Food Security: An evaluation of food choices, household food consumption patterns and health implications: A case study of Khayelitsha in the Western Cape Province of South Africa.

UNIVERSITY *of the* **WESTERN CAPE**

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Master of Development studies

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FOOD SECURITY: An evaluation of food choices, household food consumption patterns and health implications: A case study of Khayelitsha in the Western Cape Province of South Africa.

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Abstract

Background: Many factors result in a shift in food consumption patterns. These include uncertain food production, unequal food distribution, changing food markets, food inflation and fast urbanization (Cockx et al., 2019). All of the above have been prevalent in the past decades and are still persistent today. These factors have not only intensified but have shown a rise in food related health issues and issues of food insecurity.

Methods: A quantitative and qualitative was used in this investigation to conceptualize and explain the link between a participant's food choices, eating habits and the household's attitude towards adopting healthy consumption patterns. This study used secondary data based on the topic of food choices that was gathered in 2017 by researchers from the Institute of Social Development (ISD), at the University of the Western Cape.

Results: The study revealed that, there is a positive relationship that exists between a respondent's level of education together with their attitudes towards weight control. Moreover quantitative findings obtained from this investigation showed that the participant's dietary patterns are not only explained by educational level and income status, but also the desire to maintain a healthy standard of living.

Conclusion: The investigation used a mixed method that involved the use of quantitative and qualitative research methods to broaden its data base and enhance the depth of the study. In conclusion there are other factors that have been found to be contributing to an individual's eating habits and weight management practices. These include amongst others the price of foods, weight perceptions and television adverts.

List Of Abbreviations

BMI	Body Mass Index
CCHIP	Community Childhood Hunger Identification project
DOH	Department of Health
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immune Deficiency Syndrome
ISD	Institute for Social Development
LMICs	Low and Middle-Income Countries
SADHS	South African Demographic Health Survey
SANHANES	South African National Health and Nutrition Examination Survey
SSA	Sub-Saharan Africa
PMBEJD	Pietermaritzburg Economic Justice and Dignity Group
UWC	University of the Western Cape
WHO	World Health Organization
WFP	World Food Program

Key words: Household food consumption, food security, obesity, BMI, Overweight, food choices, household wealth.

1.1. Background and Contextualization

Access to food in South Africa is considered as one of the main determinants of food security and food affordability is one of the drivers. With reference to the Food and Agriculture Organization (FAO) of the United Nations (2008), Herforth et al. (2020), argues that people are deemed food secure when all people, at any time are exposed to the economic and physical access of safe, nutritious and sufficient food that satisfies their dietary requirements and food choices for a healthy and active lifestyle. Research has found that the diets of the people residing in rural areas when compared to diets in urban areas usually corresponds to a more traditional way of eating (Pretorius, 2013). Their diets usually have a high concentration of carbohydrates, lower sugar, lower fat and high fibre (Brouns, 2018).

When looking at the urban areas, research has found that consumption patterns tend to shift into a more westernized and globalized diets (Pretorius, 2013; Spence, 2021). However, the western diets are characterized with a resultant decrease in fibre, carbohydrates, an increase in fat, processed foods and salt consumption (Brouns, 2018). A study conducted by the SADHS, 2016: 301) found that consuming specific foods on a daily basis will decrease as one's age increases. For an example, the research has found that participants that are between the ages of 15-19 years (32%) eat salty snack on a daily basis as compared to the 4% of participants who are 65 years and older (SADHS, 2016: 301). Additionally, the research found that eating specific foods on a daily basis yield to a higher percentage amongst participants that reside in urban areas when compared to non- urban areas, to be specific about 17% of the participants in urban areas eat processed meat daily compared to the 9% that reside in non-urban areas (SADHS, 2016: 301).

There are many factors that can influence or play an important role in the change in dietary patterns and food choices. Mota et al. (2019) argues that these factors can range from; lack of knowledge and awareness of a recommended nutrition of a person who might be suffering from chronic illnesses, socio- economic status, level of education and food insecurity. Moreover, there has been a shift in consumption patterns since South Africa was declared a democratic regime in 1994. Research conducted by Kruger et al. (2012) found that even though some people may still eat only for survival (intake of energy), hedonic eating aimed at obtaining pleasant feelings (sort of reward) from the intake of food is more prevalent. Such a shift has in some cases led to the consequent acquisition of incorrect or irregular eating habits (intake) (Avena, 2015). This refers to favouring

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high energy foods that could have negative effects on human wellbeing, by increasing the risks to gain weight, and consequently resulting in obesity or overweight.

Satorius et al. (2015) found that, a combination of environmental individual and societal factors largely contributes to dietary practices and food consumption behaviour. Changing consumption patterns in food and beverages with a lack of physical activities are believed to be the main causal factor to the increasing prevalence of being overweight. In a study conducted by SADHS (2016: 301), research participants were asked on how they frequently eat fast foods, fried foods, processed meats and salty snacks. The SADHS (2016: 301) found that a majority of 37% of the participants eat fried foods at least once a week and only 10% of the respondents eat them on a daily basis.

Moreover 29% of the respondents eat processed meats once a week and 14% eat processed meats daily. When looking at the consumption of salty snacks 13% of the respondents eat them on a daily basis and 29% have recorded to eat them once a week (SADHS, 2016: 301). Furthermore, gender disparities in the prevalence of obesity are linked to age, socio-economic status and fertility. Research conducted by Mphekgwana et al. (2022), found that there were major differences within genders, women and young girls were found to be more obese when compared to young boys and males. Moreover, the prevalence of being obese and overweight amongst women of childbearing age showed variations in population groups, age, socio- economic status of women (Nglazi & Ataguba, 2022).

The purpose of food consumption is more than nourishment. What people consume is not usually grounded on their biological desires; but also addresses many emotional and psychological issues (Zurawicki, 2015). Measuring consumption patterns and understanding food choices in adults and children are important elements that enable people to live a healthy life, leading to a better society that has a promise of a higher economic growth at national level (Kruger et al., 2012). According to SADHS (2016; 301) the Whites population group recorded a high consumption rate of fruits and vegetables (71% and 84%), Black Africans had the lowest consumption rate (46 and 57% respectively).

When looking at the beverage consumption (fruit juice) in SADHS (2016; 301), Whites (24%) were more likely to drink than other population groups (13% - 20%). On the other side Coloured women and men were most likely to consume sugar- sweetened beverages 38%, followed by the Black Africans 36% respectively (SADHS, 2016; 301). Furthermore the research found that

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women when compared to men are more likely to consume fruit juice (15% versus 13%); vegetables (64% versus 52%); fruit (51% versus 45%), while men were more likely to consume sugar- sweetened beverages (40% versus 33%) respectively (SADHS, 2016; 301).

Having sufficient access to food is one of the most important determinants of household food security which is largely shaped by a household's total income and food prices. Peyton et al. (2015) argues that, in low middle- income areas, the food prices that are being paid by households tend to be higher than those in formal suburbs. On January 2015, it was found that a basket of food costed around R9.84 more in rural areas than urban areas, with food items such as 5 kg maize meal, 500 ml of milk, loaf of brown and white bread, sunflower oil and 50 g of margarine (NAMC, 2015). Additionally recent research that was conducted in 2021 by the Pietermaritzburg Economic Justice and Dignity Group (PMBEJD, 2021), Cited in Haysom, (2021) PMBEJD found that the average cost of a basic household food basket per month was R4272,44. The resultant causes of the steep prices have been attributed to various factors such as growing inflation, fuel increases and shortages in the supply of goods and services.

Environmental, social and economic factors have also been found to play an influential role in the process of food intake and physical activity (Steyn, 2006; Ronquest-Ross et al., 2015). Globalisation has meant that most Sub- Saharan African (SSA) countries have shifted from the consumption of traditional foods that are low in fat and high in fibre, towards high saturated fats products such as meat, food and sugar (Nnyepi et al., 2015). Other evidence indicates that children who experience stunting growth in their early years are more likely to be overweight when they become adults (Sawaya & Roberts, 2003). Recent studies that have been conducted have shown a direct link between developing countries that have undergone an economic transition with a high risk of being overweight and obese (Nga et al., 2019; Tumas et al., 2019; Ataey et al., 2020).

