

Perceptions of South African high school learners regarding healthy school food environment

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ABSTRACT

Overweight and obesity among adolescents have been continuously increasing year in and year out. This has been reported across all socio-economic groups in South Africa with adolescents having higher percentages of overweight and obesity than most of Southern countries. It has been postulated that a change in nutrition consumption within South African communities has led to these alarming rates of overweight and obesity. This change in nutrition is also being witnessed in Gauteng's private school environments, including Pretoria's Central Business District (CBD) high schools. The food environments in schools (school food environments) have the ability to shape the learner's eating behaviours, food choices, and perceptions about healthy or unhealthy foods. Little is known about the perceptions that private high school learners have about their school food environments and what they would suggest to improve these environments so that they may be healthier. There is dire need for qualitative research pertaining school food environments so that a tailor-made transdisciplinary health intervention can be implemented in most of privately owned schools.

The main aim of this study was to explore the perceptions of the learners in a private high school in Pretoria about their school food environment and how they would like to change their school food environment to be healthier. The study followed a qualitative research design employing focus group discussions (FGDs) in which a total of 29 Grade 10, 11 and 12 high school learners participated. Purposive sampling was used during the study applying predetermined inclusion and exclusion criteria. Three FGDs were conducted and audio recordings were made using handheld tape recorders during the FGDs. After the FGDs, the interviews that were recorded were transcribed so that they data can be analysed. ATLA-ti was then used to analyse the qualitative data. The themes were developed during the data analysis.

The study revealed that the high school learners perceived that the food sold within the school environment to be unhealthy. They were concerned about the cholesterol and sugar levels of most of the food items that are sold within the school's premises. The high school learners also felt that food hygiene was not well practised, especially during food preparation and handling. The learners mostly bought muffins, ice cream,

sandwiches, potato crisps, chips, cold drinks, sweets, fruit juices, biscuits, chocolates, pies, water, energy drinks, and potato fries. Some high school learners also reported that they bought their food from fast food outlets outside of the school premises. At the time of the study, most learners did not carry lunch boxes to school simply because they had very little time to prepare the food for school. Food prices was another concern raised by the learners. They complained that food sold at the tuckshop was too expensive and did not warrant to be sold at those prices.

The study concluded that a transdisciplinary approach might bring about a change in school food environments through learner engagement, health education, changing the menu, physical activity, establishing a feeding programme, and parental involvement.

Word count: 496

Key words: high school learners, school food environment, nutrition, perception, healthy food, transdisciplinary, health education, South Africa.

LIST OF ABBREVIATIONS

AUTHeR	Africa Unit for Transdisciplinary Health Research
BMI	Body Mass Index
CVDs	Cardiovascular diseases
DALYs	Disability-adjusted life-years
FGDs	Focus group discussions
HALE	Healthy life expectancy
HAKSA	Healthy Active Kids South Africa
NCDs	Non-communicable diseases
NICDs	National Institute for Communicable Diseases
NYRBS	National Youth Risk Behaviour Survey
NWU	North-West University
PHSAC	Provincial Health Services Authority in Canada
SANHNES	South African National Health and Nutrition Examination Survey
SSBs	Sugar-sweetened beverages
UNICEF	United Nations Children's Fund
WHO	World Health Organization
WOF	World Obesity Federation

LIST OF DEFINITIONS

Adolescent	Any person who is between the ages of 11 and 21 years
Body Mass Index (BMI)	A measure used to categorise overweight and obesity individuals.
Healthy food	Any food, which has the nutritional composition that prevents diseases and promotes health (WHO, 2018).
Healthy food environments	Places where various foods have an influence in people's eating practices and that food should be within the diet guidelines of a nation (Swinburn <i>et al.</i> , 2013:2).
Non-communicable diseases	Diseases that are associated with lifestyle and cannot be passed from one person to another through infection (WHO, 2018).
Obesity	When there is too much fat within a person body that can increase the chances of getting a disease (WHO, 2018).
School food environment	A learning place for students where they can obtain food through buying or feeding schemes (Fit4Kids, 2018).
Sephatlo / Kota / Bunny Chow	A portion of a loaf of bread filled with fried hot potato chips, egg, russian sausage, together with atchar (South African Cookbook, 2012).
Perceptions	People's views about the situation at hand (McDonald, 2011).
Unhealthy foods	Foods with high energy, fats that are saturated, free sugars and other elements (WHO, 2018).

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CHAPTER 1

1 INTRODUCTION

Chapter 1 is the background to the study and describes the ideas; gives a summary of the subject under discussion; and sets out the problem statement, research aim and objectives that the study propose to achieve. A general description of the structure of the dissertation is given at the end of the chapter.

1.1 BACKGROUND

Worldwide, overweight and obesity has shown a significant increase amongst children and adolescents (WHO, 2016). Globally, the prevalence of obesity is shocking, the statistics has reported that more than 1 billion adults are said to be overweight, with 400 million being obese (WHO, 2016). The increase in obesity is a global epidemic, previously, overweight and obesity was viewed as a health problem for those nations with high-income, but research has indicated that it is on the increase those countries with low to medium income. The increase has been mostly reported in urban areas. According to the World Health Organization (2016) this as an escalating global epidemic.

Amongst children, it has also been noted that the overweight and obesity prevalence has gone up across the globe for the past two decades (Lobstein, 2015). The situation in United States of America (USA) is even worse, for the past 30 years the average weight has been increasing with more than 5 kg. This has led to one third of the children in the country being overweight and obese. (Wang *et al.*, 2013). The study, conducted by Lobstein (2015) in the USA, reported that the obesity of children has also extended to some countries whose communities have low-income even though the same countries are faced with undernutrition. Wang (2013), postulated that nutrition policies that are put in place to fight child obesity, have to promote healthy growth and provides access to nutrition within households, and try level their best to guide children overconsumption of food with poor nutrition. Huang *et al.* (2015) reported that the availability of food that has high energy value and poor nutrition content will promote overweight during the early stages of childhood development and it will increase the chances of them getting chronic disease when they grow-up.

South Africa prevalence's prevalence of overweight and obesity within children aged years and 19 years has been reported to be 18.8% and 26.3% for boys and girls (Ng *et al.*, 2014:384). One of the survey that was conducted in South Africa has revealed that 20% of secondary school learners reported be overweight and 5% being obese (Karki *et al.*, 2019). In some studies, it has been reported an adolescent who is overweight and obese, has greater chance of having several non-communicable diseases (NCDs) and significantly lower the mean quality of life scores (Salwa *et al.*, 2019; Farrag *et al.*, 2017).

Overweight and obesity during childhood and adolescence may foretell how obesity will be like when someone reaches adulthood (Kelsey *et al.*, 2014), and this has a negative health and economic impact on individuals, family members, and it may extend to the community (Litwin, 2014; Nader *et al.*, 2006; Sonntag *et al.*, 2015). The World Health Organization (WHO) School Food Policy Framework (2008) proposed that the prevention of overweight and obesity development might be through early intervention that should be applied during childhood when the children are still developing food, choices, perceptions, and eating habits.

Hawkes *et al.* (2015:3) reported that food preferences are controlled by frequent eating practices of elderly people in the family, childminders, peers, and epitomes; foods availability, be it inside or outside home; and to a larger extend the society and its social norms concerning food. According to Hawkes *et al.* (2015:11), adolescents may change their food choices by acquiring new information from marketing sources, and this repeated exposure could may turn into a habit, that may difficult to control. Food preference therefore begins during in early stages of life and children may be changed with time. Dodds *et al.* (2014:73) highlighted that well-structured policies should be in place to support the school settings so that they can provide a healthy eating practices to learners.

Wang and Stewart (2015:271) also added that when health promotion and nutrition programmes are run at school, they may provide a platform to strengthen the learners' eating practices and views about nutrition.

Globally, nutrition content of food has continuously been in transition because of the industrialisation that has caused the processed food to rise significantly. Nutrition transition is a move by individuals from the taking a certain diet to another due to environmental changes. Studies have revealed that highly processed foods may be classified as unhealthy foods (Igumbor *et al.*, 2012:866; Puoane *et al.*, 2012:115), because of them having a lot of energy, fats that are saturated, free sugars, and salts. This has led to more cases of overweight in the past decades; these cases the have skyrocketed in most of the developing countries (Dodds *et al.*, 2014:73). According to Aung *et al.* (2012), this change can be linked to the adverse effects of the health and nutritional status of a country's general population, but is particularly concerning in adolescents.

The general trend of adolescent food consumption in developed countries include continuous eating between meals of unhealthy foods; not having breakfast; increased intake of fast food and beverages that are sugar-added; and rarely consume vegetables, fruit, and dairy products. This kind of behaviour has been linked to poor quality of nutrition (Fulkerson *et al.*, 2014:16; Greenwood & Stanford, 2013:21).

In South Africa a change in nutrition has been witnessed by a changes in lifestyle in most communities and also rising cases of overweight and obesity (Abrahams *et al.*, 2011:801; Steyn & Mchiza, 2014:88). The change in nutrition is a consequence of populations in Africa becoming modernised because of socio-economic development, urbanisation, and acculturation (Voster *et al.*, 2011). This transition in nutrition has led adolescents having access to quick cafeteria foods because these foods are available from both commercially owned and informally owned outlets, with the result that adolescents are consuming fewer traditional foods and modified foods. The main focus of change in nutrition is a change in the patterns of diet and the amount of the nutrient that is taken; what determines these changes and the effects of that change; as well as possible public health nutrition policies and interventions as well as the research that will bring forth a positive change in South Africa.

Drewnowski and Popkin (2013) highlighted the negative effects of changing dietary patterns by comparing the diets between the rural and urban Africans in the THUSA (Transition and Health during Urbanization of South Africans)-study (MacIntyre *et al.*,

2012:22; Vorster *et al.*, 2011:96). In African communities, there has been a decrease in the consumption of staple foods that have a lot of starch and dietary fibre, and sources of proteins such as legumes. According to Vorster *et al.* (2011:96), adolescents have resorted to snack foods that have a lot of energy, any type of beverage, and food that is from animal origin and may be rich in fats. The transitioning in nutrition has been witnessed by an increase in sugars that are added to food, and oils used in cooking food (MacIntyre *et al.*, 2012:22). These dietary patterns have changed to a more palatable diet that contains snack food, fast and convenience foods such as highly processed foods and low consumption of traditional diets that have large quantities of fibre together with essential nutrients. When looking at the general trend of food, it may be reported that the way in which nutrients are consumed by adolescents could be associated with an increase in the chance of being overweight, obesity and other NCDs (Kruger *et al.*, 2011:594).

Wang and Stewart (2013) conducted a review about school-based health promotion in South Africa, and it showed that parents play an essential role when it comes to children's diets, but that adolescents are also motivated to consume unhealthy food because of the constant challenges due to marketing conducted by food companies. With industrialisation at the forefront, fast food outlets are using the media platform to market, thereby being able to catch the attention of children and parents being aware of what is going on (WHO, 2013).

The world at large has been reporting about overweight and obesity in children who are consuming unhealthy foods (WHO, 2010; WHO, 2012). Dietary intake of adolescents in the past 50 years has changed significantly (Vorster *et al.*, 2011:429) but adolescence is a time when good nutrition and eating practices are very important so that it can establish a healthy eating behaviour that curbs the number of illnesses and deaths in adults (Lassi *et al.*, 2017). Shisana *et al.* (2014) also highlighted that in children, overweight and obesity might increase as they start high school because of a change in food environments. Steyn and Labadarios (2011:104) postulated that overweight and obesity may also increase as one grows from being a child to an adult. According to the World Obesity Federation (2015), South Africa's overweight and obesity prevalence rate is one of the top in Sub-Saharan Africa. The prevalence of overweight and obesity is more in adolescents aged 15 to 17 years compared to

adults, with 8.8% of men and 27.3% of women in that age group being regarded as both overweight and obese (World Obesity Federation, 2015).

It is important to remember that healthy foods such as vegetables are now being substituted by modified foods that are convenient to adolescents, and these foods are not healthy (Adeel *et al.*, 2012:6). Vorster and Bourne (2008) proposed that dietary intake has become westernised to the point of having a negative impact on non-communicable diseases, and undernutrition. Studies conducted in some parts of South Africa postulated as nutrition changes, the rate at which adolescents engage physical activity also diminishes, and this has resulted in most adolescents having health challenges such as obesity (Shisana, 2015); Steyn *et al.* 2011; Wenhold *et al.*, 2010).

Several studies have been done pertaining the food found within the school's settings. Studies conducted in Cape Town, South Africa and New Zealand showed that there is a variety of food sold around the school, but the biggest challenge is that most these foodstuffs are unhealthy and therefore the studies proposed that they be should an intervention because items sold have high quantities of energy (Temple *et al.*, 2011:55; Utter *et al.*, 2007:120). Gosliner *et al.*, (2011:146), postulated that as long as there are unhealthy foods sold at schools' tuck shops, they will affect the perceptions and eating habits learners and consequently may impact negatively on their healthy choices. One challenge is that school tuck shops sell food for profit that is the reason why they may not offer both health and unhealthy foods so that learners may have a variety of choices (Wiles, 2013:26). Kakarala *et al.* (2010:429), also reiterated that healthy foods are not frequently in stock because they do not give a lot of profit when sold in schools' tuck shops.

1.2 PROBLEM STATEMENT

In South Africa, children who are overweight and obese are on a continuous increase (Voster *et al.*, 2011:429). This increase may be linked to the transformation school food environments with more availability, accessibility, and acceptability of highly processed foods that are mainly classified as unhealthy. Nutrition transition in South

Africa has negatively cause some health implications and this calls for health programs that will address these issues in adolescents (Steyn *et al.*, 2014:88). Consequently, the South African National Department of Health (SADoH) published the Strategy for the Prevention and Control of Obesity in South Africa 2015-2020 (SADoH, 2015), report that targets the prevention of adolescents overweight and obesity. This strategy is a multi-sectoral approach aimed at fighting of obesity in the country; creating an enabling atmosphere that will promote healthy eating among the adolescents. Within the any food environment such as a school, opportunities and food choices appear to be limited for school learners. In order to curb this health problem, school nutrition programmes open the doors for learners to give their views about school food related matters. This may eventually promote learners to change their habits of eating in positive and health direction. Most of the studies on school food environments in South African schools has been focused on adult key players, such as principals, teachers, food coordinators, and food handlers in the setting of public primary schools in impoverished communities (Abrahams *et al.*, 2011:10; Van den Berg & Meko, 2015:50). Little is known about the perceptions of private high school learners of their school food environment and what learners would suggest to improve their school food environment to be healthier. Conducting a study in a school setting can generate new knowledge about school food environments. Understanding student's perceptions on the matter is critical for progress to be made towards collaborative efforts to address adolescent obesity and other NCDs.

1.3 RESEARCH QUESTIONS, AIM AND OBJECTIVES

1.3.1 MAIN RESEARCH QUESTION

What perceptions do learners of a private high school in Pretoria have about their school food environment and would they like to change about their school food environment?

1.3.2 SPECIFIC RESEARCH QUESTIONS

Below are questions of the research that were used to develop the aim of the study:

- How do high school learners in a private school in Pretoria describe their school food environment?

- What are the high school learners' perceptions regarding the healthiness of the food that they purchase in and around schools?
- What perceptions do high school learners have regarding a change of their school food environment?
- What recommendations, based on learners' opinions, can be made for school leaders (principals, teachers, parents, and governing body) to change towards a healthier school food environment?

1.4 AIM OF THE RESEARCH

The main aim of this study was to inquire about the perceptions of the learners in a private high school in Pretoria about their school food environment and if they would like to change their school food environment to be healthier.

1.5 OBJECTIVES

- To explore how high school learners describe their school food surrounding.
- To inquire about the high school learners' perceptions regarding the healthiness of foods that are sold in and around schools.
- To explore the high learners' perceptions about changing their school food environment.
- To recommend strategies, based on learners' opinions, to school leaders (principals, teachers, parents governing body) towards a healthier school food environment.

1.6 HYPOTHESIS/CENTRAL THEORETICAL ARGUMENT

The central argument of the study is that school food environments in private schools are not promoting learners to practice a healthy eating and that understanding their perceptions about their school food surroundings can direct the promotion of healthier school food environments.

1.7 CONTEXT OF RESEARCH

The study focused on school food environments. The study was done at a private school surrounding in the Pretoria CBD and participants were learners in Grades 10 to 12 with no specific age classification.

1.8 SUMMARY

Chapter 1 described the reason why the research was conducted and included the aims and objectives– Chapter 2 explores the state of information concerning main ideas used in this study, and perceptions of South African high school learners regarding healthy school food environments. For easy accessibility of all the details of the study, please turn to the outline provided at 1.8

1.9. DISSERTATION OUTLINE

Outline 1: Chapter 2 describes theoretical framework and gives a description of literature that exists which relates to this study

The literature will cover some of the following concepts:

- obesity during childhood and adolescence;
- contributing factor to obesity development;
- dietary behaviour, specifically food choices and food preferences;
- food environments;
- school food environments;
- importance during childhood and adolescence;
- what is currently happening (SA data) – food eaten at school versus food purchased from the school; and
- food choices – determinants using the social cognitive theory; and
- transdisciplinary health in the school food environment.

Outline 2: Chapter 3 describes the study methodology including the outline of the study design that was applied, the target population, and sampling information. Chapter 3 also explains how the sample size was determined, how the participants were recruited, and the process followed for obtaining consent. The ethical

considerations, how the data was collected and analysed will be explained in the chapter.

