

**KNOWLEDGE AND PERCEPTIONS AMONGST GRADE 10 AND 11
LEARNERS TOWARDS OBESITY IN CAPRICORN DISTRICT, LIMPOPO
PROVINCE.**

By

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DEDICATION

I dedicate this dissertation to my late mother Mapela Lydia Rammutla. She was a great mother and still is in the spirit and I indeed appreciate all the support, love and guidance. I also dedicate this study to all individuals who grew up or are being raised without mother figures but still could find their way to survive and strive to excel in life regardless of their limitations.

DECLARATION

I, RAMMUTLA DINEO ORNELLA declare that KNOWLEDGE AND PERCEPTIONS AMONGST GRADE 10 AND 11 LEARNERS TOWARDS OBESITY IN CAPRICORN DISTRICT, LIMPOPO PROVINCE, is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references and this work has not been submitted before for any other degree at any other institution.

Signature

Date

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ABSTRACT

Background: Worldwide, childhood obesity has increased over the past few decades. It has become a public health concern in South Africa and in many developing countries. The aim of the study was to determine the knowledge and perceptions of grade 10 and 11 learners towards obesity within Seshego Circuit of Capricorn District in Limpopo Province.

Methods: A quantitative descriptive cross-sectional study design and stratified random sampling method was used in the selection of 194 learners from three (3) high schools. Data were analysed using SPSS v24.0 and both frequencies and inferential statistics were analysed.

Results: Results from the study showed that 53% of learners were females and 47% were males. The mean score for knowledge was 4.2 ± 1.08 ranges from 1 to 6 and 92% (179/194) of learners were considered to be knowledgeable. There was no statistical significant association between knowledge and socio-demographic profiles of learners ($p > 0.05$). Shared perception of obesity among learners include lack of self-control (90%); losing weight naturally (40%); being less attractive than other children (74%).

Conclusion: The findings from the study revealed varied perceptions on obesity with most learners significantly knowledgeable. Programmes focusing on prevention of obesity among learners should be strengthened.

Keywords: Childhood; Obesity; Knowledge; Perception; Learners

LIST OF ABBREVIATIONS

BMI	Body Mass index
DOH	Department Of Health
ISHP	Integrated School Health Programmes
NCD	Non Communicable Diseases
SPSS	Statistical Package for the Social Sciences
TREC	Turf loop Research and Ethics Committee
WHO	World Health Organization

DEFINITION OF CONCEPTS

Knowledge: Knowledge is the theoretical and practical understanding of a subject or phenomena (Collins, 2012). For the purpose of the study, knowledge refers to information, views, awareness and understanding of obesity.

Perceptions: Perception refers to a belief often held by many people and based on how things seem (McIntosh, 2013). For the purpose of the study, perceptions refers to the views and opinions of grade 10 and 11 learners about obesity.

Learners: A learner means any person receiving education or obliged to receive education in terms of the South African Schools Act (Department of Basic Education, 2011). For the purpose of this study, learners refer to those in grade 10 and 11 at schools within Seshego circuit.

Obesity: Obesity is the consequence of long-term imbalance between energy intake expenditure determined by intake and physical activity and influenced by biological and environmental factors (WHO, 2011).

In the study, obesity refers to a condition in which a person has accumulated too much body fat that it may become a risk to that person's health.

Overweight: Overweight refers to having more body fat than it is optimally healthy (WHO, 2011).

In the study, overweight refers to a weight that is higher than what is considered as healthy weight for a given height

CHAPTER ONE

1. BACKGROUND AND INTRODUCTION

1.1 Background

In human health, obesity has become known as a problem affecting people of all ages, racial groups, ethnic backgrounds and socio economic status globally (Van Biljon, 2010). Childhood obesity has increased over the past few decades and has become a public health concern in both developed and developing countries. Prevalence of those affected by obesity has become a global concern, prompting numerous healthcare systems of various countries responding to its growing concern based on specific needs of respective countries (Karnik & Kanekar, 2012).

According to Armstrong, Lambert & Lambert (2011), the present occurrence of obesity in South African children is comparable to that of developed countries a decade ago. Although, there appears to be an increase of 15% in the prevalence of obesity in childhood and adolescence in South Africa, however, this prevalence does not give a true reflection of the problem, and obesity differ markedly between age groups, gender, ethnic groups and geographical areas.

Some of the highest rates for overweight and obesity have been reported from early childhood in rural communities of Limpopo, Eastern Cape and KwaZulu-Natal Provinces. High rates of obesity was observed with up to 50% of the under-one-year to adolescence stage (Rossouw, Grant & Viljoen 2012).

Childhood obesity is due to the imbalance between calories intake of the child and the calories utilized for growth, development, metabolism, and physical

activities. Normally, the amount of calories a child consumes through food or beverages, if not used for energy activities, leads to obesity (Van Biljon, 2010).

The World Health Organization (2013) emphasized that obesity is becoming a major health problem in many developing countries, particularly in women and children. This discovery appears to present a significant threat to the emergence of non-communicable diseases in the developing world as obesity has become associated with increasing risks of developing hypertension, coronary heart diseases, diabetes and stroke in both African and white populations.

Obesity during childhood and adolescence have negative impacts on both physical and psychological well-being. From a physical point of view, obesity is associated with a higher risk for the development of insulin resistance, type 2 diabetes mellitus and a number of cardiovascular abnormalities during childhood and adolescence. From a psychological point of view, low self-esteem seems to be the overriding concern of obesity during childhood and adolescence, since these conditions have the tendency to give rise to a lack of confidence, negative self-perception and depression (Karnik & Kanekar, 2012).

1.2 Research problem

Adolescence obesity is commonly accompanied by health and social problems including a threat of contracting heart diseases, diabetes and high blood pressure which adolescents are usually unaware of. In Africa, the estimated prevalence of obesity in 2010 was 8.5% and expected to reach 12.7% in 2020 (De Onis, Blossner & Borghi, 2010). Therefore, childhood and adolescence obesity is seen as a public health risk which necessitates effective prevention programmes and treatment.

Childhood body mass index (BMI) and adults disease risk is associated with the situation where obese children grow into being obese adults and are at higher risks of developing Non-Communicable Diseases (NCDs) in their adult year. Children at the bottom range of BMI who become obese adults may be susceptible to risks associated with adult obesity leading to hypertension. Regardless of the recent strategy that aims at reducing the prevalence of obesity by 10% in 2020, South Africa lacks standing guidelines to address adolescence obesity (Department of Health, 2015).

1.3 Literature review

The study shows that Obesity can be classified as a chronic disease. According to Mchiza (2012), the obesity epidemic reflects numerous and complicated interactions of genetic, biological, psychological, sociocultural and environmental factors. Obesity, like any chronic disease, requires that great value is placed on primary prevention.

Globally, obesity has grown to be an issue of great concern. Estimates indicate that 43 million children were overweight and obese in the year 2010 with more than one-fifth of overweight and obese children being from developing countries (Moshia & Fungo, 2010). Globally, the prevalence of overweight is expected to increase from 6.7% in 2010 to more than 9% in 2020 compared to the increase from 8.5% to 12.7% in Africa within the same span of time (Sallis & Glanz, 2006). The United States (US) ranked 19th of 192 countries, with 33.7% of its adult population obese. Mexico came in at 33 with 28.1% of its adult population being obese. South Africa was the 44th country with 26.8% of adults considered obese (Malhotra, et al., 2008) .

Obesity increases the likelihood of suffering from hypertension, dyslipidemia, type 2 diabetes, coronary heart disease, stroke, gallbladder disease, osteoarthritis, sleep apnea, respiratory problems and some cancers (Mchiza, 2012). Obesity does not only tax a person's health but also disturbs their biomedical and psychosocial dispositions as well as have economic consequences (National Institute of Health, 2000).

The literature of the study outlines the prevalences of childhood obesity from a global perspective to a South African perspective. In chapter 2 of this document, the literature discussions will focus on global view of obesity, obesity in African countries and in South Africa.

1.4 Purpose of the study

The aim of the study was to determine the knowledge and perceptions of grade 10 and 11 learners towards obesity within Seshego Circuit of Capricorn District in Limpopo Province.

1.4.1 Objectives

The objectives of the study are as follows:

- To assess the knowledge regarding obesity among grade 10 and 11 learners within Capricorn District in Limpopo Province.
- To assess obesity related perceptions among grade 10 and 11 learners within Capricorn District in Limpopo Province.
- To determine demographic data of grade 10 and 11 learners within Capricorn District in Limpopo Province.

1.5 Research question

The main question of this study is: What is the knowledge and perceptions of grade 10 and 11 learners regarding obesity within Capricorn District, Limpopo Province ?”

- What is the knowledge of grade 10 and 11 learners regarding obesity within Capricorn District, Limpopo Province?
- What are the perceptions of grade 10 and 11 learners regarding obesity within Capricorn District in Limpopo Province?
- What is the relationship between the grade 10 and 11 learner’s demography and obesity in Capricorn District, Limpopo Province?

1.6. Methodology

This study followed a quantitative research approach. A descriptive cross-sectional study design was used in high schools in the Capricorn District of Limpopo Province. A stratified random sampling method was used in the selection of 194 learners from three (3) high schools. Data were analysed using SPSS v24.0 and both frequencies and inferential statistics were analysed.

1.7. Ethical considerations

The aspects of ethical considerations were included in this study. Parents of learners who participated gave permission for their children to be part of the study. Anonymity was ensured and identity of participants was protected by using symbols instead of real names. Confidentiality was ensured as only the researcher was dealing with data provided by the participants. No harm was anticipated towards participants in the study as there were no procedures to be undertaken. Further explanation for ethical considerations will be in Chapter 3.

1.8. Significance of proposed research

This study may assist the learners and Department of Education as well as the Department of Health to jointly assess whether their curriculum, sport and recreation activities and health programmes are contributing towards preventing obesity and promoting healthy living at institutions of learning.

1.9. Conclusion

This chapter has outlined the background of the study, the rationale of why the study was conducted, the methodology, ethical considerations and the significance of the proposed research. The next chapter deals with literature review.