These trends have important implications for human health. It has been predicted by Mapumulo (2015), that infectious diseases will be soon preceded by an increased prevalence of non-communicable lifestyle diseases which are linked to obesity. In the near future and the cost is likely to amount to approximately R8 billion annually (Mapumulo, 2015). In order to alleviate or combat the country's weight problem, there's a need for a fast response from government in formulating active policies. There is thus an urgent need to examine the growth of obesity and being overweight, taking into consideration that there is also a huge gap and lack in understanding of the

food choices people make in relation to their lifestyles. It is against this background and context that the research will focus on the link between food choices, household consumption patterns and the health implications in Khayelitsha.

1.2. Rationale and Significance of The Study

The Food and Agriculture Organization (2015a), argues that the world has enough food to feed everyone. However, as noted by the FAO of the United Nations (2015), approximately 800 million people do not have enough access to food, to satisfy their daily nutritional requirements. Although food insecurity has been found to be the main cause of being undernourished and stunting (Tanumihardjo et al., 2007), it can also be linked with being overweight and obese in high- and low-income countries (Dinour et al., 2007; Franklin et al., 2012). It remains unclear as to whether the relationship mentioned above exists in LMICs, this uncertainty thus initiates the need for more research (Hough & Sosa, 2015).

As a middle-income country South Africa is known to be food secure because of its ability to produce staple foods that are able to cater for the nutritional and dietary needs of its population together with its capacity to export foods (Greenberg & Drimie, 2021). Although South Africa has been deemed to be food secure at its national level, circumstances could differ at the level of each household. Access to food, that is regulated by unstable food prices is an important component of food security. The prevalence of high food prices has directly influenced the change in eating patterns, because households have resorted to consuming less and buying food of lower quality.

The rational of the study intends to support the suggestion that in poor urban areas, food choices and household food consumption patterns are not homogeneous; and that health implications show variations. There is a scarcity of recent evidence concerning food consumption patterns in South Africa. This includes as people's stated preferences for certain foods and their consumption frequency in the majority of black populations together with factors that influence these patterns (Swart, 2018; Steyn & Theart, 2021; Faber et al., 2022).

Research conducted by the SADHS (2016: 298) found that in SSA, the occurrence of obesity shows a wide range of differences as the mean BMI is 23.6% for men and 29.2% for women. When looking at the BMI cut offs, one-third of men 31% are overweight, the majority 59% have a normal range of BMI and 10% are underweight (SADHS, 2016: 298). In contrast two-thirds 68% of

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women are overweight, 3% are underweight and 30% have a normal BMI range. Even though research by Dalal et al. (2011); Addo et al. (2021); and Caperon et al. (2022), takes the genetic factors of obesity in consideration; socio-economic status, behavioural, socio-cultural as well as environmental factors are important. In the past the African continent has been grappled with under-nutrition and infectious diseases such as tuberculosis and HIV/AIDS Alemu et al. (2022). Additionally research by Anjorin et al. (2021); and Wu et al. (2023), found that over the last century the continent has experience a growth in the occurrence of overweight, obesity and their associated comorbidities.

In South Africa, Stats SA (2014) reports on different elements of food access, nutritional status and the experience of hunger. According to Crush and Tawodzera (2017), an average of 26% of South African household roughly about (13-±15 million) people either have severely inadequate access to food. A research conducted by Mmakola (1996) studied the Sepedi- speaking group in Mamelodi and Zebediela, taking into account of the effects of the socio- economic factors on food consumption patterns. Phali (2015) did a comparative analysis of the impact of food prices, on household food security. Moreover Dinbabo et al. (2017) investigated food choices and the body mass index in adults and children. What has not been done, however, is to consider the factors linking food consumption patterns with their health implications, and relating this to exposure to media influences, such as television.

Bandura (1986) argues that a person's behaviour can be influenced by television. In reference to his working theory that propose that, by watching television viewers are more likely to copy the behaviours observed in television such as drinking and eating (Bandura, 1986). This subsequently increases the consumption of products which are advertised on television. Furthermore, advertisements from television may have an impact towards the use of certain products. In support of the statement mentioned above; studies conducted by various researchers have reached a conclusion that watching television encourages the consumption of low energy dense foods and unhealthy food items (Lizie, 2013; Avery et al., 2017; Folkvord et al., 2020) and the impact of watching television has a significant impact on adult food choices and consumption patterns (Lee & Gispanski, 2016).

1.3. Research Questions and Objectives

1.3.1. Statement of the Research Problem

An investigation conducted by World Health Organization (2020) revealed that there have been major shifts in dietary patterns throughout the world, even in the consumption of basic staple foods to more diversified diets. In addition to these changes in food consumption at both regional and global level, are the underlying health consequences. People who reside in countries that are undergoing rapid economic transition tend to experience a nutritional transition (Povey, et al. 2000; Popkin, 2001; & Kearney, 2010). Moreover, the diversity of the transition may be the result of existing differences in consumer characteristics and socio demographic factors. As noted by Pretorius (2013) different cultural and ethnic groups make South Africa to be a diverse country that has its own way of eating and food choices. The black African ethnic group is one example of a population that has its own distinct consumption patterns and food choices. However these consumptions are influenced by other cultural trends through media such as television.

Research has revealed behavioural socio-economic differences in food choices. To fully understand the nature of consumption patterns, one should note that it takes into account a wide range of spectrum of factors that shape and affect human behaviour in varying aspects that result in the rejection of specific products and acceptance of certain choices (Fleming et al., 2013). The study of food choices is concerned with outlining the question of "why do people eat the foods they eat?" (Conner et al., 2002). The choices that people have on which foods they consume is a determinant of what kind of nutrients enter our bodies. With the rapid epidemiological transition occurring in Sub-Saran Africa (SSA), South Africa emerges with the highest prevalence of obesity.

Battersby et al. (2009), argues that as a consequence of urbanization, urban food security has emerged as one of the developmental concerns. As noted by Battersby et al. (2009) urban food security is fundamentally differentiated from questions of food security within the agricultural and rural sector. Nevertheless, there is insufficient information about the magnitude of food insecurity in the urban areas, towns and townships in South Africa. This has resulted to many challenges faced by the agents of development and policy makers in their attempt to quantify the challenge and to effectively plan on how to reduce the gap that exists within urban areas (Chikanda et al., 2017).

The problem of household food insecurity and amongst other individuals is a major concern for all developing countries, as it is in South Africa (Abdu- Raheem & Worth, 2011). According to Altman et al. (2009), access to adequate food at household level is largely dependent on how food markets and food distribution systems function and not only on agro-food output. This can be caused by multiple factors such as access to resources to produce the food or access to income to purchase the food. The underlying causes of food insecurity are often complex and interconnected. For an example the consequences of food insecurity include malnutrition, hunger and have a negative impact on health and quality of life. According to Dukhi (2020), under-nutrition and hunger are both outcomes of inadequate food intake, while stunting is associated with long- term inadequate nutrient intake and frequent infections.

The increasing frequency of being overweight and obese in South Africa has become a matter of high concern. Obesity is a factor that has been affecting many people of all age groups, racial background and class, South Africa remains to be amongst countries with highest overweight levels on the African continent (Hwalla & Jaafar, 2020). A study conducted by Skaal and Pengpid (2011) investigated healthcare and non-healthcare workers in South Africa. The study found that a total of about 37.5% with a 9.5% of those who are severely obese, with regards to the above- mentioned statistics more than 55% were perceived to have normal weight (Skaal and Pengpid, 2011: 565).

A study conducted by Folkvord et al. (2020) argues that the time spent by adolescents watching television may result in behaviours, attitudes and beliefs and that fit in to established traditional values, norms and expectations. It should be noted that the use of television as a socializing agent has a direct influence on the acquisition of beliefs, attitude, behaviours and nutritional socialization. With reference to choosing foods with low nutritional quality than eating proper foods, television characters appear to eat without the intention of fulfilling their physiological needs but to fulfil social and psychological needs (Avery et al., 2017).

Therefore, there is a need to evaluate of food choices, household consumption patterns and the health implications that needs to be carried out. Understanding food choices and household food consumption patterns are important factors that will play an essential part in the regulation and maintenance of a healthy lifestyle. The research findings of this thesis aim to add to the existing body of literature from many parts of the developing world on the incidence of food choices and

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food consumption patterns. More specifically, this research will provide a detailed account of food consumption dynamics in a disadvantaged area in Khayelitsha using a recent food consumption survey and to look at the food choices that people are forced to make as a result of limited income, and how media mitigates this.

