expensive shopping bills. Consequently, the adolescent's food choices were often dictated by this strategy, leaving little or no room for negotiation or autonomy (Bassett et al., 2007). According to Ryan et al. (2005), assuming responsibility to help children advance in their personal development (life skills) is a factor which is taken into account in terms of the roles dimension of the McMaster Model. The implications of neglecting personal growth may affect the way in which the child approaches lifestyle decisions. Contento et al. (2006) recommended that adolescents acquire skills to negotiate their food preferences with their families as this will increase their sense of control and help to develop their communication skills.

The equal distribution of tasks is important to avoid distress within the family (Ryan et al., 2005). Patrick and Nicklas (2005) found parents who are extremely busy find it difficult to ensure healthy meal times, leading to a high intake of fast or frozen foods. Unfortunately, parents are creating unhealthy lifestyles by including large amounts of fast food in the family's meals as these contain high levels of sugar and fat, thus constituting what the World Health Organisation regards as an unhealthy diet (WHO, 2015). In addition, it is worth noting the development of health risks such as type 2 diabetes, obesity and heart diseases which may result from unhealthy practices (Mokabane et al., 2014; Rossouw et al., 2012). Establishing a healthy diet is even more difficult for parents in modern society as conflicting messages are communicated, for example, the Noakes (banting) diet incorporates high-fat and low-carbohydrates in the meal plan (Opie, 2015). However, the diet has been criticised for causing heart and brain problems due to "higher circulating FFA (free fatty acid) concentrations, impaired myocardial energetics and decrease cognition in healthy subjects" (Holloway et al., 2011, p. 754). Consequently, Holloway et al. (2011) stated individuals experienced impaired attention, poor visual information processing and low alertness.

In respect of family functioning, health related functions (treating diabetes and heart diseases) increase role accountability due to the additional care required for the ill family member (Ryan et al. (2005). In conclusion, in developing a healthy lifestyle it is important to provide adequate healthy meal options and to encourage adolescents to make their own food choices. In this way, parents support the development of autonomy in children and adolescents (Davids et al., 2016; Golan & Crow, 2004; Roman et al., 2016). Roos, Lehto, and Ray (2012) assert that, when it is the parents who decide mainly what food products their children consume, they neglect the development of autonomy in their children.

2.5.1.4 Affective responsiveness dimension

Affective responsiveness in the family context indicates the capacity of family members to respond with a broad range of both welfare (affection, warmth, love, support, tenderness) and emergency emotions (fear, anger, sadness, depression, disappointment) (Ryan et al., 2005, p. 34). A family is considered to function most effectively when the appropriate emotion is experienced with reasonable intensity and for a reasonable duration (Ryan et al., 2005). Thus, the focus is on the capacity of the family members to respond emotionally to their actual behaviours (Ryan et al., 2005). The focus in this study was exploring the range of emotions which family members experienced in response to their lifestyles. For example, whether family members only experienced one type of emotion (i.e. guilt, happiness) or whether a broad range of emotions inclusive of both negative and positive emotions were experienced.

It is interesting to note that Evers et al. (2010) established an association between emotion regulation and overeating. Individuals who lack adaptive emotion regulation often employ maladaptive strategies, such as increased food intake, to regulate negative affect (Evers et al., 2010). Effective self-regulation in adolescents is evident when they control impulsive behaviours such as frequently consuming unhealthy snacks (Kerig et al., 2012). Feelings of guilt also play a role in the establishment of a healthy lifestyle. Some parents are working long hours and they may overcompensate for their feelings of guilt by either providing their children with food treats or overfeeding them (Adamo & Brett, 2013; Turner, Kelly, & Mckenna, 2006). In their study Schösler, De Boer, and Boersema (2014) found that those participants who dieted regularly experienced feelings of guilt about the food they consumed. In a family system emotional episodes of either over- or under-responding may occur, but do not influence the overall functioning of the family (Golan & Crow, 2004; Levine, 2005; Ryan et al., 2005). A parent-child relationship that is grounded

in trust, warmth, love and nurturance assists the child to develop self-determination (Roman et al., 2015).

Schösler et al. (2014) and Hagger and Chatzisarantis (2008) studied the link between food choices, exercise and self-determination. The concept of self-determination provides an understanding of an individual's level of motivation to engage in healthy behaviour (Hagger & Chatzisarantis, 2008; Opie 2015). However, a distinction should be made between internalised and externalised motivation. For example, Patrick and Williams (2012) as well as Ryan and Deci (2002) argue that internalised motivation causes an individual to be more committed to healthier behaviour. Conversely, external motivation in the form of reward or avoidance techniques is detrimental to healthy behaviour (Patrick & Williams, 2012). Self-determination stems from feeling connected and from being involved in relational aspects of each other (Walsh, 2012).

2.5.1.5 Affective involvement dimension

The level of interest that family members show in the activities of each other may influence lifestyle choices. For example, Ray and Roos (2012) found that children tended to engage in regular physical activities when they participated in such activities with their parents. Kremers et al. (2003) found in their study that parent involvement characterised by warmth, emotional support and clear communication contributed positively to the eating practices of children. In addition, children consume more fruit and vegetables because of parental involvement during family meal times (Ray & Roos, 2012). In other words, individuals who experience the satisfaction of feeling connected to others in their context most likely feel autonomously self-regulated, thus resulting in healthier dietary decisions (Patrick & Williams, 2012; Walsh, 2012). However, family involvement may also imply that some parents pressure their children to eat all their vegetables before they may have dessert (Savage, Fisher, & Birsch, 2007). Unfortunately, Savage et al. (2007) also found that, in this situation, the children may develop a dislike of those vegetables. Developing standards to control eating behaviour during family meal times is another point that should be considered in family functioning (Berge et al., 2012).

2.5.1.6 Behaviour control dimension

This section discusses more than one approach to behaviour control because parents use various strategies to encourage their children to consume healthy food. For example, Brown and Ogden (2004) studied the effect of behaviour control on adolescents' diets and found that the control and restriction of children's diets do not generally promote healthy eating. In addition, high levels of body dissatisfaction are evident in cases where food is

used as a behaviour modification tool, for example, parents who use sweet treats as a reward if children have to finish a healthy meal (Brown & Ogden, 2004; Peters et al., 2014). Sweet treats are associated with motivating behaviour, problem solving and may even become a coping mechanism for children. For example, Hamburg, Finkenauer and Schuengel (2014) state food offered to regulate emotion may initiate unhealthy eating choices because children learn to regulate negative experiences or emotions with food or sweet treats (i.e. lollipops). Later in the lifespan when children experience hardship they turn to food to provide comfort (Hamburg et al., 2014). In addition, the restriction of certain foods may cause poor dietary self-regulation, thus leading to increased body weight gain. According to Birch et al. (2001), mothers who are concerned with their own body weight are more likely to restrict the food intake of their daughters than their counterparts who are concerned with their own body weight. Consequently, mothers may be under the impression that better body weight loss results will be achieved. However, restrictive dieting is not beneficial to the adolescent as it often actually promotes weight gain (Field et al., 2003).

According to the McMaster Model perspective, behaviour control encapsulates the standards that a family put in place to monitor behaviour and requires parental discipline and standards of behaviour in terms of the psychobiological needs (such as eating) of their children (Ryan et al., 2005). There are four styles of behaviour control, namely, rigid, flexible, laissez-faire and chaotic. Rigid behaviour control involves a constricted and narrow standard and allows little room for negotiation. On the other hand, families who use flexible behaviour control have rules in place that the family members regard as reasonable while they are also permitted to negotiate and change the standards (Ryan et al., 2005). The third style is the laissez-faire style that implies that families do not have any standards or direction in place and total latitude is allowed. The chaotic behaviour control style is the least effective because family members are unsure about which standards to apply in situations and whether negotiation is possible (Ryan et al., 2005). In this study the focus was on how the family applied standards in the home to monitor healthy lifestyle choices and whether transitioning to adolescence initiated changes in family boundaries.

Another perspective in relation to setting standards in the family is child-rearing styles which, according to Golan and Crow (2004) and Kremers et al. (2003), are associated with children's diets. According to Berk (2009, p. 569), child rearing styles include "a combination of parent behaviours that occur over a wide range of situations, creating an enduring child-rearing climate". A description of the child-rearing four styles, the degree of

control that is executed in the relationship and the granting of autonomy are presented in the table below (Berk, 2009, p. 570):

Table 6 Parenting styles

Child Rearing Style	Acceptance and Involvement	Control	Granting of Autonomy
Authoritative	Warm, responsive, attentive and sensitive to the child's needs.	Makes reasonable demands for maturity and consistently enforces and explains such demands.	Permits the child to make decisions in accordance with his/her readiness to do so. Encourages the child to express thoughts, feelings and desires. When parent and child disagree, joint decision making when possible is used.
Authoritarian	Cold and rejecting and frequently degrades the child.	Makes numerous demands coercively, using force and punishment. Psychological control, withdrawing love and intruding on the child's individuality occur frequently.	Makes decisions for the child. Rarely listens to the child's point of view.
Permissive	Warm but overindulgent or inattentive.	Makes few or no demands.	Permits the child to make numerous decisions before the child is ready to do so.
Uninvolved	Emotionally detached and withdrawn.	Makes few or no demands.	Indifferent to the child's decision making and point of view.

According to Moletsane (2004), corporal punishment (authoritarian) is the least effective strategy in the social and emotional development of the child. On the other hand, a balance between adult-child needs and positive reinforcement (authoritative) is the most effective (Moletsane, 2004). The type of parenting style influence healthy eating. The findings of a study by Berge et al. (2010) revealed that the permissive parenting style promoted the consumption of fruit and vegetables because the fathers were responsive to the needs of their adolescent daughters and, they created less structure. On the other hand, authoritarian parenting style promoted low levels of fruit and vegetable consumption (Kremers et al., 2003) because parents are less responsive and more demanding (Berge et al., 2010). Davids et al. (2015) agree with Kremers et al. (2003) that authoritative parents encourage their children to engage in healthy lifestyle behaviours because they are responsive to the needs of their children.

The level of competence that parents experience in setting standards contributes to healthy behaviour. Willis et al. (2014) affirmed that parental self-efficacy refers to parents feeling confident in setting limits about food and exercise, thus leading to healthier behaviour in children. Parental self-efficacy relate to the ability to change lifestyles with confidence, participate in active play and establish regular family mealtimes (Willis et al., 2014). In light of the fact that the adolescent is viewed "within the context of the environment in which he/she interacts" (Bezuidenhout & Dietrich, 2010, p. 72) and, hence, having parents who model low self-confidence when setting limits about food and exercise may result in adolescents feeling out of control of their lives (Donald et al., 2012, Thirlaway & Upton, 2009).

2.6 SOCIAL CONTEXT

2.6.1 Peer group interaction

Even though this study focused on family factors, it is important to note that other influences, such as peers, also influence the establishment of a lifestyle (Skaal, Monyeki, & Toriola, 2015; Voorend et al., 2012). Voorend et al. (2012) conducted a study in urban Soweto to explore joint food decisions and shared eating among adolescents. The findings showed that generally friends shared food within a group or between pairs regardless of whether the food came from home or had been bought from the tuck shop at school with the money received from caregivers (Voorend et al., 2012). In addition, during visits to the shopping malls friends often combined their money to purchase fast foods or unhealthy snacks from the grocery store. Conversely, it was also found friends did not always agree about where food must be purchased if they were following different diets. It is interesting to note that more than 50% of the 58 participants in the study by Voorend et al. (2012), were overweight and that dieting was perceived necessary when the adolescents wanted to attend an event, such as the matric dance (Voorend et al., 2012). Contento et al. (2006) are of the opinion that junk food choices with friends may be balanced with healthy meals at home, thus the adolescent felt connected with friends and family members.

The way in which adolescents respond to each other affects their participation in physical activity. A study conducted by Skaal et al. (2015) in the North West Province reported that 19% of the 284 adolescent participants in the study had stated that friends never commented on how well they had performed in physical activity while 18,6% of the participants had indicated that they did not have friends who encouraged them to participate in physical activity. It is interesting to note that the boys in the study were underweight and highly active while the girls were relatively overweight and inactive

(Skaal et al, 2015). A study by Sedibe et al. (2014) found that the adolescent females did not have the courage to exercise in front of their peers as they feared peer gossip about their appearance. Similarly, in the study by Verstraeten et al. (2014, p. 3) the adolescents feared that their peers might "mock" them if they ate healthy in front of them, thus suggesting that the opinions of the peer group influenced healthy eating. However, the peer environment is not the only context which provides information about what to eat and how to exercise. According to Verstraeten et al (2014), parents are concerned about the content of advertisements in the media that influence the eating choices of children.

2.6.2 Media and television factors

The level of physical activity often decreases among adolescents due to increased screen time. Micklesfield et al. (2014) found that adolescents spent 68% of their time in sedentary behaviour (screen time) and 26% of their time doing homework. The main concern about television viewing and playing computer games is that the increased sedentary behaviour may lead to obesity (WHO, 2014). A further concern is that television viewing stimulates the child to eat more frequently with Golan and Crow (2004) finding television viewing tends to be associated with a decline in physical activity as well as feasting on sweets, chips and pizza.

Research into overweight parents showed that girls who spend a significant amount of time watching television also have a higher body mass index. The stimulus-sensitive child requests foods he/she sees in the food advertisements consequently eating food high in fat (Golan & Crow, 2004). Mokabane, Mashao, Van Staden, Potgieter, and Potgieter (2014) reported similar results with children often engaging in unhealthy behaviour such as eating sweets, biscuits and cakes when they watched television or played electronic games (Mokabane et al., 2014). A contributing factor of concern is that the dietary patterns of the immature child may be negatively influenced by the images of thin models displayed on television, thus causing children to develop issues about their bodies.

Magazines often portray pictures of so-called ideal body images and print articles about diets. According to Golan and Crow (2004), a child reading these magazines may decide to diet and lose weight because the ideal of a perfect body image triggers the child to compare her appearance with that of the image in the magazine, with subsequent body dissatisfaction as well as restrictive and bulimic behaviours arising (Golan & Crow, 2004). Parents are fundamental in facilitating communication about messages in the media as they may encourage their children to openly discuss their views about harmful messages (Levine, 2005). On the other hand, Gray and Smith (2003) commented that parents in an

urban area often encouraged their children to watch television as it is perceived to be safe entertainment for children.

2.6.3 Urban/rural areas

According to Rossouw et al. (2012), South Africa is in a rural-to-urban transition phase while the area (urban or rural) in which adolescents reside influences diets. However, it is also clear in the literature that both healthy and unhealthy practices manifest in urban and rural areas. According to Verstraeten et al. (2014), rural parents tend to produce their own food, thus providing their children with healthier food as opposed to urban parents who have to rely on the availability of healthy food in the supermarket (Verstraeten et al., 2014). Vorster, Venter, Wissing, and Margetts (2005) concurred with Verstraeten et al. (2014), stating that dietary patterns in the rural areas are often influenced by the Westernised practices of urban migrant workers travelling to their homes located in rural areas. Vorster, Kruger, Wentzel-Viljoen, Kruger, and Margetts (2014) assert that rural individuals were consuming increased amounts of added sugar in 2010, compared to findings of an earlier study conducted by Steyn, Myburgh, and Nel (2003). In South Africa sugar intake has also increased in urban areas, thus increasing the risk of obesity and non-communicable diseases (Vorster et al., 2014). Frequent exposure to foods with high amounts of sugar and foods that are rich in energy foster a preference for such foods, thus leading to obesity (Scaglioni et al., 2008). Vorster et al. (2005) studied the effect of urbanisation on nutrition and health transition in South Africa and found that 100% of rural individuals consume staple maize porridge every day, while the urban participants tended to consume more fruit such as bananas and apples (Vorster et al., 2005). In addition, the amount of protein consumption increased with urbanisation with a high increase in animal protein intake and, consequently, influencing cholesterol levels (Vorster et al., 2005).