CHAPTER TWO

2. LITERATURE REVIEW

2.1 Introduction

The previous chapter has outlined the overview of the study. This chapter focuses into literature review for the study regarding the global view of obesity, the perceptions in African countries and in South Africa.

2.2 Global View of Obesity

According to Mchiza (2012) obesity can be classified as a chronic disease and the obesity epidemic reflects numerous and complicated interactions of genetic, biological, psychological, sociocultural and environmental factors. Obesity, like any chronic disease, requires that great value be placed on primary prevention. Primary prevention comprises of preventive measures that forestall the development of a disease (Mchiza, 2012). Health education programs, routine screening, early and appropriate management of obesity may decrease the potential for developing complications later in life (Mpembeni, Muhihi, Maghembe, Ngarashi, Lujani, Chillo, Kubhoja, Anaeli, Njeleke, 2014).

Globally, obesity has grown to be an issue of great concern. Estimates indicate that 43 million children were overweight and obese in the year 2010 with more than one-fifth of overweight and obese children being from developing countries (Moshia & Fungo, 2010). The prevalence of overweight is expected to increase from 6.7% in 2010 to more than 9% in 2020 compared to the increase from 8.5% to 12.7% in Africa within the same span of time (Sallis & Glanz, 2006). The United States (US) ranked 19th of 192 countries, with 33.7% of its adult population obese. Mexico came in at 33 with 28.1% of its adult population being obese. South Africa was the 44th country with 26.8% of adults considered obese (Malhotra, et al., 2008)

The World Health Organization (2011), noted that although obesity in various countries is caused by numerous factors, some of the commonly identified predictors of child obesity across all countries are maternal nutrition during pregnancy, child's birth weight, breastfeeding, parental obesity, family's socio-economic conditions, child's dietary habits and physical activity status. The last two predictors (dietary habits and physical activity status) can result in an imbalance between energy intake and energy output.

According to RWJF (2015), seventeen percent of children and more than 30 percent of adults are currently considered obese in the United States of America, thus putting the state at heightened risks. RWJF further states that obesity is one of the biggest healthcare cost drivers because it requires billions of dollars in preventable spending each year. This is also problematic because, should the problem persist, the current generation of American kids will live shorter lifespans compared to their parents.

Interestingly, individuals who are overweight do not necessarily eat more. On the contrary, they often eat less or the same amount as normal weight individuals (Fairbrother, 2009). Decreased physical activity is what seems to play the central role in obesity (WHO, 2013). It is therefore necessary to measure the knowledge and perceptions of learners, including the causes and consequences of obesity.

Obesity increases the likelihood of suffering from hypertension, dyslipidemia, type 2 diabetes, coronary heart disease, stroke, gallbladder disease, osteoarthritis, sleep apnea, respiratory problems and some cancers (Mchiza, 2012). Obesity does not only tax a person's health but also disturbs their biomedical and psychosocial dispositions as well as have economic consequences (National Institute of Health, 2000).

2.3 Obesity in African Countries

According to Fairbrother (2009), childhood obesity has become a major public health epidemic and one in every three children are either overweight or obese. Consequently, children who are obese are most likely to become obese adults (Stankov, 2012). A family and home environment is most influential in determining a child's diet and physical activity behavior (Mchiza, 2012).

In Africa, the prevalence of obesity in children aged between 12 and 19 is estimated at 11% (BMI > 95% percentile) and shows an upward increase (Pienaar, 2015). However, the World Health Organisation (2013), ranked African countries according to their obese percentages and South Africa topped the WHO ranking with 26.8%. Countries such as Seychelles rated 26.3%, Botswana 22.4% while Namibia followed with 18.9%, while Mauritius presents a 17.9% ranking (WHO, 2013).

Kilpelainen (2014) states that it is important to understand how societies are also to blame for the lifestyle changes that led to the surge of obesity in both children and adults. Kilpelainen further states that obese children come from all types of backgrounds, classes and ethnic origins but if not accustomed to physical activities, there is the likelihood of them remaining obese.

Advertisements in Africa plays a major role towards increasing obesity (Karnr & Kanekar, 2012). For example, when advertising high calorie, low nutritional foods is seen as part of the physical environment. Hence, current targeted marketing practices add to the contextual risks for obesity development. Several studies that have examined the frequency and content of food advertisements in television markets with a high viewership of African children have documented the higher than average occurrence of food adverts and higher proportion of adverts for high calorie snack foods, soft drinks and candy in comparison to adverts in predominantly white markets (Sallis & Glanz, 2006; Stankov, 2012; Mchiza, 2012).

2.4 Obesity in South Africa

The government of South Africa, through its Department of Health, developed a strategy aimed at decreasing obesity prevalence by 10% in year 2020 (Department of Health, 2015). The strategy is used as a roadmap that guides and uses joint collaboration with other departments to ensure that South Africans remain healthy (Department of Health, 2015). The mission statement of the strategy is designed to empower the population of South Africa to make healthy choices by creating an environment that enables and promotes healthy eating and physically active lifestyles for the prevention and control of overweight and obesity. Goal 2 and 3 of the same strategy include the promotion of healthy eating in different settings and strengthening partnerships between communities and local schools to engage in physical activities. Goal 4 of the strategy is meant to support obesity prevention in early childhood (Department of Health, 2015).

A study to understand the determinants of obesity was conducted at Khayelitsha, an informal settlement found in the Western Cape Province in South Africa (Malhotra, Hoyo, Bostbye, Hughes, Schwartz, Tsolekile, Zulu & Puoane, 2008) and it revealed that 32.1% females are more obese compared to 21.3% of their male counterparts. Furthermore, people in urban areas are noted to be less obese compared to those in informal settlements like Khayelitsha. The overall prevalence of obesity is 53.4% (Malhotra, et al., 2008).

A total of 31 schools (18 in Nongoma and 13 in Ceza) at Kwazulu Natal were participants in a study which focused on overweight and obese female primary school learners. The study revealed that 16.9% of learners sampled were overweight and 4% were obese with 7.2% girls being more obese compared to 3.3% boys. The overall national prevalence of obesity was 25% (Tathiah, Moodley, Mubaiwa, Denny and Taylor, 2013).

Fairbrother (2009) mentioned that rising levels of obesity pose a major threat to the public health system in South Africa. Childhood obesity is almost always a result of a number of factors working together to increase the risk. The factors that follow contribute towards obesity in South Africa and learners may not be aware of these causes and risks.

2.4.1 Contributory Factors towards Obesity

A few factors have been noted to contribute to obesity in young and adults alike.

- **Diet**

Unhealthy lunch options and regular consumption of high-calorie foods, like fast foods, cookies and other baked goods, soda, candy, chips and vending machine snacks contribute to weight gain (Karnik & Kanekar, 2012). Snacking is another major risk factor. Kilpelainen (2014) states that lifestyle and economic changes are bringing an obesity crisis to South Africa and other low-income countries. Furthermore, many people, especially children, in South Africa consume too much calories and snack before going to bed. Calories consumed and snacking account for up to 27% of their daily caloric intake. Between 1977 and 2006, children increased their caloric intake from snacks by an average of 168 calories per day, up to a total of 586 calories.

- **Lack of Physical Activity**

Regular physical activity has long been regarded as an important component of healthy lifestyle and can help to alleviate and control obesity. In schools, physical education classes and organized sport aim to provide an opportunity to meet daily recommendations for physical activities in a fun and supportive environment. However, obese children commonly worry about body image and lack of confidence may be barriers to physical activity (Shaw, 2014).

According to Stankov (2012), computers, television, and video games conspire to keep kids inside and sedentary, which means they burn fewer calories and are more likely to gain weight. Concerns about the safety of outside play and a reliance on cars instead of walking even to the corner store does not help to reduce obesity. By preschool age, many kids are already lacking enough activity, which often translates into poor exercise habits later in life leading to obesity and/or overweight.

There is an increasing awareness that physical environment can influence obesity development and is less favorable to weight control in South African communities. Kilpelainen Annu conducted a study, titled *South Africa's obesity crisis: the shape of things to come*, which interrogated supermarkets and franchises in order to discover the extent to which people relate to their physical environments. Kilpelainen (2014) discovered that a few neighborhoods have less access to supermarkets or other retail outlets that provide access to a mix of healthful food products at reasonable costs. There was a higher than average exposure to fast food restaurants documented in ethnic minority and low income communities. In the same study, there was lack of access to supervised recreational facilities, a situation which may keep children from being physically active.

Childhood obesity is more than a physical problem. Children struggling to control their weight may suffer from low self-esteem. Compared to young children, obese adolescents who suffer from a low self-esteem are less likely to endure criticism from other learners about their body sizes hence this impacts negatively on their self-image (Fairbrother, 2009).

Obese young girls often allude that getting sweaty, messed-up hair and makeup limit their willingness to participate in physical activities. However, closer observations reveal that they hate their body weights and are ashamed to

participate. Overweight and obese children experience bullying and teasing from their peers and may lack sporting role models. Lack of confidence in their own ability and skills level can also inhibit participation in physical activities (Stankov, 2012).

Overweight and obese children are discovered to have difficulties on a day to day life, especially at school as classmates, including adults, may address them with provocative names and labels, thereby, subjecting them to teasing and bullying. Learners labelled as heavy children may have trouble making new friends and involving themselves in physical activities (McClanahan, Kimberly, Huff, Marlene, Omar & Hatim, 2009).

The following are recommendations on how to deal with obesity by the Department of Health, (2015):

In her message of support, Minister of Basic Education, Angie Motshekga mentioned that effective learning cannot happen if the well-being of learners is not prioritized. Therefore, the Department commits itself, in line with Action Plan 2019 of planning towards Schooling 2030 which states that the Department will use school as vehicles for promoting access to a range of public services such as health, poverty alleviation, psychosocial support, sport and culture. This commitment addresses challenges relating to health, including obesity, which is on the rise among learners in South Africa. Schools are, therefore, in a better position to influence behavior change.

Attaining such a commitment by the Department of Basic Education entails the inclusion of nutrition and physical activity lessons into the curriculum as core classroom subjects, introduction of physical education as well as after-school programs to teach skills that help learners choose and maintain healthy lifestyles. School physical education is expected to focus on getting children engaged in high quality and regular physical activity.