1.3.2. Research Objectives

The aim of this study is to give an evaluation of the demographic profile of Khayelitsha, food choices, household consumption patterns and the health implications that come with certain food choices. The study's intention is to realize the following objectives:

- To present the socio- demographic profile of Khayelitsha (Educational level, religion, income status).
- To give an outline of the consumption patterns in poor urban households (Breakfast, Lunch and Supper).
- To examine the healthy eating practices in Khayelitsha (Fried Foods, fruit & vegetable consumption).
- To study the influence of television on food choices in poor urban areas.
- To study the health perception and weight management practices (Health perception, prevalence of obesity in Khayelitsha).
- To propose new recommendations for policy review.

1.3.3. Research Questions

- What is the socio- demographic profile of Khayelitsha?
- What are the types of consumption patterns in poor urban households?
- What are the types of healthy eating practices in Khayelitsha?
- What kind of influence does television have on food choices in poor urban areas?
- What is the overall household health perception and weight management practices in Khayelitsha?

1.4.   A Brief Review of the Study Area

The research engages in the analysis of secondary data on eating patterns of residents in Khayelitsha, a suburb of the City of Cape Town in the Western Cape Province. The case study area of Khayelitsha has emerged amongst others to be the largest townships in Cape Town. It is

situated at a distance of approximately 36 km southeast of the city centre (City of Cape Town, 2012). This township is also famous for being a vibrant place with entrepreneurial spirit for business establishments and rich in culture. The township is also well known for its high crime rates that remain a predominant factor and a cancer to the community at large. According to the Crime Statistics of South African Police Services (2020) between 1st April 2019 and 31st March 2020. In the top ten stations in South Africa the most murders, Khayelitsha was ranked number two with 251 reported cases. Additionally, with the top ten most recorded murder attempts it ranked at number six with 146 reported cases.

Western Cape Government (2020) has found that the township's population size is estimated at an average of 442 721 people in 2020, 447 120 in 2021, 451 616 in 2022 and 456267 people in 2023 with a predominantly youthful population. In this township, residents live in different housing structures that include informal settlements, backyard shacks, blocks of apartment and formal houses. The residents that tend to occupy the informal settlements experience living under unfavourable conditions, such that they have limited access to adequate public services like proper sanitation, water and electricity. Most of these inhabitants are unemployed, while others earn a household income that is below R1600 (Western Cape Government, 2013).

Khayelitsha is surrounded by Mitchells Plain to the west, Mfuleni in the northern parts, while Macassar is located to the east. The word Khayelitsha when translated from its original Xhosa to English means 'New Home'. The township was established in 1983 and originated as a segregated black community housing establishment for low-skilled migrant labourers. In terms of income and poverty levels, Khayelitsha remains an impoverished area with a high prevalence of unemployment of 38.02%. This is accompanied by a large number of households (about 73.7%) that earn an income that ranges between R1 and R 3200 per month (StatsSA, 2011). A study undertaken by StatsSA (2011) found that about an average of 18% of the population have no sources of income. The study will use qualitative and quantitative research methods to do an evaluation of the consumption patterns in Khayelitsha.

The study conducted by Dinbabo et al. (2017) on body mass index and food choices have provided this study with a primary set of data. This study will then employ secondary data analysis as means of enhancing an overall level of efficiency within the study. For data collection purposes the study will use a mixed method qualitative and quantitative. Stata will be utilized for statistical and

analytical purposes, to process the primary data as well as to depict the demographic profile of the case study area.

1.5. Chapter Outline

Chapter one presents a general introduction. The first chapter gave an outline and a generalized introduction on the nature of the study, additionally it gives an outline of the background and the context within which the study will be undertaken. The first chapter follows a current review of demographic and epidemiological trends, it highlights the problems associated with food security, household consumption patterns, food choices and it also highlights the health implication as a consequence of food choices in South Africa. The final sections of chapter one focus on the objectives of the study, research questions, research design and research methodology.

The second chapter will explore literature on food and nutrition security together with its components, food choices, emerging trends and prevalence of obesity and overweight. It will also give an outline of food security indicators, food insecurity, key determinants of food security and food security trends in South Africa. The literature presented in this chapter will identify or focus on major factors implicated on its development. In general, it will provide a more detailed discussions on the role that households, individuals and socio-economic factors have on health implications, eating habits and food choices.

Chapter three will put more focus on the delineation of the study areas and the research design. The third chapter will also examine the methodology that will be used in this study. The aim of this chapter is to give a broad outline of Khayelitsha which is our study area. The outline of the chapter includes the demographic profile of the study area Khayelitsha, the socio- economic characteristics, its settlement history and location. The last sections of the chapter will provide an outline of the type of research that will be applied to this study, taking into account of the methods and research design that will guide this study.

The fourth chapter will present the observed results from the study with a thorough discussion on the findings of the research. It will give a response to the research question that were posed in chapter one. The chapter will then summarize the quantitative results. It will present results relative to the respondents' eating habits, health perception, demographic characteristics, as well as weight management practices.

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The focus on Chapter five will be to give an outline of concluding remarks drawn from the study and recommendations that are a result of the research findings. The primary stages of this chapter will commence by giving an outlined summary of the key findings of the study. This will be followed by a discussion on the priority areas that are required for further research and the limitations that the study had. Lastly the chapter will cater for the stakeholders that have interests in strengthening health systems that will address health effects of food choices and consumption patterns in South Africa by giving out policy recommendations. The concluding parts of the final chapter will provide an overall summary of the study.

CHAPTER 2 LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1 Food Systems

2.1.1 Assessing Food Availability in South Africa as A Component of Food Security

According to May (2018) because of the dynamic nature of factors that surround the food policy environment, there was a need to develop the concepts of food systems over time. For an effective nutrition and food security outcome, A multidimensional interaction of various factors from several stages that can range from food production process to its consumption (Pereira, 2014). The general definition outlined by Drimie and McLachlan (2013) is as follows: it takes into account of the entire process of the food value chain that ranges from inputs from agricultural markets, via the production of food, the processing of food items, the food distribution process, retail process, the consumption, waste management of food related items, and the regulatory functions together with food support services.

The definition that was proposed in the World Food Conference had to encompass a number of factors. Like its focus on the availability of adequate basic food supply aimed at offsetting arising fluctuations in the process of food production, food prices and was aimed at creating a steady expanded supply of food consumption (FAO, 2003). The National Development Agency (2013: 3) defines food availability as the production and procurement of adequate quantities of regularly available food. According to Integrated Food Security Strategy (2002) the availability of food involves a continuous and an effective food supply that exist at national and household level.

It is vital to note that the food systems remain complex and it involves a linear processes that can be governed by methodological and conventional policies (Bentham, 2020). The food system is rather a complex network that consists of nonlinear plus multidimensional relations that are regulated by flexible policy instruments or structures. The dual agrarian system of South Africa established during the Apartheid era, makes the food systems a highly contested factor (Delport, 2019). The nature of the agricultural sector of South Africa over the last thirty years has experienced significant transformation, especially after the democratic transition of 1994. Changes such as the liberalization of the agricultural sector, the reduction of state support and its

reintegration to the global markets. The changes mentioned above have a direct impact on the practice and the role of agriculture hence the wide range of food systems in South Africa.

2.1.2 Assessing Food Accessibility as a Component of Food and Nutrition Security

The definition proposed by the FAO (2013: 20) of food access, refers to the ability to access sufficient resources aimed at obtaining proper foods for a nutritious and healthy diet. The distribution of food is relative to food provision process at the perfect time to areas or places where the food is needed (FAO, 2013: 20). According to the FAO (2013) the income that households and individuals have at their disposal has influenced the ability of the South African state to access food, the variations in food prices and the ability to access social assistance strategies. Moreover the people's ability to obtain food has a direct influence on the economic access of food, while the availability of infrastructure such as markets and roads plays an influential role on the physical access of food. May (2021) found that South Africa has a Food Poverty Line (FPL), which refers to the rand value below which individuals are unable to purchase or consume enough food aimed at supplying them with the minimal per capita caloric intake as a requirement for adequate health.

Research conducted by Pereira (2014) argues that, in order for a food system to be declared as accessible; social, economic and environmental factors need to be taken into consideration. An outline of the different components of food systems include: inputs from the value chain, structures and mechanism (for the supply chain process) (Delport, 2019). According to Delport (2019) another component takes into account all the stages of the food systems (these stages range from the process of production to consumption), it also takes into consideration the social issues that are linked to food equity, justice and sovereignty. Additionally it takes into account of the political and institutional consideration that span across a wide range from local, regional, national and global levels (Battersby et al., 2009: Delport, 2019).