A significant difference is noticeable between the levels of physical activity in rural and urban areas. For example, in a photovoice project about the perception of physical activity among urban children, the researchers found that the physical environment is a key determinant in the level of physical activity (Heidelberger & Smith, 2016). In addition, higher levels of physical activity were evident in arranged community activities such as high intensity games, with less exercise at home and in school (Heidelberger & Smith, 2016). Molnar, Gortmaker, Bull, and Buka (2016) identified safety concerns as one of the reasons for decreased physical activity in urban areas while the limited outdoor space at urban homes often decreased the level of physical activity (Heidelberger & Smith, 2016). Mokabane et al. (2014) suggested that safe community playgrounds in South African may motivate adolescents to engage in more physical activity while exercising with family

members tends to motivate individuals to be more active. For example, Heidelberger and Smith (2016) reported that children in urban areas were more active with their siblings and friends when they played team sports together. In addition, children often participated in a functional activity with their parents such as walking to the bus stop or the train station (Heidelberger & Smith, 2016). On the other hand, the level of physical activities in rural areas was sometimes lower for adolescent girls because they were advised by the school to focus on their studies instead of taking part in physical activities (Sedibe et al., 2014). It is interesting to note that Sedibe et al. (2014, p. 6) reported that adolescent girls often value the benefits of physical exercise for the body. According to Sedibe et al. (2014), "young people should exercise so that the illnesses that are common nowadays cannot get us soon". Micklesfield et al. (2014) found that pubertal development, sedentary behaviour and low socio-economic status were all contributing factors to lower levels of physical activity in rural areas. It may, thus, be concluded that urban and rural areas differ in terms of the level of physical activity but not in terms of eating healthy and unhealthy food products. In addition, household income is a key determinant in healthy choices (Vorster et al., 2005).

2.6.4 Socio-economic status

Individuals' attitudes about the cost of food influences their choices, for example, it has been found that perceptions about certain meals such as traditional food (miroho) tended to be negative as miroho (green leafy vegetables) is often associated with poverty. On the other hand, fast food and rich meaty-dishes were preferred as they are associated with wealth (Sedibe et al., 2014). However, regardless of what individuals associate with wealth, the income of a family affects the food products that are purchased. An international study conducted by Chen and Wang (2011) among low-income African American adolescents revealed that, as compared to their counterparts with a high ideal body image, adolescent girls with a low ideal body image (IBI) tended to consume less fruit and milk and participated in limited physical activity, thus indicating an unhealthy lifestyle. Similarly, Heidelberger and Smith (2016) found that children from low-income homes in South Africa are at risk of obesity and experience barriers to physical activity with 99 of the 254 photos received in their photovoice project depicting sedentary activities such as playing video games, watching television or movies or sitting at a computer (Heidelberger & Smith, 2016). Bukman et al. (2014) provided insight into the perspectives of low socio-economic and high socio-economic status groups with regard to healthy lifestyle choices. Following the results of their study low socio-economic groups were motivated to change their lifestyles due to health complaints but, due to cost

concerns they did not eat healthy (Bukman et al., 2014). The low-socio-economic group relied on one salary and indicated that they purchased groceries at cheap supermarkets and food with a discount (Bukman et al., 2014). In my experience, one salary in the home do affect food items purchased for example, blue berries is high in antioxidants and nutritional value and, low in calories but cost R39,99 for 125g (www.healthline.com; www.woolworths.co.za). I will most likely purchase the brown bread at a cost of R13,99 for 700g (www.woolworths.co.za) as it will allow me to feed a family of four. Brown bread is high in gluten and is digested faster consequently increase blood sugar levels (www.healthline.com). In a study by Aertsens et al. (2011) consumers complained that the cost of healthier food, such as organic fruit, is higher than that of other products thus limiting lifestyle choices. However, lifestyle choices must rather be based on knowledge about food and exercise.

2.7 LIFESTYLE CHOICES

Nowadays there is a variety of diets available from which to choose. According to Friedland (2011), healthy eating becomes a challenge because of having to prepare meals that are accepted by all the family members and are also nutritious. Accordingly, this study explored the level of commitment of family members in respect of dietary requirements. In modern society individuals are exposed on a daily basis to various diets and eating plans, for example, the Banting diet promotes high levels of fat and low carbohydrates (Noakes, 2013) while the Atkins diet is low in carbohydrates (Atkins, 2003). Opie (2015) maintains that the Mediterranean diet is directly associated with better heart health as it includes fish, olive oil, nuts, fruit and vegetables. Short term diets have proved to be unreliable and, therefore, the concept of lifelong eating patterns has gained prominence (Opie, 2015). However, the question remains: “What is considered to be healthy food and exercise?”

The *South African guidelines for healthy eating and food guide* (Department of Health, 2012) suggests that individuals incorporate a variety of food products in their meal plans while Friedland (2011) suggests that parents may encourage healthy eating by adding fruit, vegetables and food with low fat content to their children’s diet. Limited physical exercise, unhealthy meals and poor stress management are all contributing factors to illnesses (Baron, Branscombe, & Byrne, 2009). Diabetes may best be prevented with weight control, exercise and a diet that contains high fibre, fresh vegetables, fruit, low GI-foods and fats such as olive oil, omega-3 and flaxseed (Friedland, 2011).

The World Health Organisation (2017) defines health as a complete state of physical, mental and social wellbeing and not only the absence of a disease or illness. Baron et al. (2009) explain that optimal health may be attained through an awareness of lifestyle choices. Although a healthy diet is an important component in a healthy lifestyle it is not the only component (Opie, 2015). Both international and South African research indicate that a healthy lifestyle consists of non-smoking, regular exercise of 30 to 40 minutes three times a week, optimal nutrition, moderate alcohol intake and management of weight (Chiuve, McCullough, Sacks, & Rimm, 2006; Friedland, 2011). Adolescents, who make informed decisions about their health, contribute to lifelong health (Opie, 2015).

2.8 CONCLUSION

Ryan et al. (2005) suggest that families are viewed in light of how effectively they function as a system and their ability to manage problems together, for example, the developmental changes during adolescence in the family life cycle (McGoldrick & Shibusawa, 2012). Such developmental changes mean that the family is compelled to change established family patterns to make room for the granting of autonomy and flexibility in boundaries (Bassett et al. 2007). It is important for parents to remain warm, supportive and responsive to the needs of their children as this will promote healthy behaviour (Kremers et al., 2003). The dimensions of the McMaster Model, namely, problem solving, communication, roles, affective responsiveness, affective involvement and behaviour control all provide insight into the way in which family functioning contributes to the optimal physical and emotional health of family members (Bronfenbrenner, 1986, Ryan et al., 2005).

Using the lens of systems theory (Bronfenbrenner, 1986) other systemic influences are also recognised in respect of the establishment of a healthy lifestyle. Interaction with the peer group may either promote or hinder healthy lifestyle choices as do the media and television viewing (Micklesfield et al., 2014; Skaal et al., 2015). Higher levels of sedentary behaviour are evident among urban children with South Africa being in a rural-to-urban transition phase which is exposing families to more Westernised lifestyle behaviour with an increase in sugar and fat intake, and a decrease in traditional food such as miroho (green leafy vegetables) (Rossouw et al., 2012; Sedibe et al., 2014).

3.1 INTRODUCTION

In Chapter One and Two I discussed the planning, execution and theoretical background of the study. In Chapter Three I interpret the data that was collected, to attain certain findings and, hopefully, to draw conclusions from the data analysis (Nieuwenhuis, 2014b) (see Chapter One for a discussion of the analytical process). Accordingly, this chapter reports on the outcomes of the data analysis per individual family (which was described in Chapter One, Section 1.9.4). These findings are then interpreted by drawing on relevant theoretical knowledge (Nieuwenhuis, 2014a).

3.2 DATA ANALYSIS

Using deductive thematic data analysis two themes emerged (discussed in Chapter One, Section 1.9.4). Theme one, lifestyle choices (American Heart Association, 2017; Department of Health, 2012; Friedland, 2011; Thirlaway & Upton, 2009), describes the choices of the family members who participated in the study while theme two, systemic influences (Bassett et al., 2007; Berk, 2009; Friedland, 2011; Imber-Black 2012; Ryan et al., 2005; Viswanathan, 2017) describes the systemic influences the families experienced in establishing a healthy lifestyle (see Annexure D for a complete audit trail of the data). Table 7 below presents the themes and subthemes that emerged:

Table 7 Themes and subthemes

Theme	Sub-theme	Data Source
Theme One: Lifestyle choices	Subtheme 3.2.1.1 Physical exercise Subtheme 3.2.1.2 Food consumption Subtheme 3.2.1.3 Perception of healthy food items Subtheme 3.2.1.4 Level of physical activity versus food consumed	Photovoice messages Photovoice messages Semi-structured interview Semi-structured interview
Theme Two: Systemic influences	Subtheme 3.2.2.1 Family functioning • Problem solving • Communication • Roles ○ Planning, preparation and availability of healthy food • Affective responsiveness • Affective involvement • Behaviour control	Semi-structured interview and lifestyle journal

Theme	Sub-theme	Data Source
	○ Family values Subtheme 3.2.2.2 Family rituals Subtheme 3.2.2.3 Autonomy Subtheme 3.2.2.4 Friendship Subtheme 3.2.2.5 Use of mobile applications Subtheme 3.2.2.6 Medical conditions	

The next section discusses theme one and the subthemes.

3.2.1 THEME ONE: LIFESTYLE CHOICES

In the context of this study lifestyle choices are described as the choices individuals make with regard to the type of food they consume and the level of physical exercise they do and, that affect their future health (Department of Health, Western Cape, 2017). The subthemes under theme one are discussed below.

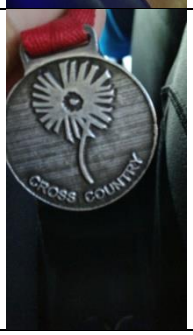
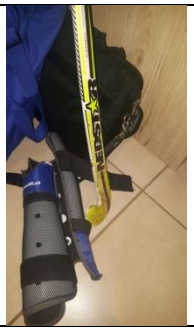
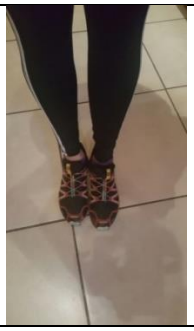
3.2.1.1 Physical exercise

According to Ratamess, Alvar, Evetoch, Housh, Kibler, Kraemer and Triplett (2009) strength training is physical exercise that increases size of skeletal muscle by varying intensity, volume, frequency, duration and rest intervals. Cardiovascular training is defined as a rhythmic aerobic exercise that uses large muscle groups (Wahid et al., 2016). Examples of cardiovascular training include swimming, running, walking, dancing (Friedland, 2011). Flexibility exercise is defined as stretching to improve the range of movement of the body (Bushman, 2016). Cardiovascular exercise, flexibility training and strength training are the type of exercises that should be incorporated into a lifestyle (Friedland, 2011). In the photovoice messages families A, B and C in the study indicated high levels of physical activity such as running marathons, muscle strengthening training and playing team sports. Tables 8, 9 and 10 contain a summary of the physical activities in which the families participated:

In the photovoice messages **family A** cited the following physical activities.

Table 8 Physical activities for family A as indicated in the photovoice messages

Type of physical activity	Description of activity	Example of photographs received

Type of physical activity	Description of activity	Example of photographs received
Strength training	90 minutes muscle conditioning 2-hour weight resistance training	
Cardiovascular training	2,5 km treadmill run 45 minutes gym 2,5 km walking 18,5 km running (including cross country running) 2-hour astro session 4-hour hockey games 1 hour of dancing.	  
Flexibility	None	

In the photovoice messages **family B** cited the following physical activities.

Table 9 Physical activities for family B as indicated in the photovoice messages

Type of physical activity	Description of activity	Example of photographs received
Strength training	1 hour of sit ups, push-ups and plank	
Cardiovascular training	4 hours of aerobic exercise Walked 54 800 steps. 8 hours of netball games. 1 hour 30 minutes of rugby 9 hours 30 minutes of dance practice	 
Flexibility	None	

Family B indicated in a photovoice message that they had completed a daily schedule of their physical activities. In the field notes (line 10) the family explained that one family member had been diagnosed with diabetes and they kept a family schedule to monitor their level of physical activity.

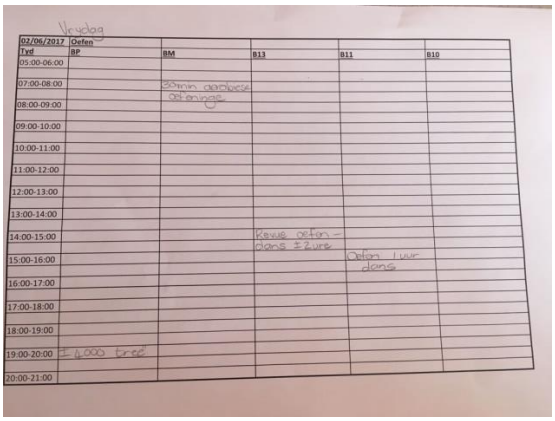


Figure 3 Family B's daily schedule of physical activities

Family C cited the following physical activities in the photovoice messages.

Table 10 Physical activities for family C as indicated in the photovoice messages

Type of physical activity	Description of activity	Example of photographs received
Strength training	1 hour of muscle conditioning 1 hour of weight training	
Cardiovascular training	1 hour playing on jungle gym. Walked 14 000 steps 4 hours playing golf 1 hour 30 minutes hockey game 4 hours 30 minutes running practice 56 km running race	 
Flexibility	40 minutes stretching	

As indicated in the tables above the families in the study indicated physical activities such as muscle conditioning and weight training such as strength training. They also indicated running, team sports such as hockey and rugby, walking and aerobic training as cardiovascular training. One family (family C) cited stretching as flexibility training. One member in family B had been diagnosed with diabetes and, thus, the family maintained a daily schedule to monitor their level of physical exercise. There was a pattern of high levels of physical activities on the part of the family members in all three families.

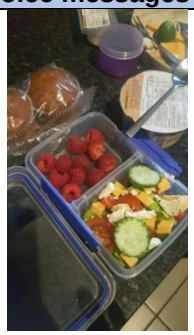
3.2.1.2 Food consumption

The South African guidelines for healthy eating (2012) indicates a variety of food products that may be consumed of which greater amounts of some products may be consumed as compared to others (Department of Health, 2012).

Families A, B and C in the study indicated in the photovoice messages that they had consumed a variety of fruit, vegetables, protein, food high in starch, dairy products and sugar or processed food over a period of two weeks. In the tables below the food items the families consumed over a period of two weeks are categorised. I used the South African guidelines (Department of Health, 2012) to list healthy food items first (fruit, vegetables, protein, dairy products, food high in starch, fat/oils), followed by unhealthy food items (processed food and sugar).