Other institutions of learning are also able to promote health outside the classroom by providing learners with education and opportunities on healthy eating, staying active and leading positive lifestyles. To improve nutrition, schools could include healthier food offerings in the cafeteria and eliminate marketing of unhealthy food. To improve activity, schools can prioritize sports and recreational activities, develop safe walking and biking routes to school as well as promote active recess time (McClanahan, Kimberly, Huff, Marlene, Omar & Hatim, 2009).

Promoting wellness programs within a school environment should be a task not limited to learners only, but faculty and staff as well. Involving all stakeholders will contribute towards building enthusiasm for schooling in children. Focused programs as well as a culture to keep fit and eating healthy is expected to increase the health of learners in South Africa. Initiatives such as the Integrated School Health Programmes (ISHP) which the government of South Africa through the Department of Health is currently running, serve as important data sources on children's health. For example, information on learner's body mass index (BMI) can help educators and policy makers to assess success of current programs and decide the direction of the future obese prevention related programs (Tathiah et al. 2013).

School based prevention programs can successfully and without many added resources, help children to eat healthy, be more active, and achieve healthier weights, making these schools better positioned to become integral parts of the fight against the obesity epidemic.

The National Institute of Health (2000:26) in South Africa has revealed that there are various weight management techniques that can be implemented in the fight against obesity. These include dietary therapy, physical therapy, behavior therapy, pharmacotherapy and weight loss surgery. Furthermore, it states that the utilization of relevant treatment strategies has the ability to foster long-term weight control and prevention of weight gain.

2.5 Conclusion

The chapter has discussed what obesity is, the prevalence of obesity worldwide, the global view of obesity, Obesity in African Countries, obesity in South Africa. It further reviewed contributory factors towards obesity. The next Chapter will deal with the methods followed in conducting the study.

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1 Introduction

In the previous chapter, literature review about the study was discussed. This chapter discusses the methods and materials used in the study and further outlines the study design followed, research setting chosen and the study population. Sampling procedure and size are also clarified, as well as inclusion and exclusion criteria. In addition, this chapter presents data collection tools used to collect data and the measures taken to ensure validity and reliability. Reasons for minimising bias are also described, data analysis explained, including ethical considerations.

3.2 Research Approach and Design

A quantitative approach focuses on understanding a phenomenon from a closer perspective and tends to approximate phenomenon from a large number of individuals using survey methods (De Vos et al. 2011). Quantitative approach was used for this study to determine the knowledge and the perceptions of grade 10 and 11 learners towards obesity within Capricorn District in Limpopo Province.

A descriptive cross-sectional design was used for the study. A cross-sectional design is one conducted within a specified short period of time, e.g. a year duration. The design was selected in order to collect and analyze data aimed at describing the knowledge and perception of learners towards obesity (Burns & Grove 2009).

3.3 Study Site

The study was conducted in high schools of Seshego Circuit, in the Capricorn District of Limpopo Province, South Africa. The Polokwane municipality is one of four local municipalities under Capricorn District Municipality. Seshego Circuit is a semi-urban area and consist of seven (7) public high schools and two (2) private schools. High schools have grades 8 to 12 with about 30-50 pupils in each class. The reading proficiency of learners in grades 10 and 11 enables them to complete the questionnaire with ease and within allocated time. However, learners were urged to participate voluntarily in the study. The study site is shown in Annexure A: *Study Site Maps* which contains Figure 4: *Capricorn District Level, Designated Sub-district and Seshego Circuit as a study site*.

Annexure A: Study Site Maps

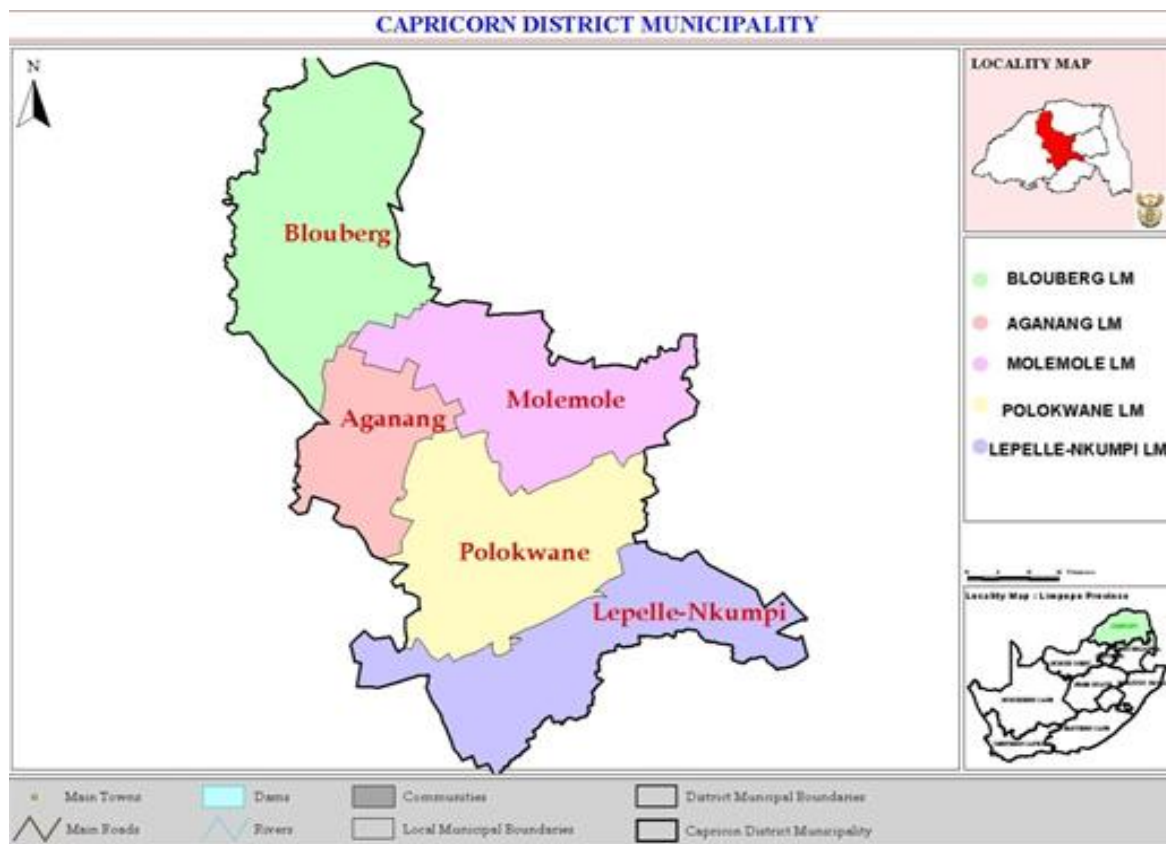


Figure 1: Capricorn District Map



Figure 2: Polokwane Sub-district Map

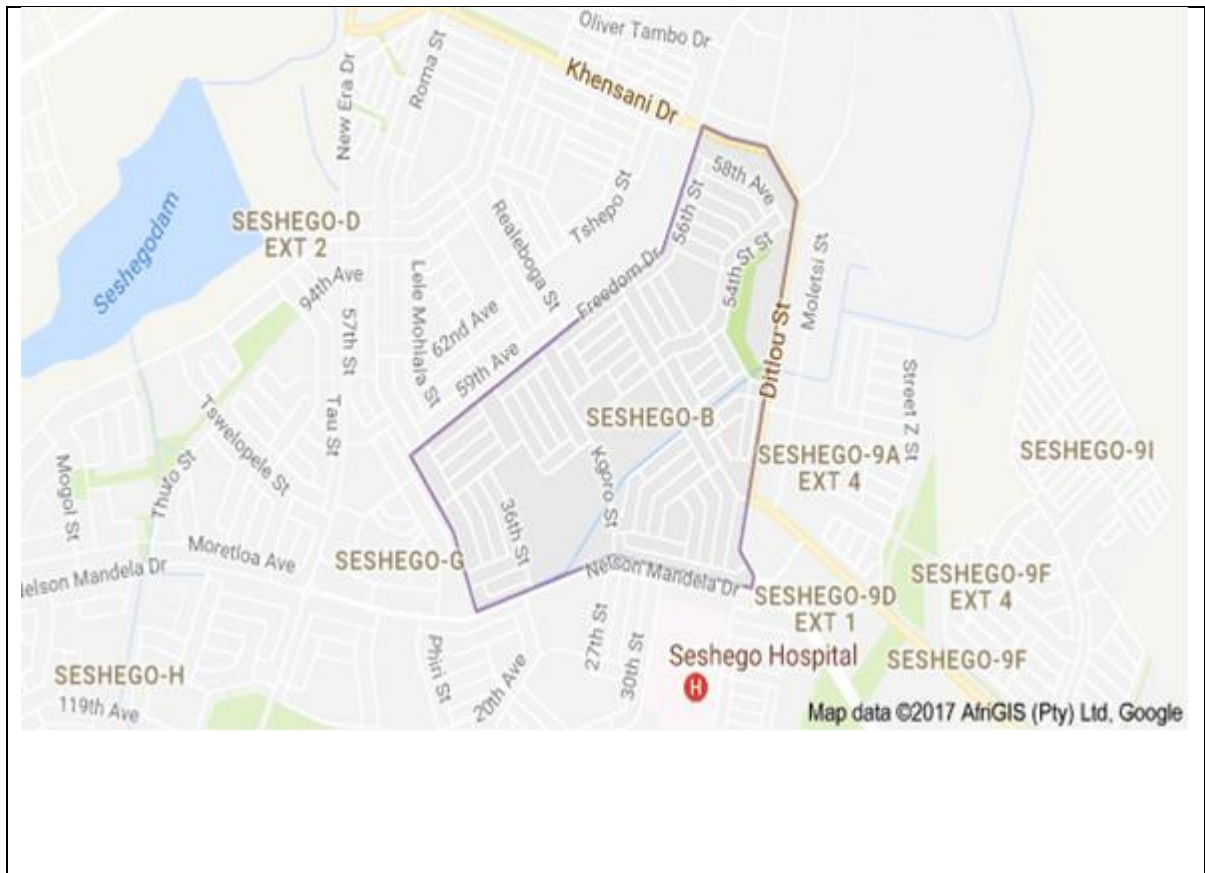


Figure 3 Seshego Demarcation Map

3.4 Sampling

The study was conducted in selected Seshego high schools. In total, there are seven public and two private schools. Stratified random sampling was used to select 194 learners from three (3) high schools. Stratified random sampling was used as a technique wherein the researcher divides the entire population into different subgroups or strata, then randomly selects the final subjects proportionally from the different strata (Mogorosi, 2011).

$$n = \frac{Z^2(1-p)}{d^2}$$

n= Sampling size

Z= Confidence=1,96

P= Prevalence= 15%

D= Sampling error

$$N = \frac{1,92(1-0,15)}{0,05^2}$$

=195,9 m

n =196 learners (The number of the learners was 196)

The selection of the participants was based on the following:

3.4.1 Inclusion Criteria

- Grade 10 and 11 learners who were willing to participate and whose parents had given permission to participate in the study.