A study conducted by SANHANES (2013:145) found that a majority of 45% of the South African population are food secure, followed by 28.3% that are facing hunger risk and 26% have been deemed (food insecure) and have experienced hunger. When examining the country at household level, South Africa is facing a challenge whereby households have inadequate access to food. It should be noted that access to food is one of the important elements of food security, that is why the inability to access food remains a challenge to household food security (Nkwana, 2015).

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Battersby (2011), argues that there is a constant struggle in poor households in finding ways to respond to limitations in food access. According to SANHANES (2013:145) the urban informal had the highest recorded prevalence of food insecurity (hunger) 36.1% and the rural informal had 32.8% respectively.

According to Moseley and Battersby (2020), the resilience and vulnerability of South African food systems is influenced by particulars of place together with the position held by various African countries in global and regional systems of economic exchange. Due to the dynamics of food systems', complicated nature and the relationship between food and nutrition security; it is vital to put into consideration of the various factors currently shaping the South African food systems (Delport, 2019). There have been many amendments that have emerged on the multidimensional definition of food security over the years. The changes mentioned above shifted from a definition that is only focused on production towards a definition that embraces nutrition (Ayala & Meier, 2017).

2.1.2 Assessing Food Utilization as a Component of Food and Nutrition Security

The FAO's definition of food utilization puts its focus on the physical availability of food and the body's ability to use nutrients obtained from foods, the economic and physical access and the stability of the three dimensions (FAO, 2008). With reference to the body's ability to use food for health, directly links food security to nutrition security. Research conducted by Pieters et al. (2013) defined food utilization as an individual's nutritional intake together with the ability to absorb nutrients from the consumed foods. Due to the definition mentioned above, the dimension of food utilization does not only relate to the amount (quantity) of food consumed but also focuses on the quality of the diet.

May (2021) has found that it is within the utilization dimension that the weaknesses of the South African food systems are fully revealed. Food utilization refers to the use of the food by individuals and households (Nkwana, 2015). It is essential for humans to use food for sustaining a healthy and nutritional wellbeing, the food preparation process must contain all the important nutrients. It should be noted that the utilization of food is influenced by two key factors, these are dietary diversity and food preservation (Ayala & Meier, 2017). Nkwana (2015) argues that the diversity

of diets is influenced by the ability to obtain food and nutrition security, dietary diversity yields to foods rich in macro and micro nutrients.

Since the 1900s the field of social development have engaged in studies associated with food security and its association to the global discourse on food (Battersby & Haysom, 2019). According to Steenkamp et al. (2021) increased food production does not indicate that everyone is exposed to sufficient food to eat, this has resulted in the persistence of hunger especially in the Global South. According to SANHANES (2013: 145) the largest people that have experienced being food insecure (hunger) resided in the formal rural locations 37% and urban informal 32.4% respectively.

One of the most influential research findings by Sen (1982) on 'food entitlements', found that the prevalence of hunger is highly influenced by distribution and access, rather than the physical presence of food in a region (Connolly-Boutin, & Smit., 2016). The modernization of diets has resulted in the existence of the 'triple-burden', with insufficient micronutrient, obesity and malnutrition are rampant within regions (Battersby & Haysom, 2019; Steenkamp et al.,2021; May, 1998). Even though food may be economically, politically, physically and socially available, the food itself might not be able to meet proper dietary quality to ensure adequate nutrition (Devereux et al., 2019).

Pieters et al. (2013) argues that shifts in diets may be caused by undesirable indirect effects that are socially constructed. The first pertains to the idea that; if demand increases due to higher incomes, there will be an expected increase in the prices of high-valued food items (May & Timæus, 2014). Moreover households that have not benefited from a positive shift of income are more likely to become food insecure. The rising demand for high-valued food yields to an induced demand for staple foods, therefore decreasing their price while increasing food security for the poor households. The second effect refers to the sudden increase in the demand for high-value products that create competition for land reserved for staple crops (Laborde et al., 2016). The land competition mentioned on the above statement puts additional pressure on the prices of staple crops and therefore intensifies the rate of food insecurity for households that have not experienced income growth.

The dimension of food utilization also caters for other important determinants which are related to the health status and intra-household choices concerning the distribution of food. It should be noted

that individual health tends to affect one's ability to absorb nutrients, a process known as nutrient utilization (Pieters et al., 2013). When a person has been infected or suffering from a certain disease, he/ she will develop a reduced desire to consume food resulting to constrained nutrients and absorption of energy (UN World Food Programme, 2007). The above interdependence between food, health and nutritional status creates a vicious circle: whereby a household or an individual who does not engage in the consumption of adequate diets will have a low capacity of resisting infection. This will lead to more severe, longer and more recurring sicknesses that result in reduced malabsorption, appetite which further worsens one's dietary intake (UNICEF, 1998).

According to Pieters et al. (2013), intra- household food distribution patterns determine the nutritional level and dietary intake of each individual household member. Gender inequality and education play a vital role in outlining the distribution patterns mentioned above. When looking at the developing countries, the adult household members who are often males are often favoured in terms of food intake (Haddad et al. 1996; Thomson & Metz 1999). Therefore it is practically possible to simultaneously have a food secure and food insecure members within a specific household. Moreover if the bargaining power of the primary caregiver in the household has been increased (for an example through improved women's access to education), this might be advantageous for the nutritional status and health of the household individuals.

Research conducted by Shroff et al. (2011) has shown that children that belong to women who participate more in household decision making processes are less underweight. Therefore it is important to note that education of the caregiver may also reduce discrimination or the stigma of consuming certain foods among children of different genders within the household (Thomas, 1994). Nutrition education is very important and has to be acknowledged as far as food utilization is concerned (May, 2014). Nutrition education is vital because it gives individuals information on the planning of meals, preparation of food in a healthy and nutritional manner this is done with aims of preserving lost micronutrients in the food preparation stages (Ayala & Meier, 2017).

The utilization dimension presented above is central to this thesis, since both obesity/ overweight and behaviour change due to watching television fall into the utilization dimension of food and nutrition security. Bandura (1986) cited in Bufford (1986), argues that watching television results in an influenced behaviour. By making reference to Bandura's theory of learning, Aulbach et al. (2021) argues that, people who spend time watching television will copy the eating and drinking

behaviours they see on television which increases the consumption of certain products. Furthermore, television advertisements may affect attitudes towards the use of certain products. Researchers have argued that the consumption of low dense and unhealthy foods is promoted by television which has a direct impact on adult food choices (Gerbner et al., 1982; Bufford, 1986; Lizie, 2013; Lee & Gispanski, 2016).

2.1.3 Assessing Food Stability as a Component of Food and Nutrition Security

The stability of food supply can be influenced by a multitude of factors these include the natural, socio-economic, market, cultural and political conditions (Nkwana, 2015). According to May (2010) the definition of food stability refers to the variations on the cost, quality and availability of food. According to Moseley and Battersby (2020) stability is an important component of food security, that refers to the regularity on the supply of food. Moreover the study found that the drivers of the stability dimension of food and nutrition insecurity can be shaped by a number of factors that range from the increase in input prices, global increase of food prices, and a depreciated exchange rate (May, 2021). A study conducted by Moseley et al. (2010), argues that while the strategies mentioned above yielded to a fairly supply of stable food together with its prices in the 1980 and 1990s. However global food prices started becoming variable in 2000 which resulted in food crisis (2007- 2008) global food crisis that hit urban areas in Africa hard (Moseley, et al., 2010).

Research conducted by May (2021) has found that, the stability dimension of food can be threatened by the relativity of prices of healthy foods as compared to highly processed foods with poor nutritional diets and high energy levels. Moseley and Battersby (2020) argue that challenges such as the depreciation in currency, decline in exports and imports together with the rising transit in cost will have an impact on food prices in African urban areas. Throughout the world, the food prices of foods with a high nutritional value continue to rise, while less nutritious foods are easily affordable (Marafa et al.,2020). Various pillars of food security require policy implementation that are multidimensional and multi- sectoral in nature. In support of the above statement Marafa et al. (2020), states that different government and intervention programs can address each pillar of food security in a different way. An example would be support for subsistent or small holder farmers, social relief programs and school or communal feeding schemes.

The multi-sectoral and multidimensional nature of food security presented earlier is evident in the diverse programs that address each of the four pillars. Therefore it is important to highlight that the strategies are put in place to encourage the realization of the right to access food provided by the government. According to Crush and Frayne (2011) there is an idea that is being held by studies conducted globally that, issues pertaining to nutrition and food security can be solved by giving support to the rural producers or an increase in the production rate. The definitions outlined above are biased in a sense that they only encompass factors of access, availability, stability and utilization. The components mentioned above have been fully examined and are essential components as far as nutrition and food security is concerned. The food security definition takes a wide spectrum of factors into account in its definition.