Family A indicated the following food categories in the photovoice messages:

Table 11 Food categories for family A

Food category		Example from photovoice messages
Fruit and vegetables • Strawberries • Pineapple • Pumpkin • Beetroot • Broccoli • Carrots • Cucumber • Tomato • Pineapple Protein • Red meat • Chicken • Fish • Eggs • Salami • Beans Dairy products • Cheese • Fat free plain yoghurt	Food high in starch • Potato • Rice • Bread • Oats Fats/oils • Avocado Processed food and sugar • Vetkoek • French fries • Pizza • Doughnuts • Monkeyglan d sauce • Sweet chili sauce • Jams • Fruit punch • Cinnamon pancakes • Honey tea	   

Family B indicated the following food categories in the photovoice messages:

Table 12 Food categories for family B

Food category		Example from photovoice messages
Fruit and vegetables • Banana • Apple • Tomato • Beetroot • Broccoli • Lettuce • Green beans • Raisins Protein • Biltong • Chicken • Fish • Eggs Dairy products • Cheese • Yoghurt	Food high in starch • Provitas • Rice • Pasta • Oats • Potato • Corn flakes Fats/oils • Peanut butter • Avocado • Mixed nuts Processed food and sugar • Hot chocolate • Chocolate cake • Milkshake • Rusks • Sweets • Pancakes • Granola bars • Apple juice • Dates	   

In the photovoice messages **family C** indicated the following food categories:

Table 13 Food categories for family C

Food category		Example from photovoice messages
Fruit and vegetables • Banana • Apple • Naartjie • Carrots • Cucumber • Mushrooms • Peas • Sweet chili Protein • Red meat • Chicken • Tuna • Eggs • Lamb • Bacon • Dry wors and biltong	Food high in starch • Brown bread • Rice • Oats • Pasta Fats/oils • Olive oil Processed food and sugar • Glucose sweets • Hamburgers • Viennas and french fries • Milo • Diluted fruit juice	 

Dairy products • Cheese • Yoghurt			

It was clear the three families consumed similar meals comprising both healthy food items (fruit, vegetables and oats) and unhealthy food items (hamburgers, pancakes and french fries). A variety of fruit, vegetables and protein were consumed by all three families. Cheese was frequently consumed by all three families. Although cheese is regarded as a healthy food item, according to the South African guidelines (Department of Health, 2012), consumers must use cheese sparingly. In the semi-structured interview (see Section 3.2.2.1.1) family B indicated the control of sugar as a problem and, evidence in their data, included food products high in sugar (hot chocolate, chocolate cake, sweets, apple juice). On the other hand, family C controlled the sugar intake of family members, for example, by diluting the fruit juices with water. Family B consumed the most sugar, family C consumed the most protein while family A consumed the unhealthiest meals such as deep-fried products although they did prefer air fried food (see Section 3.2.1.3). Air fried food is prepared by using an electric appliance to circulate hot air that contains fine oil droplets around the food to produce a crispy exterior, for example potato chips (Shaker, 2014). In summary, all three families frequently participated in physical activity and consume both healthy and unhealthy meals, regardless of medical conditions, food preferences and perceptions of healthy or unhealthy meals. According to Khan and Stevenpiper (2016, p. 38), “we should consider the whole diet for health benefits compared to just focusing on one nutrient” (for example sugar and fat). It is, thus, more important to view healthy eating within the context of all food items consumed and the level of physical activities of family members.

3.2.1.3 Perception of healthy food

Families A, B and C indicated in the semi-structured interviews that they regarded certain food items as healthy and others as unhealthy. Esther from family A commented that they avoided processed foods such as viennas, sodas, deep fried food and artificial sugars such as Canderel. In addition, the family preferred food that is air fried because the fat content is lower. Maryke from family B stated that chicken, fish, low GI bread, vegetables, fruit, such as bananas and apples, cheese and biltong were healthier food options. On the other hand, Kate from family C stated that they regarded vegetables, fruit, dairy

products, nuts, meat and food without colourants and chemical ingredients as healthy food options. Family C regarded portion sizes and a balanced diet as healthy. However, although the family regarded food high in starch, such as bread and pasta, as unhealthy they did eat these food types to save time. Water was the only drink perceived as healthy. In short, the perceptions of healthy food varied among the families. Family A's diet reflected deep fried food such as vetkoek and french fries in the two weeks of the study, regardless of their perceptions while the diets of both families B and Cs' diets reflected the food items they perceived to be healthy.

3.2.1.4 Level of physical exercise versus food consumed

During the data analysis a new theme emerged which had not previously been identified as a priori code. Subtheme 3.2.1.4 referred to the amount of energy that an individual consumed versus the amount of energy the individual used during exercise. According to the American Heart Association (2017), an individual must consume whole grain pasta, fruit, wholewheat toast or yoghurt to maximise energy levels before physical exercise and, after physical exercise the individual should consume proteins to repair muscles and carbohydrates to fuel the muscles. In the field notes, family C indicated that the children maintained high levels of physical exercise after which they consumed glucose sweets and large portions of protein. Table 14 presents the responses of the participants in the semi-structured interviews.

Table 14 Responses of participants in Afrikaans and translated into English

Participant	Afrikaans response	English translation
Family B		
Maryke, lines 308-309:	*"Ek is net altyd dankbaar dat hulle so aktief is want weet net as hulle net gesit het dan is dit nag. So dis onder beheer omdat hulle besig bly".*	*"I'm just always grateful that they are so active because, if they just sat, there would have been problems. So, it's under control because they keep busy".*
Lizl, line 310:	*"En omdat ons nie heeltyd so baie sweets eet nie".*	*"And because we do not eat that many sweets "*
Family C		
Kate, line 19:	*"Sodat die tannie kan weet hoekom eet hy (Joshua) so baie kos en glukose want hy oefen so baie".*	*"So, the lady may know that he (Joshua) eats so much food and glucose because he exercises so much".*
Phillip, line 20:	*"Ek sê mens moet eet en leefstyl verstaan binne die konteks".*	*"I say one must understand eating and lifestyle within the contex".*
Kate, lines 218-220:	*"Maar met die sport deur al die jare en hoe hy groei en honger is het hy agtergekom, want dit wat in die huis is, is in die huis en dan sit ek nou vir hom in wat hy wil hê, maar hy het so agtergekom dit is nie vir hom genoeg om net 'n*	*"But, with the sport through all the years and how he is hungry and growing, he realised, what is in the house, is in the house, and then I pack what he wants, but he has noticed it is not enough for him just to pack a sandwich".*

	broodjie in te sit nie".	
Kate, lines 221-225:	*"So ons het al baie gesprekke gehad en wat het sy liggaam nodig, hulle het regtig albei. Elzaan leer ook nou baie want sy het nou eers rerig baie sport begin doen maar Joshua kan baie duidelik voel wat sy liggaam nodig het. Hy sal vir my sê maar hy gaan moet tuna ook insit want dis nie vir hom genoeg nie".*	*"So, we've had a lot of conversations and what his body needs, they both have really. Now Elzaan is also learning because she now only started to do a lot of sports but, Joshua can feel very clearly what his body needs. He will tell me he should also pack tuna because it is not enough for him".*
Kate, lines 232-233:	*"Ek het vir hulle geleer dit is baie belangrik om protiëne te eet".*	*"I taught them it is very important to eat protein".*

Family A disagreed that they do not try to balance the amount of energy they consume with the amount of energy they use during exercise: *"Nee wat, hierdie is nie ons nie" ("no this is not us").*

3.2.2 THEME TWO: SYSTEMIC INFLUENCES

In modern society various factors influence the choices individuals make with regard to their lifestyle (Thirlaway & Upton, 2011). The findings in this study revealed that the participants interacted with peers, friends, family members and the community and, therefore, these systemic influences were classified as theme two. Systemic influences are grounded in the reciprocal interaction and relationships which the individual has with settings or individuals (Keenan & Evans, 2010). At the innermost level is the microsystem, which is the immediate setting in which the individual interacts, and which includes his/her family, peers and school. Subtheme one in this category is, therefore, family functioning.

3.2.2.1 Family functioning

The notion of family functioning is viewed in light of the six dimensions (problem solving, communication, roles, affective responsiveness, affective involvement, behaviour control) in the McMaster Model that have the most influence on the emotional health, physical health and/or problems of a family (Ryan et al., 2005).

3.2.2.1.1 Problem solving dimension

Problem solving in the McMaster Model is defined as the ability of family members to solve problems to an extent that family functioning is maintained. Problems may threaten the integrity and functional capacity of the family. A healthy family has few unresolved issues and deals with problems that arise systemically. As stated in Chapter One, there are seven steps involved in resolving an issue, namely, identifying the problem,

communicating with the appropriate person, developing alternatives, deciding on alternatives, acting on the decision made, monitoring the action and evaluating the effectiveness of their problem solving strategy (Ryan et al., 2005, p. 27). On the other hand, families that are unhealthy are often unable to identify problems, denies the problems or mislabels them, thus leading to conflict within the family (Ryan at al., 2005).

The study findings revealed that families A, B and C had all encountered minor problems with regard to their lifestyles. Family A had identified the need to exercise more often as a family as a problem and had engaged in a conversation in an attempt to solve the problem. Family B indicated that their problem was to eliminate sugar from their diet to accommodate the one family member who had been diagnosed with diabetes. They had engaged in conversation by having a family meeting around the table and had integrated family values and religion into their problem-solving strategy. Family C stated in a semi-structured interview that their lifestyle was too busy and, consequently they engaged in unhealthy lifestyle decisions and found it difficult to connect with each other. They had communicated about the problem and had considered options to solve the problem. Table 15 presents the responses of the participants during the semi-structured interviews:

Table 15 Responses of participants in Afrikaans and translated into English

Participant	Afrikaans response	English translation
Family A		
Kallie, line -5-6:	*“Ek dink die rede hoekom ons met die Parkruns begin het so vier jaar terug, was omdat ons agtergekom het ons moet 'n bietjie meer oefen".*	*"I think the reason why we started with the Parkruns four years ago was because we realised we needed a little more exercise".*
Esther, line 7:	*"Maar ook as 'n gesin saam oefen”.*	*"But also to exercise together as a family".*
Kallie, lines 21-22:	*"As daar 'n probleem is sal my ma vir ons sê ‘luister daar is 'n problem”.*	*"If there is a problem my mom will say, 'listen, there is a problem'".*
Esther, lines 25-28:	*"Ek dink nie daar is 'n formele strategie nie, maar wat ons wel doen is om miskien om die ontbyttafel te sit en te gesels. As ek byvoorbeeld sê 'al die take in die huis moet ons oor praat' dan sit ons om die ontbyttafel, dan lys ons gou al die take en dan gee ons vir elkeen al sy take wat hy moet doen".*	*"I don't think there is a formal strategy but what we do is perhaps to sit at the breakfast table and chat. For instance, if I say 'we must talk about the chores in the house', we then sit around the breakfast table and list all the tasks and then we give each his/her tasks to do”.*
Family B		
Teresa, lines 18-20:	*"Dis partymaal so dat ons vir mamma vra 'kan ons asseblief 'n sweetie kry?' dan is mamma soos 'nee, want Lizl kan dit nie eet nie of ja gaan eet dit net agter die huis' of so".*	*"If we sometimes ask Mommy 'can we please have a sweetie?" then Mommy says 'no, because Lizl cannot eat it or yes, just go and eat it behind the house' or something”.*
Maryke, lines 55-56:	*"Dan het ons 'n huisvergadering en*	*"Then we have a house meeting*

	daar kom nogal goedjies uit wat mens vir mekaar kan sê dit pla mens".	*and we can tell each other what is bothering us".*
Willie, lines 51-52:	*"Ons probeer maar gereeld om die tafel eet, en in die die aande bid en so aan".*	*"We try to eat regurlarly at the table and we pray in the evenings and so on".*
Family C		
Joshua, line 18:	*"Ons is besig".*	*"We are busy".*
Phillip, line 20:	*"Ons lewensstyl is besig, ja".*	*"yes, our life style is busy".*
Phillip, line 24-26:	*"Ja ek dink daar is baie aande wat ons byvoorbeeld sommer net, want tyd haal jou in, so dan stop ons gou by die kafee, kry slap tjips [sic], kom huis toe."*	*"Yes I think there are many nights that we, for example, time is catching up with you, so we then quickly stop at the Café, get slap tjips [sic], come home."*
Kate, line 46-50:	*"Ja gewoonlik wanneer ons 'n probleem identifiseer, sal ons daaroor praat in die gesin. Ek en jy sal eers daaroor praat (wys na Phillip) en dan sal ons met die gesin daaroor praat en dan doen ons gewoonlik iets daar omtrent. Maar die goed wat in hierdie stadium ons huis besig maak is daar nie veel wat ons kan... behalwe vir ek wat meer ge-organiseerd kan wees."*	*"Yes, usually when we identify a problem, we will talk about it in the family. You and I will talk about it (point to Phillip) and we'll then talk to the family about it and then we usually do something about it. But the things at this stage that make our house busy.. there is not much that we can...except that I can be more organised."*
Kate, line 54-57:	*"Want ons kan nie die skool stop of die sport wat hulle wel doen nie. Hulle doen nie nou meer so baie sport soos wat hulle voorheen gedoen het nie, dis vir ons belangrik dat hulle wel sport doen, so ja. Ons oplossing is dan om in die vakansies regtig dan net te chill."*	*"Because we can not stop the school or the sports they do. They are not doing as many sports as previously, it's important to us that they do participate in sports, so yes. Our solution is to just really chill in the holidays".*

The three families adequately identified their problems and engaged in communication about their problems to the others. They demonstrated the ability to use strategies to resolve their issues and implemented their strategies. However, the findings also revealed that they did not monitor or evaluate the effectiveness of their strategies but that this did not impact on the functioning of the family (Ryan et al., 2005). According to Ryan et al. (2005), it is only the most effective families that have the ability to evaluate the effectiveness of their problem-solving strategies. Although the families in the study did not evaluate the effectiveness of their problem-solving strategies, they were aware that their strategies to solve problems worked.