3.4.2 Exclusion criteria

- All learners who were in other grades and are constantly occupied with school work to improve the pass rate.
- Other learners whose parents did not consent and learners who did not assent to being part of the study.

From school A = 60; School B= 60; and school C = 54, while n = 194 . Two learners from school A did not get consent from parents to participate.

3.5 Data collection

3.5.1 Pilot study

To ensure the reliability a pilot study was conducted among 10 high school learners at Peter Nchabeleng Secondary School and health care professionals in different strata at Seshego hospital and corrections were implemented. Clarification on the term Body Mass Index (BMI) in Section B of the questionnaire was done to make learners have a clear understanding on questions. An assessment was done to establish whether or not participants in the pilot study understood the questions and whether or not there are questions that made participants feel uncomfortable. The results of the pilot study were used to assist the researcher to make necessary corrections to improve the questionnaire prior to utilizing it on the sample selected.

3.5.2 Data Collection Instrument

A questionnaire was used to collect data focusing on the knowledge and perceptions toward obesity. The questionnaire consisted of three (3) sections. Section A was about demographic information, Section B, knowledge, while Section C was on perceptions of learning regarding obesity. The study used a questionnaire because it made it efficient to collect a wide range of information from many participants at the same time, thus saving time.

3.5.3 Data Collection Procedure

Questionnaires were distributed by the researcher among participants in a class room setting and the researcher was available to assist in case challenges are encountered. According to Du Plooy (2009), data collection method is a procedure that specifies techniques to be employed, measuring instruments to be utilized and activities to be conducted when implementing research

3.6 Data Analysis

Descriptive statistical analysis using Statistical Package for the Social Sciences Version 24.0 (IBM SPSS Statistics, 24.0) was used to analyze data. A statistician assisted with data analysis. Descriptive statistics involves the interpretation of numerical data to answer a research question (Mogorosi, 2011). Descriptive statistics was used to describe basic features of the data in a study regarding the sample provided. Data was presented in the form of frequency distribution tables where means and medians were used to analyze the characteristics of the study population. Associations were measured using the chi-squared test.

To assess knowledge of obesity, we used 6-questions (q9, q10, q11, q13, q16 and q19) and each question contains two choices: true or false. The question answered correctly is code 1, otherwise 0. Total score for each learner was calculated by adding the six-questions with minimum score of 0 and maximum score of 6. Learners who had a total score of 3 or more were considered to be knowledgeable, otherwise unknowledgeable.

Bias creates a tendency to deviate from true findings. It occurs when there is an underlying factor that consistently distorts the results (Demerouti & Bakker 2011). The researcher focused on the following bias which may obstruct the study findings.

3.7 Reliability, Validity and Bias

3.7.1 Reliability

A pilot study was conducted to assess the reliability of the data collection tool using a group of learners with similar characteristics with those of the selected population. Pilot test is a study done in a small scale, in a real world tried out first on a few people with similar characteristics away from the research site (De Vos, Strydom, Forché and Delpport, 2011)

3.7.2 Validity

The questionnaire was submitted to the supervisor and colleagues for content validity. Content validity is the extent to which the method of assessment or measurement includes all various major and important aspects of a specific construct (De Vos, Strydom, Fouche & Delpport, 2007).

A test is valid if it demonstrates or measures what the researcher thinks or claims it does (Welman, Kruger and Mitchell, 2005).

3.7.3 Bias

According to Demerouti & Bakker (2011), biased language refers to words and phrases that are considered prejudiced, offensive and hurtful. In research, language is important as it enables participants to respond appropriately to the questionnaire. In the study, simple clear English language was used in the questionnaire. It is assumed that clear English was convenient for grade 10 and 11 learners. When there were words that were not clear, the researcher translated and elaborated further in Sepedi language. Randomization also ensured that selection bias was eliminated.

3.8 Ethical considerations

Wysocki (2008) defines ethical consideration as guideline for research that enables a researcher to ensure that all respondents participate voluntarily and are not harmed. The proposal was submitted to Turfloop Research Ethical Clearance Committee (TREC) to request ethical clearance before data collection. The researcher also asked permission to conduct study from the Department of Education. Permission was also requested from the school principals.

3.8.1 Informed Consent

Informed consent refers to the process of seeking explicit agreement from subjects to participate in a research project based on their full understanding of the procedure involved (De Vos et al. 2011). The researcher informed parents and learners who were participants about the study, indicating the purpose of the study as well as the psychological discomfort that participants may experience during data collection. Participants were allowed to ask questions about the study and seek further clarity. Participants were also informed that

they may stop participating at any point of the study as long as they feel uncomfortable and/or wish to discontinue taking part.

3.8.2 Confidentiality

Monette, Sullivan and De Jong (2008), define confidentiality as ensuring that data collected from those who participate in a study is not made public and it may not be linked to any individual. Participants' identity and information were known by the researcher only and was not revealed anywhere in the research report.

3.8.3 Anonymity

To ensure anonymity, symbols were used to identifying participants on all research records so that the participants are not identifiable or traceable after the research (Wysocki, 2008). Questionnaire did not require participants to provide names and surnames. Numbers were used to identify different questionnaires.

3.8.4 No Harm to Participants

The study did not involve any physical harm upon participants and questions on the questionnaire were not structured to inflict any emotional harm (Monette, Sullivan and De Jong, 2008).

3.8 Significance of the study

The findings of the study may be used to add to the existing literature on the knowledge and perceptions of grade 10 and 11 learners towards obesity. It may contribute towards forming a solid foundation for future research and play a critical role in identifying key intervention areas and preventative strategies

which may be utilised to combat obesity in adolescents in South Africa especially and worldwide, generally.

This study may assist the South African Departments of Education and Health to jointly assess whether their curriculum, sport and recreational activities and health programmes contribute towards preventing obesity and promoting healthy living at institutions of learning in South Africa.

CHAPTER FOUR

4. PRESENTATION AND INTERPRETATION OF THE RESULTS

4.1 Introduction

In the previous chapter, the study design, setting, population, sample size, data collection, data analysis, ethics considerations have been outlined. In this chapter, the results of the study are presented and interpreted.

Table 4.1: Number of participants

High school	No of participants	Response Rate
School A	60	98%
School B	60	100%
School C	54	100%

4.2 DEMOGRAPHIC PROFILE OF THE PARTICIPANTS

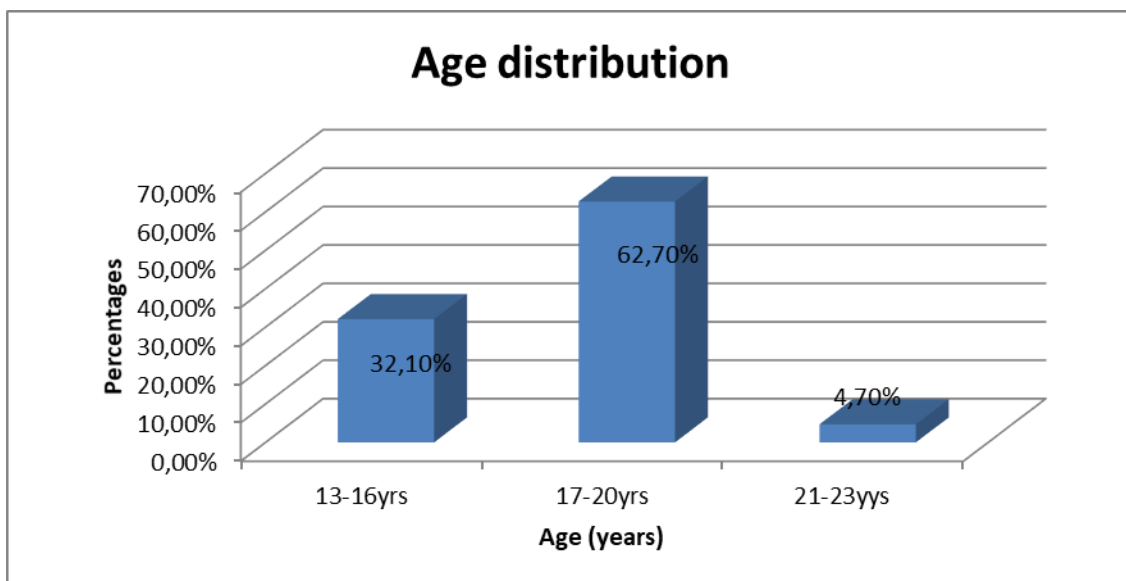


Figure 4.2.1: Age Distribution

Figure 4.2.1 above shows that 63% of respondents were within the age group of 17-20 years, followed by 32% who were aged 13-16 years and the least were ranged between 21-23 years.