Outline 3: Chapter 4 carries the findings of the study and describes how they were discussed as obtained from three FGDs described in chapter 3. This chapter shows the findings of the study based on the FGD guide question (**see** Appendix 1): At the beginning of this chapter, an outline of data gathering process and the participants that were involved in the study is provided in this chapter. Research findings i.e. themes and sub-themes that came from data analysis are presented and described in this chapter.

Outline 4: Chapter 5 pays attention to discussions, evaluation, conclusions, and recommendations obtained from the study. This chapter also gives a summary of the findings found in the study, the perceptions high school learners have regarding their school food environments and relates them to other study findings, in South African communities and other countries. In this chapter the following ideas will also be discussed; the explanation of the study findings, limitations incurred during the study, the conclusion that can be drawn from study findings, and some recommendations that can be implemented to the study that are still to come.

1.10 CONCLUSION

There has been a shift in dietary consumption all over the world this has led to an increase in overweight and obesity within a population of adolescents. This is still a health challenge in schools and it calls for health interventions. Learners' perceptions about the food that they purchase in and around has to be taken into consideration. There is need to gather literature about the school food environments and how they influence the eating practices of the learner.

CHAPTER 2

LITERATURE REVIEW

2 INTRODUCTION

Chapter 2 examines the state of the concepts that have been used in the research which include high school learners, school food environment, nutrition, perception, healthy food, the case of having many disciplines within school environments, and the promotion of this status quo in terms of the many health related disciplines. Given this, the aim of this study is to delimit the study and clearly indicate the areas that the research will cover regarding school food environments. In addition, the researcher starts by identifying the areas which research has not covered and works towards covering some of such gaps. The researcher goes on to examine the related researches that he chooses and establish the link between the results of such studies with those of his own study. More information regarding this point is given in this chapter.

2.1 SEARCH STRATEGIES FOLLOWED

This researcher used Google Scholar to gather information from academic articles especially the content in about policy documents which was retrieved from the government systems of dissemination of information. Other sources that were consulted included the data bases in the University of North West. By implication, different retrieval methods were used to get information from registered entities such as the A-Z Publication Finder; JSTOR. The researcher used the key terms below to select the articles from which he got the related literature that he needed: high school learners, school food environment, nutrition, perception, healthy food, transdisciplinary, health promotion, South Africa.

2.2 OBESITY DURING CHILDHOOD AND ADOLESCENCE

It has been observed that in South Africa there are high levels of the prevalence of obesity. Compounded with this problem is overweight among children and adolescents. These two conditions cause a plethora of problems that include NCDs and other metabolism related problems. Not only are these problems rife among children and adolescents, but are also common among adults in South Africa (De

Skinner *et al.*, 2018). According to WHO (2018), there has been a significant increase in the cases of overweight and obese children and adults in South Africa. However, the numbers of those affected are not the same for each age or gender or population group (Skinner *et al.*, 2018). The conditions under discussion are quite detrimental to those affected. For example, the conditions in early childhood cause a serious lack of confidence, very little or no self-esteem, negative self-perception and depression which may carry over into adulthood (Monyeki *et al.*, 2013:15; Truter *et al.*, 2010:52). To add to this, it was found out in a study carried out among children and adolescents in Potchefstroom in South Africa that obesity and overweight could affect the learners' academic and athletic competence. The same participants were found to have been affected in their sense of self-concept and the way in which they socially accept things (Monyeki *et al.*, 2013:15). (UNICEF, 2018) recorded very interesting figures to demonstrate the prevalence of obesity and overweight in Africa; 15% of the 5 to 15 year group in 2017 was affected. The figure increased by 50% in 2000 from 6.6 million to 9.7 million. It was observed that since 1975 until 2016 all over the world the cases of obesity and overweight increased very significantly in the age group of 5 to 19 year olds. (NCD Risk Factor Collaboration, 2017:26) concur with UNICEF (2018) by further recording an increase of the prevalence of obesity and overweight of 400% in every 10 years in Southern Africa. Notably, the rate of prevalence is not the same all over Africa, which means that the prevalence is high in some parts than in others. For example, in 2017 North Africa had 10.3% cases of obesity and overweight among the under 5 year old group while North Africa had 13.7% in the same age group.

2.2.1 PREVALENCE OF NON-COMMUNICABLE DISEASES AND NUTRITION IN CHILDREN

Globally, NCDs such as cardiovascular diseases and some types of diabetes are considered to be some of the causes of deaths and general bad health conditions that affect many people at a time. Such effects are seen among low-income earners in sub-Saharan Africa. (Owino *et al.*, 2019). In addition, there is also a high prevalence of over-nutrition and under-nutrition in the regions mentioned above. (Uys *et al.*, 2016) observes that these two conditions co-exist in South African primary and secondary

schools. Compounding his observation, it was reported that 17.1% of the same population was obese or overweight.

The cross-sectional study conducted by Oldewage-Theron and Kruger (2014:420), reported that more boys than girls had ill-health. These were at risk of becoming overweight.

2.2.2 CONTRIBUTING FACTORS TO OBESITY DEVELOPMENT

Obesity and overweight were discovered to be caused by factors found in the children's and adolescents, home environment. According to Baidal *et al.*, (2016) children whose parents are obese or overweight are predisposed to being obese and overweight themselves. Research indicates that overweight and obese mothers' attitude towards the body weights of their children are important factors to determine the Body Mass Index of their children. However, it is not always true that children whose parents are overweight will be overweight and obese themselves. There is evidence to the contrary. The studies carried out in the rural parts of Limpopo and North West, found out that 30% to 50%. In studies on rural communities in Limpopo and the North West provinces, between 30% and 50% of the participants had parents who were either obese or underweight. (Steyn, 2011).

Food preferences are well established to be the most common causes of obesity and overweight. The definition of food preferences for this study is thus that food which people choose freely to eat any time anywhere from the stocks of food available to them. According to Hawkes *et al.* (2015:14), in some cases the preferences are inborn such as in adolescents who tend to like sweet things. Be that as it may, some food preferences are learned over long periods of time. Dixon *et al.*, (2012:72; Flynn *et al.*, 2013:7) observe that the differences in preferences help in making people realise which foods are energy giving and which non-toxic. The process of preference learning takes a long time. People learn their preferences in a long time. In fact the learning is a lifelong process that starts even before a child is born. How and what the child is fed early in life influences his / preferences. When a child learns that some foods are not good for him / her early in life, he /she will find it difficult to like the food. He / she will have an attitude towards the foods he / she learns early in life to unfavourable to him / her. Constant exposure to a type of food makes the children to like it and to eat it

more and more (Lobstein, 2015). In the cases when children suffer from specific problems as a result of eating a specific food, they will dislike the food and consequently avoid eating it whether it is a healthy food or not. In addition to that, parents and caregivers can positively or negatively influence the food choices and preferences which children make early in life and even later Hawkes *et al.*, 2015:14).

2.2.3 FOOD ENVIRONMENTS

Swinburn *et al.* (2013:2) consider a food environment as that environment in which the food and beverages choices are made as made possible by factors such as culture, policies on food production and supply and the status of nutrition of the country. The factors explained here are responsible for eating habits and perception about health food during childhood and adolescence (Sedibe *et al.*, 2014:211). Food preferences, choices, and eating habits have an effect on the physical and mental growth of adolescents, and may influence the onset of lifestyle diseases such as diabetes mellitus, obesity (Van den Berg & Meko, 2015). Eating behaviours affect the general health standards of people in any community and are capable of creating lifelong patterns in food consumption by children and adolescents which may not be easy to change later in life (Story *et al.*, 2012:44; Shepherd *et al.*, 2016:21; McCabe *et al.*, 2013:10). A good food environment, as defined by Swinburn *et al.*, (2013:2) is “an environment in which the foods, beverages and meals that contribute to a population diet meet the national dietary guidelines, are widely available, affordably priced, and widely promoted”.

2.2.4 CONCEPTUALISATION OF SCHOOL FOOD ENVIRONMENTS

The environment in which food is made available in schools is explained as “the setting for students’ dietary intake, including when and where children obtain food and the types of options that are available”. The process of making food available in schools involves the use of various programmes governing break and lunch times, the transport system used to supply food, the storage system of the food and the places where the food is sold such as tuck-shops, vendor machines and even food brought from homes by learners and staff members (Fit4Kids, 2018). The school setting provides some of the best opportunities to train learners in good eating habits as the

take advantage of the gatherings of learners who could learn from peers (Faber *et al.*, 2013:17).

In South Africa, however, studies at numerous schools in different provinces demonstrated that the environment in which food was supplied was not as helpful as was expected. This was mainly because of limited food choices provided by school tuck-shops and the price of foodstuffs sold (Faber (ibid:12-14; Falbe *et al.*, 2015:194; Van den Berg & Meko, 2015:50). These studies reported that most learners purchased fast foods and fizzy drinks.

2.3 THE SOCIAL COGNITIVE THEORY (SCT)

In this research, the theory of (SCT) (Fig 2-1) was adopted to describe how environmental factors, the experiences of high school learners, and the actions of others influence the individual health behaviours and perceptions of students regarding their school supplies of food. SCT tries to explain the opportunities and support available within an environment and how they can influence the behaviour of an individual (Green *et al.*, 1994:397).

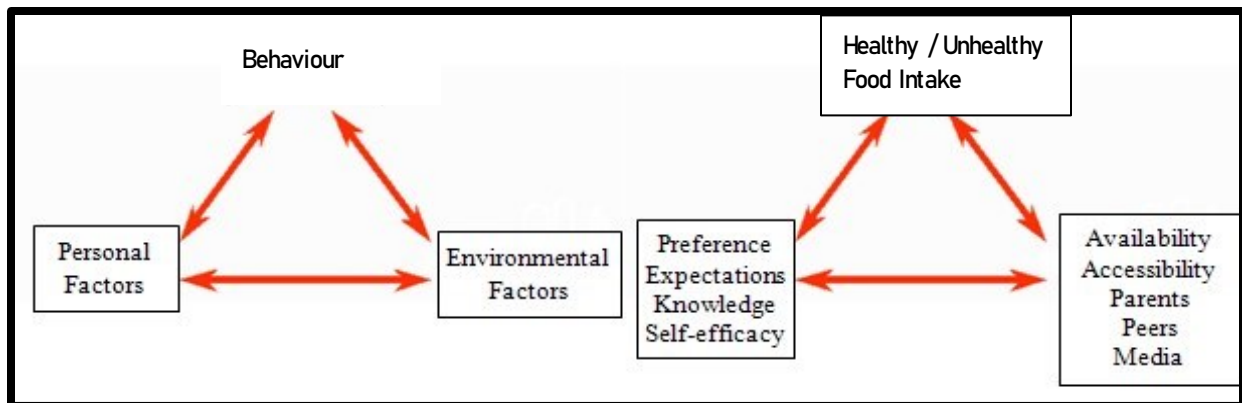


Figure 2-1. Applying the SCT study about food intake among adolescents (Green *et al.*, 1994).

According to Green & Kreuter (1994), the key components of the SCT that relate to perceptions of high school students regarding their school food environments include the following constructs:

- Environmental factors refer to physical surrounding factors that can influence the perceptions of high school students about school food environment and their eating behaviour.
- Behaviour refers to the way in which high school students in response to their school food environment and their eating behaviours.
- Expectations refer to anticipated outcomes regarding how to change their school ways of supplying food; expectancies are those values, which are put on the expected change of respective school food environment.
- Self-control means high school students controlling their own eating behaviours in and around school.
- Observing of friends and role modelling constitutes means in which behaviour is learned.
- When rewards such as incentives given for good behaviour regarding eating habits, high school students will perform healthy eating behaviours.
- The confidence which the learners have in the ability to perform a healthy eating behaviour in and around school is self-efficacy; it makes a common target regardless of challenges faced within school food environments.

2.3.1 DETERMINANTS OF FOOD SUPPLIES IN SCHOOLS AND EATING BEHAVIOURS

With the availability of various food items, high school students in South Africa can choose what they want to eat, how they want to eat and at what times they would like to eat. (Vorster *et al.*, 2011:96). Brug (2013) highlighted the fact that, in order to promote changes in the diet provided the changes should begin with the high school students who should understand how their food preferences are shaped. Hawkes *et al.* (2015:14) reported that recurring exposure of high school students to the same type of food and food supplies will never be good for the learners. Gardener (2014:1) added that, when the learner take more time eating the same food and at the same times it creates the chances greater that the behaviour can lead to habit and may lead to food preferences.

2.4 ACCESS TO FOOD BY LEARNERS

The barriers to the provision of nutritious food in schools include inability to access the sufficient, relatively affordable and nutritious food as opposed to cheap and of low quality food readily available due to food outlets such as tuck-shops and vendors. (Abrahams *et al.*, 2011). According to Oldewage-Theron and Kruger (2011), when food is not available the consequences are dire. They include food deficiencies and very low nutrient supply into the body which results in malnutrition. In spite of the recommendations to eat enough varieties of food, the ugly realities in South African schools are that the food available to the learners is appalling. The food which the high school students eat in schools contributes towards their poor perception of food and results in the ill-health (Bail *et al.*, 2011:3). The food available in South African schools is more than enough but is not good for health. However, the food appeals to the learners' early inborn and acquired preferences as if as it is sweet, salty and fatty (Burg 2013:2). To add to this, Ball *et al.* (2011) observes that the eating habits of South African students is such that when food is available they eat, when more food is available, they eat more and that the food is full of fat and salt. This leads to obesity and overweight.

Studies conducted in some of the districts in South Africa's Eastern Cape, Gauteng North, and Free State provinces, reported that, although schools encourage children in both primary and high school to bring packed lunch boxes for later in the day, most of them do not bring one. They preferred buying food from school tuckshops and street vendors (Faber 2014:23; Falbe, 2015:194; Van den Berg & Meko, 2015). The survey reported that high school students (almost 45%) buy junk food 4 times or more per week. The junk food included deep-fat fried potato chips, sweets and chocolate (Reddy *et al.*, 2010:262). SANHANES (2014) indicates that 51.1% of the 10 to 14 year old age group did not carry prepared lunch boxes to school preferring to buy food from the school tuckshops or vendors selling or around the school premises. In addition to this, Temple (2015:252) studied 14 primary schools in Cape Town and found out that in spite of many learners taking breakfast before the start of school, there was a smaller portion of 41% to 56% took lunch boxes to school. The study established that the learners who did not carry lunch boxes either did not eat any food at school or they bought it from vendors or any other food outlets. It was established also in the study

that the food bought from the vendors or school tuckshops were junk food such as deep-fat fried potato chips, candy, sweets and soft drinks.

According to the 2014 South African National Health and Nutrition Examination Survey (SANHANES), more than half (51.1%) of children aged 10 to 14 years were not taking lunch boxes to school, and of the 51.3% of children who indicated that they took money to school, nearly half of them did this on a daily basis (Shisana *et al.*, 2015). A study conducted by Temple *et al.* (2015:252) in 14 primary schools in Cape Town reported that, although most learners ate breakfast before school, a much smaller proportion (41%-56%) took food to school in the form of a lunchbox. The learners who did not take a lunchbox to school would either not eat anything during the school day or would buy food from food shops or vendors (Temple *et al.*, 2015:252).

The main goal of a school is to ensure that the learners receive quality education. Not only do the schools offer quality education, but they also provide opportunities to improve learners' health (WHO, 2012). Since learners spend most of the day at school, schools should therefore ensure that the learners facilitate interventions that support learners in areas of healthy eating and right food preferences (Steyn *et al.*, 2013:146; Upton *et al.*, 2015:152). Furthermore, there is an opportunity to influence food practices in their formative years. (Abrahams *et al.*, 2010:1752).

Schools have the ability to promote healthy behaviours related to food in learners and help ensure appropriate food intake (O'Toole *et al.*, 2007:1746). Food items sold in and around the school should take up the duty to provide refreshment as well as energy requirements for learners. Consumed food also provides the much-needed nutrients for optimal development. It has an impact on curricular and co-curricular activities and well-being of learners and the school community. Available food determines the eating habits and the healthy levels of the learners (Wang & Stewart, 2013:16).

Some studies carried out in The Free State and Cape Town have reported that school food environments offer a platform for promoting health because most learners, at school, consume roughly 35% to 47% of their daily food intake. Schools reach most children of various cultures and backgrounds (Briefel, 2014:109; Story, 2013:583). However, studies show that learners are exposed to and consume excessive amounts

of unhealthy food and beverages (e.g. energy-dense and micronutrient-sparse foods) while at school (Story *et al.*, 2013:146).

Shepherd (2016:239) highlighted that most high school learners aged 13 to 19 years preferred to buy junk food and any food that looks pleasant to them and it gives them an opportunity to have choices. According to Banegas *et al.* (2014:1), the emergence of fast foods has been seen as convenient to families and schools. The study also revealed that peer influence was a significant influence on what children ate, when and how they ate (Banegas *et al.*, 2014:1).

A survey conducted in California USA, by Davis and Carpenter (2014:505), found out that the eating houses found within private school premises sold very little food with fruits and vegetables and more soft drinks that were preferred by learners than those that were a distance away from these schools. Deliens *et al.* (2014) also conducted a qualitative study on a focus group discussion in Belgium using students as participants. He highlighted that most learners who were aged 14 to 19 years had their food choices affected by several factors including taste preferences, time, and convenience, lack of parental control, friends, and peers.