3.2.2.1.2 Communication dimension

Communication comprises the second dimension of the McMaster Model. By definition, in the family context, communication refers to the exchange of information between family members. Healthy family functioning occurs when the family members communicate

clearly and directly about instrumental and affective issues with minimal misunderstanding (Ryan et al., 2005). The study findings indicated that families A, B and C did communicate clearly and directly with each other and that the messages transmitted were received and understood. Family A indicated that they exchanged information while the members felt that they listened to each other. Although some members communicated more than others this did not, however, disrupt the functioning of the family because the members felt comfortable with each other and accepted the situation. Family B indicated that the children listened to their parents and that parents attempted to explain aspects about stress, personal development and lifestyle to them. The family was grounded in religious values that guided their conversations. The communication pattern in family C was similar to that of families A and B in terms of clear and direct messages being conveyed. It is worth noting that one member of family C found it difficult to verbalise his emotions and that it was possible that both children did, at times, say things to please their parents but the whole family was helping them to improve this. Family C also integrated family values, for example, to be fair in their communication pattern. In general family C viewed their communication pattern as open and with minimal challenges. In addition, they indicated it was constantly developing and improving. Table 16 presents the responses of the participants during the semi-structured interviews:

Table 16 Responses of participants in Afrikaans and translated into English

Participant	Afrikaans response	English translation
Family A		
Jean, lines 50-54:	*"Daar kom kort-kort goed op wat Esther sal sê 'nee, ons gaan begin om sop te eet of ons gaan dit', maar dis nie dat ons bymekaar kom en vir almal sê hoe gaan ons nou..dis maar meer 'n kwessie van sy is die gewete en die res van ons moet daarby inval".*	*"Every now and then stuff will come up and Esther will say 'now, we are going to start to eat soup or we will', but it's not that everyone comes together to say how we are going to do things now.. It's more a matter of she is the conscience and the rest of us must fall in".*
Kallie, line 56:	*"Ek voel ek luister vir my ma (lag), nee, ons luister vir mekaar".*	*"I feel I listen to my mother (laughs) No, we listen to each other".*
Esther, line 98:	*"As iemand iets wil gaan doen dan sê ons dit vir mekaar".*	*"If someone wants to do something then we tell each other".*
Jean, lines 61-62:	*"Sy (verwys na Esther) het 10 000 woorde elke dag en sy maak seker sy gebruik elke een (almal lag)".*	*"She (Esther) has 10 000 words every day, and she makes sure she uses each one (all laugh)".*
Esther: lines 67-68:	*"Ja, ek dink Jean sal by ons en tussen mense wat hy ken praat maar hy's nie 'n vreeslike…"*	*"Yes, I think with us and with people he knows Jean will talk but he is not much of a.."*
Kallie, line 69:	*"Ekstrovert nie."*	*"Extrovert."*
Family B		
Willie, lines 48-51:	*"Sê nou maar daar is 'n probleem*	*"If there is a problem with one,*

	met een, nie in die hele gesin nie, dan sal mens maar, as daar ongelukkigheid was, weer na die tyd roep en met die enetjie praat en so aan".	*not in the whole family then, if there was unhappiness, afterwards we would call him and talk to him, and so on".*
Teresa, line 87:	*"Ons moet na ons ouers luister".*	*"We must listen to our parents".*
Maryke, lines 92-93:	*"En partykeer dan mis mens mekaar en, soos Willie sê, dan probeer mens teruggaan en net gou hoor wat was die situasie".*	*"And sometimes we don't understand each other and, as Willie says, we will go back and soon hear what the situation was about".*
Maryke, lines 249-254:	*"Mens besef dit partykeer te laat maar as ons dit besef dan sal ons vir hulle sê 'ok, dit is wat nou by die werk aangaan. So, gee nou net 'n rukkie kansie, dit is nou hoekom ons voel soos ons voel. Ma voel nou hierdie dag is daar nou baie dinge so, as ek nou bietjie geïrriteerd klink, dit is hoekom".*	*"One sometimes realises it too late but, if we realise it, we'll tell them 'ok, this is now going on at work. So, now, just give us some, this is why we feel the way we feel. Mom feels that there is a lot going on today, so, if I sound a little irritated right now, that's why".*
Maryke, lines 227-228:	*"Daai laaste sê is vir my en Willie 'n nee. So ons probeer om hulle dit te leer: Jy hoef nie altyd die laaste sê te sê nie".*	*"For Willie and me the last word is a no. So, we are trying to teach them that you don't always need to say the last word".*
Family C		
Phillip, line 86:	*"Ons kommunikasie is baie oop en direk".*	*"Our communication is very open and direct".*
Joshua, line 87:	*"Ja, ek sukkel om te kommunikeer".*	*"Yes, I struggle to communicate".*
Kate, lines 89-91:	*"Mens moet dit reg verwoord, hy kommunikeer wel want ons het hom al laat oefen daarmee want hy het nooit in die verlede sy gevoelens rerig geverbaliseer nie, maar hy is al baie beter daarmee".*	*"One must articulate it properly, he does communicate because we have practised it with him. In the past he never really verbalised his feelings but he has become much better about it".*
Kate, lines 93-94:	*"Ons praat oor alles, die kinders en oor die huis en dis nie asof jy nie wil hoor dit het nou nie gewerk met my spyskaart nie".*	*"We talk about everything to the children and about the house, and it is not as if you do not want to hear this did not work with my menu."*
Phillip, lines 95-96:	*"Maar hulle twee (Joshua and Elzaan) sal baie keer sê wat ons wil hoor maar daaraan werk ons ook".*	*"But both of them (Joshua and Elzaan) will often say what we want to hear, but we are also working on it".*
Phillip, line 124 and line 127:	*"Ons het ook nie 'n kwessie van nie vir mamma sê of vir pappa sê nie." "…moenie na mamma toe gaan nie want pappa is beneuk nie".*	*"We also do not have the issue of don't tell Mommy or Daddy." "...don't go to Mommy because Daddy is angry".*
Kate, lines 444-449:	*"Maar ek is baie openlik en verduidelik, byvoorbeeld, hoekom is voor die huwelikse seks verkeerd, hoekom is pornografie verkeerd, ons praat baie openlik oor allerhande sulke goed in ons huis en gereeld. Hulle sal, byvoorbeeld, na ons toe kom en sê vandag het 'n maatjie dit by die*	*"But I am very open and I explain, for example, why premarital sex is wrong, why pornography is wrong, we regularly talk very openly about all sorts of stuff in our house. For example, they will come to us and tell us what a friend has done that day at school and whether it is actually*

	skool gedoen en is dit nou eintlik volgens ons waardes of is dit nou nie? Of hulle sal weet dat dit is of nie en dan sal ons daaroor praat".	*according to our values or is it not? Or they will know that it is or it is not and, then we will talk about it".*
Kate, lines 114-120:	*"Ek dink mens kan altyd daaraan werk maar ons luister, ja. Ons is dalk nie altyd almal so goed om dit mooi te ..ons is al baie beter as wat ons was, maar ek dink mens gaan deur sulke oppe en affe, mens dink jy is nou ok, jy is goed hiermee en dan kom jy 'n jaar later agter, o nee, jy kan maar eintlik weer bietjie hieraan werk of dit het 'n bietjie teruggeval. Maar ek dink oor die algemeen kan ons redelik goed met mekaar praat. Ons is 'n huis wat alles bespreek".*	*"I think one can always work on it, we listen, yes. We may not always be good at... we are all much better than we were, but I think one goes through such ups and downs, one thinks you are ok, you are good and, then, a year later you realise, oh no, you could actually work on this a little or it that has fallen behind. But I think, in general, we are able to discuss things with each other quite well. We discuss everything in our home".*

3.2.2.1.3 Roles dimension

Roles refer to the execution of family functions in the family in order to maintain healthy family functioning. The following five categories form the basis of family roles (Ryan et al., 2005):

- Provision of resources such as money, food, clothing and shelter.
- Nurturance and support: Providing warmth, comfort, reassurance and support for family members.
- Personal development: This includes the physical, educational and social development of the children and the career and psychological development of the adults.
- Maintenance and management of the family system: This includes decision making, boundaries, membership, maintaining discipline, household finances and health related functions.
- The last category refers to adult sexual gratification and includes the level of satisfaction in the interaction between couples (Ryan et al., 2005). This category was excluded in the semi-structured interview schedule as this study focused primarily on the role of the family in providing a healthy lifestyle and not on the intimate interaction between couples.

The study findings indicated that families A, B and C had all clearly defined roles in the family and that all the members of the family took responsibility and were accountable for their tasks. According to Ryan et al. (2005), family functioning may be said to be healthy

of if a high percentage of tasks are executed and the family handles disruptions adequately.

Family A in this study indicated that all members of the family were responsible for executing tasks. The parents buy groceries together, the mother usually packed the lunchboxes, the father was responsible for driving their daughter to school and, at times, ironing her school clothes, while the preparation of meals was divided between the parents, although this depended mainly on which parent arrived home first. The mother indicated that, at times, she had felt that she had more responsibilities than the others, but they had solved the problem by discussing the roles and reallocating tasks to other family members. Family rules were integrated with the tasks to ensure that tasks were executed. It was found that the members in the family felt they had ample opportunities to focus on their personal development.

Family B indicated they organised their schedules to execute tasks and that the parents taught the children to take responsibility for the tasks, with the children understanding that there would be consequences if tasks were not executed. All the family members were, to a certain extent, involved in the preparation of food, packing lunchboxes, buying food or setting the table although the decision as to what to prepare for dinner was shared by the parents. Systemically, family B supported each other in the coordination of tasks and each member took responsibility to complete certain tasks. According to Ryan et al. (2005), role functioning depends on role allocation and role accountability in the family. Role allocation refers to assigning tasks to family members and ensuring that they possess the skills required to complete the tasks. On the other hand, role accountability focuses on ways to ensure that tasks are completed (Ryan et al., 2005). The teenage children in the present study reasoned that task allocation was according to their ages. During the adolescent phase children start to reason about aspects of their life (Berk, 2009).

Family C indicated that they had clear roles and that all the family members knew what was expected of them. The mother prepared breakfast but dinner was prepared either by the father or the mother, depending on the routine. The children packed their own lunchboxes according to a predetermined menu. Tasks were allocated and completed according to a schedule. The family applied rules to monitor that the tasks were completed. The parents in the family each felt that their spouse had more responsibilities than they did. The parents also felt what the children did was sufficient taking into consideration their school and sports schedules. Table 17 presents the responses of the participants during the semi-structured interviews:

Table 17 Responses of participants in Afrikaans and translated into English

Participant	Afrikaans response	English translation
Family A		
Esther, line 77:	*"Ek en Jean doen dit saam".*	*"Jean and I do it together".*
Esther, lines 79-80:	*"Ons doen dit ook saam, so ons besluit as ek laat werk sal Jean die etes voorberei".*	*"We do it together, so we decide if I am working late Jean will prepare the meals."*
Jean, line 81:	*"Nie noodwendig saam nie, maar een van ons sal die etes voorberei".*	*"Not necessarily together, but one of us will prepare the meals".*
Esther, line 82:	*"Ja, elkeen het 'n dag in die week wat jou dag is om kos te maak".*	*"Yes everyone has a day in the week to make the food".*
Jean, lines 92-93:	*"Elke ou is verantwoordelik vir sy eie goed. Ek stryk nou en dan Samantha se klere voor skool".*	*"Everyone is responsible for his/her own stuff. Now and then I iron Samantha's clothes before school".*
Esther, lines 109-111:	*"Partykeer voel ek dat ek meer take het as ander maar dan doen ons die gesprek en dan verdeel ons dit en dan het elkeen sy verantwoordelikheid".*	*"Sometimes I feel that I have more tasks than the others but then we have a discussion and we divide it and each have his own responsibilities".*
Esther, lines 113-114:	*"Maar net so voel Kallie hy doen meer as Samantha".*	*"But Kallie feels he does more than Samantha".*
Kallie, lines 116-117:	*"Wanneer ek dit doen dan voel ek nie so baie kwaad vir haar nie maar ek gee nie om om goed vir haar te doen nie".*	*"When I do it I don't feel very angry with her but I do not mind doing things for her".*
Jean, line 134:	*"Dis nie dat almal daaroor praat nie, dit gebeur net".*	*"It's not that everybody talks about it, it just happens".*
Kallie, lines 139-141:	*"Ek dink ons is al net so getrain dat ons pretty much net skoonmaak, maar as sy (verwys na Esther) nou by die huis kom en ons het niks gedoen nie dan verstaan ons dat dit nie 'n lekker aand gaan wees nie".*	*"I think we're all just so well trained that we pretty much just clean but if she (Esther) comes home and we have not done anything then, we understand that it is not going to be a good night".*
Jean, lines 149-151:	*"Ek dink die een vir wie dit die moeilikste is om so iets te doen is Samantha, want sy is nog baie afhanklik, mense moet haar vat na plekke toe, maar sy is besig dat ek dink daar is genoeg ontwikkeling daar".*	*"I think the one for whom it is more difficult to do such things is Samantha because she is still dependant, people must take her to places, but she is very busy and I think there is enough development there."*
Kallie, lines 152-155:	*"Ja, ek dink wanneer daar geleenthede is soos kuier met vriende of as daar 'n hokkie kliniek is wat haar (Samantha) kan help om beter te kan speel. Enige hulp is altyd daar. Selfde met my as daar flippen iets is wat ek wil hê dan kry ek dit in terme van ontwikkeling".*	*"Yes, I think when there are events like a visit to friends or if there is a hockey clinic that may help her (Samantha) to play better. Any help is always there. Same with me, if there's something in terms of development that I flippen want I get in terms of development".*
Family B		
Willie, lines 65-71:	*"Ekskuus, ek dink omdat ons altwee bietjie gestruktureerd is sal ons 'n dag…ek meen as jy nou daar kan sien, sal jy so 'n rooster met Lizl, Teresa and Herman en*	*"Excuse me, I think because we are both a bit structured.. I think if you could look there, you will see a schedule with dates for Lizl, Teresa and Herman... in the*

	die datums sien…Maryke sal ook in die oggend vir hulle sê 'Ok, die dag gaan nou so verloop. Wie gaan aflaai, 14h00 dan kry mamma jou, jy gaan Voortrekkers toe, jy het netbal, dan kom ons terug dan so aan, ek dink omdat ons albei bietjie vooruit beplan lig ons mekaar so in".	*morning Maryke will also tell them 'Ok, so now the day will go like this. Who is going to drop off, Mom will get you at 14h00, you go to Voortrekkers, you have netball then we come back and so on. I think because we both plan ahead we are able to provide information like this to each other".*
Willie, lines 75-77:	*"Daar was al gevalle wat hulle iets vergeet het vir die skool wat hulle nie daar gehad het, wat ons voet neergesit het".*	*"There have been cases that they have forgotten something for school and we have put our foot down".*
Teresa, line 81:	*"Mamma gaan nie terugry nie."*	*"Mom is not going to drive back."*
Willie, line 82:	*"Dit was hulle verantwoordelikheid".*	*"It was their responsibility".*
Maryke, line 116:	*"En skottelgoed was volgens 'n rooster".*	*"And washing dishes according to a timetable".*
Teresa, line 113:	*"Party maal sal ons mamma help om 'n tamatie te sny".*	*"Sometimes we will help Mommy to cut a tomato".*
Willie, line 114:	*"Ja, die kinders sal maklik altyd 'n slaaitjie maak".*	*"Yes, the children will always make a salad easily".*
Teresa, line 115:	*"En ons sal soos meeste kere die tafel dek en so".*	*"And we will usually set the table and so on".*
Maryke, lines 101-104:	*"Wat vir my baie lekker is, Willie sal, as hy oor 'n naweek hier is, dan sal hy Saterdagoggend sê hy gaan Food Lovers toe en ek voel hy doen daai aankope baie goed. So ek waardeer dit verskriklik want dan weet ek ons is weer reg".*	*"Something that I appreciate is that, when Willie is here for a weekend, then he will say he's going to Food Lovers on Saturday morning and I feel he does the buying very well. So, I appreciate it terribly because then I know we are ok again". ".*
Willie, lines 109-111:	*"Ek dink die laaste tyd maar meer Maryke. Ek het vroeër jare maar meer gehelp, maar toe was my werksituasie anders, dan kom ek soos vandag was ek vier ure op die pad".*	*"I think mostly Maryke. Earlier years I helped but then my work situation was different, For example, today I was on the road for four hours".*
Maryke, line 112:	*"Maar as hy vyf uur hier is dan maak hy gou 'n slaaitjie".*	*"But if he is here at five o'clock, he quickly makes a salad".*
Teresa, lines 121-123:	*"Sê nou maar ons is gedruk vir tyd dan sal mamma die broodjies gemaak het en sê 'onthou 'n vruggie en dit' of so dan sal mamma net sê 'sit gou vir jou nog ietsie in".*	*"Say, for example, we are under pressure, then Mommy will make the sandwiches and say 'remember a fruit and this' or Mommy will say 'quickly, pack something".*
Maryke, lines 127-129:	*"Ja, ek sal party keer vir hom vra watse vleisie en as hy 'n vleisie kan gee dan gaan ons verder met die groente en goed. Anders kyk ek maar wat is in die vrieskas, haal uit".*	*"Yes, sometimes I will ask him what meat, and if he can say a particular meat, I continue with the vegetables and stuff. Otherwise I see and take out what is in the freezer".*
Willie, lines 135-136:	*"Ek dink maar meer Maryke en Lizl is goed in die oggend om hulle te organiseer om in die kar te kom".*	*"I think Maryke and Lizl are better in the morning to organise them to get into the car".*
Teresa, lines 137-138:	*"Ja, maar ons weet ook al op watte tyd ons netbal oefen en dan kan ons ook sê mamma moet ons nou daar kry".*	*"Yes, but we know by now what time netball is and we also can tell her where to find us".*
Lizl, lines 143-144:	*"Ek dink elkeen vat*	*"I think everyone takes*