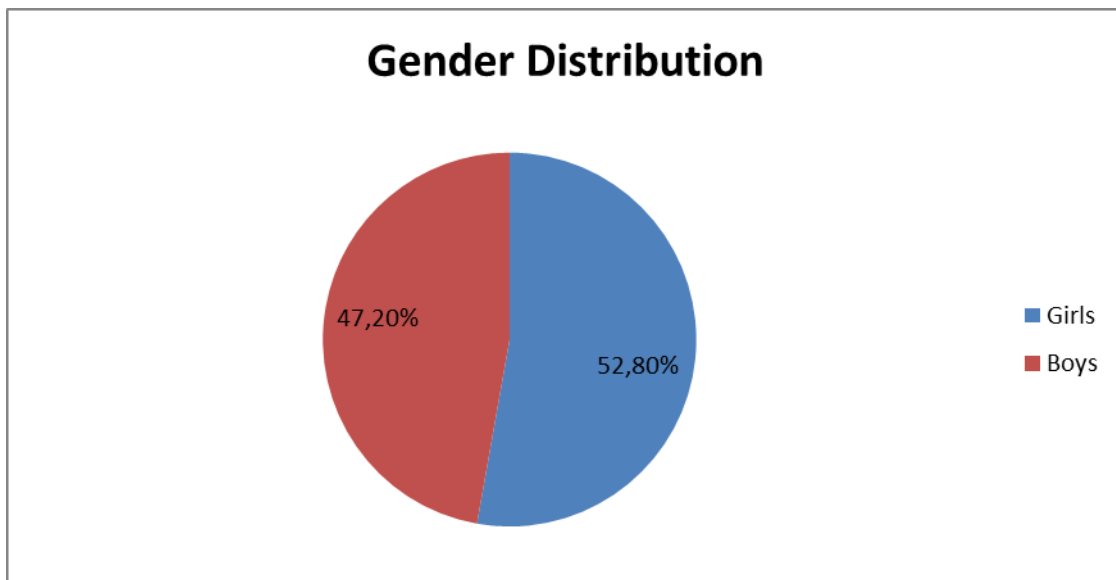


Figure 4.2.2: Gender distribution

Figure 4.2.2 above shows that More than half 53% (n=102) were girls and only 47% (n=92) were boys.

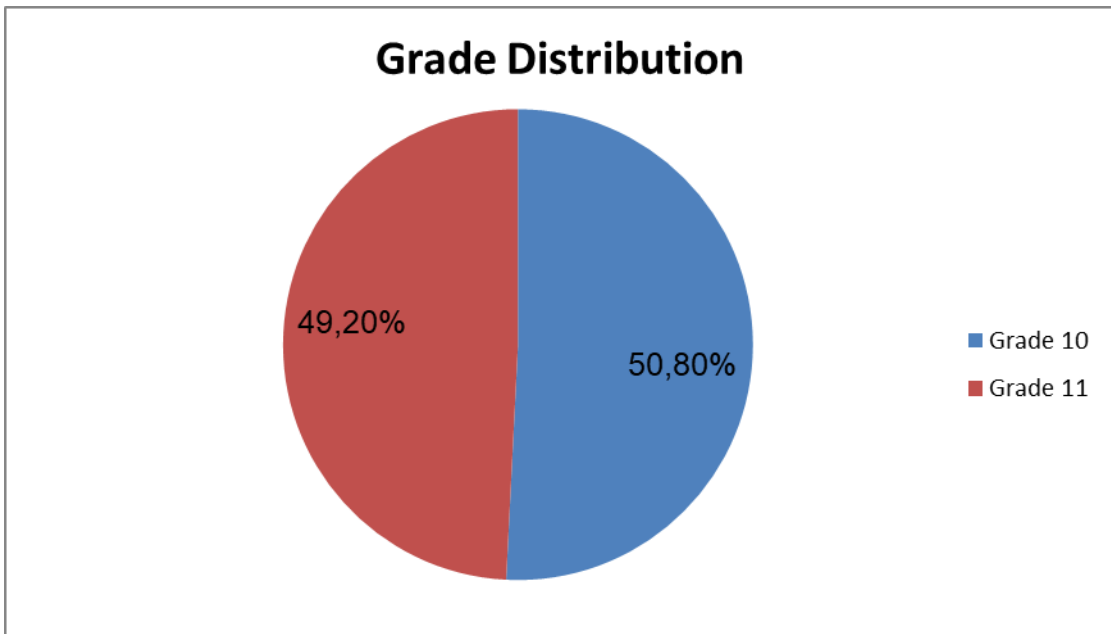


Figure 4.2.3: Distribution of learners per grade

Figure 4.2.3 shows 51% of the learners are in grade 10 and 49%, in grade 11.

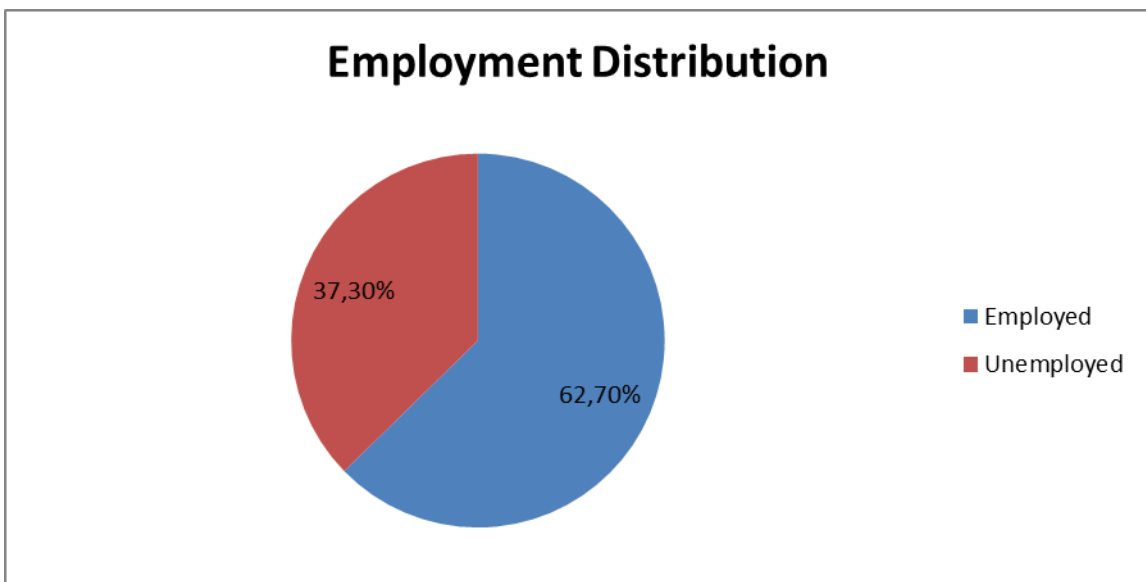


Figure 4.2.4: Employment Distribution

Figure 4.2.4 above shows that 63% of the learners parents/caregivers are employed while 37% are unemployed.

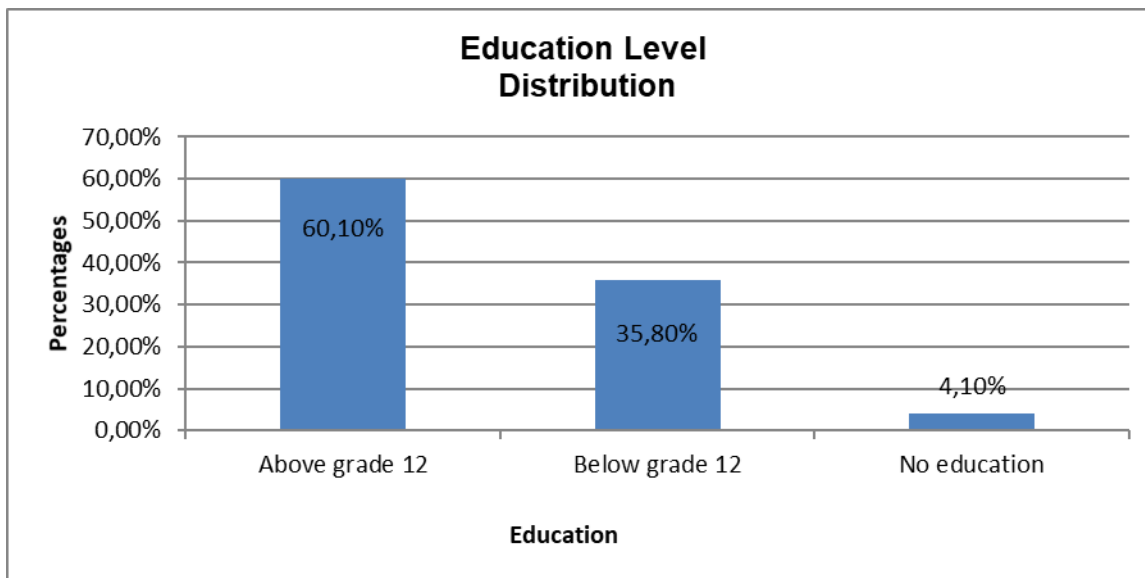


Figure 4.2.5: Education Distribution

Figure 4.2.5 above shows that 60% of the learners parents/caregivers have above grade 12 as the highest level of education.

4.3 Learners Knowledge of Obesity

Figure 4.2.6 shows that the mean score for knowledge was 4.2 ± 1.08 ranges from 1 to 6, and 92% (179/194) of learners were considered to be knowledgeable. Learner's level of knowledge is illustrated in Figure 5. The majority (40%) of learners have moderate knowledge of obesity followed by those with good knowledge (31%). There were few (11%) learners with excellent knowledge.