2.2 The Drivers of Food and Nutrition Security

2.2.1 Gender and Age

By using the gender perspective to analyse food security at a household level, helps in revealing the issues that are related to gender inequality which can be viewed as the cause and reflection of food insecurity. Various researchers have argued that in certain situations the most people who are likely to be food secure are members of female headed households (females) when compared to male headed households (Dodson et al 2012; De Cock et al 2013; Adepoju et al 2015; Taylor and Chagunda, 2015). In support of the above statement Ndobo (2013) argues that is important to note that to be able to fully understand the dynamics of household food security we should take into consideration the impacts poverty and unequal gender relations. Even though poverty can be seen as the main driving factor on a household's food security status, gender relations can also have a major impact on food insecurity of different households.

Research conducted by Taylor and Chagunda (2015: 120) found that women experience poverty differently, "the gender significance especially on the ongoing struggles faced by women in accessing their right to food" needs to be carried out with reference to people's experience of food insecurity. In a research conducted by Kassie et al. (2012) and Bashir et al. (2012: 7) have found that, there is a negative relationship that exist between the age of household head and food security. There is a serious food security challenge that might be faced by the older population (old age grant recipients and pensioners) mainly because they have low or limited income in their disposal. They have low income at their disposal because of their inability to successfully participate in

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labour market. Oleyemi (2012: 137) has found that, the situation mentioned above might worsen if the adult population have a specific diet that they have to adhere to that sustain them at old age. Also, having a large household sizes will often put strains on the accessibility, sustainability, stability of food items (Olayemi, 2012).

This means that households with a large number of people will often have an increase in consumption needs. In most cases dependents will have limited or no contribution to food production or strategies that will help in generating income. A household head that has a good employment status is likely to be positively affected as far as food security is concerned. Being able to earn an income is very important as it means that an individual or the household will be able to maintain a healthy lifestyle and have access to food and credit (Tanga & Gutura, 2013). As we experience a steady increase in food prices, households that live without enough income will not be able to purchase sufficient food to consume. This results to food insecurity and an increase in the risks of illness (Ndlovu et al., 2014).

2.2.2 Education

Education has been widely accepted as an essential factor in food production, access and utilization (Mutisya et al., 2016). Various researchers, of which a majority of them reside outside SSA have explored the factors that influence the relationship that exists between education and food security (De Muro and Burchi 2007; Oluwatayo 2009; Gebre 2012; Bashir and Schilizzi 2013; Reimers and Klasen 2013). However researchers have not thoroughly examined the impact of educational attainment among the urban poor. Available research that focuses on the impact of education on food security has widely focused on rural and urban areas. According to Headey (2013) food security and education has a two-way relationship.

The first one suggests that food security has an effect on health and education. Black et al. (2013) argued that food security particularly in the early stages of growth, leads to malnutrition among children; associated with low educational attainment and cognitive growth, the impacts may be evident in later stages of life. The second relationship refers to the impact that education has on food security amongst the urban poor population. A study conducted by Card et al. (2022), states that human capital is the most important determinant of later chances of success and production such as employment and earning an income. These theories emphasize that education as a measure of human capital, can be directly associated with both efficiency and productivity.

Babatunde et al. (2007: 354) found that education is described as an important element of social capital, mainly because of the positive impact that education has on a household food security status. In support of the above statement Kuwornu et al. (2013:35) found that educational attainment can present one with higher chances of securing job opportunities within the labour markets. A research conducted by Hofmarcher (2021) suggests that, if an individual attains more than primary education they are in better conditions of reducing their chances of being subjected to poverty.

Furthermore, there is a positive effect on a household's food security status if the head of the household has attained education. The statement mentioned above implies that the household food insecurity diminishes because the head of the household has acquired more education (Shumiye 2007; Bashir et al. 2012:7). To give support to the statement outlined above Pankomera et al. (2009:3) found that this becomes possible as the household head now is in high risk of obtaining an improvement in their financial resources. Thus having an increased ability to secure better job opportunities (Heidhues, 2009).

Studies conducted by Frayne et al. (2009:16); Carter et al. (2010:3); Benjamin and Joseph (2012:22); Gebre (2012:165); Kassie et al. (2012:5) and de Cock et al. (2013: 38), found that there is a larger proportion of income that is spent by female headed households (FFH) when compared to male headed households (MHH). Moreover FHH are still worse off in terms of food security, that is why they experience higher incidents of food insecurity. In support of the above statement, a research conducted by De Cock et al (2011: 66) observed that due to the reason that the female headed households do not have better chances to access productive resources, they are less likely to engage in activities that will generate income and are often characterized with low levels or quality of education.

Studies have found that education has wider and direct returns to individuals, family, and the society at large due to improved standard of living, better health conditions, increased income opportunities and better decision making (McMahon, 2009). Educated people are more likely to secure employment opportunities, exposed to improved sanitation facilities, nutrition and diets, better access to markets, better health facilities and improved decision making processes which are important factors in household's food security (Mutisya et al., 2016; Drammeh et al., 2019). Family planning is more prevalent in educated households than those with no education. That is

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why educated household often have a manageable household size that will often decrease the pressure on the need for stock of food and available income at their disposal (Agidew & Singh, 2018; Sisha, 2020). Households that have obtained better educational opportunities are more likely to use the skills (human capital) to ensure that they realize and experience a better standard of living and engage in the attainment of food security compared to the households that have no form of formal education.

Education can also be seen as a major determinant of social mobility mainly because it has the ability to move households and individuals out of poverty. There are many different underlying factors through which education influences food security. These factors might vary depending on context, for an example rural and urban. When focusing on the impact of education within the rural areas, researcher like De Muro and Burchi (2007); Bashir and Schilizzi (2013) argue that the level of education here focuses on food security initiatives by accessing information related to agricultural production, proper sanitation (irrigation systems); nutrition, better decision making and increased efficiency (produce/ output). It should be noted that even though the mechanisms mentioned above can be evident among rural household, the pathways tend to differ. On the other hand the impact of education within the urban sectors is experienced through household income, securing employment and better decision making. The indicators outlined above have a direct impact on all four dimensions of food and nutrition security.

According to Gebre, (2012); Bashir and Schilizzi (2013) being enrolled in school for many years leads to better employment opportunities, proficiency in the working environment, increased disposable income and better decision making. In the urban areas about 90% of the food that is consumed is purchased on the other hand, poor urban households are more susceptible to food price increase, more than 50% of income is spent on food items (Ruel & Garrett, 2004). According to Bashir and Schilizzi, (2013) the percentages presented above imply that individuals and households that have obtained a higher education tend to have a high purchasing power and stand grater chances of being food secure. There's a proportion of a population that resides in informal settlements that are active in the labour market and yet their income returns can barely support them or meet their minimum daily needs.

2.2. 3 Urbanization and Urban Food Security

The global population has expected a rise that will reach an average of 9.8 billion people by the year 2025 (FAO, 2017) and an expected 68% of this population resides in urban areas (Ritchie & Roser, 2019). The arguments presented in this literature's highlights depicts that there is an urgent need for better policy interventions especially for the regions in the Global South since it is a place whereby the contexts that influence rapid urbanization (Crush & Frayne, 2010), urbanized poverty and food security are mostly felt.

Research has shown that urban planners tend to turn a blind eye in planning for food related discourses because it is perceived as a rural issue that has no connection with the built environment (Slade et al., 2016). The arguments outlined above however does not take into account of the existence of urban agriculture, which is mainly a process carried out by the poor for subsistence purposes aimed at reduction or alleviation of poverty. The multi- functionality of the food supply chain with components linked to different fields of planning interests has been exclude within the literature.

Strategic food planners have put the urban residents at risk of facing food insecurity by neglecting to plan for food, as they have food security issues that have exacerbated by the very nature of the urban environment (Steenkamp et al., 2021). Research has proved that there is a need for planning interventions for more sustainable methods of production and supply chains (Slade et al., 2016). According to Ritchie and Roser (2019) the prevalence of hunger together with rapid urbanization in low-income countries, implies that the debate on food security favours an urban dimension. In the coming years research has shown that cities and towns in low-income countries will experience food security related issues (Morgan, 2009). According to Steenkamp et al. (2021) the important dimensions of food and nutrition security have been acknowledged by key actors of food policy interventions.