	verantwoordelikheid. As jy oefen dan moet jy weet jy moet so laat ry".	*responsibility. If you have a practice then you should know what time to leave".*
Teresa, lines158-160:	*"As almal nou in Graad 8 was het ons almal dieselfde take, ons gaan almal dieselfde take hê as wat Lizl nou het maar ons het dalk nou minder as sy maar in Graad 6 het sy ook minder gehad."*	*"If everyone were in Grade 8, we would all be doing the same tasks, we're going to have the same tasks as Lizl now but we have maybe fewer now than she had in Grade 6 but she also had fewer then".*
Lizl, line 167:	*"Nie altyd nie, maar dan sal mamma my leer en dan kan ek dit doen".*	*"Not always, but then my mom will teach me and I will be able to do it".*
Family C		
Phillip, line 138:	*"Ja, ontbyt maak sy (wys na ma)".*	*"Yes, she makes breakfast (points to Mommy)".*
Kate, lines 136-137:	*"Aandetes is of ek of Phillip, dit hang af wat pas die beste in die roetine in. Maar ontbyt is ek".*	*"Either myself or Phillip make dinners it depends on what fits into the routine the best. But breakfast is me".*
Kate, line 139:	*"Kosblikke pak hulle self (wys na kinders)".*	*"They pack lunchboxes themselves (points to children)".*
Joshua, line 168:	*"Julle maak die hoofetes, maar ons moet vir julle sê as iets amper klaar is".*	*"You make the main meals, but we need you to tell them when something is almost finished".*
Joshua, line 174:	*"Vooruit sê, die hondekos is amper klaar".*	*"Say in advance, the dog food is almost finished".*
Phillip, lines 176-178:	*"Jy kan my nie vanoggend sê die hondekos is gisteraand klaar nie. Jy sal my eergister gesê het die hondekos gaan môre of oormôre klaar wees want dit moet inpas".*	*"You cannot tell me this morning the dog food was finished last night. You should have told me yesterday that the dog food was going to be finished tomorrow or the day after tomorrow".*
Phillip, lines 199-202:	*"En in die kombuis het hulle ook hulle eie verantwoordelikhede. Dis nie van wie gaan môre vir wie skool toe vat nie. Daar is 'n rooster. Jy doen dit en jy doen dit. Want anderste is dit 'n bakleiery of 'nee, maar ek het gisteraand dit gedoen en jy het nie'. Daar is struktuur".*	*"And they also have their own responsibilities in the kitchen. It's not like who is going to take whom to school tomorrow. There is a schedule. You do this and you do that. Because otherwise it is a fight or 'no, but I did it last night and you did not'...There is a structure"*
Kate, lines 181-185:	*"Ek dink Phillip doen eintlik te veel omdat hy ook nou nog voltyds werk, want hy sit vir Hein in die bed. Om met hom tyd te spandeer sit hy hom in die bed en bad saam met hom en dan maak hy nog baie keer kos ook wanneer hy in die aande by die huis kom. So dit voel vir my ek is die heel dag hier ek kan nou maar eintlik die ete maak".*	*"I think Phillip actually does too much because he also still works full-time as he puts Hein to bed. In order to spend time with him, he puts him in the bed and baths with him and then he still makes food at times when he comes home in the evenings. So, for me it feels if I am home the whole day that I could actually make the food".*
Phillip, lines 186-195:	*"Maar dis 'n persoonlike gevoel. Dis uitputtend om na Hein te kyk. Ek bly vir Kate sê sy vergeet ek klim in my kar en gaan kantoor toe en gaan werk en 'deal' met mense daar. Sy staan dieselfde tyd op as ek, sy gaan slaap dieselfde tyd as*	*"But it's a personal feeling. It's exhausting to look after Hein. I keep on saying to her she forgets I get into my car and go to the office and I go to work and deal with people there. She gets up the same time as I go, she goes to*

	ek, sy ry die kinders skool toe, sy kom terug, sy sort vir Hein uit, sy gaan koop die kruideniersware, sy doen die begroting, sy sorteer ons dagboeke uit, dan gaan haal sy die kinders, dan ry sy agter sport aan, dan is dit die en dan is dit daai. Ek kom by die huis en chill net. Verstaan ek het ook 'n verantwoordelikheid in die huis, party keer ry ek 'n bietjie vroeër om een van die kinders op te tel. Mens moet maar jou kant bring".	*sleep at the same time as me, she drives the children to school, she comes back, she sorts Hein out, she buys the groceries, she does the budget, she sorts out our diaries, then she fetches the children, and drives to the sport, then this, then that. I come home and just chill. I also have a responsibility in the house, some times I leave work a little earlier to pick up a child … one should do one's part".*
Kate, lines 196-198:	*"En die kinders kan nie rêrig meer doen as wat hulle reeds doen nie. Hulle het eintlik net twee take. Die kombuis en die honde wat hulle beurte mee maak. En hulle sukkel alreeds om daarby uit te kom".*	*"And the children cannot really do more than they are already doing. They actually only have two tasks. The kitchen and the dogs that they take turns with. And they are already struggling to get to it."*

The mother in family C was responsible for organising all family matters. She used a schedule to help other family members to remember their tasks. In a semi-structured interview Phillip, line 156, stated: *"Sy is die organiseerder. Sy het ons dagboeke, sy manage ons dagboeke"/"she is the organiser.She has our diaries, she manages our diaries".* In the field notes, lines 3-4 I stated that the mother had predetermined lists and schedules about tasks, planning school activities and the content of lunchboxes. Below are photographs taken during the field notes recorded for family C:

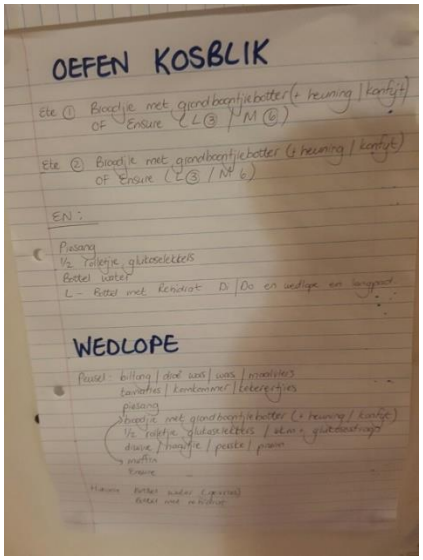


Figure 4 Menu planning for lunchbox

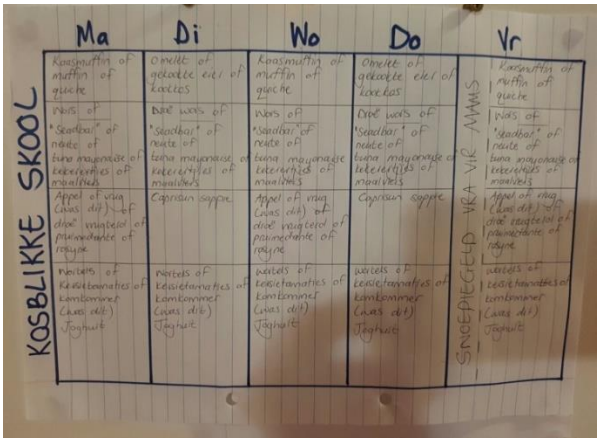


Figure 5 Menu planning for lunchbox

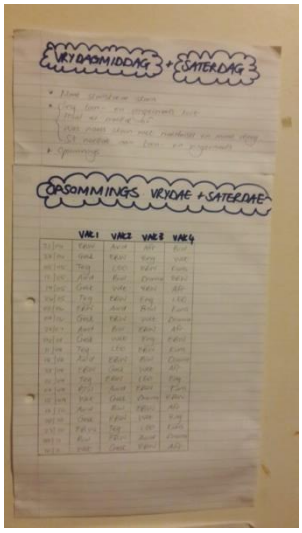


Figure 6 Weekly planning for family

Planning, preparation and availability of healthy food

The study findings indicated that the lack of planning healthy meals due to busy time schedules tended to result in a lack of provisions for healthy meals. In addition, busy time schedules also resulted in lower levels of physical activities and lower levels of energy. Conversely, the findings also indicated that planning and the availability of healthy food did result in healthy eating. Families A and B did not use a predetermined menu to prepare meals, but family C did have a predetermined menu to guide their meals. Table 18 below presents the responses of the participants from the lifestyle journals, photovoice messages and semi-structured interviews.

Table 18 Responses of participants in Afrikaans and translated into English

Participant	Afrikaans response	English translation
Family A		
In a lifestyle journal, Samantha, lines 17-21:	*"Vandag het ek 'n hokkie wedstryd gehad, maar ek was moeg so ek het nie op my beste gespeel nie. Na dit het ek konsert oefening gehad en toe het ek weer laat gaan slaap agv skool verpligtinge".*	*"Today I had a hockey game but I was tired so I did not play at my best. After that I had concert practice and then went to sleep late because I had school responsibilities".*
In a lifestyle journal, Esther, lines 12-15:	*"Lang dag! 02:15 opgestaan, Durban toe vir die dag en 21:20 terug by die lughawe. Geen oefening, sleg geëet en laat gaan slaap. Voel goor vandag".*	*"Long day! Got up at 02:15, Went to Durban for the day and back at the airport at 21:20. No exercise, ate poorly and went to sleep late. Do not feel good today".*
In a semi-structured interview, Jean lines 255-259:	*"Ek dink rêrig wanneer die tyd druk. As ek die aand 7 uur by die huis aankom en Esther kom 7 uur by die huis en daar was net nie tyd om self iets te doen nie, dan is*	*"I think when the time is really pressured. When I get home and Esther comes home at 7 o'clock and there was just no time to do anything, then we are quite*

	ons half ge-irriteerd en gaan koop takeaways, gaan koop 'n pizza, en dis maar basies die meeste van die tyd. So, dis die omstandighede wat dit druk".	*annoyed and we buy take aways, a pizza, and it's basically most of the time. So, it is the circumstances that cause pressure".*
Family B		
In a lifestyle journal, Maryke lines 19-23:	*"Sal eintlik graag oor naweke bietjie wil gaan draf, maar daar is altyd iets anders om te doen, die lewe is te besig".*	*"Actually want to jog a little over weekends, but there is always something else to do, life is too busy".*
In a lifestyle journal, Willie lines 31-32	*"Middagete, res van lunchbox…gee rustigheid vir assessering wat volg".*	*"Lunch, rest of lunchbox ... provides tranquility for the assessment which follows".*
Family C		
In a lifestyle journal, Kate lines 1-4:	*"Het vandag (Saterdag) besige dag gehad en nie vooruit etes beplan nie wat nie goeie gevolge gehad het nie".*	*"Today (Saturday) had a busy day and did not plan meals ahead, with unsatisfactory consequences".*
Kate, line 14-19:	*"Ek net appel by my gehad (en melk/water) vir Hein. Dus was hy baie huilerig en honger en ek was self half moeg en sonder energie omdat ek honger was".*	*"I only had an apple (and milk/water) for Hein. So, he was very whiny and hungry and I was quite tired myself and without energy because I was hungry".*
Kate,lines 22-28:	*"Het (ongesonde) besluit gemaak om slap tjibbe [sic] en viennas te eet vir vroeë aandete sodat ons net vinnig iets in almal se mae kan kry".*	*"Made (unhealthy) decision to eat slap tjibbe [sic] and viennas for an early dinner as we just quickly wanted to get something into everyone's tummies".*
In a photovoice message on 19 May 2017, Kate:	*"Gisteraand het die wiele van die bus afgeval en het ons nie kans gekry om kos te maak nie. Het dus slap tjibbe [sic] geëet, en elkeen 'n glas Coke".*	*"Last night the wheels came off and we had no chance to make food. So we ate slap tjibbe [sic] and drank a glass of Coke".*
In a lifestyle journal, Kate lines 52-55:	*"Was vandag baie besig maar het vooruit beplan wat ek gaan maak vir aandete, so die etes het goed uitgewerk".*	*"Today was very busy but I planned in advance what I was going to make for dinner, so the meals worked out well".*

3.2.2.1.4 Affective responsiveness dimension

Affective responsiveness includes the ability of family members to respond with a full range of emotions and whether the emotion experienced is appropriate to the situational context (Ryan et al., 2005). Family A cited feelings of happiness, sadness, love and support. While family B mentioned happiness and fear with the mother feeling happy when the children consumed the food she had made. Family B also mentioned experiencing feelings of guilt about unhealthy food. Family C also cited feelings of guilt when unhealthy food was served and, as in family B, the mother mentioned feelings of happiness when the family members consumed the healthy food she served. The members of family C indicated that they experienced feelings of happiness when they exercised because it relieved the feeling of stress. In general family A, B and C experienced a broad range of emotions (love, support, happiness, sadness) appropriate to

the situational context. Table 19 presents the responses of the participants from the lifestyle journals and semi-structured interviews.