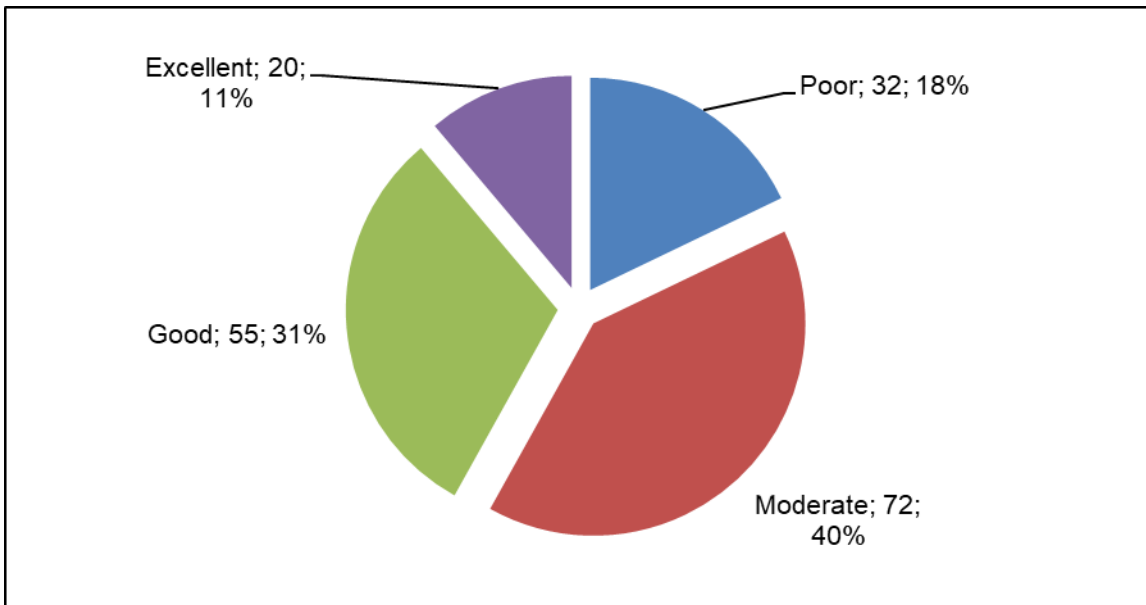


Figure 4.2.6: Learner level of knowledge of obesity

Table 4.2: Knowledge of obesity by selected demographics

	n	Knowledgeable		p-value
		Yes (%)	No (%)	
Gender				
Boys	92	87(95)	5(5)	0.255
Girls	102	92(90)	10(10)	
Age (years)				
13-16	63	59(94)	4(6)	0.547
17-20	122	111(91)	11(9)	
21-23	9	9(100)	-	
Grade				
10	98	92(94)	6(6)	0.396
11	96	87(91)	9(9)	
Parent level of education				
None	7	5(71)	2(29)	0.097
Below grade 12	70	66(94)	4(6)	
Above grade 12	117	108(92)	9(8)	

The association between selected variables and knowledge of obesity is demonstrated in Table 4.2. There was no statistical significant relationship between knowledge and gender, age, grade and parents/caregivers level of education ($p > 0.05$). However, girls, those aged 13-16 years, in grade 11 and parent/caregiver had no education, were more likely to lack knowledge of obesity.

Table 4.3: Knowledge of obesity

	TRUE	FALSE
6. I regard myself as having normal weight.	179 (92.7%)	13(6.7%)
7. I regard myself as having underweight	10 (5.2%)	182 (94.3%)
8. I regard myself as having overweight.	16(8.3%)	176(91.2%)
9. Obesity in a person means excess of fat.	171(88.6%)	21(10.9%)
10. Obesity can cause food allergy	81(42.0%)	111(57.5%)
11. Obesity is not linked to high blood pressure	51(26.4%)	141(73.1%)
12. Obese people can live as long as those who are not obese	45(23.3%)	147(76.2%)
13. Physical activity is can reduce weight loss	185(95.9%)	7(3.6%)
14. Obesity is more of a risk to the health of people living in urban areas than those living in rural areas	111(57.5%)	81(42.0%)
15. Obese people eat too much of fatty food	179(92.7%)	13(6.7%)
16. One of the causes of obesity is heredity	80(41.5%)	111(57.5%)
17. High rate of heart disease is found in obese people	137(71.0%)	55(28.5%)
18. Obese people have low self-esteem	145(75.1%)	47(24.4%)
19. I believe that eating habits are a cause of obesity conditions	143(74.1%)	49(25.4%)
20. Obese people feel comfortable "working out" in a gym	37(19.2%)	155(80.3%)
21. Obese people loose and regain weight regularly	71(36.8%)	121(62.7%)
22. I Believe the BMI should be cross the board for everyone	48(24.9%)	144(74.6%)
23. I believe obesity triggers depression	154(79.8%)	38(19.7%)

Table 4.3. shows that the majority 95.5% of respondents are of the opinion that physical activities can reduce weight loss, followed by 92.7% who regard

themselves as having normal weight. Furthermore, 88.6% believe that obesity in a person means excess of fat, 79.8% of the respondents believe obesity triggers depression whilst 75% believe obese people have low self-esteem. About 73% believes that obesity is not linked to high blood pressure.

4.4 Learners Perception of Obesity and its Relation with Demographics

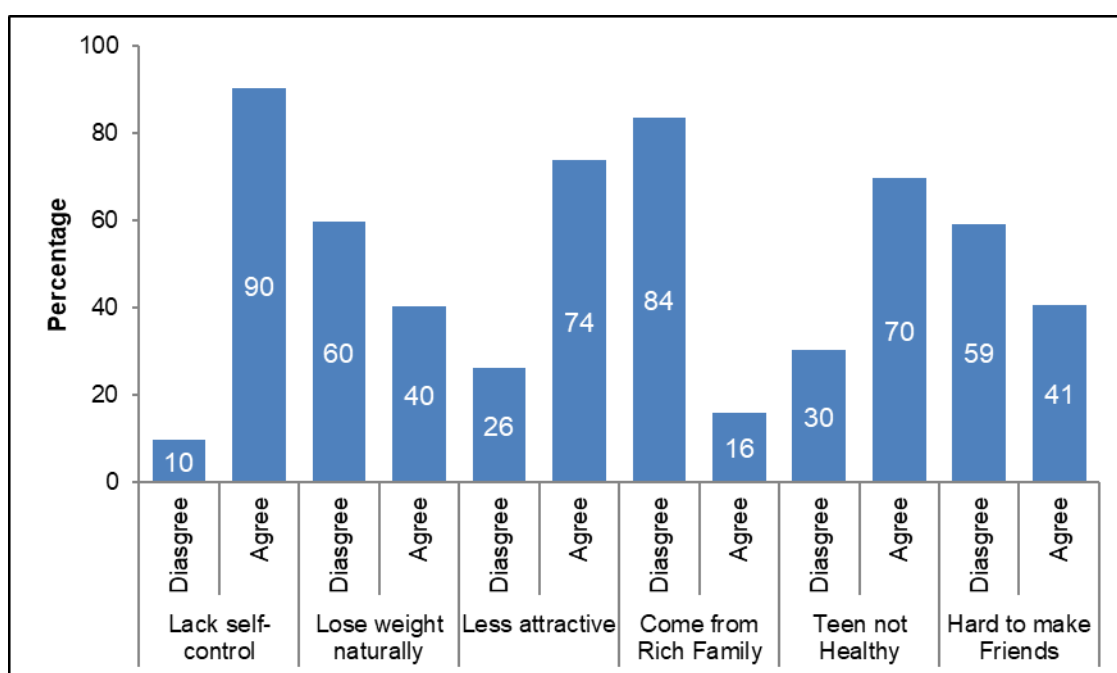


Figure 4.2.7: Learners perception regarding obesity

Figure 4.2.7 presents learner's perception in relation to obesity. The majority (90%) of the participants reported that obese teenagers lack self-control, 40% will lose weight naturally and 74% are less attractive than other children of their age. The majority (84%) disagree that obesity is a sign that a child comes from a rich family and 59% disagree that it is hard to make friends.

Table 4.4: Perception by Gender

		Boys		Girls		p-values
		No	%	No	%	
Obese child:						
Lack self-control	Disagree	13	14	6	6	0.054
	Agree	79	86	96	94	
Lose weight naturally	Disagree	50	54	66	65	0.142
	Agree	42	46	36	35	
Less attractive than others	Disagree	22	24	29	28	0.475
	Agree	70	76	73	72	
sign that child come from rich family	Disagree	76	83	86	85	0.631
	Agree	16	17	15	14	
Shows that teens are unhealthy	Disagree	27	29	32	31	0.760
	Agree	65	71	70	69	
Hard to make friends	Disagree	55	60	60	59	0.892
	Agree	37	40	42	41	

Table 4.4. shows that girls seemed to agree that obese children lack self-control (94%) and disagree with the statement that they will lose weight naturally (35%). About 28% of the girls disagree that those who are overweight are less attractive than others. More girls (85%) and boys (83%) disagreed that being overweight is a sign that a child comes from rich family. About (71%) of the boys agree that obese teens are unhealthy as compared to (69%) of the girls. However, the results were not significant.

Table 4.5: Association between perception and age about obesity

		13-16 yrs		17-20 yrs		21-23 yrs		p-values
		No	%	No	%	No	%	
Obese child:								
Lack self-control	Disagree	9	14	10	8			0.251
	Agree	54	86	112	92	9	100	
Lose weight naturally	Disagree	40	64	71	58	5	56	0.758
	Agree	23	36	51	42	4	44	
Less attractive than others	Disagree	22	35	27	22	2	22	0.166
	Agree	41	65	95	78	7	78	
sign that child come from rich family	Disagree	52	84	102	84	8	89	0.917
	Agree	10	16	20	16	1	11	
Shows that teens unhealthy	Disagree	24	38	34	28	1	11	0.156
	Agree	39	62	88	72	8	89	
Hard to make friends	Disagree	35	56	75	61	5	56	0.720
	Agree	28	44	47	39	4	44	

Table 4.5 shows that all older learners (100%) aged 21-23 and (86%) of learners aged 13-16 agreed that obese children lack self-control. Both age groups 17-20 and 21-23 with (78%) agreed that obese teens are less attractive than others. Group age of 13-16 learners (64%) and (56%) of 21-23 age group disagreed that obese children lose weight naturally. About (89%) of learners aged 21-23 and both groups 13-16 and 17-20 with (84%) disagreed that being obese shows a sign of coming from a rich family. About (89%) learners aged 21-23 agreed that obese teens are unhealthy than younger learners with (62%). This table reveals that there were no significant relationships between age and perception about obesity.