The State of Food and Agriculture Report (2020) have accepted the importance of one's ability to afford nutritious food and how the prices of food influence the urban food and nutrition security (FAO; IFAD; UNICEF; EFP; WHO, 2020). To fully address the risks associated with food security in urban areas, there's a need to shift from a production paradigm and rural bias that needs to occur (Steenkamp et al., 2021). The process of designing effective strategies on food that fully address the issues of extreme poverty, obesity, overconsumption, and hunger remains complicated

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(Sonino, 2016). The nature of food security will occur in different ways even in the urban sectors. In simple terms there might be existing evidence which argues that, some people do show signs of being food insecure.

In support of the above statement, Crush and Frayne (2011) argues that, on a daily basis supermarket in Southern Africa might be bursting with fresh produce, whereas on the pavements or streets there are people who cannot obtain adequate food to feed themselves more than once a day. It was projected by the UN in 2014 that the global urban population will grow by 2.5 billion people by 2025 on the other hand the rural population would stay the same. Additionally, an average of 90% of the urban growth mentioned above is expected to occur in Africa and Asia (New York., UN 2014 Revision, 2015). Ayala and Meier (2017) found that, when a certain region experiences urbanization, a large pool of the rural population is drawn towards the urban areas which in turn threatens food security especially for the poor urban population.

Additionally Steenkamp et al. (2021), argues that the statement mentioned above remains true especially for the population that is residing in low income countries and are experiencing a growth in the urban populations (Battersby & Watson, 2018). In urban settings, food might be available physically but affordability acts as an obstacle that limits or regulates the rate, quantity, and quality of food (Ayala & Meier, 2017). The high cost of living within the urban areas has created a lot of challenges amongst the urban poor's ability to afford food while meeting their basic nutritional needs (Peyton et al., 2015). Furthermore, the low-income urban population often spends their income on food, this means that an increase in food prices might create a highly vulnerable population.

2.2.4 Food Literacy

Food choice models have shown that aspects of economic and neighbourhood proximity (Rose et al., 2010), influences, personal food systems and other events that have shaped an individual's life (Sobal & Bisogni, 2009), personal differences, environmental factors and productive quality considerations are determinants of food choices (Marreiros & Ness, 2009). These determinants can be divided into the following groups, nutritional knowledge and education, economic and environmental, psychological and physiological factors. Nutritional knowledge is the ability to identify the healthiest foods, having knowledge of what we mean by a healthy diet, being aware

of nutritious sources and being knowledgeable of the health effects of that result from eating or not eating specific foods (Fernandez-Celemin et al., 2010).

Being able to prepare food and cook food is also an important indicator of nutritional knowledge (Chenhall, 2010; EUFIC, 2011). Research has proved a link between an adult's dietary behaviour and an individual's level of education (Kearney, et al. 2000). However, the correlation between good dietary habits and nutritional knowledge is not strong. This is because knowing about a healthy lifestyle does not directly translate into an individual's actions, it also requires knowledge about the application of that knowledge. Research conducted by the SANHANES (2013:178) revealed that Western Cape recorded the highest prevalence of general nutritional knowledge score for adults 5.78%, Free State 5.6% when compared to other provinces that range from 4.6% to 5.39% respectively.

Furthermore the black population recorded a lower mean score of nutritional knowledge 5.14% when compared to all racial groups. Additionally, there are vast sources of information on nutrition which are often viewed as contradictory and are mistrusted and this demotivates and discourages change (De Almeida, et al.,1997). Physical elements of the environment, namely, seasonality, time and on site food storage and food preparation facilities are part of the environmental determinants of food choice and consumption (Kolbe- Alexander et al., 2008). Economic determinants include cost, food availability (Du Plessis, 2011), and wages (Tiwary et al., 2012).

Fruits and vegetables are usually subject to high costs (Waterlander, et al., 2013). Studies on fruits and vegetables found that they were the most preferable food choice determinants (Kushi et al., 2006; Nie & Zepeda, 2011). When looking at fruit and vegetable consumption by population group, with 71% and 84%, the Whites had the highest percentage, and Black Africans were among the groups with the lowest consumption rate, with vegetable consumption of 46% and 57% for men and women (SADHS, 2016; 301).

Additionally, the research found that women consumed more fruit, vegetables and fruit juices than men with 51% of women being likely to consume fruits compared to the 45% of men who are likely to consume fruit, for vegetable consumption, 64% of women compared to the 52% of men and for fruit juice consumption, 15% of women compared to the 13 of men (SADHS, 2016; 301). Moreover men were found SADHS (2016; 301) more likely to consume 40% more sweetened beverages when compared to 33% of females. The cost and accessibility of food has been found

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to be one of the most vital economic and environmental determinants of food choices. Food packages and health professionals showing accurate and consistent information and even through media platforms is important.

2.2.5 Poverty

South African urban areas are often characterized with urban formal and informal settlements which are largely infested with poverty and food insecurity. The country's cities and towns are vulnerable to environmental stressors, food insecurity, diseases and extreme poverty. The urban informal settlements face an elevated risk of being hungry and have experienced hunger (Shishana et al 2013; Sekhampu, 2017). This is highly prevalent in a country with high poverty rates, and about two-thirds of its people living in urban areas.

Due to poverty a large number of households remain food insecure (Manyamba, 2013). Poor households are characterized by having low or no disposable income and they are unable to meet the nutritional needs of their family members. They are often reliant on other forms of income such as seasonal and informal employment or other food sources in order to meet household needs (Department of Agriculture, 2002). The literature suggests that cash transfers are likely to improve food security, this can be achieved by giving households money to buy food (Tanga and Gutura, 2013). Author Ndlovu et al. (2014: 2) argued that, an additional income of R1140 from old age pension increases food consumption related spending by 24%.

According to Parnell (2005) the extent of urban poverty is underestimated because of its shortcomings in terms of definition and measurements. According to Sen (1977); cited in Rukuni & Eicher (1988), poverty is the lack of food entitlement (in reference to the lack of access to credit, land, family support systems and income); which have been outlined as the main causes of hunger and famine. Leibrandt et al. (2006), argues that while a higher proportion of poor people that reside in rural areas is declining, there is a large number of people that live in urban informal settlements, that have poor access to social services and infrastructure. Additionally the standard of living (high living costs such as shelter, education, health and transport) within the urban area also undermines the ability of the poor to access sufficient foods.

Besides the economic and political developments that have occurred since 1994, South Africa is still challenged by serious problems of poverty, unemployment and high increases in food and fuel

prices. These hostile conditions have left already struggling South Africans in an even more vulnerable circumstance. The increasing rate of rapid urbanization in South Africa, particularly informal settlements has resulted into increased food insecurity and poverty. Furthermore, it is often difficult for the urban poor population access credit and they are underemployed and left with no economic security in their old age (Peyton et al., 2015). Those that live in poverty in urban areas are more likely to have their human right to food infringed when buying it. It is essential for the urban poor to actively participate in productive work (FAO, 2010) that will afford them and their families a decent standard of living (Rae & Subramaniam, 2008).

2.3 An Assessment of Dietary Changes, Food Production and Diversification

Countries have been experiencing dietary changes towards a more diversified food system over the past decades. (Finaret & Masters, 2019; Barabási et al., 2020). The agricultural sector has also experienced diversification. Research have found an increase in the overall diversity of food supplied nationally, with homogenization across countries (Nelson et al., 2016; Aizen et al., 2019; Martin et al., 2019; Aguiar et al., 2020). Likewise, research conducted by Khoury et al. (2014) also agreed that food supplies have become more diverse. According to Battersby and Haysom (2019) dietary diversity refers to an indicator of food security that is used to assess nutritional adequacy of a diet, it extends beyond the intake of sufficient calories. Global food trends of increased amounts of fat, calories, weigh and protein influenced the diversification of food products.

Amongst the poor urban dwellers, changes in dietary composition have been proven to be highly sensitive to income (Campi et al., 2021). Most Asian countries in recent years have been experiencing the most extensive changes, such as sourcing their foods from animals, sugary contents, sea foodfxs, oil crops, fruits and vegetables to becoming an abundant component of food supply (Campi et al., 2021). The experience in the sub-Saharan African region differs, where dietary diversification practices are few (Bentham et al., 2020). An investigation conducted by Battersby and Haysom (2019) argues that the types of foods consumed in households does not always contain the required nutrients essential for mental and physical health and development. However it should be noted that countries will not undergo the same experiences in dietary changes especially with income disparities, since factors such as culture, socio- economic status, and climate can largely influence dietary diversification.