Table 19 Responses of participants in Afrikaans and translated into English

Participant	Afrikaans response	English translation
Family A		
In a semi-structured interview, Kallie, line 180:	*"Ek weet nie, ek is happy, ek kan nie dink aan 'n tyd wat ek nie happy was nie".*	*"I don't know, I am happy, I cannot think of a time when I was not happy".*
Jean, line 193:	*"Ek dink dis 'n redelike happy-go-lucky groepie, meeste van die tyd".*	*"I think it's a reasonable happy-go-lucky group most of the time".*
Esther, line 183:	*"Ek dink dit is almal, daar is nie een spesifieke persoon nie".* (giving love and support).	*"I think it is everybody, there is not one specific person".* (giving love and support).
Jean, lines 188-191:	*"Daar is nie iemand wat altyd hartseer is nie maar ek dink as gevolg van omstandighede. My pa is twee jaar terug oorlede toe was ek op 'n stage nie so lekker nie, Esther se ma is 'n paar maande terug oorlede, so dit vang nog. Maar dis 'n hartseer met 'n rede, dis nie hartseer vir niks nie".*	*"There is never a person who is always sad but, I think, as a result of circumstances. My father died two years ago and I was not so good at that stage, Esther's mother died a few months back, so it still catches her. But it's sadness with a reason, it's not sadness for nothing".*
In a lifestyle journal, Esther, lines 1-3 and lines 5-6:	*"Lekker landloop gedoen – 4km. Jean en Samantha groot support gegee (smiley face). Voel koud maar goed!" "Samantha se hokkie gekyk by TUT – awesome game gewees – super trots!"*	*"Did a nice cross country – 4km. Jean and Samantha gave wonderful support (smiley face). Feel cold but good!" "Watched Samantha's hockey at TUT – was an awesome game – super proud!"*
Family B		
In a semi-structured interview, Teresa, lines 271-272:	*"Ons gaan altyd by die Voortrekkers op nagmarse en dan maak hulle ons bang en dan sal ek dit vir lank onthou en dan…ja".*	*"At Voortrekkers we go for night marches and then the others scare us. I will remember it for long and then..yes".*
In a semi-structured interview, Teresa, lines 274-278:	*"Die groter kinders maak die ander kinders bang. Dit is die beleid klink dit vir my dat hulle op daai manier weerbaarheid by die kindertjies kweek waarmee ons glad nie saam stem nie en het al ons mening gelig. Maar dis nou beter en jy (verwys na Teresa) is nou ouer en ons het vir 'n paar jaar nie op daai kamp gegaan nie".*	*"The older children scare the other children. It sounds to me as if it is the policy in order to develop resilience but we don't agree with it and we have given our opinion. But it's better now and you (referring to Teresa) are now older and we have not gone to the camp the last few years".*
In a semi-structured interview, Lizl, lines 283-284, 288:	*"Dis maar as ek netbal speel of, veral laas jaar, as ons SA's toe gaan saam met die netbalspan". "Ja, as ek in die top 10 is of so".*	*"It is when I play netball or, especially last year, we went with the netball team to the SA's". "Yes, if I was in the top 10 or so".*
In a lifestyle journal, Maryke, lines 1-5:	*"Dit is vir my lekker as die kinders die kos wat ek maak geniet en waardeer. Soos vanoggend se bacon en eier".*	*"For me it is nice if the children enjoy and appreciate the food I make. Like this morning's bacon and eggs".*
In a lifestyle journal, Teresa, lines 11-12:	*"Ek was baie bly toe ek hoor ons gaan vis braai want ek is mal oor vis en dit was baie lekker".*	*"I was very happy when I heard we were going to braai fish because I am really fond of it and it was delicious".*

In a lifestyle journal, Herman, lines 11-14:	*“Mamma het vir ons almal hot chocolate gemaak. Ek weet ek moet bietjie gesonder drink maar dit is te lekker om nee te sê”.*	*“Mommy made us all hot chocolate. I know I should drink something healthier but it is too delicious to say no”.*
In a lifestyle journal, Maryke, lines 58-64:	*“Vandag saam met 'n vriendin koek geëet, die kuier is altyd lekker maar die ongemaklike gevoel na die soetgoed is sleg. Wens mens kan kuier sonder die soetgoed...”*	*"Today ate cake with a friend, the visit is always nice but the uncomfortable feeling after the sweet treats is unpleasant. Wish you can social without the sweet treats ..."*
In a lifestyle journal, Lizl, lines 72-74:	*“Ek het lekker hot chocolate gedrink en suurlemoentert geëet. Ek voel bietjie skuldig want ek het ook vandag niks geoefen nie”.*	*"I drank delicious hot chocolate and ate lemon tart. I feel a little guilty because I have also not exercised today”.*
Family C		
In a lifestyle journal, Kate, lines 35-39:	*“Ons het onbeplan by ouma gaan kuier en toe net koek en melktert vir middagete geëet. Dit laat my altyd skuldig voel wanneer ons so iets doen want ek wil graag my kinders gesonde gewoontes aanleer”.*	*"We made an unplanned visit to granny and only ate cake and milktart for lunch. It always makes me feel guilty when we do something like this because I want my children to learn healthier habits”.*
In a lifestyle journal, Kate, lines 56-58:	*“Almal het genoeg geëet en lekker geëet en dit maak my gelukkig”.*	*"Everyone ate enough and enjoyed it and that makes me happy".*
In a semi-structured interview, Joshua lines 269-278:	*“Ek hardloop want ek geniet dit en dis nou waar ek nie stres nie of wat ookal. So, in die eksamen, kan ons per dag meer intens oefen as wat ons kan in skooltyd. So dit kan partykeer voel ek kry minder rus..”*	*"I run because I enjoy it and it's also when I don't stress or anything. So, during the exams we can exercise more intensely each day as compared to during school time. So sometimes I feel I get less rest..”*
In a semi-structured interview, Kate, lines 296-297	*“Ek stuur vir hulle ondersteuning-boodskappies of boodskappies om te sê ek is lief vir hulle”.*	*"I send messages of support or messages to say I love them".*
In a semi-structured interview, Kate, lines 352-356:	*“Ek dink ek en Elzaan is die twee wat die meeste gespanne raak. Jy (aan Joshua) raak ook gespanne maar jy hanteer dit baie beter?”*	*"I think Elzaan and I are the two who become the most stressed. You (to Joshua) also become tense but you handle it much better?”*
In a semi-structured interview, Joshua, line 357 responded and lines 359-360:	*“Nee, dis nog nie beter nie. Ek kry letterlik sulke spierspasmas. Ek sal noodwendig sit en voel jinne ek kan nie meer nie. Maar soos my liggaam sal sommer ingee”.*	*"No, it is still not better. I literally get such muscle spasms. I will sit and feel I can’t anymore. As if my body will just give in”.*
In a semi-structured interview, Elzaan, line 286:	*“Dit laat my voel asof ek weg hardloop van al die gevaar af”.*	*"It makes me feel as if I am running away from all the danger".*
In a semi-structured interview, Kate, lines 387-393:	*“Ek raak net staties oor paintings wanneer ek baie lekker aan ‘n ding geverf het dan raak ek rerig baie baie happy. En Hein kan my verskriklik lekker laat lag, ek en hy het baie pret wat ek oor jammer is dat hulle uit mis want hulle is nie altyd hier nie. Ek is nie iemand wat net lag en lag en sulke goed nie maar hy bring dit nogal in my uit. Ek is bly ek het die voorreg om saam met hom by die huis te*	*"I become ecstatic over a painting. When I have really enjoyed painting something then I really feel very happy. And Hein can make me really laugh and the two of us have such fun which I feel sorry about because they miss out because they're not always here. I'm not someone who just laughs and laughs and stuff, but he brings it out in me. I am glad that I have the privilege to be with*

	wees".	*him at home".*
In a semi-structured interview, Kate, lines 395-399:	*"Joshua het laas jaar deur 'n baie moeilike tyd gegaan. Hy het vir drie maande longontsteking gehad. Hy het gekwalifiseer om SA's toe te gaan en toe gaan hy SA's toe en, toe hy op SA's is, toe kon hy op die ou einde nie hardloop nie so siek is hy. En sulke goed maak ons hartseer. Vir hom".*	*"Last year Joshua went through a very difficult time. He had pneumonia for three months. He qualified to go to SA's and then he went to SA's but at the SA's he could not run because he was too sick. And such things make us sad. For him".*

3.2.2.1.5 Affective involvement dimension

Ryan et al. (2005) define affective involvement in the family context as the level to which family members show interest in and value the activities of individual family members. In relation to healthy family functioning and in terms of this dimension it is important that family members show a true, affective concern for the interests of other family members. At the other extreme family members who show a lack of interest, little investment of the self or feelings, invest primarily from an egocentric point of view or who are over involved in the activities of individual family members are often an indication of families who are functioning in an unhealthy way (Ryan et al., 2005).

The study findings indicated that families A, B and C all really cared about the activities of individual family members and showed an active interest in their activities. Table 20 presents the responses from the participants in the lifestyle journals and the semi-structured interviews.

Table 20 Responses of participants in Afrikaans and translated into English

Participant	Afrikaans response	English translation
Family A		
In a semi-structured interview, Kallie lines 208-209:	*"Dis eweveel. As ek vir my ma iets gaan vertel gaan sy net so veel belangstel as wat ek vir my pa iets gaan vertel".*	*"It's equal. If I go to my mom to tell her something she is just as interested as when I go to tell my father something".*
In a semi-structured interview, Jean, line 216:	*"Ons is absoluut betrokke by absoluut alles wat hulle doen (verwys na kinders)."*	*"We are absolutely involved in absolutely everything they do (refer to children)".*
In a semi-structured interview, Kallie, lines 5-6:	*"Ek dink die rede hoekom ons met die Parkruns begin het so vier jaar terug was omdat ons agtergekom het ons moet 'n bietjie meer oefen".*	*"I think the reason why we started with the Parkruns about four years ago was because we realised we needed to exercise more".*
In a semi-structured interview, Esther, line 7 responded to Kallie's comment:	*"Maar ook as 'n gesin saam oefen".*	*"But also to exercise together as a family".*
In a lifestyle journal entry Esther, lines 1-3 and lines	*"Lekker landloop gedoen - 4 km, Jean en Samantha groot support*	*Did a nice cross country – 4km. Jean and Samantha gave great*

5-6:	*gegee – voel koud maar goed". "Samantha se hokkie gekyk by TUT, awesome game gewees – super trots!"*	*support (smiley face) – Feel cold but good!. Watched Samantha's hockey at TUT – was an awesome game – super proud!"*
Family B		
In a lifestyle journal, Maryke, lines 24-28:	*"Vanoggend was vir my heerlik, almal het 05h15 opgestaan. Ek het vir almal hot chocolate gemaak en ons het die Comrades gekyk".*	*"For me this morning was wonderful, everyone got up at 05h15. I made hot chocolate for everyone and we watched the Comrades".*
In a lifestyle journal, Herman, lines 9-11:	*"Ons hele gesin het vroeg opgestaan om die wegspring van die Comrades te kyk".*	*"Our whole family got up early to watch the start of the Comrades".*
In a lifestyle journal, Herman, lines 6-8:	*"Ek het lekker saam met Pappa bal geskop en vir Pappa met die swembad gehelp".*	*"I had fun kicking a ball with Daddy and I helped Daddy with the pool".*
In a lifestyle journal, Teresa, lines 4-8:	*"…en lekker saam met Lizl dans geoefen, sommer buite op die stoep. Dis lekker want Lizl het nie die dans oefening nodig nie maar ek het en Lizl het my mooi gehelp".*	*"... and had a good dance practice with Lizl outside on the veranda. It is nice because Lizl did not need the dance exercise but I did and Lizl really helps me".*
Family C		
In a semi-structured interview, Elzaan, lines 286-288:	*"Ek wil net iets gesê het oor die golf. Dit is ook 'n ander manier wat ek en my pa tyd spandeer. Hy leer my nou om golf te speel".*	*"I just wanted to say something about the golf. It is also another thing that my dad and I do to spend time together. He is teaching me to play golf".*
In a semi-structured interview, Kate, lines 300-302:	*"'n Jaar terug, ons het iewers gehoor van hierdie ding, ons doen dit nogal baie, as hulle in die kar klim, dan vra ons, 'Wat was goed in jou dag? Wat was sleg in jou dag?' Ons praat oor beide, nie net die een of die ander een nie".*	*"A year ago we heard about this somewhere, we do it quite often, as they climb in the car then we ask, 'What was good in your day? What was bad in your day?' We talk about both, not just one or the other".*
In a semi-structured interview, Phillip, lines 311-314:	*"En ek en Kate het ook, byvoorbeeld, 'n reël dat maak nie saak of dit 8h00 in die oggend is of en dit 21h00 in die aand is, as ek in die kantoor is en sy sê vir my 'Kom nou huis toe' dan klim ek in die kar en ek ry, want ek weet sy het nou dit nodig".*	*"And Kate and I also have a rule that, no matter whether it is 8h00 in the morning or 21h00 in the evening, if I am in the office and she says to me 'Come home now', then I get in the car and I go home because I know she now needs it".*
In a semi-structured interview, Kate, lines 413-416:	*"As die kinders, byvoorbeeld, dokter toe moet gaan dan gaan ons almal saam. Ek weet dit was al weird vir 'n dokter as almal daar opdaag, Ja, ons doen alles saam".*	*"If, for example, the children have to go to the doctor, then we are all go together. I know it was weird for a doctor as we all arrived there. Yes, we do everything together".*
In a lifestyle journal, Phillip, lines 1-4:	*"Lekker groot ontbyt geëet saam die hele gesin. Daarna het ons agter die kinders op die sportveld rondgeloop en sopnat gereën".*	*"The whole family ate a nice big breakfast together. We then ran about with the kids on the sports field and got very wet in the rain".*

3.2.2.1.6 Behaviour control dimension

In the family context, behaviour control is defined as “the pattern the family adopts for handling behaviour in three specific areas: physically dangerous situations, situations involving meeting and expressing psychobiological needs and drives and situations involving socialising behaviour, both between family members and with people outside the family system” (Ryan et al., 2005, p. 36–37). In terms of this dimension the family adopts a style of acceptable behaviour as well as a degree of flexibility or tolerance (Ryan et al., 2005). It emerged from the study that families A, B and C had in place clear standards and rules that guided their behaviour with family A more flexible than the other families in applying their rules. It is worth noting that families B and C integrated family values into the rules and standards set to guide their behaviour. Table 21 presents responses of the participants in both the lifestyle journals and the semi-structured interviews.

Table 21 Responses of participants in Afrikaans and translated into English

Participant	Afrikaans response	English translation
Family A		
In a semi-structured interview, Jean lines 126-132:	*“Nee, maar in alle eerlikheid. Ek kan nie ‘n deurmekaar plek vat nie, deurmekaar plek so bietjie maar ‘n vuilplek kan ek nie vat nie. So, as ons klaar geëet het in die aand pak ons op, dan word die goed gebêre en dit word in 'n wasbak gesit. Niemand sal gaan slaap voor die kombuis nie skoon is nie. Dis maar net hoe dit werk”.*	*"No, but in all honesty. I can't bear an untidy place, maybe an untidy place to an extent but I can’t stand a dirty place. So, if we have eaten in the evening, we pack up, then the things are packed away and placed in a basin. No one goes to sleep before the kitchen is clean. It's just how it works”.*
Family B		
In a semi-structured interview, Maryke, lines 31-33:	*“Daar is een wat nogal neig na gesonder kos, daars een wat neig na soetgoed (lag) maar nie dat dit 'n reuse probleem is nie. Ek dink mens het redelik mens se reëls".*	*“There is one who tends to go for the healthier food and one who tends to go for the sweets (laughs) but not that it is a huge problem. I think one has reasonable rules”.*
In a semi-structured interview, Maryke, lines 227-228:	*“Ok, daai 'laaste sê' is vir my en Willie 'n nee, so ons probeer om hulle dit te leer. Jy hoef nie altyd die laaste sê te sê nie”.*	*"Ok, that 'final say' for both Willie and me is a no, that is what we try to teach them. You don't always have the last say".*
In a semi-structured interview, Willie, lines 202-203:	*“Ek dink iets wat ons baie aanmoedig is om nie net op jouself te fokus nie. Ons sal aanmoedig: 'Kyk uit by die skool vir die hartseer maatjie’”.*	*"I think something we very much encourage is not to focus only on youself. We encourage: 'Look out at school for the heartsore friend’".*
In a lifestyle journal, Teresa, lines 36-37:	*“Ek het niks spesiaal oor die kos te sê nie maar net dat ek dankbaar is".*	*"I have nothing special to say about the food, but just that I am thankful".*
In a lifestyle journal, Willie lines 33-34:	*“Sop en broodjie om die tafel, nie gunsteling, maar dankbaar”.*	*"Soup and bread on the table, not a favourite, but thankful".*
Family C		

In a semi-structured interview, Phillip, lines 339-340	*“Ons het baie reëls in ons huis. En as jy die reël breek dan weet jy jy het die reël gebreek”.*	*"We have a lot of rules in our house. And, if you break the rule then you know you have broken the rule".*
In a semi-structured interview, Elzaan, lines 343-345:	*“Ja, dan as ek dit breek dan sê my pa vir my ‘Gaan kyk watse reël het jy gebreek’ en dan moet ek deur al die goed gaan en sê wat ek nou gebreek het en dan partykeer dan vra hy ons wat hy ons moet straf”.*	*"Yes, then if I break it then my father says to me ‘Go see what rule have you broken’ and then I have to go through all the stuff and say which rule I broke and then sometimes he asks us how he should punish us”.*
In a semi-structure interview, Kate, lines 432-440:	*“Ons het ‘n baie sterk waardestelsel maar ons probeer hulle leer, Joshua is al baie verder daar, ek probeer van kleins af hulle eie waardestelsel te vorm. So van kleins af gebruik ons ons waardestelsel maar ons probeer hulle begelei om self te verstaan hoekom, soos byvoorbeeld, ons het sulke ouderdomsgroepe waarin hulle sekere flieks mag kyk en sekere flieks nie mag kyk nie. Ek probeer hulle begelei tot op die ouderdom waar Joshua nou is om na ‘n fliek te kan kyk en krities vir homself te kan sien maar hierdie is iets wat hy nie verder gaan kyk nie of gaan kyk of wat ookal. Elzaan raak ook nou al baie oulik daarmee”.*	*"We have a very strong value system but we try to teach them, Joshua is much further in that respect, I try to teach them to have their own value system. So from when they were young we used our own value system and tried to guide them to understand why, for example, we have age groups in which they may see some movies but not others. I try to guide them until at the age where Joshua is now able to watch a movie and critically see for himself, but this is something that he is not going to watch further or go to or whatever. Elzaan is also becoming good with this”.*

3.2.2.2 Family rituals

According to Imber-Black (2012), family rituals refer to the actions taken by family members that occur in daily life. Such rituals ground the family and help to support the family in life-changing circumstances. They may include small actions such as the way they say goodbye in the morning or may be bigger celebrations such as a wedding. The form that these rituals take connects the family with the past and leads them to the future (Imber-Black, 2012). Findings in the study revealed that families A and B used meal times at the table to connect with each other and to discuss important matters. According to Imber-Black (2012), rituals may occur in meaningful spaces. Families A and B indicated they gathered around the table to discuss important matters. In a photovoice message family C indicated that the family ate at a Spur restaurant at the end of each term to celebrate the children’s school marks. Table 22 presents the responses given by the participants in the semi-structured interviews.