Table 4.6: Association between obesity perception and grade

Obese child:		Grade 10		Grade 11		p-values
		No	%	No	%	
Lack self-control	Disagree	13	13	6	6	0.100
	Agree	85	87	90	94	
Lose weight naturally	Disagree	48	49	68	71	0.002
	Agree	50	51	28	29	
Less attractive than others	Disagree	29	30	22	23	0.291
	Agree	69	70	74	77	
sign that child come from rich family	Disagree	82	85	80	83	0.820
	Agree	15	15	16	17	
Shows that teens unhealthy	Disagree	43	44	16	17	<0.001
	Agree	55	54	80	83	
Hard to make friends	Disagree	70	71	45	47	<0.001
	Agree	28	29	51	53	

Table 4.6 presents the relationship between learner's grade and perception about obesity. About (94%) learners in grade 11 and (87%) in grade 10 agreed that obese children lack self-control. About (71%) of grade 11 learners and (49%) of grade 10 disagreed that obese children lose weight naturally, while about (83%) of grade 11 agreed that obese children are unhealthy compared to those in grade 10 which records (54%) learners. Learners in grade 10 significantly disagreed that obese children find it hard to make friends compared to grade 11.

4.7 Association between Knowledge and Perception about Obesity

Table 4.7 shows that in both genders, there appears not to be any significant linear relationship between learner's knowledge and perception. For boys, the statement that "obese child is sign that he/she comes from a rich family" and "obese child is unhealthy" were inversely associated with learners' knowledge about obesity. While among girls, the following statements were inversely

related to knowledge about obesity: “obese child is less attractive than others”; “obese child is sign that he/she comes from rich family” and an “obese child finds it hard to make friends”.

Table 4.7: univariate linear model of knowledge on perception about obesity

	Boys		Girls	
	B	p-values	β	p-value
Obese child:				
Lack self-control	0.0087	0.979	0.0313	0.945
Lose weight naturally	0.2523	0.266	0.2979	0.183
Less attractive than others	0.2948	0.266	-0.1516	0.524
sign that child come from rich family	-0.0789	0.792	-0.0349	0.909
Shows that teens unhealthy	-0.2353	0.343	0.0884	0.702
Hard to make friends	0.1056	0.648	-0.2119	0.330

4.5 Conclusion

In this chapter, the results of the study were presented and interpreted. The data was analyzed using SPSS version 24.0. The results of this data analysis will be discussed in the next chapter, deals with discussion, recommendations, limitations and conclusion of the study.

CHAPTER FIVE

5. DISCUSSION, RECOMMENDATIONS, LIMITATIONS AND CONCLUSION

5.1 Introduction

This chapter will discuss the results of the study as they were represented in chapter 4. The discussion will give consideration to studies conducted previously as well as various literature related to the knowledge and perceptions amongst grade 10 and 11 learners about obesity. The chapter will also conclude, recommend and discuss the limitations of the study. The aim of the study was to determine the knowledge and perceptions of grade 10 and 11 learners towards obesity within Capricorn District in the Limpopo Province of South Africa. The objectives of the study were as follows:

- *To assess the knowledge regarding obesity among grade 10 and 11 learners within Capricorn District, Limpopo Province.*
- *To assess obesity related perceptions among grade 10 and 11 learners within Capricorn District in the Limpopo Province.*
- *To determine demographic data of grade 10 and 11 learners within Capricorn District, Limpopo Province.*

5.2 Discussion of results

5.2.1 Demographic Profile of Learners

- **Age**

Findings from this study revealed that two thirds of the participating learners were 17 years and older. This implies that these learners are teenagers and are at a stage characterized by self-awareness. This means that they already aware

of their weight and some would even have ideal body size they aspire to have (Moshia & Fungo, 2010). Mchiza (2012) found that society shapes children's body size, in that, young children are expected to be plumpy, a term regarded as "cute", leading to parents overfeeding their children in order to please societal expectations. Eventually, this has reportedly lead to children continuing with their "plumpy" bodyweight even when they are teenagers (Sallis and Glanz, 2006). However, studies show that many obese teenagers were obese in their early childhood (Fairbrother, 2009; Stankov, 2012; Mchiza , 2012).

Perceptions about bodyweight are also influenced by how the child was raised, and this differs according to race and whether such child was raised in rural or urban areas (Stankov, 2012). This, at times, has serious negative impacts on how teenagers are perceived as being overweight, especially if they grew up being bullied because of their bodyweight. These teenagers' desire to lose weight is more intense due to consciousness about their bodyweight at this stage of their lives, and in extreme cases, some eating disorders such as anorexia and bulimia are more common within this age group (Sallis and Glanz, 2006). Therefore, it is expected that teenagers in this current study will have differing perceptions about an ideal bodyweight.

- **Gender**

The results of this study revealed that just over half of learners were girls compared to boys. Gender differences in childhood obesity have been understudied partially because of how the categories of overweight and obesity are defined (Kasu, Ayim, and Tampouri; 2015). Studies revealed that gender differences were common, both before and during puberty in terms of body composition, patterns of weight gain, hormone biology, and the susceptibility to certain social, ethnic, genetic and environmental factors (David, Kimiywe, Waudo, & Orodho, 2008; Klipelainen,2014; and Tathiah et al., 2013).

According to Kasu, Ayim, and Tampouri (2015), the findings of genetic studies are similar for males and females while differences in obesity rates as defined by body mass index are generally small and inconsistent. Kilpelainen (2014) found that the differences between males and females due to biology are evident in the patterning of body fat, the fat levels at which health risks become apparent, levels of resting energy expenditure and energy requirement, ability to engage in certain physical activities and the consequences of obesity for female reproductive system. It is for this reason that males and females will have different perceptions regarding obesity in this current study.

Differences due to society or culture behaviors include food choices and dietary choices, overall physical activity levels, body satisfaction and long term psychosocial consequences of childhood and adolescent obesity (Chen, Ceh, Lai, Shyu, Huang, & Chiou, 2010). The percentage of obese and overweight black teenage girls has been found to increase as they become older while the opposite was found among white teenage girls (Karnr & Kanekar, 2012). The contributory factors were found to be cultural beliefs implying that it is acceptable for girl children to be overweight and plumpy and therefore, this influences their eating habits which directly add to the problem of obesity amongst black teenagers. These findings imply that gender will have a direct influence on perceptions and attitudes of the teenagers in this study.

5.3 Knowledge of learners regarding Obesity

The results of this study revealed that the majority of learners were considerably knowledgeable about obesity. The Department of Health in South Africa emphasizes the importance of learners, schools and societies to know about the dangers of obesity in order for them to lead a positive healthy lifestyle (DoH, 2015). The World Health Organisation (2011) noted that in various countries, obesity is caused by numerous factors, thus interventions and prevention measures should respond to the needs of that specific country. In

contrast, a study in India found that most of the teenagers had inadequate knowledge about obesity (Kasu, Ayim, and Tampouri; 2015).

According to McClanahan et al. (2009), children labelled as heavy may have trouble making new friends and involving themselves in physical activities. At times, they may either become heavily aggressive or too shy as a way of defending themselves from notions circulated amongst peers. Interestingly and contrary to literature, the study further revealed that younger learners in lower grades significantly disagreed with the notion that obese children find it hard to make and sustain friendships. Although, the source for knowledge in this current study was not investigated, studies show that the implementation of health promotion in schools contribute in learners' knowledge regarding obesity (David et al., 2008; Chen et al., 2010). The present study found no statistical significant relationship between age, gender and knowledge. Furthermore, this study reported that parental educational status was not significantly related to learner's knowledge about obesity which is similar to (Kasu, Ayim, and Tampouri; 2015).study findings.

Karnr & Kanekar (2012), posit that socioeconomic factors are likely to exert a profound influence on health and are conflicting points of view on their link to childhood obesity. This study was conducted in a township in Seshego, Limpopo Province, which is characterized by communities with strong cultural practices, could influence their views regarding obesity. Carlson, Crespo, Sallis, Pattenson and Elder (2012) reveale that teenagers from wealthy neighbourhoods may influence types of foods, opportunities for physical activity and the quality of local schools compared to those from poor neighbourhood. Carlson et al., (2012) further reported that children from low socio-economic background consume food that are affordable to their income regardless of being healthy or not and have no access to physical activities infrastructure. Therefore, their knowledge of teenagers about obesity and prevention in this current study is likely to be influenced by what is available, rather than what should be consumed to prevent obesity. Furthermore, Higgins and Dale (2012)

also found that the child's place of residence provide additional insight into the complex relationships between social and economic resource and obesity.

The current study revealed that majority of teenagers believe that being obese leads to depression. Cohen' (2016) findings is that the adolescent perceive obesity as a high risk of psychological and mental experience of the appearance of his or her body where it produces conscious and unconscious perception, attitudes and feelings. Mohammed (2017) found that weight perception and body image satisfaction is not only an important mediator for psychopathology, but a strong determinant of nutrition habits and weight management among persons.

The current study revealed also, that majority of teenagers regard their weight to be normal. Interestingly, this was not based on objective measurements of individual BMI, but on perceptions. Erem (2015), found that among adolescents one in every four of overweight and obese students misperceived themselves as having normal weight and only half of them reported that they had previously attempted to lose their weight. Cohen (2016) also found that the majority of obese adolescents perceived their weight as being above normal whereas fewer adolescents felt that they were within their normal weight.

This study continued to reveal that majority of teenagers believed that high blood pressure has no link with obesity. Mohammed (2017) posits that obesity is linked to poor health outcomes, increasing the likelihood of developing non-communicable diseases (NCDs) including hypertension, diabetes, heart disease, stroke, cancer and chronic respiratory diseases. Therefore, it is important for health education to clearly show the link between obesity as a risk factor to developing NCDs in their messaging

5.4 Perceptions of Learners Regarding Obesity

The study revealed that a majority of participants disagree that obesity is a sign that a child is from a rich family. Kilpelainen (2014) argues that it is critical for

society to understand the impact that they have on their child's lifestyle that may lead to the surge in obesity. Kilpelainen (2014) supports that obese children are not only from rich families, but come from various types of backgrounds, classes and ethnicities.

The study revealed that majority of teenagers believe that obese teens lose weight as they grow older with less involvement in physical activities at school. Higgins and Dale (2012), found that obese and overweight adolescents perceive their weight as a problem, intend to lose weight and have taken action to lose weight. Adolescents often chose exercise than diet as an action aimed at losing weight.