School food environments in South Africa have been studied by various researchers who reported that unhealthy foods (fried chips, *vetkoeks*, *sephatlo*, sweets, and sweetened cold drinks) were some of the options available in and around schools (Brug, 2013:2; Steyn, 2011; and Swinburn *et al.*, 2013:2). The availability of unhealthy food in school environments is also highlighted at a national level by the 2008 National Youth Risk Behaviour survey (Davis & Carpenter (2014:505).

Peer influence through increased social activity has been reported to have an effect on the food choices of adolescents in South Africa (Cusatis & Shannon, 2016:27). Research found out that adolescents may refuse to eat healthy foods because they may not want to look different from their peers and friends (Brown, 2014:230). However, Jas (2015:163) argued that peer pressure did not seem to be a factor in 16-year-olds' choice of soft drinks, but adolescents' food choices. Researchers do not agree on what the influence of peer group is on adolescents regarding the preferences and choices of food but there is an agreement on the positive influence of the family on adolescents' preferences and choices of food. (Dennison & Shepherd, 2015:9;

Feunekes *et al.*, 2016:645) Parents set good standards for children to meet in terms of what the children should eat, food that includes fruit and vegetables and dairy products. (Brug *et al.*, 2013:2; Steyn *et al.*, 2011; Swinburn *et al.*, 2013:2). Woodward *et al.*, (2016:109) reported that family use was a one of the prognosticator when it comes to food choice than the use of friends. When parents use rules pertaining the food that they eat during childhood, it seems like children will resort to more healthy food when they grow up (Feunekes *et al.*, 2016:645).

According to De Bourdeaudhuij (2014:45), there is a contrast between eating healthy and unhealthy eating regulations. The former describes what one should consume more whereas the latter describes what is consumed in small quantities. These two idea are sometimes made known differently; the food that is not healthy food is sometimes used as purse or supress as punishments, creating confusion over the elaboration of 'pleasant' and 'unpleasant' foods (Hill *et al.*, 2015:55). Research has reported that adolescents' food fondness change based on where they are. Brown *et al.* (2014:230) reported that the food fondness was dissimilar between school environments and most homes

While the school learners favour the meals from home, the food that was well favoured was fast food and it was consumed as school and social meals. Furthermore, Croll *et al.* (2014) reported that fast foods showed a tendency of being consumed by adolescent when they are away from home, while the food that is healthy adult's food and they consumed it at home. Evenly, the foods that were healthy were often considered as those they have to consume at home and unhealthy foods as the ones parents restricted their children from eating. In spite of school being described as the origin of nutritional and food risk education, food from the cafeteria to be related to high energy foods (Cusatis & Shannon, 2016:27).

Steyn and Labadarios (2011) found out that there has been escalating sales of most of the groups of the foods that are packaged in South Africa. This growth was observed in school food environments where, 11.3% of the high school learners bought food from people who sell foods in the streets, 6.8% of learners purchased food from fast food outlets at two times a week. Adolescents such as high school learners are vulnerable to different types of food that they sometimes consume during school hours

(Hendrie *et al.*, 2012:159). Learners, therefore, find it more appropriate to buy from tuckshops and the street vendors whenever they feel they are hungry. Some of the foods sold at school outlets in most of the private schools in Pretoria are high-energy value and since they contain high percentages of sugar and fats (Van den Berg & Meko, 2015). Another worry is that, after school, learners often purchase food from the outside school premises and they are heedless of how and when the food has been prepared (Falbe *et al.*, 2015:11).

2.4.1 SCHOOL NUTRITION CULTURE AND ENVIRONMENT

The HAKSA (2018) Report Card suggested that, healthy lifestyle behaviours have a positive influence on children and adolescents' intelligence and performance in school. The HAKSA 2018 Report Card is built from the data of 2007, 2010, 2014 and 2016 versions that are centred on research that has been issued two years ago. The proof is the foundation on which to guide policy, expand programmes, and give strength to advocacy in order to create surroundings that contribute to healthy eating, and chances for vigorous exercising which is at the moment is not practised by most of South African children and adolescents. This index comprise of school tuck shops, planting vegetable gardens, and nutrition education in the school curriculum. Despite various guidelines and programmes that are there to build healthy school tuck shops, the execution of these is not exacted. As a result, food purchased from tuckshops or outside school has very little nutrition in it, high in energy, and a lot of salt and sugar (Nortje *et al.*, 2016:74.) This is very disturbing because approximately 50% of school learners in South Africa always purchase food at school, since they will not be having their lunch boxes (Nortje *et al.*, 2016:74). Looking at the schools providing meals to learners, 40% get some of the food from their gardens so that they can add to the meals that the tuckshops and vendors are providing. However, just less 33% of gardens have vegetables growing in them, and 20% are well looked after (Hazel, 2016).

2.4.2 THE SCHOOL FOOD PLAN AND NATIONAL SCHOOL NUTRITION PROGRAMME

In England, in July 2013, the School Food Plan (SFP) was published. It aimed at concerns of health, on making pupils' academic performances better, and their preparedness to learn. In the light of a remarkable downward swing in schools, the uptake of meals decreased from around 70% in the 1970s to just above 40% in 2013, and to almost 30% in secondary schools. It is proposed in the SFP that there should be the growth in the uptake of school meals in the country (OC&C, 2013). Despite the fact that most of the children who can access free school meals are registered for the benefit, very few take those meals for consumption (OC&C, 2013). The main substitute to school meals is bringing lunch boxes from home or buy food outside of schools. It is a challenge to control food choices for learners who carry their lunch boxes to school, but it is important that most of the learners are part of the group may not buy food at school (Biggeri, 2011:33).

In South Africa, the (NSNP) gives meals to over 9 million learners in public schools. The classes shown range from one to three meals, with a mean of R2.51 spent per child each day (Gresse *et al.* 2017:59-68). In spite of the part of schools serving the meals (96%) and learners observed eating the meal (73%) was a lot, small number of children said they consumed the meal (Hazel, 2016). The problems with the application of this programme involve learners not receiving the proposed amount and type of foods; the nutritional standard of meals being less than maximum; food being served late (after 10h00 in 82% of schools) to assist learners to pay attention in class; and health and safety concerns pertaining the food that is prepared. Moreover, there are times, when school feeding is put up due to the financial problems, the food not delivered in time or shortage of fuel for cooking (Hazel, 2016).

In addition, according to the 2018 HAKSA Report Card, only 20% of schools serve the proposed amount of vegetables and fruits as part of the NSNP. The national economy in South Africa, which does not have vegetation, has led to an increase in the fast-food industry, and increased sales of sugar-sweetened beverages (SSBs) (Wesgro, 2016). According to the research carried out in 12 countries by Katzmarzyk *et al.* (2016:307), South African's intake of SSBs is higher than nations with children in the

lowest income groups, and this is more likely to affect healthy eating than those in the highest income groups.

2.5 TRANSDISCIPLINARITY IN THE SCHOOL FOOD ENVIRONMENTS

The provision of healthy foods in schools requires the combination of curricula set by the Department of Basic Education (DBE), parent involvement at home, and a healthy school food services component (French & Stables, 2013:593). The synergism of school food environmental changes, perceptions, curriculum or knowledge interventions, and parental or family involvement is the most effective way to increase school healthy food for consumption by children (Perry *et al.*, 2014:88). According to Brug *et al.* (2013), a supportive school food environment can be created through changes at many levels that involve school food services, and the provision of perfect opportunities to prompt environmental changes at school. The home and the community environments may be used in support of the school environment (Perry *et al.*, 2014:88). The school and the home influence on both the environmental and the personal determinants of healthy eating. Involving the families and the schools provides the chance for family members to show support for change by creating a workable school food environment and providing different forms of support. Parents can strengthen the positive school health information children receive at school and impact family eating (Lytle & Achterburg, 2010:57; Sahay *et al.*, 2016:76).

2.5.1 TRANSDISCIPLINARY APPROACH

Several authors have defined the transdisciplinary approach in various ways. The introduction of the concept was in the 1970s by Jean Piaget. He described transdisciplinarity as the highest stage that is even above interdisciplinary relations; it is not restricted to acknowledging interdependency mutualness between the specialised researches but also identifies the association without any frontier of the discipline (Piaget, 1972:1). Nicolescu (2010:17) added the aspect “beyond any discipline” to the above description. In recent years, a transdisciplinary approach has become one of the most valid and rigorous ways of conducting research. It gives the opportunity to comprehend the existing environment and to satisfy the importance of the “unity of human knowledge” – an idea that was formed by Bohr in 1961. It is an idea that stretches outside the disciplinary frontier with the purpose of sharing

information within various disciplines (Nicolescu, 2010:17). Transdisciplinary approach has impacted universities and other tertiary institutions. Transdisciplinary curricula has been adopted by most of the universities. They now participate in various research activities and it is showing a great success (Dincă, 2011).

Transdisciplinary approaches are more suitable compared to disciplinary research approaches when it comes to addressing public health problems (Femenías & Hagbert 2013:89). Transdisciplinarity is based on the idea that public health problems consists various parts, and different stakeholders may view health problems from a different angle and this enables an efficient and effective working of the system (Pade-Khene *et al.*, 2013:13). Given that the stakeholder involved render their expertise in the field, the health problems faced by communities may be addressed in a more suitable way (Apgar *et al.*, 2009).

2.5.2 PROMOTING HEALTH THROUGH TRANSDISCIPLINARITY

Social problems that are deemed public health problems due to their interconnectedness, daring, and difficult to comprehend. Health promotion programmes that are designed to curb health problems such as overweight and obesity calls for the integration of ideas from walks of disciplines and fields (Jou *et al.*, 2010:49; Elder *et al.*, 2014). The article by Haire-Joshu and Mc'Bride (2013:591) concerning transdisciplinary approach to health, provided a well detailed account and made known that transdisciplinary approach plays a vital role in solving community problems in public health sector.

According to Terblanche (2015) a transdisciplinary approach open doors for the stakeholders who form part of the research to connect with one another and interpret this complex problem according to the target group and bring forth a tailor made solution to that specific health problem. According to Qudrat-Ullah and Tsasis (2017), the health of people can be improved by changing the functions of the society but, in some instances, there is resistance with the people to accept change and this affects the interventional programme, because of the complexity of public health problems. Tozan and Ompad (2015:490) postulated that the complexity found in public health systems demands a transdisciplinary approach to elucidate and get to know the interchanges and relations. This idea is based on the reality that public professionals

perceive that health is dependent on various issues grouped into the precepts of cultural, economic, social, physical (Witt *et al.*, 2017:134). Various stakeholders participated in the first International Conference on Health Promotion (Ottawa Charter). This charter defines health promotion as follows:

The system of helping people realise that they have control over their health, and they have the capacity to make it better. A complete state of well-being may be achieved if individuals take a resounding control over their health through identification of environmental factors that have to manage on their own. The complete state of physical, emotional mental, and social well-being, calls for individuals or communities to change their mind-set and adapt a culture of positive living in an environment which they are exposed. Health should viewed as an everyday resource not the reason to be living. It is a notion that lay stress on social and individual resources, and importantly physical amplitude. The health sector is not the one that is responsible for health promotion. It extends beyond the life-styles to a point of well-being (WHO, 2012). Transdisciplinary health promotion involves the thinking of professional who are in health, outside their profession in order to function to improve their expertise in their fields and improve people's health through a holistic approach (Aguirre *et al.*, 2016).

2.6 CONCLUSION

Most studies on school food environments are multi-disciplinary in nature. The DBE, schools, and parents must work together to promote healthy school food environments. However, as identified from the literature review, the school feeding programme has been implemented only in public schools. The high school students' eating behaviour, peer pressure and perceptions about their school food environments must not be overlooked. Engaging students in making decisions about their school food environment will empower the students to take charge of their eating behaviour and food choices.

CHAPTER THREE

RESEARCH METHODOLOGY

3 INTRODUCTION

Chapter 3 gives an outline of the methods that were followed during data collection and analysis. It gives an insight of the research design, the instruments that were used during data collection, study population, how sampling was done, analysis of data, how trustworthiness was ensured, and research ethical issues that were considered during the study.

3.1 RESEARCH DESIGN

The principal aim of this study was to inquire about the perceptions of high learners in a private high school in Pretoria about their school food environment and if they would like to change their school food environment to be healthier.

The study followed a qualitative descriptive research design employing focus group discussions (referred to in this study as FGDs). Qualitative research was used because little was known about perceptions of private high schools learners about their school food environment and what they would suggest to change the food environment to make them healthier. Most previous studies have been conducted in public schools. The qualitative research design was aimed at obtaining a deep understanding of the participants' experiences as well as how they made meaning of food environments. The investigator's aim was not to give the general idea from the sample of one high school and its learners but to explain, describe, and interpret their views of the school food environment.

During the qualitative study, a systematic, subjective approach was used to describe high school learners' perceptions of school food environments, and their experiences to give them meaning. Qualitative research was used to extract perceptions of high school learners in this study, produced data in words form, and relate them to a particular event. It provided a well detailed enquiry of an event that is put off from a wider clarification that quantitative research gives.

The study assessed the high school learners' views and perceptions about their school food environment. Through FGDs, high school learners were also asked about their

views on how to improve school food environments. This form of inquiry enables the gathering of vigorous ideas from a sample that was obtained purposively, and forms part of interpretation formless data.

This study applied a qualitative descriptive design (Creswell & Creswell, 2017), which is used to carry a formal inquiry of present event within real-life conditions. The use of this study design has provided a better idea of inter-connected issues about the school food environments and views of high school learners and the extensive experiences of what is already known school food environments from the past studies.

3.2 TARGET POPULATION

This study was conducted at Royal Schools Princess Park College and Secondary, which is situated in the Pretoria CBD in the Gauteng province of South Africa. This private school, serves suburbs that are within a radius of 20 kilometres. Royal Schools Princess Park College and Secondary provides education to primary and high school learners that from Grade R to Grade 12. Close to 930 learners attend school from primary to high school, a total number of 380 learners are enrolled in the high school alone. The school is an independent school with cultural diversity that includes not only South Africans but also learners from neighbouring countries such as Botswana, Zimbabwe, Zambia, Uganda, Angola, and Mozambique. When it comes to the staff at this school, they are 42 educators employed full time at Royal Schools Princess Park, with 16 of them being high school educators. This school also have eight supporting staff. From the researcher's observation and in line with many studies in South African schools, street vendors that are located around school premises are able to sell various foodstuffs to Royal Schools Princess Park learners.

Research on school food environments in South Africa has generally focused on schools in low-income areas. The rationale behind selecting this school as a study setting was because it is located within the city centre and most of the learners from middle to high income communities attend school at Princess Park.

The participants were learners from Grade 10, 11 and 12 in 2019. Most of these learners are between 15 to 21 years of age. It was decided to choose the older learners

of the schools as they are more likely able to critically discuss their school food environment.

3.2.1 SAMPLING

Purposive sampling was used during the study, applying set inclusion and exclusion criteria (see Table 3-1). The reason why the high school learners were selected was that they were the ones who frequently bought food in and around school and were knowledgeable about the issues under study. Grade 10 to 12 learners were selected because they were more likely to know about healthy food and nutrition, and they could communicate complex issues in English. Learners were randomly selected to ensure equal chances of selection.

3.2.2 INCLUSION CRITERIA

Table 3-1: Inclusion criteria and justification

Inclusion criteria	Justification
Learners enrolled in Grade 10, 11, and 12 at Royal Schools Princess Park for 2018	Learners of the three highest grades were selected as we assume higher levels of conceptualisation among these age groups compared to younger learners.
Voluntary participation and willingness to be audio recorded.	Only voluntary participants were included.
Obtained informed consent by adult learners (18 years and older), and parental permission and adolescent consent in the case of minors.	Only once relevant consent forms and permissions of parents in case of minors were obtained, were learners allowed to take part in the study.

3.2.3 EXCLUSION CRITERIA

The following learners were not part the study:

- Learners from Grade R to 9, as we believed only older learners, such as learners in Grade 10 to 12 would provide the in-depth discussion needed for this research.
- Learners not enrolled at Royals Schools Princess Park for 2018 because we specifically selected the Royal Schools Princess Park School due to its location, background of learners and size.

3.2.4 SAMPLE SIZE DETERMINATION

The size of the sample was decided by the sufficiency and saturation of data collected by the researcher. Sufficiency and saturation were determined by allowing a wider range of learners to be part of the study and learners were given the chance to be part of the study (Saunders *et al.*, 2018). Saturation was reached once no new relevant data emerged. The researcher pursued all avenues and leads in order to make sure that the story would be complete. A minimum of three FGDs were to be carried out with 6 to 10 participants each. The FGDs were repeated until data saturation was reached.

3.2.5 RECRUITMENT OF PARTICIPANTS

In order for the researcher to conduct the study, a written permission was obtained from the South African Department of Basic Education (DBE), the principals and the management of Royal Schools Princess Park, formed part of the gatekeepers. The DBE strives to provide education that is sustainable, and add value to quality of life through peaceful building of nation that supports democracy.

The DBE's long term goals are as follows:

- election of the government that will manage the education sector in a competent way.
- observes how the curriculum is implemented and provides support.
- ensures that there is sufficient educators in the sector.
- support schools and ensure that the welfare of learners is preserved.