Table 22 Responses of participants in Afrikaans and translated into English

Participant	Afrikaans response	English translation
Family A		
Esther lines 35-38:	*“Ek is nie 'n voorstaander vir TV eet nie. Omdat ons so 'n gejaagde lewe het, ons het so min tyd om met mekaar te gesels dat ek voel as ons om die tafel sit en ons gesels 'n bietjie oor mekaar se dag”.*	*"I am not an advocate of eating in front of the TV. Because we have such a hectic life, we have so little time to talk with each other that I feel we sit around the table and talk a little about each other's day".*
Esther, lines 26-28:	*“As ek, byvoorbeeld, sê 'al die take in die huis moet ons oor praat' dan sit ons om die ontbyttafel, dan lys ons gou al die take en dan gee ons vir elkeen al sy take wat hy moet doen”.*	*"For instance, if I say we must talk about 'all the chores in the house', we sit around the breakfast table, then we list all the tasks and then give each one the tasks that he should do".*
Family B		
Willie, lines 86-86:	*“Ek dink ons sal baie keer om die tafel sit en dan sal ons lewens-dinge verduidelik en probeer perspektief stel”.*	*"I think we often sit around the table and we will explain things about life and try to provide some perspective”.*
Willie, lines 51-52:	*“Maar ons probeer maar gereeld om die tafel eet, en in die aande bid en so aan”.*	*"But we try to eat at the table regularly and pray in the evenings and so on".*

3.2.2.3 Autonomy

Autonomy includes the expression of the self to the extent that the individual feels in control of situations (Ryan & Deci, 2002). In the family context, autonomy, which is related to a lifestyle, refers to the process by which children take responsibility for their food choices and the parents become less involved in their decisions (Basset et al., 2007). The co-construction of food choices between the parent and the child plays an important role in healthy eating (Basset et al., 2007). The findings from this study indicated that the parents and children were involved in the food choices. Firstly, the parents shared their knowledge about food and, secondly, they discussed food preferences in the family. Table 23 presents the responses the participants made during the semi-structured interviews.

Table 23 Responses of participants in Afrikaans and translated into English

Participant	Afrikaans response	English translation
Family A		
Esther, line 237:	*“Ons probeer een keer per week vegetaries eet”.*	*"We tried to eat vegetarian food once a week”.*
Esther, lines 251-252:	*“Ja, maar onthou wat het ons gedoen met Kallie en Samantha. Ek het self die groentes gekook op 'n Sondag en dit fyn gemaak".*	*"Yes, but remember what we did with Kallie and Samantha. I cooked and mashed the vegetables myself on a Sunday”.*
Jean, lines 244-247	*“Kallie hou van sy groente van kleins af. Jy kon eerder vir hom groente gee. Nou nog as jy vir*	*"Kallie has loved his vegetables from a young age. You can always give him vegetables rather*

	hom op 'n Sondag vra 'Wil jy junk food hê of groente?' dan sal hy sê, 'Gee my groente'. Ons is maar net lucky".	*than anything else. Now, even if you ask him on a Sunday 'Do you want to have junk food or vegetables?' then he will say, 'Give me vegetables'. We are just lucky".*
Family B		
Maryke lines 33-34:	*"Jy weet wat mens wil hê en nie wil hê nie plus hy (verwys na Herman) is baie lief vir vrugte en dit is genadiglik, so hy sal kom en sê wat hy wil hê".*	*"You know what one wants and doesn't want plus he (referring to Herman) is very fond of fruit and so fortunately he will come and say what he wants".*
Teresa, line 298:	*"Meeste van die kere skep ons vir onsself in".*	*"Most of the times we dish up for ourselves".*
Lizl, line 299:	*"Maar ons moet gewoonlik iets van alles vat".*	*"But we usually have to take something of everything".*
Family C		
Joshua lines 243-248	*Ja, ek kan begin besluite neem en sulke goed maar ek voel op 'n manier is ek nog afhanklik, soos ek is baie lus vir vleis maar ek kan nie die heel tyd net vleis eet nie. Dis nou waar my ma inkom en sê ok, maar ek moet dit ook eet. En baie keer is jy ook lus vir iets maar dan is dit nie eintlik dat jy dit moet inkry nie. Dis waar my ma my dan help om 'n gebalanseerde eetplan te hê".*	*Yes, I can start to make decisions and stuff but I feel, in a way, I'm still dependent, for example, I really like meat but I can't just eat meat the whole time. This is where my mom comes in and says, ok, but I must also eat it. And often when you crave something it's not really that you need to eat it. So that's where my mom helps me to have a balanced diet".*
Kate lines 249-255:	*"Hulle het, byvoorbeeld, gekla dat hulle kry nooit snoepiegeld of wat ookal nie en dit is ons het nooit voorheen vir hulle snoepiegeld gegee nie, dis maar van hierdie jaar af wat ons nou maar eers elke Vrydag vir hulle snoepiegeld gee en ons sê glad nie vir hulle wat om daarmee te koop nie. Want hulle het gevoel hulle wil ook party keer net 'n koeldrank vir wat ookal by die skool koop sonder dat ons vir hulle sê jy moet dit eet of dat eet".*	*"For example, they have complained that they never get tuckshop money or whatever and, in the past, we never gave tuckshop money. It's only this year that we started giving them money for tuckshop every Friday. We don't tell them what to do with the money. Because they felt they want to sometimes just buy a soft drink or whatever at school without us telling them to eat this or that".*
Kate lines 223-235	*"…maar Joshua kan baie duidelik voel wat sy liggaam nodig het. Hy sal vir my sê maar hy moet tuna ook insit want dis nie vir hom genoeg nie of wat ookal. So, dis hoe die spyskaart tot stand gekom het sodat ek vir hulle kon sekergemaak het dat daar vir hulle genoeg was van wat ookal in die huis. Dis net makliker om vooruit te beplan so. Maar sodat ons kan weet hulle sit 'n kosblik in met genoeg kos en met die spyskaart ook dan. Ek het vir hulle gesê hulle moet vir my sê as hulle voel ... want Elzaan eet ook 'n bietjie minder as Joshua, as sy*	*"...but Joshua can sense very clearly what his body needs. He will tell me he should also pack tuna because it's not enough for him or whatever. So, this is how the menu originated so that I could make sure that there is enough for them in the house. It's just easier to plan ahead. But, so that we know they have enough food in their lunch boxes and also with the menu then. I have told them they should tell me if they feel ... because Elzaan also eats a little less than Joshua, if she feels there is too much food then she should tell me so that I can*

	voel daar is te veel kos op dan moet sy vir my sê sodat ek vir haar kan sê waar moet sy dan nou iets nie insit nie. Ek het vir hulle geleer dit is baie belangrik om proteïne te eet, so ons praat baie daaroor. En hoe belangrik ontbyt is, alhoewel ek en Phillip baie sleg is daarmee".	*say to her when she should not pack something. I have taught them that it is very important to eat protein, so we talk a lot about it. And how important breakfast is, although Phillip and I are very bad with that".*

3.2.2.4 Friendship

Friendship contributes to the development of trust, sensitivity and intimacy whereas a peer group provide unique values and standards for both behaviour and social structure (Berk, 2009). Friendship was identified as a sub-theme in this study because it emerged in the findings that closer and more intimate relationships with peers influenced both food choices and the level of physical activity. Friendship is reciprocal and, during the adolescent phase, enables the individual to express his/her thoughts and feelings more clearly (Papalia et al., 2006). In the field notes, line 18, family B indicated that Herman exchanged the food in his lunchbox with his friends for sweets and that his best friend consumed unhealthy food only. Furthermore, family B stated that friends influenced the children to buy food from the tuck shop at school but, when the children visited their friends at their homes, they choose the healthier options. Table 24 presents the responses made by the participants during the semi-structured interviews.

Table 24 Responses of participants in Afrikaans and translated into English

Participant	Afrikaans response	English translation
Family B		
In a lifestyle journal, Maryke lines 37-41:	*"Ek geniet die 30–60 minute se oefen saam met my buurvrou in die oggende so baie! Dit is goed vir liggaam en siel".*	*"I enjoy the 30-60 minutes of exercise with my neighbour in the mornings so much! It is good for body and soul".*
In a lifestyle journal, Maryke, lines 58-62:	*"Vandag saam met 'n vriendin koek geëet, die kuier is altyd lekker maar die ongemaklike gevoel na die soetgoed is sleg".*	*"Today I ate cake with a friend, the visit is always enjoyable but the uncomfortable feeling after the sweet treats is not good".*
Family C		
In a semi-structured interview, Kate, lines 453-461:	*"..ek dink Joshua se vriende verstaan hom eintlik nou eers…want Joshua, hy het 'n persoonlikheid wat hy voel ook baie sterk daaroor. So hy sal net reguit sê 'Ek doen nie dit nie, maar dis ok as julle dit doen. Ons doen dit net nie'. Maar dis nie hoe hulle dit ervaar het nie maar nou eers dink ek verstaan hulle hom baie beter, nou dink ek raak hulle baie gemakliker. Hy doen sy eie ding. Hy sal 'n*	*".. I think Joshua's friends actually only understand him now... because Joshua, has such a personality that if he feels very strongly about it. So he will simply say 'I feel strongly about it, but it's ok if you do it. We just don't do it'. But it's not how they experience it but I think they understand him much better now, I think they have become much more comfortable. He does his own thing. He will drink*

	biertjie drink maar, as jy wil tien drink, doen dit want hy gaan jou nie veroordeel of wat ookal nie".	*one beer but if you want to drink ten, do it because he will not judge you or whatever".*
In a photovoice message on 28 May 2017, Kate:	*"Gistermiddag het Elzaan pizza geëet saam by 'n maatjie".*	*"Yesterday afternoon Elzaan ate pizza with a friend".*

3.2.2.5 Use of mobile applications

Mobile applications refer to software programs which are developed for mobile devices such as smartphones. The functionality of an application may enable the user to interact with specific information about fitness, entertainment and navigation (Viswanathan, 2017). The study findings revealed that families A, B and C used mobile applications to monitor and track their physical activity, family involvement and family arrangements. In a semi-structured interview family A, Esther, lines 98-100, stated: *"Ons het 'n WhatsApp groepie vir die gesin dan kommunikeer ons oor die groep soos 'Is jy lus om te gaan' (verwys na uiteet)"l"We have a Whatsapp group for the family that we use to communicate, for example, 'Are you in the mood to go' (refer to eating out)"*. In the field notes, line 12, family A again referred to the use of the WhatsApp group because it is *"real time"* and it enabled them to make decisions about family arrangements. Family B indicated in the field notes that the father and daughter used a mobile application to track the number of steps they walked in a day while family C indicated in the field notes that they used the mobile application, Wunderlist, to synchronise their grocery shopping list.

3.2.2.6 Medical conditions

Medical conditions were a further new sub-theme that emerged from the data. In this context medical conditions included health related problems or illnesses (Friedland, 2011). The study findings revealed that one member of family B had been diagnosed with diabetes. Diabetes is a metabolic disease that affects the body's ability to manufacture or respond to insulin (Friedland, 2011). The eldest daughter in family B had been diagnosed with diabetes and, thus, systemically the food options were limited for the whole family. In addition, the father of family C revealed that he had been diagnosed with diverticulitis and, as a result, he had to consume large quantities of water. Table 25 presents responses made by the participants in both the semi-structured interviews and lifestyle journals.

Table 25 Responses of participants in Afrikaans and translated into English

Participant	Afrikaans response	English translation
Family B		
In a semi-structured interview, Willie line 21:	*"Jy weet sy (verwys na Lizl) is nou maar vier jaar 'n diabeet".*	*"You know she (referring to Lizl) has now been a diabetic for four years".*
semi-structured interview	*"Dit is party maal so dat ons vir*	*"Sometimes we ask our mom*

Teresa lines 18-20	*mamma vra 'Kan ons asb 'n sweetie kry?" dan is mamma soos 'Nee, want Lizl kan dit nie eet nie of, ja, gaan eet dit net agter die huis, of so'".*	*'Can we have a sweet then mom will say 'No, because Lizl cannot eat it or, yes, go and eat it behind the house".*
Maryke, lines 24-28	*"Ek dink dit is eintlik voordelig vir die gesin, alhoewel mens soms lus raak vir iets soos pizza of wegneemetes en dan is dit eintlik sleg na die tyd, dan sal mens sê 'Ag tog' as mens die suikerlesing sien, dan sien mens eintlik hoe sleg is dit vir die hele gesin om daai tipe goed te eet, dan weet mens jy moet dit eintlik nie eet nie maar, omdat dit so gerieflik is en mens raak lus".*	*"I think it is actually beneficial for the family, though one sometimes craves something like pizza or a takeaway and then it is really bad afterwards, then one will say: Oh goodness' when we see the sugar reading, then one actually sees how bad it is for the whole family to eat those types of food and you realise you should actually not eat it but because it is convenient and one craves it".*
Family C		
In a lifestyle journal, Phillip lines 104-107 and lines 108-111:	*"Ek is ook in 2015 gediagnoseer met diverticulitis. Dit maak ook dat ons 'n redelike gesonde leefstyl het in my opinie". "Die diverticulitis maak dit soms moeilik want, sodra ek dink dit ontsteek, eet ek gewoonlik verder maar verhoog my vloeistof inname".*	*"I was also diagnosed with diverticulitis in 2015. It means that we follow a reasonably healthy lifestyle in my opinion. The diverticulitis sometimes makes it difficult because as soon as I think it is becoming infected, I usually increase my fluid intake".*

3.3 CONCLUSION

Chapter Three discussed the themes and subthemes that emerged from the deductive thematic analysis. The themes were correlated with the literature and supporting data sources. New themes that emerged during the data analysis were included and described in the findings. In the next Chapter I provide a summary of the findings and respond to the research questions.