Furthermore, this study revealed that older learners agreed that obese children lack self-control and feel less attractive. According to McClanahan (2009) et.al., childhood obesity is more than a physical problem in that it also negatively impacts a child's self-esteem, confidence and outlook in life. Such struggles with self-esteem are intensified in cases where classmates, including adults, may call overweight and obese children by names and labels thereby, subjecting them to teasing and bullying.

Karnr & Kanekar (2012) found that more than half of teenagers reported the experience and feelings of sadness, crying, anger, becoming grumpy, nasty in relation to bullying at school due to their bodyweight, and others witness their peers being distressed due to bullying. Teenagers reported that being bullied cause their victimized peers to avoid attending school and become truant in order to avoid victimization while fewer were reported to have attempted suicide.

5.5 Conclusion

The South African government, through the Department of Health, has developed a strategy which seeks to provide a roadmap on how to promote healthy living. However, this requires joint collaboration with schools in the area

as well as working with nearby clinics and other health sectors such as the Department of Arts, Sports and Recreation.

The aim of the study was to determine the knowledge and perceptions of grade 10 and 11 learners towards obesity within Capricorn District in the Limpopo Province of South Africa. The study found out that learners have some form of understanding of obesity with some equally misplaced perceptions. It further discovered that various demographics affect and are related to learner perceptions about obesity.

5.6 Recommendations

The following are recommendations from the study:

- High quality curricular physical education should be provided for the learners in order to assist in emphasizing their lesson more on healthy eating, nutrition, staying active and leading positive lifestyles.
- Schools and health facilities in close proximity to each other should develop and promote wellness programs within a school environment, which shall include both staff and learners i.e. Integrated School Health Programs.
- The Department of Education should prioritize the inclusion of obesity prevention programs into the school's weekly activities i.e. compulsory sporting days for all learners.

5.7. Limitations

The study was conducted at Capricorn district in Limpopo Province and only grade 10 and 11 learners in three high schools within Seshego circuit participated in the study. The study population was approximately 196 and only 194 participants sampled, which cannot be a true representation of the thousands of the population of learners in South Africa, hence the same study can be replicated in other parts of the country.

5.8 Summary

The results of data analysis were discussed with consideration of the objectives of this study. Relevant findings from other studies were used in the discussions and authors acknowledged. Conclusion was derived based on the discussions. Recommendations and limitations of the study were also discussed in this chapter.

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ANNEXTURES

Annexure: B: Parental Consent for Children Participation in Research

Title: KNOWLEDGE AND PERCEPTIONS AMONGST GRADE 10 AND 11 LEARNERS TOWARDS OBESITY IN CAPRICORN DISTRICT, LIMPOPO PROVINCE.

Equiries: Rammutla D.O(cell: 072 0210 992)

Dear Parents/Guardian

My name is Rammutla Dineo Ornella, a Master of Public Health student at the University of Limpopo. The purpose of this form is to provide you (as the parent of a prospective research study participant) with information that may affect your decision as to whether or not to let your child participate in this research study. The study aims to determine the knowledge and perceptions of grade 10 and 11 learners towards obesity in Capricorn District, Limpopo Province. Because your child is under the age of 21, your consent is required in order for your child to participate in these study. . Read the information below and ask any questions you might have before deciding whether or not to give your permission for your child to take part. If you decide to let your child be involved in this study, this form will be used to record your permission.

What would your child be asked to do?

The task that your child will be asked to perform is to share his or her knowledge and perceptions towards obesity in a form of answering a questionnaire.

Is my child's participation compulsory?

Your child's participation is voluntary. Participants are fully informed of what they will be asked to do before the study begins and they are allowed to ask any questions at any time during the study. Your child may refuse to participate, discontinue participation or skip any part of the task they don't wish to work on at any time without penalty. You are

also free to withdraw your child from the study at any time. Withdrawal will not affect your child's grade or status at their school.

What are the risks to my child?

The University of Limpopo Turfloop Research Committee Clearance reviewed the study to confirm that there is no anticipated risk associated with participating in the study beyond those encountered in daily life.

How will my child's privacy be protected?

Your child's responses will be kept private. Only the researcher will have access to your child's responses. In the event of publication of the research data, no personally identifying information will be disclosed.

Will there be any compensation?

Neither you nor your child will receive any type of payment for participating in this study.

If you permit your child to be in this study, please sign and return the form to his or her school through your child:

I have read the above information and give consent for my child's participation in this study

I give permission for my child to participate in this research (child's name)

Parent/Guardian's name

Signature..... Date

Witness's name

Signature..... Date

Annexure C. Questionnaire

KNOWLEDGE AND PERCEPTIONS OF GRADE 10 AND 11 LEARNERS TOWARDS OBESITY IN SCHOOLS WITHIN SESHEGO CIRCUIT, CAPRICORN DISTRICT, LIMPOPO PROVINCE.

This study is conducted to determine the knowledge and perceptions towards obesity among grade 10 and 11 learners within Seshego Circuit, Capricorn District, Limpopo Province.

NB: All the information gathered will be kept confidential.

INSTRUCTIONS

- Please do not write your name or any information pertaining to your identification on this questionnaire.
- Please answer the questions as honestly as possible.
- Please do not leave out any question.
- Use a black pen to indicate your answer.
- Indicate your answer with an "X" where applicable.
- Indicate your answer with true and false where applicable

SECTION A (Demographic Information)

1. Gender

Male	
Female	

2. Age

13-16	
17-20	

21-23	
-------	--

3. Grade

Grade 10	
Grade 11	

4. Employment status of parents/caregiver

Employed	
Unemployed	
Self-employed	

5. Educational status of parents

Educated (above grade 12)	
Less educated(below grade 12)	
Uneducated(No education)	

SECTION B (Knowledge)

Answer true or false

	True	False
6. I regard myself as having normal weight.		
7. I regard myself as having underweight		
8. I regard myself as having overweight.		
9. Obesity in a person means excess of fat.		
10. Obesity can cause food allergy		
11. Obesity is not linked to high blood pressure		

12. Obese people can live as long as those who are not obese		
13. Physical activity is can reduce weight loss		
14. Obesity is more of a risk to the health of people living in urban areas than those living in rural areas		
15. Obese people eat too much of fatty food		
16. One of the causes of obesity is heredity		
17. High rate of heart disease is found in obese people		
18. Obese people have low self-esteem		
19. I believe that eating habits are a cause of obesity conditions		
20. Obese people feel comfortable "working out" in a gym		
21. Obese people loose and regain weight regularly		
22. I Believe the BMI should be cross the board for everyone		
23. I believe obesity triggers depression		
24. Provide three(3) reasons why obesity is not good		
25. From your lessons in class, what do you think is the cause of obesity?		
26. How can obesity be prevented?		
27. From the food that you eat, which ones do you believe causes obesity?		

SECTION C (Perceptions)

28. Most obese teenagers lack self-control.

Agree	
Disagree	

29. Obese children will lose weight naturally as they grow up,

Agree	
Disagree	

30. Obese children are less attractive than other children of their age

Agree	
Disagree	

31. Being obese is a sign that a child comes from a rich family.

Agree	
Disagree	

32. Obese teens are not healthy.

Agree	
Disagree	

33. It is harder for obese teens to make friends.

Agree	
Disagree	

Annexure D: Letter of permission

Enquiries: Rammutla D.O Tel: 072 0210 992

Email: rammutladineo@gmail.com

719 Zone 8

Seshego

0742

20 February 2017

Department of Basic Education
Corner 113 Biccard & 24 Excelsior Street
Polokwane
0700

RE: Permission to Conduct Research Study

Dear Mr/Mrs

I Rammutla Dineo Ornella of identity number: 891002117001 am a registered student (201613377) in Masters of Public Health at the University of Limpopo. I request permission to conduct research at the high schools within Seshego Circuit titled: Knowledge and perceptions of grade 10 and 11 learners towards obesity within Seshego Circuit, Capricorn District, Limpopo Province.


The research study is conducted as part of the requirements for the acquisition of a Master of Public Health at the University of Limpopo. The study will be conducted under the supervision of Ms. T. J Mashamba and Prof L. Skaal from the Department of Public Health at the University of Limpopo.

Kind Regards,

.....

Rammutla DO.

Annexure E: Approval from University of Limpopo



University of Limpopo
Department of Research Administration and Development
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 2212, Fax: (015) 268 2306, Email:noko.monene@ul.ac.za

**TURFLOOP RESEARCH ETHICS
COMMITTEE CLEARANCE CERTIFICATE**

MEETING: 04 July 2017

PROJECT NUMBER: TREC/71/2017: PG

PROJECT:

Title: Knowledge and perceptions amongst Grade 10 and 11 learners towards obesity in Capricorn District, Limpopo Province

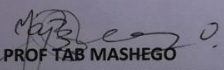
Researcher: Ms DO Rammutla

Supervisor: Ms TJ Mashamba

Co-Supervisor: Prof L Skaai

School: Health Care Sciences

Degree: Masters in Public Health


PROF TAB MASHEGO
CHAIRPERSON: TURFLOOP RESEARCH ETHICS COMMITTEE

The Turfloop Research Ethics Committee (TREC) is registered with the National Health Research Ethics Council, Registration Number: REC-0310111-031

Note:

- i) Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee.
- ii) The budget for the research will be considered separately from the protocol. PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.

Finding solutions for Africa

Annexure F: Permission Letter Department of Basic Education



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

CAPRCORN DISTRICT OFFICE

Date: 01 09 2017 Cellphone:0822562594
In-school sport,arts and culture

TO MS D O RAMMUTLA

REQUEST TO VISIT THE SCHOOL OF YOUR CHOICE FOR RESEARCH.

1. As you approached this section on the 01st September 2017 requesting to visit the school of your choice on your research, permission is granted to you as long the school permits you. The research is relevant to our section also, In school sport, arts and culture.
2. Kindly approach the school of your choice in the Circuit and agree with them.
3. Hoping for the best in you venture.

FH Macheru: Manager
In-school sport, arts and culture

Date: 2017 09 01