The researcher asked the school principal to announce the proposed study to the students during school assemblies (Monday and Friday), three and two weeks before the study started. Parents were also informed through short message services (SMS), on the school's Facebook page, on the school's Application (called D6 communicator), and also during parent meetings. The assistant administrator of the school acted as an independent mediator in order to assist with enlisting the names and phone numbers of interested students as well as providing information about the study and handing out the participant consent forms or, in case of minors, to hand out both the parental permission and adolescent consent forms (see addendum). The independent mediator collected the signed consent, adolescent consent, and parental permission and listed all interested participant record. Based on the number of interested learners, the mediator randomly selected student names and phoned them to inform them about the date, time, and venue of the FGDs. The researcher was not involved in the recruitment process due to possible conflict of interest (see Table: 3-2).

3.2.6 PROCESS OF OBTAINING INFORMED CONSENT

Possible participants (learners) received a general overview of the study during a school assembly conducted by the principal. Interested learners were requested to add any information that could enable the research to contact them into the record of interested participants. As described above, the independent mediator informed the interested learners about the study's details and the informed consent/parental permission process. The learners had a maximum of 5 days to discuss their participation with parents and peers before they decided to sign the consent form. In the case of minors, it was requested that both, the adolescent consent form is filled and signed by the learners, and the form that gave permission by parents for learners to participate in the study. This form had to be completed and then signed by the parent or legal guardian. An independent mediator contacted only those interested participants whose relevant forms were correctly filled in and signed. These learners were invited to take part in the study.

At any time during the recruitment procedure, learners were advised to participate voluntarily in the study, that would not have any influence on their school performance assessments, and that they could withdraw from the research whenever they wanted

to do so. Learners were not penalised in any way if they refused to take part or withdrew from the study later on.

The student researcher was not involved in the informed consent process due to possible conflict of interest (see Table 3-2).

3.3 DATA COLLECTION

An independent researcher (Dr N. Claasen, research supervisor of the student) or facilitator (Mrs M. Thomas, a trained FGD facilitator) conducted the FGDs with the high school learners to explore their views about the school food environments and how they would like to change this setting. According to Yin (2014), FGDs provides a close interaction of a group of participants in order to gather data based on participants' attitudes, perceptions, behaviours and language. An audio recording was done during the interviews using handheld tape recorders. The groups consisted of six to ten participants, from Grades 10, 11 and 12. At least three FGDs were conducted, and the FGDs continued until data saturation was achieved. The duration of two FGDs took approximately one hour (60 min), and another took about an hour and a quarter (75 min).

The FGDs were conducted in a classroom at Royal Schools Princess Park after school hours. The independent researcher and facilitator met with participants in a classroom, where greetings and introductions were made. The objectives of the FGDs were made clear to the participants, and basic ground rules for the discussion period were discussed. Before the FGDs were conducted, the participant gave their consent to allow audio recording. A tape recorder was used during FGDs.

A semi-structured questionnaire was used during the FGD (see Appendix 1). The questionnaire was developed by the researcher with the help from the research supervisor, combining knowledge from literature, the Royal Princess School environment, as well as the qualitative research expertise of the supervisor.

The researcher was not involved in the data collection process due to possible conflict of interest (see Table 3-2).

3.4 DATA ANALYSIS

Lowe *et al.*, (2018) indicated that data analysis requires that researchers dwell with or become immersed in the data.

Data analysis commenced by taking the tape recordings and attentively listening to the several times. Transcribing was then performed one word after the other. Common trends were taken out of the transcripts of the interviews. Data coding and analysis was done using ATLAS.ti, a software to assist qualitative data analysis. Themes were identified based on the common patterns. When the themes were analysed, the principal investigator was concerned the themes that emerged from the data that was collected.

Cresswell and Cresswell (2017) stated that during data analysis, the researcher should have a sense of the data that is in text and diagrammatic form. By doing this, researcher can thereafter sort the data so that it can be analysed with a better insight of data, and eventually it can be represented and interpreted.

The following stages were used to analyse data:

First step: Preparation of data and sorting it into field notes

During this process, interviews were transcribed and all the materials collected during data analysis were sorted into various types.

Second step: Formation of a common sense

During data analysis the researcher obtained a common sense and ideas reflected by the data.

Third stage: Extensive data coding

It involves sorting of materials to form categories and codes that are meaning and in line with the research objectives. In this study, the data was therefore categorised into themes that had emerged based on learner's views about their school food environment

The researcher made an array of information and then put in table form so that the themes, age, groups of learners could be compared, ranked in an orderly manner, and summary of findings can be created. ATLAS-ti was used to analyse qualitative data. This data represented the learners' views on how to improve school food environments.

Fourth step: Describing and identifying themes

The researcher used a system of coding to give a description of the school food environment as well as generating categories. The description involved the detailed rendering of information about high school learners and the researcher developed a considerable number of themes based on the major findings on school food environment and perceptions of high school learners about how school food environment could be improved.

Fifth step: Representing findings

The researcher used a written account to communicate findings from the FGDs conducted. This account contains a discussion that is well detailed with several themes and discussion with interconnecting themes. The researcher used figures and tables as additional information to the discussions.

3.5. RIGOUR

3.5.1 QUALITATIVE RELIABILITY

Reliability during data qualitative analysis was enhanced by using a software called ATLAS.ti. The following features are supported by using the software:

- Documentation of data, codes, categories, and themes accurately and comprehensively;
- Checking transcripts (raw data) and coded data for correctness;
- Ensuring there is no drift in the definition of the code while analysing data; and
- Cross-checking codes developed during the study and reaching inter-coder agreement between the supervisor and student researcher (Creswell & Cresswell, 2017).

3.5.2 QUALITATIVE VALIDITY

An independent researcher (Dr N. Claasen, the research supervisor of the student) or facilitator (Mrs M. Thomas, a trained FGD facilitator) conducted the FGDs with the high school learners, exploring their perceptions on their school food environment and how they would like to change their school food environment. An audio recording was done during the interviews with handheld tape recorders. The groups consisted of 6 to 10 participants, from Grade 10, 11 and 12. At least three FGDs were conducted, and were continued until data saturation was achieved. The duration of two FGDs took about an hour, but there was the other one that took about an hour and a quarter.

The FGDs were conducted in a classroom at Princess Park after school hours. The independent researcher and facilitator met with participants in a classroom, where greetings and introductions were made. The objective of the FGDs was made clear to the learners who were participating in the study and basic ground rules for the discussion period were discussed. Before the FGDs were conducted, the participant gave their consent to allow audio recording. A tape recorder was used during FGDs.

The researcher also applied Connelly (2016) ways of increasing validity in the following manners:

- Making sure that high school learners were understood what the research was all about. The researcher gave a detailed explanation about the purpose of the study, what the principal investigator was studying, how the data would be collected, and how the data would be used. This ensured credibility.
- Developing a relationship that is based on trust with the school learners, having stayed in that setting for an extended period.
- Comprehensively describing the data to formulate the context of study and describe a comprehensive scenario that is under investigation so that the data can achieve transferability.
- Findings were confirmed with school learners by asking their views about the school food environment.
- Keeping accurate and detailed field notes by noting the variations in responses during the FGDs.

- Tracking the research process from raw data to interpretation of the data, showing, and discussing the process with the supervisor (Dr N. Claasen).

3.6 ETHICAL CONSIDERATIONS

3.6.1 BENEFICENCE AND NON-MALEFICENCE

The study strived to put forward the expected benefit ideas acquired from learners, and the risk of harm to participants. Consequently, participants who felt uncomfortable discussing their perceptions about home cooked food that may be consumed at school, and the food sold within school environment, felt free not to do so during the study. Although there was no direct benefit to being part of the research, it is anticipated that the study will generate new knowledge pertaining school food environments and ways of improving them.

Mestres and Suri, (2016) described non-maleficence as reducing the risk of harming participants in best way possible. This entails ensuring that the participants are protected from any psychological, physical, and emotional harm. Mestres and Suri, (2016) also supports idea that non-maleficence should provide greater benefit than harm to the participants involved the study and they must be a balance created by the study.

The study ensured it did not cause the following risks:

- Any harm that can be cause a threat to the psychology, emotion, and physical being of learners. This was ensured by only asking questions that are research focused.
- Infringing on the privacy of learners. No participants were coerced to answer questions that they were uncomfortable with.

3.6.2 JUSTICE, DISTRIBUTIVE JUSTICE, AND EQUITY

Participants who were involved in the study were selected in a fairly manner though it depended on the learners who volunteered to be part of the study. The research team only stopped collecting data when data saturation was reached. The research team ensured that the during the process of recruitment of participants, their selection, exclusion, and also inclusion of learners to participate in the study was just and fair,

based on ethics that are considered during the a particular study. This was ensured by informing all the Grade 10 to 12 learners about the study that was going to be conducted and that it was their choice to be part of it or not. Participants were not part of the study did not fall with the targeted population of Grade 10 to Grade 12 learners. There was no discrimination that was used to include or exclude participants.

3.6.3 RESPECT, DIGNITY, AND AUTONOMY

Bentwich *et al.*, (2018), described participants' respect as a way of protecting their dignity and safety during study. The involvement of learners was aimed at exploring some ways that may improve their school food environment. When it comes to respect and dignity the participants, the researcher made sure that all sensitive issues were excluded during the FGDs. The team that was involved in study also respected the participants by continuously checking every participant's well-being during the FGDs. This was done by observing the gestures and the tone the participants would be using. Autonomy was exercised by explaining to participants that they may quit the study at any given time without being penalised.

3.6.4 RELEVANCE AND VALUE

The study was relevant to the Royal Princess School and schools in South Africa in general since most school attending always spend most of their time in school, that is why school food environment plays a vital role in their everyday lives. The study added value to the existing body of knowledge and can be useful in policy formulation at all the Royal Schools.

3.6.5 SCIENTIFIC INTEGRITY

The research team adhered to the principles of ethics that are required during research practices. The team also maintained scientific integrity by:

- being honest and practicing fairness during all the stages of the research;
- Representing any of the contributions that forms part of the research reporting in a very accurate and fair manner

- accuracy and fairness in representing contributions to research proposals and reports;
- practising a competitive peer review that is fair;
- Sharing of all resources needed to communicate scientific interactions
- Ensuring that all the information about conflict of interest was disclosed from the beginning of the study.
- Ensuring that all participants are protected during the study.

3.6.6 ROLE PLAYER ENGAGEMENT

The research team engaged the DBE, Tshwane South district and obtained the permission to conduct the study. The team also liaised with the management of Royal Schools Princess Park (directors and principals) the permission to conduct the study was be given. The learners, parents and their caregivers were also informed about the study, the dates of recruitment and data collection.

3.6.7 FAVOURABLE RISK-BENEFIT ANALYSIS

The study was of low risk, and the likelihood of harm was low. If, however, a student had experienced any emotional harm by participating in the FGDs, the school's psychological counsellor was available to provide psychological support. Some learners were experiencing fatigue or boredom during the FGDs. The research team tried to address these matters by providing snacks and drinks and inserting a break into the discussion when needed. The study had more benefits than risks as it generated new knowledge within a small private school setting.

3.6.8 DIRECT AND INDIRECT BENEFIT

During the study, participant had no direct benefit. The findings might be used to develop a school food policy for the Royal Schools by management. This might promote a healthier school food environment. The learners were further allowed to consciously examine the health implications of any food that was purchased within the school food environment, which might raise awareness for healthier food choices.

3.6.9 FAIR SELECTION OF PARTICIPANTS

The research team ensured a fair selection of participants by informing all Grade 10 to 12 learners about the study. When there was a large number of participants interested in the study, learners who had submitted their names were selected randomly by the mediator, e.g., every x^{th} student on participation list. Learners were selected regardless of their race, ethnicity, and sexual orientation.

3.7 PERMISSION AND INFORMED CONSENT

The Health Research Ethics Committee (HREC) secured the ethical clearance for this study and the ethics number is NWU-00090-18-S. The senior managers of DBE and Royal Schools Princess Park's school principal gave their permission to the research team so that they might conduct the study. The high school learners aged 18 years and older who volunteered to participate in the study were given informed consent forms to be complete before the study. The research also obtained parental permission from the respective parent or any person regarded as a legal guardian of the learners who were below 18 years of age while adolescent consent was obtained from learners.

3.7.1 PRIVACY AND CONFIDENTIALITY

The research team assured privacy during data collection, and they only allowed participants to take part in the study if they completed and signed the relevant informed consent. FGDs were carried out in a classroom, which allowed participants to take part in the FGDs without disturbances from non-participants.

The research team was responsible for safekeeping and securing of all records during and after the study. During transcription, unique numbers were assigned to names of participants which ensured anonymity. The researcher only had access to anonymised data, including the audio recordings, identifiable only by the codes.

Partial confidentiality was ensured during FGDs by setting rules during the group discussions and activities to stress the importance of keeping personal information and the research contents within the group and not to discuss it with non-participants.

The mediators were informed about the importance of safekeeping the privacy and confidentiality of participants before signing the confidentiality contract.

Participants were informed that direct quotations would be used during research analysis and the study write-up without identifying information.

3.7.2 RESPECTING OF THE PARTICIPANTS

This was incorporated two ethical convictions:

- The individuals were treated as autonomous agents, and weight was given to their personal considered opinions and choices.
- The participants with diminished autonomy were protected by making sure that they were not offended by other participants who are autonomous.

3.8 RESEARCHER EXPERTISE AND COMPETENCE

The student researcher is a qualified health promotion specialist and also an educator. Before he entered the teaching field, he was involved in several research projects in Zimbabwe that included topics of nutrition, chronic disease and disaster management. As an educator, the researcher has excellent experience in communicating with learners and also understanding them.

Dr N. Claasen and Mariaan Wicks, supervised the researcher. Both supervisors are familiar with food environment research in South Africa, as well as qualitative research methodologies, including FGDs.

3.9 DATA MANAGEMENT

According to Amorim (2017), managing data collected from research calls for only the few individuals who forms part of the research team to have the responsibility of the data. After the data was collected, individuals were not selected to handle to the data had no access to it.

The data that was digital, consisting of audio recordings and also the transcripts, were password encrypted. The principal investigator and the study leader are the only ones who had access to the data. Data was downloaded to a password-

protected computer after each interview and was deleted from the recorder. Hard copies (printed copies and audio recordings) were under lock and key cupboard of the principal investigator. Printed and electronic data will be kept for a period of five years, thereafter the researcher will cut it into shreds, completely obliterated, and wiped out.

3.9.1 DISSEMINATION OF RESEARCH RESULTS

A report of the findings has been made available to the Department of Education, the management of the Royals Schools Princess Park, the North-West University, and learners and parents.

The student researcher wrote the research as a dissertation in order to obtain his MHS degree in Transdisciplinary Health Promotion.

3.9.2 ROLE OF MEMBERS WHO WERE IN THE RESEARCH TEAM

Table 3-2: Role players and their duties

Role player	Duty
Department of Basic Education	The DBE is a gatekeeper in this study and were asked for permission to conduct the study within the district and made sure that the study was for the best interest of education.
Royal Schools Princess Park Management	Gatekeepers of this study, who were asked to give permission to conduct the study at Royal School Princess Park.
Principals (Mr Dutuma, Mr Smit, Mrs Walker)	Individuals who manage the everyday running of the school. One of the principals was in charge of informing the learners about the study that was going to be conducted at school. They also permitted to conduct the study at Royal School Princess Park.
Assistant Administrator (Mrs Mahlangu)	The mediator in this study who assisted with recruiting, providing information about informed consent, and selecting participants.
Researcher (Mr Mukanda)	An MHS student who was responsible for the overall research process. Due to conflict of interest, he did not take part during recruitment and collection of data (see section 9.16).

Learners	The volunteers that participated in the study.
Independent FGDs facilitators (Dr N Claasen and Mrs M Thomas)	Both Dr N. Claasen and Mrs M. Thomas acted as independent persons to conduct the FGDs.
Supervisors (Dr N. Claasen and Dr M. Wicks)	Guided, monitored, and supervised the research process.

3.9.3 CONFLICT OF INTEREST

The researcher is an educator at Royals Schools Princess Park, where the study was conducted. He, therefore, had an excellent knowledge of the study population and environment that contributed to a successful research process. The research process was closely monitored by the study leaders, Dr Nicole Claasen and Dr Mariaan Wicks, who were in regular contact with the student via email, skype and in-person. It was acknowledged that there was a power dynamic between the student researcher, who is a teacher at the school, and participants who were learners at the school during the study. In order to avoid these power dynamics or inflict harm to the participants, the student researcher was not involved in recruitment, the informed consent process, and data collection. The student researcher only worked with anonymised data and did not know who participated in his study.

In case any incidents occurring during this research, the gatekeepers, mediators and student were advised to report to the supervisor and co-supervisor, Dr Nicole Claasen and Dr Mariaan Wicks. The reporting line that were followed from there on was the following: Chair of AUTHeR Scientific Committee → Director of AUTHeR → Ethics office.

3.9.4 REMUNERATIONS

The participants were not remunerated because they did not incur any cost for taking part in the research. However, refreshments were served during FGDs as way of showing respect to the participants

CHAPTER 4 FINDINGS

4 INTRODUCTION

In this chapter, the findings of the study will be presented based on the FGD guide question (see Appendix 1): The study findings were obtained from three FGDs as previously described in the other chapters. The section gives an outline regarding data process and the study participants. The data from the research findings will be presented and then described, i.e. themes and sub-themes that emanated during the analysis of data. These themes are discussed in conjunction with literature so that research findings can be reviewed against studies that are similar, and to be able to compare and identify the gap between this study and literature from previous studies.

4.1 OVERVIEW OF STUDY PARTICIPANTS

The study participants comprised of learners who were in Grade 10, 11 or 12 in 2019. The majority of these learners were within the age group of 15 to 21 years of age. Table 4-1 provides a summary of the demographic characteristics of the participants.