CHAPTER 4

SUMMARY OF THE FINDINGS, DISCUSSION, RECOMMENDATIONS AND LIMITATIONS

4.1 INTRODUCTION

Chapter Four presents a summary of the preceding chapters. The findings discussed in Chapter Three are used to respond to the research questions posed in earlier chapters. The chapter concludes with the limitations of the study and makes recommendations for future research.

4.2 OVERVIEW OF PREVIOUS CHAPTERS

Chapter One discusses the rationale of the study, namely, to explore the level of systemic support and commitment of family members in the development of a healthy lifestyle. I explained family functioning by referring to the six dimensions (problem solving, communication, roles, affective responsiveness, affective involvement and behaviour control) of the McMaster Model (Ryan et al., 2005). I then discussed the research questions and theoretical concepts that guided the study. This was followed by an explanation of the research design selected for the study. This entailed a discussion of the interpretivist paradigm and qualitative approach that had guided my understanding of the context of the participants. The setting in which the study took place and the sample set were introduced to the reader, followed by a discussion about the data generation procedure followed. This included an explanation of the data instruments that provided the information required to identify and interpret the themes which emerged from the study findings. The chapter concluded with a discussion on steps followed during thematic data analysis and the ethical principles to which I adhered during the research.

In **Chapter Two** I presented the conceptual framework that was used to organise the literature discussion. This was followed by a presentation of the theoretical framework, namely, systems theory, which underpinned the study. The literature review focused on information about the family life cycle and how developmental changes in the family may influence lifestyle choices. I then elaborated on family functioning and how it may or may not influence the development of a healthy lifestyle while also acknowledging that other systemic factors, such as peer group involvement, messages in the media, residential area and socio-economic status, may also influence lifestyle choices. The chapter concluded with an overview of lifestyle choices and how the current controversies about various diets support/do not support choices in respect of food and exercise.

The findings of the study are presented in **Chapter Three**. Two themes emerged during the deductive thematic analysis, namely: lifestyle choices and systemic influences. The subthemes were discussed under lifestyle choices, namely: physical exercise, food consumption, perception of healthy food and level of physical activity versus food consumed. The subthemes under theme two included family functioning as it related to the six dimensions of the McMaster Model (Ryan et al., 2005). Family values, planning- of and preparation of healthy food emerged as new themes under family functioning. Other themes that emerged under systemic influences included family rituals, autonomy, friendship, use of mobile applications and medical conditions. Chapter Three also contained examples of the photographs received during the photovoice activity as well as extracts from the semi-structured interviews, field notes and lifestyle journals to substantiate the relevant literature.

4.3 RESPONDING TO THE RESEARCH QUESTIONS

The rationale behind the study was to explore how systemic family functioning, as it relates to the six dimensions (problem solving, communication, roles, affective responsiveness, affective involvement and behaviour control) of the McMaster Model (Ryan et al., 2005), influenced the lifestyle choices of the family. The primary research question, in particular, guided the study in understanding family functioning. Figure 7 presents an illustration of the primary and secondary research questions and the emerging themes which were identified.

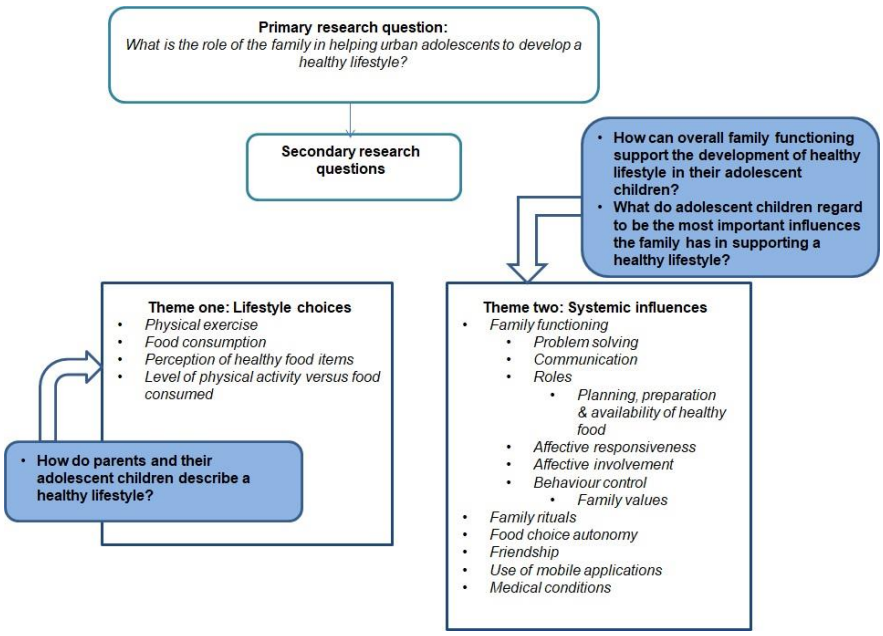


Figure 7 Illustration of research questions and emerging themes

4.3.1 Secondary research question: How do parents and their adolescent children describe a healthy lifestyle?

Physical exercise: The research findings indicated that the families who participated in the study described cardiovascular training, such as running, walking and hockey as well as strength training such as body conditioning in the gym, as the physical exercise which featured in their lifestyle. One family cited flexibility training as part of their healthy lifestyle. These findings were consistent with the recommendations by Friedland (2011) in that cardiovascular training and strength training are healthy exercise options which should be incorporated into a healthy lifestyle.

Food consumption: The families in the study cited fruit, vegetables, protein, food high in starch, unsaturated fats (avocado, nuts, peanut butter, olive oil) and dairy products as the healthy food options in their lifestyle. These food products are in line with the *South African Guidelines for Healthy Eating and Food Guide* (Department of Health, 2012), as it is recommended that healthy eating plans should include a variety of food products of which some products may be consumed in greater quantities than others. With regard to sugar intake, the *South African Guidelines for Healthy Eating and Food Guide* (Department of Health, 2012) state that small amounts of sugar may be included in the diet. The study findings were inconsistent with the guideline on sugar as food products containing sugar were included in the participants' meal plans, for example, hot chocolate, milo, cinnamon pancakes, doughnuts, sweets, chocolate cake and fruit juices. The World Health Organisation (2015) warns against excessive intake of free sugars as it promotes dental diseases, non-communicable diseases and weight gain. The families in the study also indicated the presence of processed food in their meal plans – a choice which is inconsistent with a healthy lifestyle. Processed food is regarded as an unhealthy food choice because it contains high levels of salt and fat, leading to an increased risk of obesity (Grimes et al., 2012; Scaglioni et al., 2008).

Perception of healthy food items: The families perceived air fried food, food without colourants and chemicals, fruit, vegetables, low GI bread, nuts, protein, dairy products and water as healthy food options. Emphasis was placed on portion sizes and a balanced diet. The perception of healthy food on the part of the family members was consistent with the findings of Opie (2015), as cited in the literature, as a diet similar to the Mediterranean diet (fruit, vegetables, nuts, olive oil, moderation of dairy products and red meat) is considered to lower the risk of non-communicable diseases such as heart disease (Opie, 2015). Although the family members understood what healthy food was

they also knowingly consumed unhealthy food such as processed food and food high in sugar.

Level of physical activity versus food consumed: Regular exercise is important in the expenditure of energy in the body, leading to better weight control (WHO, 2014). Two of the families in the study indicated that they maintained a balance between the food consumed and the level of physical activity. According to Silvis (2014), exercise reverses insulin resistance because, when one exercises one needs little, if any, insulin from pancreas and, thus, the risk to diabetes is decreased (Silvis, 2014).

4.3.2 Secondary research question: How can overall family functioning support the development of healthy lifestyle in their adolescent children?

4.3.2.1 Family functioning

According to criteria in the six dimensions (problem solving, communication, roles, affective responsiveness, affective involvement, behaviour control) of the McMaster Model (Ryan et al., 2005), the functioning of the families who participated in this study was both effective and healthy. The section that follows explains how each domain contributed to their healthy family functioning.

Problem solving dimension: The findings of Ryan et al. (2005) indicated that healthy family functioning relates to progressing through the seven stages of problem solving. The findings from this study indicated that the families all progressed through six of the seven stages, namely: identifying the problem, communicating with the appropriate person, developing alternatives, deciding on an alternative and acting on the decision made. However, the families did not indicate that they executed the last stage, namely: evaluating effectiveness. According to Ryan et al. (2005), it is only the most effective families who are able to evaluate the effectiveness of their problem-solving strategy and, thus, progressing through six stages is sufficient for healthy family functioning.

Communication dimension: Some family members in the study experienced challenges with regard to communication. For example, one family member found it difficult to express his emotions while another felt the other family members communicated more than him in the family. Nevertheless, family functioning was not disrupted by the abovementioned challenges and family members supported each other in the challenges they experienced. In general, the family members listened to each other and communicated in a clear and direct manner. According to Ryan et al. (2005), the most

effective families communicate in a clear and direct manner and there is a mutual understanding between the family members.

Roles dimension: The study findings indicated that the family members were able to divide roles in the family and took responsibility and accountability for the tasks assigned to them (Ryan et al., 2005). In other words, there was evidence of effective family functioning (Ryan et al., 2005). The findings further indicated that a lack of planning and the availability of healthy food were influenced by busy time schedules, resulting in unhealthy lifestyle choices. These findings are consistent with those of Sedibe et al. (2014) to the effect that busy time schedules caused adolescent girls to choose unhealthy food items. Similarly, Patrick and Nicklas (2005) indicated that parents neglected to provide healthy food due to busy time schedules.

Affective responsiveness dimension: The study found that the families who participated in this study responded to each other with a wide range of emotions varying from happiness, warmth and love to guilt, fear and sadness. The emotions included both welfare and emergency emotions and were appropriate responses to the situation in question. The above-mentioned description correlates with the finding by Ryan et al. (2005) that families are the most effective when they respond with a full range of emotions appropriate in amount and quality of the stimulus.

Affective involvement dimension: The families in this study provided evidence of their empathetic involvement in the activities and interests of all family members. According to Ryan et al. (2005), empathic involvement correlates with healthy family functioning. Furthermore, emphatic involvement also correlates with the authoritative parenting style described in Chapter Two. According to Berk (2009) authoritative parents are warm and responsive to the needs of their children. They encourage their children to express thoughts and feelings (Berk, 2009). According to Davids et al. (2015), authoritative parents encourage children to make healthy lifestyle choices.

Behaviour control dimension: The study findings indicated that the families had set standards for behaviour and that they applied the rules in a flexible manner (Ryan et al., 2005). Flexible behaviour control correlates with effective family functioning (Ryan et al., 2005). Furthermore, the findings indicated that the families used strong family values to support the standards of behaviour. It may, thus, be said that the findings of this study contributed to existing theoretical knowledge in that family values play a role in the maintenance and adaptation of behaviour control.

4.3.2.2 Family rituals

It was evident in the study findings that the role of the family is to establish family rituals that enhance lifestyle choices. For example, family meal times at the table provided a setting in which to discuss important matters and to make family decisions. According to Imber-Black (2012), the value of family rituals includes the enhancement of relationships and provides support during life cycle transitions.

4.3.2.3 Medical conditions

The study found that medical conditions such as diabetes and diverticulitis influenced the lifestyle choices of the participants because food options were limited. Notably, the functioning of the family was not disrupted by any medical conditions.

4.3.3 Secondary research question: What do adolescent children regard to be the most important influences the family has in supporting a healthy lifestyle?

4.3.3.1 Autonomy

The participants in the strudy discussed their choices in food with the parents creating opportunities for the children to choose their own food. The family plays an important role in the development of autonomy and joint decisions with regard to food and exercise, thus contributing to healthier food choices (Adamo & Brett, 2013; Bassett et al., 2007; Scaglioni et al., 2008).

4.3.3.2 Friendship

The findings indicated that close bonds with friends, and not the standards set by peer groups, influenced choices in respect of food and exercise. The parents in the study supported the choices their children made in relation to food and exercise. According to Berk (2009), friendship forms a foundation for trust and intimacy while Papalia et al. (2006) explain that close friendships enable adolescents to feel more comfortable to express personal views.

4.3.3.3 Use of mobile applications

The role of cell phone applications in the development of lifestyle choices was one of the findings of the study with the participants using cell phone applications, such as Wunderlist, step-counters and Whatsapp groups, to inform or support their decisions about food and exercise.

4.4 CONTRIBUTION OF THE STUDY

It is felt that the findings of this study contributed to the understanding of the factors which adolescents regard as important in supporting a healthy lifestyle, including the role of friendships, mobile applications and the level of autonomy that parents grant adolescents in respect of making their own food choices. Accordingly, the findings may be used to enhance the life skills orientation module at secondary schools to inform adolescents about the way in which to incorporate the above-mentioned factors in their daily lives. Educational psychologists may use the six dimensions (problem solving, communication, roles, affective responsiveness, affective involvement and behaviour control) of the McMaster Model (Ryan et al., 2005) to support families in lifestyle redesign. In addition, the study contributed to existing theoretical knowledge in that families also use values to maintain standards for behaviour. Finally, the findings may contribute to national needs by aligning the information in this study with one of the Faculty of Education's research focus areas, namely, food, nutrition and wellbeing (http://www.up.ac.za/en/faculty-of-education/article/15740/research).

4.5 LIMITATIONS OF THE STUDY

There was limited information presented in the lifestyle journals of the participants due to busy time schedules and, as pointed out by Hamilton and Corbett-Whittier (2013), this may have influenced the analysis of the data. Initially the lifestyle journal was used to generate data about the experiences of family members in respect of food and exercise. However, two participants did not complete their lifestyle journals while some journals contained a few entries only. Accordingly, data from the semi-structured interviews and photovoice messages was also used to understand how the parents and adolescents described their healthy lifestyles. Another limitation of the study is the fact that the findings are not transferable to rural areas because the study participants were selected from an urban area and, thus, they represented the perspectives of an urban area only. Lastly, a lifestyle includes physical exercise, food, regulating alcohol intake, sleep and the avoidance of smoking and drug use (Thirlaway & Upton, 2009). Accordingly, a further limitation of the study was the fact that I focused only on physical exercise and food and, thus, the findings are not transferable to the other aspects that make up a lifestyle.

4.6 RECOMMENDATIONS FOR FURTHER RESEARCH

The study represented diversity in the practices of families but not in terms of ethnicity and cultures. Further research is, therefore, recommended to understand how the systemic

family functioning of various cultural groups may influence lifestyle choices. In addition, the sample used in the study comprised two-parent families only and, thus, further studies are recommended to understand how single parent functioning may influence lifestyle choices. Lastly, the McMaster Model was developed in Canada (Ryan et al., 2005) and further research is recommended to develop a South African model to assess family functioning.

4.7 CONCLUSION

The study found that effective family functioning, as described by the six dimensions of the McMaster Model (Ryan et al., 2005), contributed to healthier lifestyle choices. Family meal times, in the form of rituals, provided a special setting for families in which to address family problems and discuss roles and personal development. The families incorporated values in setting standards for behaviour and used cell phone applications to monitor and support their lifestyle choices.

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Legislation:

Health Professions Act 59 of 1974.