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Increased demands for agricultural which are driven by dietary changes are still one of the main determinants of diversified food supplies. Whether they are produced locally or imported. An investigation conducted by Remans et al. (2014) showed that the diversity patterns are strongly dependent upon income levels of countries. Whereby in low-income countries, the prevalence of diversity in food supply is linked to local capabilities, while for the middle and high-income countries the diversity of food depends food imports (Campi et al., 2021). It should be noted that the international markets make a huge contribution to the diversification of national food supplies.

2.3.1 The Growing Food Industry, An Evaluation of Globalized Unhealthy Diets

Besides uplifting trade unions and inadequate domestic regulations, globalization has influenced the growth in the food industry that has caused growth in the industry that is a threat to global nutrition security. Moreover it has been found that major manufacturers have control of more than one third of the global market that produces about 75% of processed foods (Moodie et al., 2013). The globalization of unhealthy foods has subsequently resulted in increasing prevalence of non-communicable diseases (NCDs) globally. Of all four NCDs listed by the SANHANES (2013: 70), 30.9% respondents were more likely to report a family history of high blood pressure and 20.7 are likely to report a family history of high blood sugar, while 8.9% reported a family history of stroke and 7.6% reported a family history of heart related diseases (chest pains, angina, heart attack). The prevalence of NCDs has disproportionately impacted low- and middle-income countries.

Research conducted by Ayala and Meier (2017) has found that about three-quarter, an average of 28 million of the total deaths that occur in LMICs and about 82 % of the 16 million NCD- related deaths of people younger than 70years globally happen in these countries (WHO, 2015). Furthermore 2.7 million annual deaths are a result of unhealthy diets and they pose a huge risk factor for NCDs (WHO, 2009). There is evidence that supports the use of regulation strategies in the mitigation of the epidemic. These include the imposition of taxes and labelled trade restrictions. An empirical example would be that of Mexico, whereby in January 2014 the country imposed a 10% tax on sugary drinks (Colchero et al., 2016). This was a response to high obesity and diabetes rates in the population which caused a 12% drop in sales in one year (Colchero et al., 2016). Another country that had embarked on regulative measures was Mauritius. Here the focus was to decrease saturated fatty acids in cooking oil and replace it with soybean oil (Uusitalo et al., 1996).

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The reduction of the saturated fat was aimed at improving consumption patterns and the average cholesterol levels.

2.3.2 The Prevalence of Eating Disorders and Consumption Patterns

On a daily basis people may engage in different eating occasions, the motivations of such activities tend to differ. Many studies have investigated the factors that influence habitual food choices, at different occasions (Flint et al., 2000; Adamowicz and Swait, 2013; Leech et al., 2021). The effects of having snacks on healthy meals have been a widely debated issue. Available evidence has shown that snacking affects nutrients and energy intake but not necessarily the body mass index, BMI (Taylor and Chagunda, 2015). Overweight and normal weight individuals cope differently with snacking and have different compensatory mechanisms at subsequent meals. Helping adults to choose a snack that is healthy is often difficult for health professionals in the household. There should be a more positive approach to healthy eating like the introduction of healthier snack options over time instead of forbidding unhealthy foods (Pollard et al., 2002).

Unlike many other biological functions, a person's eating behaviour is mostly dependent on complex cognitive control, the most common one is dieting, which is exercising control over food consumption (Pollard et al., 2002). The desire to lose weight has been expressed by many individuals or the need to improve one's body shape, thus engaging in approaches that will help achieve their ideal BMI. However, there are problems that may arise when one is dieting or when exercises are taken to the extremes. The studies associated with eating disorders involve a combination of factors such as socio-cultural, hereditary, psychological and biological (Mac Evilly & Kelly, 2001; Fokina & Smirnov, 2018). The resultant of an eating disorder is usually associated with a distorted low self-esteem, self-image, obsession, non-specific anxiety, unhappiness and stress (Gravina, 2022). The possible medical care for eating disorders usually requires the stabilization of weight and one-to-one physiotherapy consultation appointments. It is more difficult to come up with outlined preventative measures, but possible suggestions include avoiding magnifying diets and health related issues.

2.4 The Determinants of Consumption Patterns

The basic determinants of food choices and consumption patterns are determined by our physiological needs. For survival humans are in constant need for nutrients and energy, they also tend to be responsive towards the feelings associated with hunger and satiety (Pollard et al., 2002).

According to Pollard et al (2002) humans have the ability to develop an ability of not being hungry between two eating occasions and a satisfaction of appetite this will result into humans developing.

The role of the central nervous system is to regulate an equal balance between the stimulation of appetite, hunger and food consumption (Pollard et al., 2002). There are macro-nutrients found in foods such as proteins, fats, carbohydrates, vitamins and minerals that are vital for generating strength. Research results have proved that fats have the lowest satiating power, the accumulation of protein in one's body have been found be the most satiating while carbohydrates have an immediate effect on the body (Hwalla & Jaafar, 2020).

One of this research's aim and objective is to conduct an investigation on the impact of television on food choices with reference to themes such as the social determinants and the physiological determinants. According to Aulbach et al. (2021), adolescents who spend time watching television may results in behaviours, norms, values, attitudes and beliefs that are in line with the established traditional expectations. Available research argues that the amount of time spent watching television can be influenced by psychosocial factors.

Moreover television often assumes the position and role of a socializing agent which takes into account of health related attitudes and behaviour. Aulbach et al. (2021), argues that television as a socializing agent may directly have an influence on nutritional socialization and the achievement of food related attitudes, behaviour and beliefs. With reference to choosing snacks more frequently and foods of low nutritional quality than eating proper meals. The characters in television when they appear do not eat with intentions of fulfilling psychosocial but they are intended to fulfil psychological and social needs.

The following section intends to give an outline of the factors of food choices and consumption patterns. The first stages will examine the physiological or the biological elements of food choices and eating patterns. Here the focus on this section will solely rely on presenting an outline of the physiological determinants of food choices and consumption patterns. The physiological determinants include elements such as hunger, satiety, appearance/ palatability and the sensory aspects. Furthermore this section will give a detailed outline on the influence of social class, the cultural influence, social context and social settings of food choices and consumption patterns.

2.4.1 Physiological/ Biological Determinants of Food Consumption Patterns and Food Choices

With reference to the sensory and biological mechanisms and needs of the body, Pollard et al. (2002) argues that appetite, hunger, satiety and taste as levels of satisfaction are important prerequisites for choosing to consume particular foods. Other physiological determinants like hunger, satiety, palatability/ appearance and sensory aspects are determinants of food choices (Pollard et al., 2002). Babicz- Zielinska (2006) argues that the diets that are dense in energy have been shown to have a high effect on satiety; healthy diets (with low energy but high nutrient values) makes people feel satisfied or not hungry. Also diets that have a high sugar or high density of fat may result to a passive over consumption. This is a process whereby extra energy is consumed involuntarily and without the consumption of additional bulk (Pollard et al., 2002). The important signal of satiety might be the proportion of size consumed and the volume of food.

According to Pollard et al. (2002) palatability can be equated to the type of pleasure that is experienced by someone when consuming a certain type of food. This type of pleasure takes into account of the sensory elements such as texture, appearance, taste and smell (Pollard et al., 2002). The foods classified as sweet and have high fats tend to have an irrefutable sensory appeal. Food is usually consumed because of the pleasurable value it conveys and it is not only regarded as the main source of nourishment. Several studies have undertaken an investigation on the influence of palatability on appetite and food consumption in humans (Clarke, 1998). Having access to a large variety of foods can also increase the food and energy intake, then alter its balance in the short term however there are unknown effects on long term regulation.

Another major influence that shapes food behaviour is taste. In actual terms taste, refers to the overall stimulation of the sensory glands that is produced when a person ingests food (McCluskey & Swinnen, 2011). The statement above does not only refer to taste per se but also to senses such as smell, texture and appearance of food. These sensory aspects are believed to influence or lead to a spontaneous food choice (McCluskey & Swinnen, 2011). Even in historical times taste and familiarity have had an influence on a household's behaviour towards food. Having the desire for sweet stuff and disliking bitter things are considered inmate human traits that have been present since birth (Steiner, 1977).