Table 4-1: Demographic profile of the study participants and the duration of each FGD

	FGD1*	FGD2*	FGD3	Total#
Total	10	10	9	29
Mean age (years)	15.7	15.7	15.9	
Grade 10	5	5	0	10
Grade 11	3	3	0	6
Grade 12	1	1	9	11
Duration	1hr 28mins	1hr 20mins	1hr 14mins	4hrs 2mins

As depicted by the symbol * on the table, one learner did not refer to his/her grade during the FGD1 and FGD2 respectively. The symbol # denotes that, in total, two learners did not report their grade.

4.2 OVERVIEW OF THEMES AND CODES.

During data analysis, various themes and codes emerged and are represented by figure 4-1 and table 4-2, respectively. From figure 4-1, the food quality theme was found to be associated with food quality healthiness, food choices, hygiene, and safety. There was also an association between food choices and food availability, price, time, and taste. Interestingly, food sources were also linked to time and food price. Furthermore, the codes home, inside school, and outside school emerged from the theme food sources. Figure 4-1 shows that there was a link between the themes food source, school food, and food quality. Change of food offered at school and change of school meals also showed to be associated with the school food. Under the theme of change, various codes emerged from the FGDs, these being parents' involvement, change offered at school, physical activity, health education, and change by providing school meals. Table 4-2 gives an overview and description of the themes and codes that emerged during qualitative data analysis.

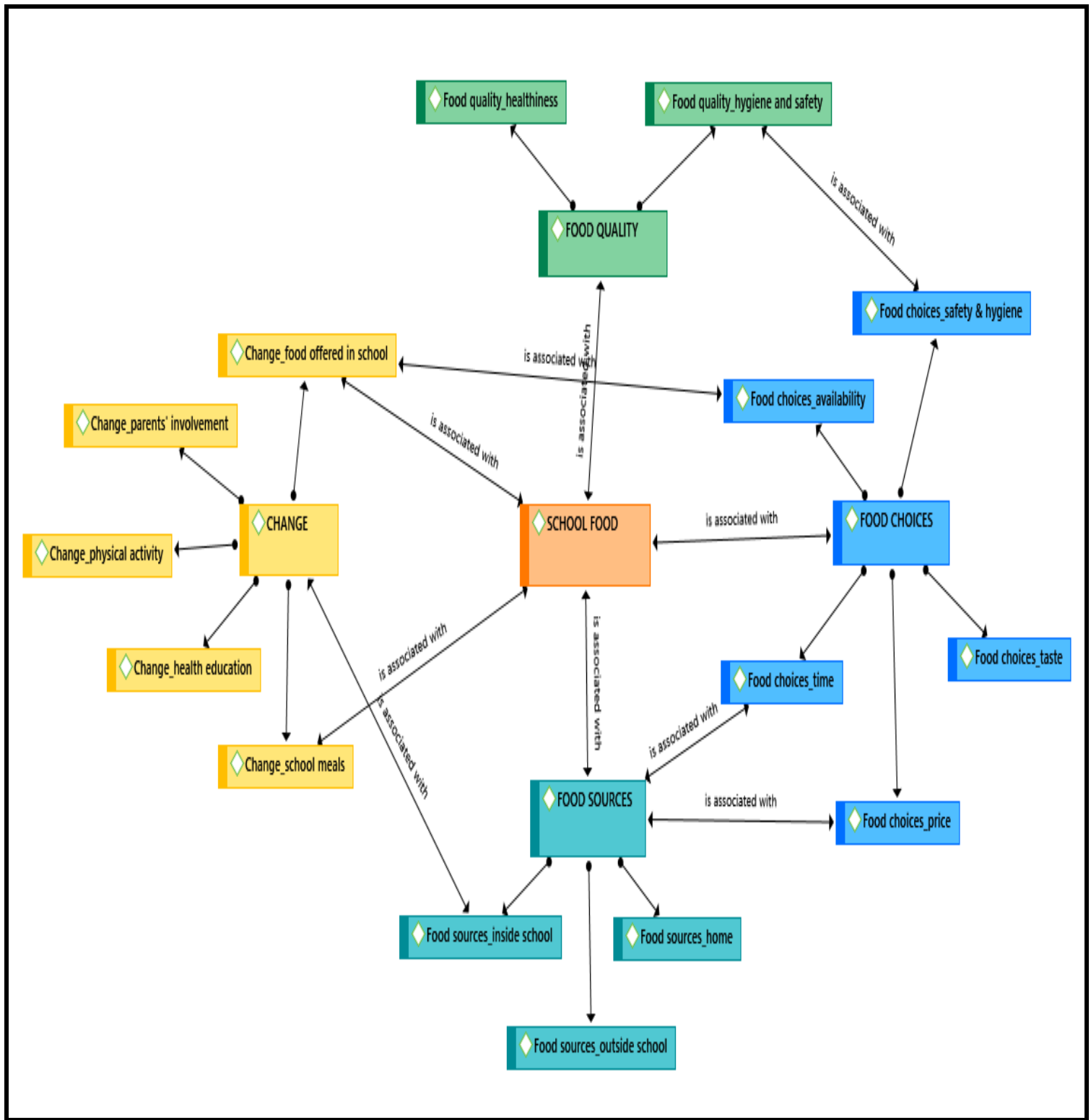


Figure 4-1. A code tree based on the themes established during data analysis

Codes that emerged during data analysis were organised and are described as per Figure 4-1. These themes were developed based on the FGD Guide (*Appendix 1*). **Q1 to Q5** represents the FGD questions that were used during data collection.

Table 4-2: Overview of themes and codes that emerged during qualitative data analysis

Theme	Codes	Description
School food	School	Food that is consumed within the school premises.
Food sources	Home	When the food that is consumed at school is obtained from home.
	Outside school	Any buying and consumption of food that occurs outside the school premises.
	Inside school	Any buying and consumption of food that occurs within the school premises.
Food quality	Healthiness	The characteristics of food that learners accept with regards to flavour, shape and size.
	Hygiene and safety	The way in which the food is handled and how is it prepared by food handlers.
Food choices	Time	Period that the learners take to prepare the food.
	Price	The amount charged for purchasing any food.

	Taste	The sense an individual has about the food that is being eaten, e.g. sweet, sour, delicious.
	Availability	Being able to obtain the type of food wanted.
	Safety and hygiene	Conditions or practices of preserving the food.
Change	Food offered at school	A different menu that can be offered at school.
	School meals	Meals consumed by learners during the time when they are at school.
	Physical activity	The movement of part of the body in a vigorous way and sometimes it may lead to sweating.
	Nutrition education	The process of acquiring new information about nutrition by an individual.

4.3 THEME 1: FOOD TYPES AND SOURCES

Data was analysed and presented according to the themes shown in Table 4-2. Participants were asked to indicate the type of food they had eaten that day, whether brought from home, bought from the school tuckshop or other outlets and food sale points that are outside the school premises.

The following were the types of food listed by the students:

Table 4-3. Types of food consumed by learners

At school	Outside school	At home
Muffins, ice cream, sandwiches, potato crisps chips, cold drinks, sweets, fruit juice, biscuits, chocolates, pies, water, energy drinks (Powerade), fries	Flavoured chips, Russian rolls, energy drinks, cold drinks, fruits, fat cakes, coffee, scones, biscuits, bread, Kentucky Fried Chicken, burgers, Kota (Bunny Chow)	Chicken kebabs, 100% fruit juices, biscuits, fruit salads, chocolates, pies, fruits, bread, yogurts, rice

The following quotes taken verbatim from the FDG data gathered, further describe the types of foods that the learner had eaten:

“My name is [name] and I’m 18 years old in Grade 12 and I ate pie and chocolate”. (FGD 1)

“Hi, my name is [name], I am a learner at... (inaudible), I am 17 years old and I ate chips at break”. (FGD 2)

“My name is [name], I am 18 years old, I’m in Grade 12 and I had a fish sandwich”. (FGD 3)

“My name is [name]. I am in Grade 12 D. Until today in break I ate chips and some veggies”. (FGD 1)

Theme 2: Sources and perceptions of the quality of food eaten at school

Participants were asked to indicate where, specifically, they get the food that they eat at school and the following sources were listed:

- *school tuckshop;*
- *McDonalds;*
- *street vendors;*
- *home;*
- *BP garage;*

- *outside school premises;*
- *fast food shops; and*
- *food shops.*

The following are some of the quotes indicating the different places in or around school where the students get their food.

“So if I don't have McDonald's for breakfast, I might order it to come deliver at school or we go after school to go with friends to go buy McDonald's”. (Age 17, FDG 1)

“Ja, or KFC if you feel like it or ja it's very close. And for the fact that you can get it delivered as well”. (Age 18, FDG 2)

“People bring rolls say put their chips in at school so bring the rolls from home and you buy the chips from school and that's a sandwich and that's not healthy”. (Age 15, FDG 2)

“You can at Spa”. (Age 17, FDG 3)

“It's the garage and street vendor.” (Age 16, FDG 3)

“Ma'am what they sell at the tuckshop, they sell chips. Ma'am it's unhealthy and learners even eat them daily from what I see.” (Age 15, FDG 3)

4.4 FOOD QUALITY

Food quality refers to the setting in which the dietary intake of learners takes place, i.e. the time and place students get the food and the food choices available to learners (Fit4kids, 2018). The learners were asked to indicate the types of foods that are offered in and around the school. They were also asked to write down the food type on red, green, and orange cards. They used a red card to write down the food they perceived as unhealthy and the green card for food perceived to be healthy. The orange card was used when learners were not sure whether the type of food was healthy or not. At the end of the exercise, the learners were requested to draw pictures (as shown in Figure 4-2), to indicate where they were getting the food and whether they perceived these foods to be healthy or unhealthy.



Figure 4-2: Drawings by learners showing healthy and unhealthy in relation to the food sources in and around the school

From Figure 4-2, a list of foods obtained from home, at school, and outside the school premises was compiled (see Table 4-3). The learners were then requested to indicate, in terms of proportion sizes, how the food they perceived to be healthy or unhealthy was distributed. It was agreed by the participants that of all the unhealthy food that is consumed at the school, 80% of it is purchased from the school tuckshop, 15% from outside school, and 5% was brought from home.

From the discussions, it was clear that some food comes into the school environment from outside the school premises. As mentioned by the participants, a variety of food comes into the school from fast food shops or being made at home. Participants were asked to disclose whether the food that they bring to school was healthy or unhealthy. This data was analysed and grouped into themes, which then showed that most of the participants perceived that the food sold at school as unhealthy. Figure 4.3 shows the codes from the analysis of data from Question 1 (Q1). The question specifically asked why the participants think that the food they bring to school is unhealthy.

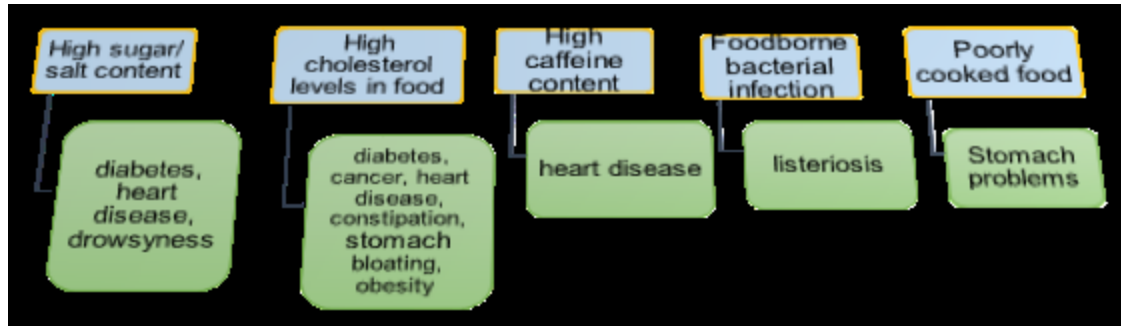


Figure 4-3: Codes that emerged from the analysis of data gathered by Question 1 (Q1)

According to Sookram *et al.* (2015:186), adults should not consume more than 6 grams (g) of common salt each day, which is as good as consuming a full teaspoon. Children who are 10 years and below should consume less than that. Anything more than the indicated amounts for both children and adults is referred to as a high salt intake. The recommended amount of sugar for those who are 5 years and older is not more than 10% of total food energy (Giabbanelli & Adams, 2016:1543). Participants stated that they considered the food they were bringing to school as not healthy because of the high proportions of sugar or salt. The high sugar or salt content was perceived to be associated with diabetes, heart disease, and drowsiness. Some of the participants had the following to say:

“Sometimes the juice is not fully healthy because sometimes it’s like 25% fruit and a lot of percent sugar ma’am”. (Age 15, FDG 1)

“I once tried it and there is also too much sugar in the Coke.” (Age 17, FDG 2)

“When you consume too much sugar, when you eat too much sugar, you get a little drowsy.” (Age 16, FDG 3)

High cholesterol levels in food

The consumption of cholesterol on every single day should not be more than 300 milligrams (mg) for every person, be it young or old. A cholesterol level above 340 mg is considered high (Sibanyoni *et al.*, 2017:1397). The learners perceived that most of the food they were consuming had a lot of fat, especially the food they were buying from outside the school’s premises. Foods that are perceived to contain high levels of fat include potato fries (hot chips) and vetkoeks. The learners believed that the fast-food outlets were re-using their oil and that it is not healthy to consume food that has been cooked in re-used oil. This is evidenced in the following statements made by the learners:

“I don’t think like the chips they use fresh oil every day, I feel like they re-use it.” (Age 17, FDG 1)

“They use yesterday’s oil.” (Age 15, FDG 2)

Now referring to the vetkoeks:

“Mam, they have too much oil like fat inside”. (Age 15, FDG 3)

“Cholesterol, like it’s bad for your heart. Yeah, high cholesterol.” (Age 16, FDG 2)

“This, this can lead to heart disease.” (Age 15, FDG 2)

One of the learners perceived that high cholesterol levels are associated with obesity.

“Or obesity”. (Age 15, FDG 1)

Some learners believed that fatty foods could lead to stomach problems and constipation when consumed in excess.

“Sometimes, you become bloated.” (Age 17, FDG 2)

“Because you know, we have we always want to order the large meals, you know, the large cold drink, the large fries, then you get the big burger and it's just so much food at one time. And it's like fatty foods and sugary foods, which isn't really good for your body. (Age 17, FDG 2)

“And it leads to constipation I think.” (Age 15, FDG 1)

High caffeine content

According to Verster and Koenig (2018:1250), the recommended amount of caffeine that an adult should consume a day is 400 mg. This is equivalent to approximately four cups of coffee and two cans of energy drinks per day. Taking more than the indicated amount of caffeine is considered a high caffeine intake. The amount of caffeine in beverages varies, particularly in energy drinks. Learners mentioned that the food that is brought to school was unhealthy because some of it contained high levels of caffeine, especially the energy drinks, and they were of the perception that these energy drinks could be associated with heart disease.

“No, I think it's unhealthy. Because it's an energy drink, energy drinks like you get a lot of energy which gives like your power... your heart pumps like a lot faster. Which will eventually give you a lot of cardio vascular problems.” (Age 17, FDG 2)

“I feel like it's healthy because most of sports, sportsmen and sportswomen, they use them, they consume Powerade. These energy drinks they have like acid and a high caffeine content.” (Age 16, FDG 3)

Foodborne bacterial infection

Foodborne bacterial is any infection of the digestive system that may be caused by consuming the food that has bacteria in it (Rauber et al., 2018:587). Several learners perceived that the food sold outside the school premises, particularly the *Kota*, were sources of bacterial infection. They associated *Kota* with listeriosis because it contains polony.

In 2017, South Africa once had an outbreak of listeriosis, a foodborne disease. According to WHO (2018), they were around 978 cases that were reported. The most affected provinces were Gauteng, Western Cape and KwaZulu-Natal. The National Institute for Communicable Diseases (NICD) (2018) reported that these provinces had 581, 118 and 70 reported cases, which accounted for 59%, 12% and 7% of the cases respectively. Cold meat products were associated with the listeriosis outbreak, hence the learners' perception of Kota to be unhealthy. The following was said by the learners:

“Kota. Sepatlo. Very unhealthy ma’am”. (Age 15, FDG 1)

“Because it produces listeriosis, there was an outbreak”. (Age 17, FDG 2)

Poorly cooked food

In this study, the researcher self-defines poorly cooked food as food that is not prepared well enough for human consumption and carries the risk of food poisoning. Participants expressed during the FGDs that the food purchased from the fast food outlets, and other places outside the school premises was poorly cooked and believed to cause stomach problems.

“How can you see that like, it's too... Junk... Like it has vitamins which are stuffed with too much fat. Like, let's say... I am making an example, there's restaurant, at that restaurant, they don't pre-cook, like they don't make them today. They pre-cook their food, just like McDonald's chips”. (Age 15, FDG 3)

“Because when you eat it, it's going to affect your stomach. Like you will have that thing growing there, then maybe they have to go number two there...”(Age 18, FDG 2)

However, there were learners who perceived that some of the food that is sold outside the school premises is healthy, and they indicated that it could depend on the way the food is prepared. For example, the following participant had a different view regarding Kota.

“No ma’am it depends what you put it. So like a sandwich, there's Kota's that are health”. (Age 15, FDG 1)

Others also perceived the sandwiches to be healthy depending on how they were prepared.

“It depends on what you put in the sandwich”. (Age 15, FDG 2)

“It depends on which one because if you use brown bread, it's healthy because there is wheat you see”. (Age 16, FDG 3)

It is evident from the discussion with the learners that the school food environment is not offering learners healthy food options. Figure 4-3 shows that most of the red cards, indicating unhealthy food types, were placed around the section of the pictures representing the school environment. The learners were asked to tell the interviewer why they perceived these food types to be unhealthy, and the same codes, as indicated in Figure 4-2, emerged again, these being:

- *high sugar or salt content;*
- *high cholesterol levels in food;*
- *high caffeine content;*
- *foodborne bacterial infection; and*
- *poorly cooked food.*

4.5 THEME 3: DETERMINANTS OF FOOD CHOICES

The learners were asked to indicate what influences their food choices at school, and several themes emerged from the analysis of their input. Table 4-4 shows the list of codes that emerged.

Table 4-4: Influences of food choices at school

Code	Description
Hygiene	Conditions or practices that are ideal for preventing diseases or for the maintenance of good health (Oxford Dictionary, 2019).
Taste	The ability to sense flavour or an individual's preference of something over others.
How the food is prepared	Involves the ingredients used in the process of producing the food item(s).
Availability	Being available for the learners.
Price	The amount required to purchase something (Oxford Dictionary, 2019).
Time allocated for break time	The duration of time given to the learners to eat.
Shelf life (Expiry date)	The duration of time before food items become unsuitable for consumption (Oxford Dictionary, 2019).

From the codes indicated in the table, learners food choices at school are influenced by hygiene, amongst others. It was mentioned during the FGDs that the food sold at the school tuckshop does not comply with hygienic standards. This perception is evidenced by the following statements made by the learners:

“The tuckshop because there is different people and we don't know if they make the sandwiches with clean hands or....” (Age 15, FDG 2)

“Ma'am once I found a cockroach in those Foxy Simba's.” (Age 16, FDG 1)

The issue of hygiene can, therefore, influence the type of food that the learners buy from school. In some cases, learners are forced to buy their food from outside the school because of their perception poor hygienic standard at school sources.

The issue of availability was also a concern amongst the learners. It was indicated that the school tuckshop does not always have stock of what they would like to eat and they, therefore, settle on buying what is available; in most cases the alternative was the fries.

“There isn't really enough because sometimes people just go off like break with just eating a packet of chips [fries], coz there's no food left in the tuckshop. So, if you rush to the tuckshop when the break bell rings. Then you lucky, but if you wait” (Age 15, FDG 2)

From the above quote, it shows that the food availability in the school tuckshop was perceived to be connected with the time that is allocated for break. The following quote can also substantiate this idea.

“So, the chips [fries] it's like at least everyone gets a chance to get chips [fries] coz they limit how much you buy and they make at least a lot, even though it's not nice, even though you can wait like you can get your pack of chips [fries], maybe two minutes before break ends”. (Age 16, FDG 1)

The other issue of concern to participating learners was the taste of the items of food that the school tuckshop sell. It was mentioned that some of the food does not taste good and, therefore, that learners would rather buy their food from outside the school instead of the school tuckshop.

“But what they do at the tuckshop, they order most of the stuff, they order them from a company that produce pies....so the pies they are not nice”. (Age 17, FDG 2)

“We don't have a choice because if you're not eating pie then you are eating chips [fries] and sometimes the chips [fries] the batch of the day is horrible. So, I can't now eat something that's bad, so I'd rather sacrifice eating that horrible thing and eat something less horrible”. (Age 15, FDG 3)

Another issue raised that was of great concern amongst almost all the learners, was the absence of an expiry date on the food products that are sold at the school tuckshop. Learners were uncertain whether the food items sold at the tuckshop were being supplied by a reputable supplier or not, because they do not display expiry dates.

“Too salty, there are no dates”. (Age 15, FDG 1)

“They buy the pies and stuff from like other companies, ma’am are they fresh when they sell them that’s my concern?” (Age 15, FDG 3)

Learners expressed great concern over the manner in which the food is prepared at the tuckshop. Some were not sure whether the food is cooked or uncooked.

“I don’t know they cook them in the microwave and they don’t taste nice. They just unfreeze, the freezed, they unfreeze them”. (Age 18, FDG 2)

“Ja they just have the packet that’s witten Braille schools then they put them and unfreeze them.” (Age 15, FDG 1)

Price was another factor influencing food choices at school. Some learners felt that they did not have sufficient pocket money to buy what they would have preferred to eat.

“Ma’am your finance ma’am. How much you have”. (Age 15, FDG 1)

“Ma’am if you don’t have a pocket money ma’am then when you’re on your way going home, your friends are going to influence you to take money and sometimes this leads to stealing, like steal money from your parents’ wallets”.
(Age 17, FDG 2)

4.6 THEME 4: POSSIBLE WAYS OF CHANGING FOOD ENVIRONMENT WITHIN THE SCHOOL

Finally, the learners were asked to discuss the possible changes that could be made in the school food environment. Interconnected codes emerged from the analysis of data and are presented in Figure 4-5.

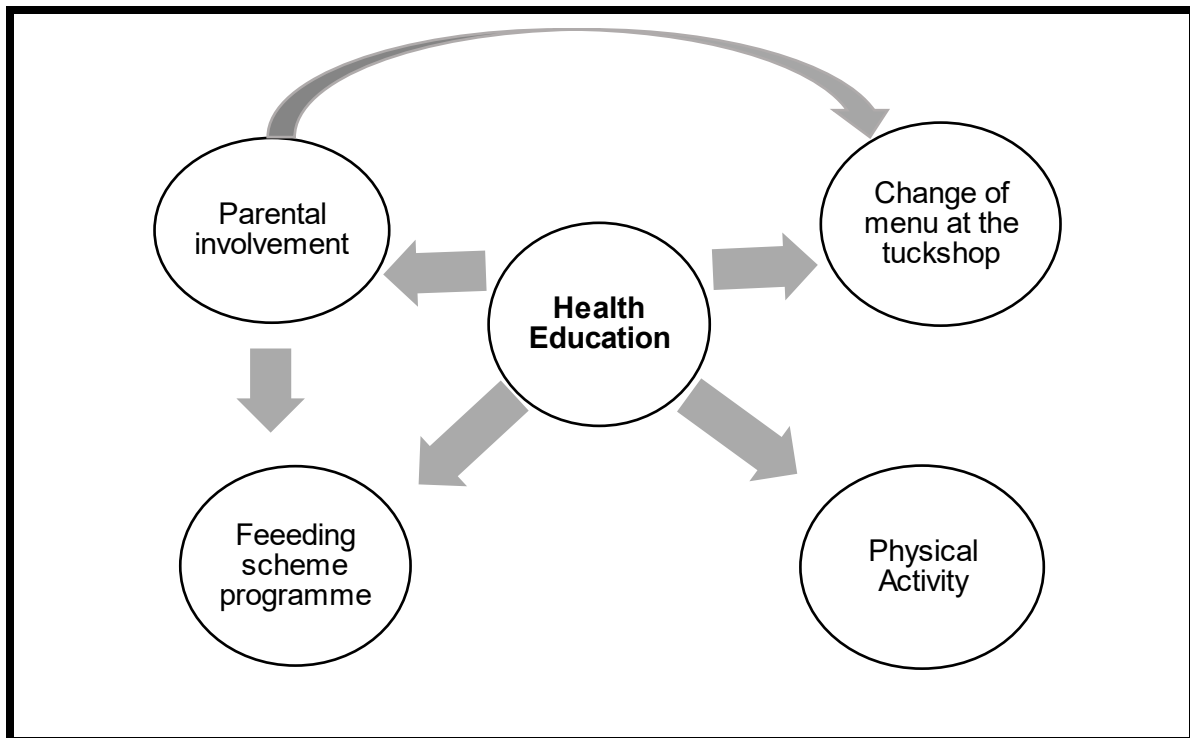


Figure 4-5: Possible changes that can be made in the school food environment

The codes that emanated when data analysis was being done from Question 5 (Q5), were interconnected, as shown in Figure 4-5, with health education being the central aspect. According to the WHO (2016), health education is an integrated way of learning that assist people who are at risk of any health problem to acquire new information and effectively apply it in their lives. One of the main issues that was raised by the learners was the perceived need to change the school menu.

“I think if they just changed a whole makeover of the menu, just make everything healthier and the way they are not giving us a choice by unhealthy food, they don’t give us a choice to buy healthy food”. (Age 17, FDG 1)

Some learners suggested the need to hire a professional chef who would be responsible for creating the menu and cooking for the learners.

“Or maybe they should employ a professional chef, you see ma’am?” (Age 15, FDG 2)

In order to change the menu, there is a need for the school to engage with the parents of the learners in the process. Parental involvement was also suggested to establish a feeding programme at school. South Africa has the NSNP, which is responsible for

providing food to over nine million learners around the country (Sibanyoni *et al.*, 2017:1397). This programme has two components, these being Nutrition Education and Deworming, and Sustainable Food Production (Laurie *et al.*, 2017:80). The greater part of the budget of this programme is allocated to feeding public school learners. In this study, participating learners indicated that, since they are at a private school, it was ideal for the school to develop its own feeding programme involving parents and working through the school governing body.

“I think they should make a feeding scheme, not the one’s from the government schools but like the ones where you include your parents from like primary school. They tell your parents, if anyone wants to take part in selling food at the tuckshop, with her own menu and the money that they make, they keep it for themselves”. (Age 17, FDG 2)

“Ja, like with my old school – because I came last year – with my old school we had this, they had this thing at the tuckshop where the tuckshop wasn’t the school’s tuckshop, it was just in the school’s premises. So, every two years they’ll find like maybe a catering company or someone who’s willing to run the tuckshop on a two-year contract whereas you, you run it yourself you make them and you come up with the menu’s but the thing is they give you this thing where like you need to come up with a balanced menu. It needs to be healthy it can’t just be fatty”. (Age 18, FDG 1)

“The school, like the governing body....The governing body is teachers and parents. Where they say like you can’t just have like fatty foods and it can’t be the same thing every day. So with that, if it was implemented here at school, it could work because now we’d have parents also like helping us and trying to like back us up that, you know what our kids shouldn’t be eating all these unnecessary and unhealthy foods daily and you know”. (Age 15, FDG 2)

It was expressed during the discussions that the learners should also be involved in physical activities to stay healthy. Physical activity in schools is extensive, which improves both physical health for the learners, as well as academic performance (Forrester, 2015:2). On the other hand, lack of physical

activity amongst the learners can heighten their chances of being obesity, heart problems, and hypertension (Swift et al., 2014:441).

“Ja ma’am, membership at a sports program in school. Like every day, not only once a week”. (Age 17, FDG 2)

4.7 CONCLUSION

The data that was gathered reviewed the views of the learners regarding their school food environments. The learners were aged 15 to 21 years. A clear of picture was drawn from the presentation in the form diagrams, tables and figures that the school food environment is of concern to the learners. Some of the themes that were identified from the data analysis were food types and sources, food quality, and possible changes of the school food environment. Themes and codes emerged from the data analysis and most of the were interconnected. A better understanding of these findings will be made possible by discussing the findings in the next chapter.

CHAPTER 5

EVALUATION, DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5 INTRODUCTION

This chapter gives an outline of the findings obtained from the study based on the perceptions of high school learners regarding their school food environment. The findings this study will also be compared to other studies previously conducted in different settings. The chapter is outlined as follows:

5.1 PURPOSE

The study aimed at inquiring about the learners' perceptions regarding their school food environment in a private high school in Pretoria, and to determine if and how they would like the food sold in schools to be healthier. The opportunities and food choices were limited for learners within the school food environment. Very little was known about both subjects prior to this study. Majority of the previous studies were done in public schools. The qualitative study conducted in a private school setting generated new knowledge about school food environments. Understanding perceptions of learners was critical for progress to be made towards collaborative efforts addressing adolescent overweight and obesity.

The study posed the following research questions:

- How do high school learners in a private school in Pretoria describe their school food environment?
- What are the high school learners' perceptions regarding the healthiness of the food that they purchase in and around schools?
- What perceptions do high school learners have regarding a change of their school food environment?
- What recommendations, based on learners' opinions, can be made for school leaders (principals, teachers, parents, and governing body) to change towards a healthier school food environment?

5.2 SUMMARY OF FINDINGS

According to the learners, the food options sold within the school food environment were perceived to be the unhealthiest options. From the learners' perspective, the food being sold at the tuckshop contained too much cholesterol, and some of it did not have the expiry dates. Another issue of concern to learners was the hygiene practices at the tuckshop, which they believed could affect the food. The research findings of the reported that participants were not sure whether the people who prepared the sandwiches washed their hands prior the handling of food. The learners mostly bought muffins, ice cream, sandwiches, potato crisps, cold drinks, sweets, fruit juices, biscuits, chocolates, pies, water, energy drinks (Powerade), and fries. Price was yet another factor raised by the learners. They complained that food sold at the tuckshop was too expensive and did not warrant being sold at such high prices. The learners listed possible changes that could help improve their school food environment. Amongst these were health education, changing the menu, physical activity, establishing a feeding programme, and parental involvement. When learners were asked how they would like to change their school food environments, they noted that health education must be central to achieving these changes. Findings from this research reported that there is need to change the menu at the school. Learners further reported that parental involvement was a key to healthy school food environments

5.3 DISCUSSION

The study findings are consistent with what Steyn *et al.* (2011) reported in their study when they reported that the nature of food found in schools in South Africa have unhealthy food options available. According to the learners, the food options sold within the school food environment are mostly unhealthy. The (SCT) highlights the fact that the environmental factors in school food environments may influence the food choices and perceptions of learners. The results that are similar were reported by Nortje *et al.* (2017:74), and reported that most of the food sold in school tuckshops are low in nutrient value, high energy foods such as potato chips, sweets, ice cream, and sweet beverages (cool drinks). Faber *et al.* (2014:1214) also reported that various foodstuffs were sold at school and some of them were unhealthy. The authors reported that foods such as chips or Niknaks, sweets, chocolates, biscuits, and were sold in

20% of the 63 schools from which data were obtained. They are some learners who have the behaviour of consuming healthy foods but they may not do so because non-accessibility and availability of healthy foods within the school premises and this makes it challenge for them to follow health choices. (Story *et al.*, 2012:41). The research findings, therefore, add to the notion that school food environments are not offering different forms of healthy food choices to learners. The number of children carrying food to school with home-packed lunch was small and, which was similar to the results of the study by Abraham *et al.* 2011:1752. Other studies reported that learners mostly purchased food from on street vendors and schools' tuck shops for food than on a meal in a lunch box (Abrahams *et al.*, 2011:1752; Wiles *et al.*, 2011:129). Previous studies have shown that availability and accessibility influence healthy food choices and preferences of learners (Cusatis & Shannon, 2016:27; Harris *et al.*, 2016:376). The findings reported that learners purchase food from fast food outlets outside the school because of the proximity.

The listed food items have been reported as unhealthy in several studies and can be responsible for NCDs (Goryakin *et al.*, 2017:151; Harris *et al.*, 2016:376; Rauber *et al.*, 2018:587). In this study, the construct of knowledge from the SCT was reported when learners perceived that the food options available are linked to diseases like cancer, cardiovascular diseases, hypertension and stomach problems. South Africa is going through an epidemiological transition characterised by an increase in NCDs (Kabudula *et al.*, 2017:424); prompting the government and other stakeholders to focus more on schools as the ideal platform for the prevention of NCDs, particularly in connection with exercising and nutrition activity amongst learners (Dalais *et al.*, 2014:1). The affordability and pricing of foodstuffs in and around schools were reported by learners to be an obstacle to healthy eating. Faber *et al.* (2014:1214) also reported learner had no enough money to purchase food and the increasing price of food prevented learners from eating healthy. The cost was also reported to prohibit the frequent intake of healthier diet both in and out of school as learners and parents were unable to purchase them regularly (Faber *et al.*, 2013:409; Ransley, *et al.*, 2010:1898). The studies that were conducted previously studies revealed that poverty together with affordability contributed to unhealthy eating among learners.

Temple *et al.* (2011:55) reported it is more expensive to purchase food that is health than the food that is normally eaten in homes and schools. However, there was a dearth in literature on the perceptions of learners in private high schools about their school food environment and what they would suggest to improve their school food environment to be healthier.

The learners listed possible changes that might help improve their school food environment. Amongst these were health education, changing the menu, physical activity, establishing a feeding programme, and parental involvement. The connection amongst these aspects has been described, and health education is central to achieving these changes. There is evidence that school health education programmes are amongst the most efficient strategies that can be used to prevent major health and social problems (Tancred *et al.*, 2017:807). The study findings show that there is need to change the menu at school. Mensink *et al.* (2012:1) concur with this perception, and their study reported that increasing the availability of healthy food options at school would have a positive influence on the food choices.

Findings also show the involvement parents as the key to the establishment of school feeding programme in private schools. Parental involvement has been reported as paramount to improving the development and the health of the learners (Stefanski *et al.*, 2016:135). (Faber *et al.* 2014:17) reported that the standard of food offered at school was decided upon by the various stakeholders such as the school governing board, educators and parents.

5.4 CONCLUSION DRAWN FROM THE DATA

South Africa is faced with a health problem of overweight and obesity among high school learners, school food environments may therefore play a vital role in providing some solution towards associated NCDs. Findings of this study show that learners are concerned about the food they purchase within the school premises. Learners have reported that they consider the food offered at the school as unhealthy. Specifically, the learners' views about unhealthy food were concerns of high levels of cholesterol, hygiene, taste and how the food was handled during preparation. In most cases, learners are enticed by the taste of the food they purchase, be it inside or outside school. Taste is a personal factor that may influence learners' food choices. Most

learners would prefer to purchase the food that has a good taste whether healthy or unhealthy. Learners mentioned that some of the food sold on the school premises does not taste nice so that learners would rather buy their food from outside the school instead of at the school tuckshop. However, some of the learners' perceptions were that some of the food that is sold outside the school premises was healthy and they indicated that, sometimes, it depended on the way the food was prepared. How the learners perceive their school food environment may affect their attitude, food choices and food preferences. For example, the following participant had to say something different regarding the *Kota*. It is evident from what was discussed with the learners that school food environment is not offering the learner healthily diets.

Promoting a healthier school food environment calls for a well-structured transdisciplinary approach that will incorporate the school curricula, health education, restructuring of policies, parents' involvement, DBE the Department of Health, and the community. If these various disciplines were to speak with one voice it may bring a change and choices that are healthier within the school food environment.

5.5 LIMITATIONS OF THE STUDY

The study presented limitations that must be taken into account. The qualitative study design was contextual, and the findings cannot be generalised to other settings. Participation was restricted to those who had signed the required forms. Some of the potential participants were willing to participate, but failed to submit their consent forms in time and some could not be part of the study because of transport issues since the study was conducted after school hours. During one of the focus group discussion two learners had to leave during the FGD session simply because their transport had to leave before the end of the FGD. The study focused on Grade 10, 11 and 12 learners and only one private high school was studied. Involvement of other grades of the high school and other private high schools could have enriched the data

5.6 IMPLICATIONS OF THE STUDY FINDINGS

Private High schools are a growing trend in South Africa. The study findings may help school policymakers understand that bringing healthy school food environments to private schools may influence a positive change.

5.7. RECOMMENDATIONS

The majority studies concerning the school food environment in South Africa focused mainly on government schools, teachers, or primary school learners. There is insufficient literature on school food environments in South African schools providing healthier choices to private high school learners. Bearing that in mind, this calls for the adaption of the transdisciplinary approach that will emancipate high school learners to deal with their school food environments that may lead to unhealthy food preferences:

- Private high schools should give high schools learners an opportunity to decide on which meals should be offered in school tuckshops. This can be achieved by selecting some learner representatives, who would be the voice of learners.
- The DBE and the health sector should collaborate with private schools to implement an NSNP as a way of providing a variety of meals to private school learners and combating overweight and obesity.
- Parents should also be involved in establishing school feeding programmes in private schools. This can be achieved by creating a feeding committee that includes devoted parents to transform school food environment for the betterment of their children.
- School management should provide training to food handlers on how food hygiene, e.g. to prepare food and keeping tuckshop clean.
- The school must ensure that expiry dates always appear on food sold at the tuckshop.
- The pricing of food must also be affordable to learners to place healthy foods within their reach.
- There is a need to adopt transdisciplinary approach through involving all stakeholders, and this will go a long way in curbing overweight and obesity if schools.

- For schools to achieve healthy food environments there is need for different actors to come and work together. There should be crossing of disciplinary boundaries when it comes to knowledge sharing i.e. the Department of Basic Education (DBE), parents at home, school food services component and other stakeholders. Through knowledge sharing interventions can be developed and the outcome will be healthy school food environments.
- Findings of this study have shown that the school food environment is multi-disciplinary in nature. There is need for the Department of Basic Education, schools, students and parents to work together to promote healthy school food environments. Meaningful involvement of students in the decision making process about their school food environment will empower the students to take control of their eating behaviour and food choices.
- There is need to create synergies between the school food environmental changes, perceptions, curriculum or knowledge interventions, and parental or family involvement is the most effective way to increase school healthy food for consumption by children.

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ANNEXURES

ANNEXURES 1: QUESTIONNAIRE FOR FGDS

<p>1. What food do you bring to school and do you think these foods are healthy? <i>(Probe: Why do you perceive/think these foods are healthy/unhealthy)</i></p>
<p>2. Where do you get these foods? <i>(Probe: Ready to eat food brought at school premises/ close by school/somewhere else or prepared at home?)</i></p>
<p>3. What foods are offered to learners at school (in and around the school) and do you think these foods are healthy? <i>(Probe: why do you think these foods are healthy/unhealthy)</i></p>
<p>4. What influences your food choices at school?</p>
<p>5. If you could change the food that is offered in and around your school what would you do and how would you do it?</p>

ANNEXURE 2: AUTHeR SCIENTIFIC COMMITTEE APPROVAL LETTER



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AUTHeR SCIENTIFIC COMMITTEE APPROVAL LETTER

Dear Chair and members of the HREC committee,

Please find herewith the approval letter to acknowledge that the below mentioned study underwent critical quality review by members of the AUTHeR Scientific Committee and have been granted approval for review by the HREC:

Title:	Perceptions of South African high school learners regarding healthy school food environments
Student Name/Researcher	Knowledge Mukanda
Supervisor:	Dr N Claasen
Co-supervisor	Dr M Wicks
Date of the meeting	11 April 2018
Reviewers	Prof IM Kruger, Drs CM Niesing & H De Beer
Final date of approval	05 June 2018

A handwritten signature in black ink, appearing to read 'S. Kruger'.

Signature of the chairperson

2018/06/06
Date

A handwritten signature in black ink, appearing to read 'M. Kruger'.

Signature of the Director

2018/06/06
Date

ANNEXURE 3: ETHICS APPROVAL



Dr N Claasen
Transdisciplinary Health Promotion-AUTHeR

Private Bag X6001, Potchefstroom
South Africa 2520

Tel: 018 299-1111/2222
Web: <http://www.nwu.ac.za>

Health Sciences Ethics Office for Research,
Training and Support

North-West University Health Research Ethics
Committee (NWU-HREC)
Tel: 018-285 2291
Email: Wayne.Towers@nwu.ac.za

25 February 2019

Dear Dr Claasen

APPROVAL OF YOUR APPLICATION BY THE NORTH-WEST UNIVERSITY HEALTH RESEARCH ETHICS COMMITTEE (NWU-HREC) OF THE FACULTY OF HEALTH SCIENCES

Ethics number: NWU-00090-18-S1

Kindly use the ethics reference number provided above in all future correspondence or documents submitted to the administrative assistant of the North-West University Health Research Ethics Committee (NWU-HREC) secretariat.

Study title: Perceptions of South African high school learners regarding healthy school food environments

Study leader: Dr N Claasen

Student: K Mukanda-29651689

Application type: Single study

Risk level: Children: Category 3 – Greater than minimal risk with no prospect of direct benefit

Expiry date: 29 February 2020 (monitoring report is due at the end of February annually until completion of the study)

You are kindly informed that after review by the NWU-HREC, Faculty of Health Sciences, North-West University, your ethics approval application has been successful and was determined to fulfil all requirements for approval. Your study is approved for a year and may commence from 25/02/2019. It, however, requires the following further conditions specific to *the progress* of the study:

- a. Please provide the HREC with copies of the goodwill permission letters from the Tshwane Department of Education, the principal and the directors of the Royal Schools Princess Park.
- b. Please provide the HREC with copies of the signed confidentiality agreements with the fieldworker and the transcriber when they become available.

As the study progresses the aforementioned conditions should be submitted to Ethics-HRECProcess@nwu.ac.za with a cover letter with a specific subject title indicating "Outstanding documents for approval: NWU-XXXXX-XX-XX." The letter should include the title of the approved study, the names of the researchers involved, that the documents are being submitted as part of the conditions of the approval set by the NWU-HREC, the nature of the document i.e. which condition is being fulfilled and any further explanation to clarify the submission.

The *e-mail*, to which you attach the documents that you send, should have a *specific subject line* indicating the nature of the submission e.g. "Outstanding documents for approval: NWU-XXXXX-XX-XX". The e-mail should indicate the nature of the document being sent. This submission will be handled via the expedited process.

ANNEXURE 4: AUTHORISATION LETTER FROM PRINCESS PARK



PERMISSION GRANTED TO CONDUCT A STUDY

THE MANAGEMENT
ROYAL SCHOOLS PRINCESS PARK COLLEGE
614 PRETORIUS STREET
PRETORIA
0001
CONTACT NUMBER: 012 324 1069
FAX: 012 324 5050
DATE: 16/5/2018

TO WHOM IT MAY CONCERN

Dear Health Research Ethics Committee/ Institution Review Board

RE: PERMISSION GRANTED TO CONDUCT A STUDY

On behalf of Royal Schools Princess Park, I am writing to formally indicate our awareness of the research proposed by Knowledge Mukanda, student number: 29651689, a Master of Science student in Transdisciplinary health education and health promotion at the School of Health Sciences, North-West University, Potchefstroom Campus.

We are aware that Knowledge Mukanda will be conducting his study among the grade 10 to 12 Princess Park students. The title and the objectives of his study are respectively as follows: Towards healthier school food environments – perceptions of high school students in Pretoria, South Africa.

- To explore how the high school students describe the school food environment
- To explore students' perceptions about the healthiness of foods that are sold in and around schools.
- To explore students' perceptions on how they would like to improve their school food environment
- To recommend strategies to school leaders (principals, teachers, parents governing body) towards a healthier school food environment based on students' voices for change.

We are also aware that participation of students in this study is voluntary and participants may withdraw from the study at any time without being penalized. The study will seek to do no harm and the only potential impact could just be the inconvenience of sitting for the approximate one hour long FGD. Moreover the data will be collected Dr Nicole Claasen and Ms M. Thomas individuals (employees at NWU and your research supervisor will be doing the FGDs to avoid any possible conflict or pressure felt by participants. The student participation will be anonymous in the analysis and write up and at no time will their names be used. The study is going to be done in partial fulfilment for the degree: Masters of Science in Transdisciplinary health, at the School of Health Sciences, North-west University, Potchefstroom Campus.

As one of the principals at Royal Schools Princess Park, I therefore grant Knowledge Mukanda permission to conduct his study at our institution.

If you have any questions or concerns, please feel free to contact my office at 012 324 1069

Yours sincerely

Mr M. Dutuma (Executive Principal)



Signature:

Date: 16-05-2018



ANNEXURE 5: DEPARTMENT OF BASIC EDUCATION APPROVAL LETTER



GAUTENG PROVINCE

Department of Education
REPUBLIC OF SOUTH AFRICA

8/4/1/2


GDE RESEARCH APPROVAL LETTER

Date:	14 January 2019
Validity of Research Approval:	04 February 2019 – 30 September 2019 2019/08
Name of Researcher:	Mukanda K
Address of Researcher:	215 Extension 23 GA- Rankuwa 0208
Telephone Number:	083 388 0390 / 076 058 1138
Email address:	kmukanda@gmail.com
Research Topic:	Perceptions of South African high school learners regarding healthy school food environments
Type of qualification	Masters
Number and type of schools:	One Secondary Schools.
District/s/HO	Tshwane South.

Re: Approval in Respect of Request to Conduct Research

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

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

 15/01/2019

Making education a societal priority

Office of the Director: Education Research and Knowledge Management

1st Floor, 17 Simmonds Street, Johannesburg, 2001

Tel: (011) 355 0488

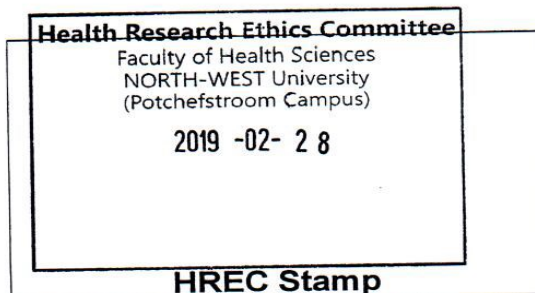
Email: Fath.Tshabalala@gauteng.gov.za

Website: www.education.gpp.gov.za

ANNEXURE 6: INFORMED CONSENT FOR ADOLESCENTS IN HIGH SCHOOL



Private Bag X1290, Potchefstroom
South Africa 2520
Tel: +27 18 299-1111/2222
Fax: +27 18 299-4910
Web: <http://www.nwu.ac.za>



**INFORMED CONSENT DOCUMENTATION FOR ADOLESCENT
HIGH SCHOOL STUDENTS**
to take part in the research study
**Perceptions of South African high school learners regarding
healthy school food environments**

**Important: Parents or a legal guardian must give permission
for the adolescent to part-take in this study by signing the
parental permission form.**

ETHICS REFERENCE NUMBERS: NWU-00090-18-S1

STUDY LEADER: Dr Nicole Claasen

POST-GRADUATE STUDENT: Knowledge Mukanda

**ADDRESS: AUTHeR (Africa Unit for Transdisciplinary Health
Research), North-West University, Potchefstroom
Campus**

**CONTACT NUMBER: 083 388 0390 (K Mukanda)
018 299 2690 (Dr N Claasen)**

You are being invited to take part in a **research study** that forms part of a Master of Health Science in Transdisciplinary Health Promotion degree. Please take some time to read the information presented here, which will explain the details of this study. Please ask the researcher or person explaining the research to you any questions about any part of this study that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research is about and how you might be involved. Also, your participation is **entirely voluntary** and you are free to say no to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part now.

This study has been approved by the **Health Research Ethics Committee of the Faculty of Health Sciences of the North-West University (NWU-00090-18-S1)** and will be conducted according to the ethical guidelines and principles of Ethics in Health Research: Principles, Processes and Structures (DoH, 2015) and other international ethical guidelines applicable to this study. It might be necessary for the research ethics committee members or other relevant people to inspect the research records.

What is this research study all about?

- The aim of this study is to explore the perceptions of the learners in a private high school in Pretoria about their school food environment and if they would like to change their school food environment to be healthier. The following are the objectives of the study:
 - To explore how high school learners describe the school food environment.
 - To explore learners' perceptions about the healthiness of foods that are sold in and around schools.
 - To explore learners' perceptions on changing their school food environment.
 - To recommend strategies to school leaders (principals, teachers, parents governing body) towards a healthier school food environment based on learners' voices.

- This study will be conducted at Royal Schools Princess Park in Pretoria and will involve a minimum of three focus group discussions facilitated by experienced health researchers who have been trained in this methodology. The participants will be the grade 10 to 12 learners in the year 2018.

Why have you been invited to participate?

- *You have been invited to be part of this research because you are enrolled in grade 10 to 12 of Royal Schools Princess Park for 2018.*
- *You have been enrolled for the past 4 weeks at Royal Schools Princess Park.*
- *You are participating voluntarily and you are willing to be tape recorded during the focus group discussions.*
- *Being under 18 years, you will have to ask your parents or legal guardian to sign a parental permission in addition to this consent form.*

What will be expected of you?

- You will be expected to participate in one focus group discussion that will be conducted in a classroom of the school after class. The main object of these focus group discussions is to talk about your perceptions and experiences with food within and around the school premises. You will be put in a group of eight to ten members who are learners from Grade 10 to 12. The focus group discussions will be conducted after school hours and will approximately take one hour.
- You will also be invited to a separate meeting where the research team will present and discuss with you the findings and interpretation of this study and will ask your input in writing recommendations for the school management.

Will you gain anything from taking part in this research?

- There will be no direct gains for you in the study.

Are there risks involved in you taking part in this research and what will be done to prevent them?

- The study is of medium risk with no direct benefits. If you experience any emotional harm during the course of participating in the FGDs, the school's psychological counsellor will be available to provide psychological support. You may experience fatigue or boredom during the FGDs. The research team tries to avoid these matters by providing snacks and drinks and inserting a break into the discussion when needed. The study has more benefits than risks as it will generate new knowledge within a private school setting.

How will we protect your confidentiality and who will see your findings?

- Privacy during the data collection phases is assured by the researcher who will only allow you to take part in the research when you signed the informed consent. FGD will be carried out in a classroom, which allows you to take part in the FGDs without disturbances from non-participants.
- The research team will be responsible of the safekeeping and securing of all records during and after the study. During transcription, unique numbers will be aligned to names of participants which ensures anonymity. The student researcher will only be in touch with anonymised data, including the audio-recordings.
- Partial confidentiality will be ensured during FGDs by setting rules during the group discussions and activities which stress the importance of keeping personal information and the research contents within the group and not to discuss it with non-participants.
- Only the research team will be able to look at your findings. Findings will be kept safe by locking hard copies in locked cupboards in the researcher's office and for electronic data it will be password protected. Data will be stored for 5 years.

What will happen with the findings or samples?

- The findings of this study will be written up as a dissertation for partial fulfilment to obtain a Master of Health Sciences Degree in Transdisciplinary Health

Promotion. The dissertation will be available to the public via the North-West University's library service.

- A summary report of findings will be presented to the school management and the Gauteng Department of Education.

How will you know about the results of this research?

- We will give you feedback of the results in form of a written report after completion of this study, latest by May 2019.

Will you be paid to take part in this study and are there any costs for you?

- You will not be paid to take part in the study because there are no costs for you involved to take part. The study will be conducted at school during school days after class.
- To appreciate your time in joining us, we will be serving light refreshments during the group discussion.

Is there anything else that you should know or do?

- You can contact Dr Nicole Claasen via Mrs Mildred Thomas from the Africa Unit for Transdisciplinary Health Research (AUTHeR), North-West University at 018 299 2690 or 27381706@nwu.ac.za if you have any further questions or have any problems.
- You can also contact the Health Research Ethics Committee via Mrs Carolien van Zyl at 018 299 1206 or carolien.vanzyl@nwu.ac.za if you have any concerns that were not answered about the research or if you have complaints about the research.
- You will receive a copy of this information and consent form for your own purposes.

Declaration by participant

By signing below, I agree to take part in the research study titled: **Perceptions of South African high school learners regarding healthy school food environments**.....

I declare that:

- I have read this information/it was explained to me by a trusted person in a language with which I am fluent and comfortable.
- The research was clearly explained to me.
- I have had a chance to ask questions to both the person getting the consent from me, as well as the researcher and all my questions have been answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be handled in a negative way if I do so.
- I may be asked to leave the study before it has finished, if the researcher feels it is in the best interest, or if I do not follow the study plan, as agreed to.

Signed at (*place*) on (*date*) 20....

.....
Signature of participant

.....
Signature of witness

Declaration by person obtaining consent

I (*name*) declare that:

- I clearly and in detail explained the information in this document to
.....
- I did/did not use an interpreter.
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I gave him/her time to discuss it with others if he/she wished to do so.

Signed at (*place*) on (*date*) 20....

.....
Signature of person obtaining consent

Declaration by researcher

I (*name*)..... declare that:

- I explained the information in this document to the research assistant and the high school students that they will complete the questionnaire and also participate in three focus group discussions
- I did not use an interpreter
- I will be available should he/she want to ask any further questions.
- The informed consent was obtained by an independent person.
- I am satisfied that he/she adequately understands all aspects of the research, as described above.
- I am satisfied that he/she had time to discuss it with others if he/she wished to do so.

Signed at (*place*) on (*date*) 20....

.....
Signature of researcher

ANNEXURE 7: PARENTAL PERMISSION FOR STUDENTS UNDER 18 YEARS



Private Bag X1290, Potchefstroom
South Africa 2520
Tel: +2718 299-1111/2222
Fax: +2718 299-4910
Web: <http://www.nwu.ac.za>



**PARENTAL PERMISSION FOR HIGH SCHOOL STUDENTS
(UNDER 18 YEARS)**
to take part in the research study
**Perceptions of South African high school learners regarding
healthy school food environments**

Ethics number: NWU-00090-18-S1
STUDY LEADER: Dr Nicole Claasen
POST-GRADUATE STUDENT: Knowledge Mukanda
ADDRESS: AUTHeR (Africa Unit for Transdisciplinary Health Research), North-West University, Potchefstroom Campus
CONTACT NUMBER: 083 388 0390 (K Mukanda)
018 299 2690 (Dr N Claasen)

Your child is being invited to take part in a **research study** that forms part of a Master of Health Science in Transdisciplinary Health Promotion degree. Please take some time to read the information presented here, which will explain the details of this study. You may ask the researcher or person explaining the research to you, any questions about any part of this study that you do not fully understand. It is very important that you are fully satisfied and that you clearly understand what this research is about and how your child might be involved in. Also, your child's participation is **entirely voluntary** and he/she is free to say no to participate. If you say no as a parent, this will not affect your child negatively in any way whatsoever. Your child is also free to withdraw from the study at any point, even if he/she does agree to take part now.

This study has been approved by the **Health Research Ethics Committee of the Faculty of Health Sciences of the North-West University (NWU-00090-18-S1)** and will be conducted according to the ethical guidelines and principles of Ethics in Health Research: Principles, Processes and Structures (DoH, 2015) and other international ethical guidelines applicable to this study. It might be necessary for the research ethics committee members or other relevant people to inspect the research records.

What is this research study all about?

- The aim of this study is to explore the perceptions of the learners in a private high school in Pretoria about their school food environment and if they would like to change their school food environment to be healthier. The following are the objectives of the study:
 - To explore how high school learners describe the school food environment.
 - To explore learners' perceptions about the healthiness of foods that are sold in and around schools.
 - To explore learners' perceptions on changing their school food environment.
 - To recommend strategies to school leaders (principals, teachers, parents governing body) towards a healthier school food environment based on learners' voices.
- This study will be conducted at Royal Schools Princess Park in Pretoria and will involve a minimum of three focus group discussions facilitated by experienced health researchers who have been trained in this methodology. The participants will be the grade 10 to 12 learners in the year 2018.

Why has your child been invited to participate?

- *Your child has been invited to be part of this research because she/he is enrolled in grade 10 to 12 of Royal Schools Princess Park for 2018.*
- *Your child has been enrolled for the past 4 weeks at Royal Schools Princess Park.*
- *Your child is participating voluntarily and is willing to be tape recorded during the focus group discussions.*
- Your child will only be included if he/she provides this parental permission letter signed by you in addition to signing an informed consent form.

What will be expected of your child?

- Your child will be expected to participate in one focus group discussion that will be conducted in a classroom of the school after class. The main object of these focus group discussions is to talk about your child's perceptions and experiences with food within and around the school premises. Your child will be put in a group of eight to ten members who are learners from Grades 10 to 12. The focus group discussions will be conducted after school hours and will approximately take one hour.
- Your child will also be invited to a separate meeting where the research team will present and discuss with your child the findings and interpretation of this study and will ask your child's input in writing recommendations for the school management.

Will your child gain anything from taking part in this research?

- There will be no direct gains for your child in the study.

Are there risks involved in your child taking part in this research and what will be done to prevent them?

- The study is of medium risk with no direct benefits. If your child experiences emotional harm during the course of participating in the FGDs, the school's psychological counsellor will be available to provide psychological support. Your child may experience fatigue or boredom during the FGDs. The research team tries to avoid these matters by providing snacks and drinks and inserting a break into the discussion when needed. The study has more benefits than risks as it will generate new knowledge within a small private school setting.

How will we protect your child's confidentiality and who will see your findings?

- Privacy during the data collection phases is assured by the researcher who will only allow your child to take part in the research when he/she signed the informed consent and provides a signed parental permission. FGD will be carried out in a classroom, which allow your child to take part in the FGDs without disturbances from non-participants.
- The research team will be responsible of the safekeeping and securing of all records during and after the study. During transcription, unique numbers will be aligned to names of participants which ensures anonymity. The student researcher will only be in touch with anonymised data, including the audio-recordings.
- Partial confidentiality will be ensured during FGDs by setting rules during the group discussions and activities which stress the importance of keeping personal information and the research contents within the group and not to discuss it with non-participants.
- Only the research team will be able to look at your findings. Findings will be kept safe by locking hard copies in locked cupboards in the researcher's office and for electronic data it will be password protected. Data will be stored for 5 years.

What will happen with the findings or samples?

- The findings of this study will be written up as a dissertation for partial fulfilment to obtain a Master of Health Sciences Degree in Transdisciplinary Health

Promotion. The dissertation will be available to the public via the North-West University's library service.

- A summary report of findings will be presented to the school management and the Gauteng Department of Education.

How will you and your child know about the results of this research?

- We will give you feedback of the results in form of a written report after completion of this study, latest by June 2019.

Will your child be paid to take part in this study and are there any costs for you?

- Your child will not be paid to take part in the study because there are no costs involved for your child to take part in the research. The study will be conducted at school during school days after class.
- To appreciate your child's time spent in joining us, we will be serving light refreshments during the group discussion.

Is there anything else that you should know or do?

- You can contact Dr Nicole Claasen via Mrs Mildred Thomas from the Africa Unit for Transdisciplinary Health Research (AUTCHeR), North-West University at 018 299 2690 or 27381706@nwu.ac.za if you have any further questions or have any problems.
- You can also contact the Health Research Ethics Committee via Mrs Carolien van Zyl at 018 299 1206 or carolien.vanzyl@nwu.ac.za if you have any concerns that were not answered about the research or if you have complaints about the research.
- You will receive a copy of this information and consent form for your own purposes.

Declaration by the parent/guardian

By signing below, I give consent that my child may take part in the research study titled: **Perceptions of South African high school learners regarding healthy school food environments**.....

I declare that:

- I have read this information/it was explained to me by a trusted person in a language with which I am fluent and comfortable.
- The research was clearly explained to me.
- I understand that my child is taking part in this study **voluntarily** and that he/she has not been pressurised to take part.
- My child may choose to leave the study at any time and will not be handled in a negative way if he/she does so.
- My child may be asked to leave the study before it has finished, if the researcher feels it is in the best interest, or if she does not follow the study plan, as agreed to.

Signed at (*place*) on (*date*) 20....

.....
Signature of parent/guardian

.....
Signature of witness

Declaration by person obtaining consent

I (*name*) declare that:

- I clearly and in detail explained the information in this document to
- I did/did not use an interpreter.
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I gave him/her time to discuss it with others if he/she wished to do so.

Signed at (*place*) on (*date*) 20....

.....
Signature of person obtaining consent

Declaration by researcher

I (*name*)..... declare that:

- I explained the information in this document to the research assistant and the high school students that they will complete the questionnaire and also participate in three focus group discussions
- I did not use an interpreter
- I will be available should he/she want to ask any further questions.
- The informed consent was obtained by an independent person.
- I am satisfied that he/she adequately understands all aspects of the research, as described above.
- I am satisfied that he/she had time to discuss it with others if he/she wished to do so.

Signed at (*place*) on (*date*) 20....

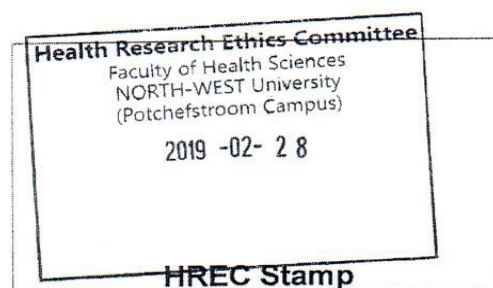
.....
Signature of researcher

Current details: (23239522) G:\My Drive\9. Research and Postgraduate Education\9.1.5.6 Forms\9.1.5.6_HREC_ICF_Template_Apr2018.docm
25 April 2018 File reference: 9.1.5.6

ANNEXURE 8: INFORMED CONSENT FOR STUDENTS OLDER THAN 18 YEARS



Private Bag X1290, Potchefstroom
South Africa 2520
Tel: +2718 299-1111/2222
Fax: +2718 299-4910
Web: <http://www.nwu.ac.za>



INFORMED CONSENT DOCUMENTATION FOR HIGH SCHOOL STUDENTS (older than 18 years) to take part in the research study Perceptions of South African high school learners regarding healthy school food environments

ETHICS REFERENCE NUMBERS: NWU-00090-18-S1

STUDY LEADER: Dr Nicole Claasen

POST-GRADUATE STUDENT: Knowledge Mukanda

ADDRESS: AUTHeR (Africa Unit for Transdisciplinary Health
Research), North-West University, Potchefstroom
Campus

CONTACT NUMBER: 083 388 0390 (K Mukanda)
018 299 2690 (Dr N Claasen)

You are being invited to take part in a **research study** that forms part of a Master of Health Science in Transdisciplinary Health Promotion degree. Please take some time to read the information presented here, which will explain the details of this study. Please ask the researcher or person explaining the research to you any questions about any part of this study that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research is about and how you might be involved. Also, your participation is **entirely voluntary** and you are free to say no to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part now.

This study has been approved by the **Health Research Ethics Committee of the Faculty of Health Sciences of the North-West University (NWU-00090-18-S1)** and will be conducted according to the ethical guidelines and principles of Ethics in Health Research: Principles, Processes and Structures (DoH, 2015) and other international ethical guidelines applicable to this study. It might be necessary for the research ethics committee members or other relevant people to inspect the research records.

What is this research study all about?

- The aim of this study is to explore the perceptions of the learners in a private high school in Pretoria about their school food environment and if they would like to change their school food environment to be healthier. The following are the objectives of the study:
 - To explore how high school learners describe the school food environment.
 - To explore learners' perceptions about the healthiness of foods that are sold in and around schools.
 - To explore learners' perceptions on changing their school food environment.
 - To recommend strategies to school leaders (principals, teachers, parents governing body) towards a healthier school food environment based on learners' voices.

- This study will be conducted at Royal Schools Princess Park in Pretoria and will involve a minimum of three focus group discussions facilitated by experienced health researchers who have been trained in this methodology. The participants will be the grade 10 to 12 learners in the year 2018.

Why have you been invited to participate?

- *You have been invited to be part of this research because you are enrolled in grade 10 to 12 of Royal Schools Princess Park for 2018.*
- *You have been enrolled for the past 4 weeks at Royal Schools Princess Park.*
- *You are participating voluntarily and you are willing to be tape recorded during the focus group discussions.*

What will be expected of you?

- You will be expected to participate in one focus group discussion that will be conducted in a classroom of the school after class. The main object of these focus group discussions is to talk about your perceptions and experiences with food within and around the school premises. You will be put in a group of eight to

ten members who are learners from Grade 10 to 12. The focus group discussions will be conducted after school hours and will approximately take one hour.

- You will also be invited to a separate meeting where the research team will present and discuss with you the findings and interpretation of this study and will ask your input in writing recommendations for the school management.

Will you gain anything from taking part in this research?

- There will be no direct gains for you in the study.

Are there risks involved in you taking part in this research and what will be done to prevent them?

- The study is of medium risk with no direct benefits. If you experience any emotional harm during the course of participating in the FGDs, the school's psychological counsellor will be available to provide psychological support. You may experience fatigue or boredom during the FGDs. The research team tries to avoid these matters by providing snacks and drinks and inserting a break into the discussion when needed. The study has more benefits than risks as it will generate new knowledge within a private school setting.

How will we protect your confidentiality and who will see your findings?

- Privacy during the data collection phases is assured by the researcher who will only allow you to take part in the research when you signed the informed consent. FGD will be carried out in a classroom, which allows you to take part in the FGDs without disturbances from non-participants.
- The research team will be responsible of the safekeeping and securing of all records during and after the study. During transcription, unique numbers will be aligned to names of participants which ensures anonymity. The student researcher will only be in touch with anonymised data, including the audio-recordings.
- Partial confidentiality will be ensured during FGDs by setting rules during the group discussions and activities which stress the importance of keeping personal information and the research contents within the group and not to discuss it with non-participants.
- Only the research team will be able to look at your findings. Findings will be kept safe by locking hard copies in locked cupboards in the researcher's office and for electronic data it will be password protected. Data will be stored for 5 years.

What will happen with the findings or samples?

- The findings of this study will be written up as a dissertation for partial fulfilment to obtain a Master of Health Sciences Degree in Transdisciplinary Health Promotion. The dissertation will be available to the public via the North-West University's library service.
- A summary report of findings will be presented to the school management and the Gauteng Department of Education.

How will you know about the results of this research?

- We will give you feedback of the results in form of a written report after completion of this study, latest by May 2019.

Will you be paid to take part in this study and are there any costs for you?

- You will not be paid to take part in the study because there are no costs for you involved to take part. The study will be conducted at school during school days after class.
- To appreciate your time in joining us, we will be serving light refreshments during the group discussion.

Is there anything else that you should know or do?

- You can contact Dr Nicole Claasen via Mrs Mildred Thomas from the Africa Unit for Transdisciplinary Health Research (AUFHeR), North-West University at 018 299 2690 or 27381706@nwu.ac.za if you have any further questions or have any problems.
- You can also contact the Health Research Ethics Committee via Mrs Carolien van Zyl at 018 299 1206 or carolien.vanzyl@nwu.ac.za if you have any concerns that were not answered about the research or if you have complaints about the research.
- You will receive a copy of this information and consent form for your own purposes.

Declaration by participant

By signing below, I agree to take part in the research study titled: **Perceptions of South African high school learners regarding healthy school food environments**.....

I declare that:

- I have read this information/it was explained to me by a trusted person in a language with which I am fluent and comfortable.
- The research was clearly explained to me.
- I have had a chance to ask questions to both the person getting the consent from me, as well as the researcher and all my questions have been answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be handled in a negative way if I do so.
- I may be asked to leave the study before it has finished, if the researcher feels it is in the best interest, or if I do not follow the study plan, as agreed to.

Signed at (*place*) on (*date*) 20....

.....
Signature of participant

.....
Signature of witness

Declaration by person obtaining consent

I (name) declare that:

- I clearly and in detail explained the information in this document to
.....
- I did/did not use an interpreter.
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I gave him/her time to discuss it with others if he/she wished to do so.

Signed at (place) on (date) 20....

.....
Signature of person obtaining consent

Declaration by researcher

I (name)..... declare that:

- I explained the information in this document to the research assistant and the high school students that they will complete the questionnaire and also participate in three focus group discussions
- I did not use an interpreter
- I will be available should he/she want to ask any further questions.
- The informed consent was obtained by an independent person.
- I am satisfied that he/she adequately understands all aspects of the research, as described above.
- I am satisfied that he/she had time to discuss it with others if he/she wished to do so.

Signed at (place) on (date) 20....

.....
Signature of researcher

ANNEXURE 9: LANGUAGE AND REFERENCE EDIT DECLARATION



EDITING DECLARATION

This document certifies that the dissertation listed below was edited for proper use of English language, grammar, punctuation, spelling, and overall style. The same dissertation was edited for the correct use of Harvard referencing style according to the requirements of the North-West University.

Neither the research content nor the student's intentions were altered in any way during the editing process. The student was given the ability to accept or reject all suggestions and changes.

The student is responsible for the final, correct presentation of the content, illustrative materials, tables, arrangement of parts, sentence structure, grammar, paragraphing, punctuation, spelling, typographical errors, quotations, bibliographical items, and all information contained within. The student is also responsible for the detection and correction of all instances of plagiarism.

Title

Perceptions of South African high school learners regarding healthy school food environment

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