2.4.2 Examining the Social Determinants of Food Choices and Consumption Patterns

According to Ellis (2013) the type of choices that people make in life are derived out of a need to obtain and solidify a social identity. According to Du Plessis (2011), the social determinants of food choices and consumption patterns include friends, colleagues and media (McCluskey and Swinnen, 2011; Gagic et al., 2014;), social belonging (Puoane et al., 2006), and family traditions (Just et al., 2007). The implication is that a person can be peer-pressured into eating food that is healthy or unhealthy (Barclay et al., 2013). What is usually eaten by people is influenced or constrained by cultural and social circumstances.

According to Gagic et al. (2014) poor diets can lead to under- nutrition (insufficient micronutrients) and over nutrition (overconsumption of high energy dense foods) which result to overweight and obesity. Culture also influences the consumption of certain food types in traditional ceremonies, and in certain cases it results to people being excluded or restricted from consuming certain food types such as meat and milk (McCluskey & Swinnen, 2011). The influence of culture however exists in a dynamic nature, meaning they are amenable and susceptible to change (Gagic et al., 2014). For example, when moving into a new region, or country an individual will often adopt particular food habits of the local culture.

The impact that others have on the eating behaviour or an individual's food intake is known as social influences (Gagic et al., 2014). Even when person is eating alone the food being consumed is influenced by social factors, because of the habits and attitudes that develops through the interaction with others (McCluskey & Swinnen, 2011). It is very difficult to quantify the social influences on food intake, because the influences people have on the eating behaviour of another person is not limited to one type. An example of social influences on one's eating behaviour or food intake are radio, television (advertisements on food). People are also not aware of the social influences that are exerted on their eating behaviour and so would not necessarily report on this when being interviewed (Feunekes, et al. 1998).

Informal interpersonal support such as that provided by friends can have a positive impact on food choices and adopting a healthy diet (Devine, et al., 2003). There has been a positive association of social support between co- workers and households, this association comes with improvements in the consumption of fruits and vegetables (Sorensen, et al. 1998a). Forms of social support may

also be able to create health promotion strategies through fostering a sense of belonging to a certain group. The household or family can be widely recognized as being significant in food decisions (McCluskey & Swinnen, 2011). Anderson, et al. (2005) argues that the presence of family and friends can act as a source of encouragement in maintaining and sustaining changes in diets, however this can exert negative influence. Access to adopted diet related strategies remains acceptable to family and friends and might be beneficial to the individual and have an impact on the eating habits of others.

There is an increasing proportion of food that is usually consumed outside despite the assumption that a majority of food is eaten at home. Additionally the place whereby food is consumed might have a direct impact on the food choices, in terms of what kind of food is being offered at that particular venue (McCluskey & Swinnen, 2011). For an example the type of food consumed in an African traditional ceremony is strictly a traditional cuisine that is less diversified. The consumption of certain foods can be increased when one always has healthy foods at their disposal whether at home or away from home. With the majority of employed adult women and men, the influence of working on health behaviours such as food choices is an important area that needs to be investigated (Devine, et al., 2003). The data collected in this study seeks to investigate the correlation in healthy eating behaviour, education, food choices and socio- economic status (employment).

2.5 Consequences of Food and Nutrition Insecurity

The following section evaluates the prevalence of overweight and obesity, body mass index, it also examines the secular trends of overweight and obesity in South Africa. It will also describe over nutrition and its associated NCD's and present the determinants of over and under nutrition in South Africa.

2.5.1 The Prevalence of Overweight and Obesity Trends in South Africa

When defining obesity, the World Health Organization (WHO, 2016) refers to the excessive or abnormal accumulation of body fat that poses a huge risk to a person's health. Besides the democratic transition and rapid economic development, South Africa has experienced a rapid nutritional and epidemiological transition. SADHS (2016; 299) found that, the prevalence of obesity in the Western Cape recorded the highest percentages among women 73% and men 44% respectively. People who are overweight and obese can be found amongst all population and socio-

economic groups in the country. According to Battersby (2017), the state of being obese and overweight are often determined by income and yet in the Eastern and Southern African region, changes in diets that are frequent amongst three-quarters of the population that falls under the international poverty line of USD 2 a day per capita. However in terms of proportion there's significant degree of difference in terms of ethnicity, age group, race, regions and socio- economic class.

When looking at the age categories provided by the SANHANES (2013; 190), the age categories 45- 54, 55- 64 and 65 years and older had a significantly higher mean BMI (31.5%; 31.6%; 30%) for females and (25.8%; 25%; 25.4%) for males respectively. Conversely the percentages show a great deal of differences when compared with the age categories of 15- 17 years and 18- 24 years (23%; 26.2% for females and 20.5%; 21.3% males) respectively SANHANES (2013; 190). Puoane et al. (2013) investigated the determinants of obesity and the anthropometric profile of South Africans and discovered that, prevalence of obesity amongst women over the age of 15 years was 30%. Moreover the prevalence of obesity in men over the age of 15 years, was 7.5%. The variations outlined above on the prevalence of obesity between men and women, have recorded for men a figure that is four times smaller than the prevalence of obesity among women.

SADHS (2016) confirmed the imbalances outlined above. Moreover when looking at the age difference, there is a strong age- dependency trend that can be observed. The statement outlined above implies that obesity is inversely proportional with a person's socio-economic status and age. According to the SADHS (2016: 299) the prevalence of being overweight or obese was the highest among women aged 45-64 (81%-82%) compared to men who are 65 years (54%) and older. Furthermore, in association with gender disparities a large degree of differences has been equally observed among racial groups. When looking at the prevalence of obesity by population group the SADHS (2016: 300) found that there is little variation amongst women (67%-70%). Moreover when focusing on the racial distribution on the prevalence of overweight and obesity, the findings of the study have shown that Whites had the highest amongst men 75% and Black Africans had the lowest 27% (SADHS, 2016:300).

In the rural areas of Eastern Cape and KwaZulu-Natal Rossouw et al. (2012), highlighted that the prevalence of obesity was prominent amongst the poor communities. The research also found overweight and obesity prevalence of 20% in infants under one year old. In addition to the

statement mentioned above the research also outlined evidence, whereby obesity rates were as high as 50% for children who are 8 years in Limpopo province (Ngema, et al. 2018; Mphekgwana, 2022). Furthermore in 2017 in a study that was conducted in Khayelitsha and Mitchell's Plain by Dinbabo et al. (2017), it was found that children who are between the ages of two to five years; 17.5% and 4.4% of the boys were overweight, whilst 18.9% and 4.9% girls were overweight respectively.

However emerging clinical and epidemiological discourses have associated the causes of obesity to certain factors that show a great deal of variety in terms of socio-economic factors such as employment or income status, level of education, nutritional knowledge and social setting. Other studies have reported that overweight and underweight can exist simultaneously at the same household (Rossouw, 2012; Kimani-Murage, 2013). This means that the risk factor for obesity can also be used as an indicator of the risk factor for underweight (Ibid, 2013).

2.5.1.1 An Evaluation of Over-nutrition and its Associated NCDs

The lives of many South Africans continue to be affected by over-nutrition and its resultant comorbidities. Regardless of the prevalence of infectious diseases like Tuberculosis and HIV/AIDS together with the burden of poverty, NCDs associated with over-nutrition have contributed to the high death toll in the country. An investigation conducted by Steyn et al. (2006), found that during the year 2000; NCD's amounted to an average of 37% of the total deaths, followed by HIV at 30% respectively.

According to Goedecke et al. (2006) studies that have been conducted over the past have depicted that the prevalence of obesity is more rampant in women when compared to men ranging between 48% and 58% in men and women from different racial groups. Additionally, during a survey conducted in 2010 that focused on a small sample of adults in big cities within the country found that, obesity between men and women ranged between 52% and 72% in both genders respectively (Health24, 2010).

Up to date national estimates of NCDs and its associated risk factors in the SANHANES (2013), continue to depict that even though the prevalence of obesity amongst males and female remains high, the female population across all racial backgrounds yields to high percentages (Stokes et al., 2017). In support of the above statement the SANHANES (2013: 72) found that in reference to

gender categories, the prevalence of obesity and overweight is higher amongst urban male dwellers 34% than those 26% in non-urban areas. Furthermore the study (SANHANES, 2013: 72) showed similarities when looking at the prevalence of obesity and overweight among urban women 68% and non-urban women 66% in that order.

An investigation conducted by the SANHANES (2013: 70) found that respondents are most likely to report a family history of 30.9% high blood pressure, 20.7% history of high blood sugar. Moreover there are fewer respondents that reported to having a family history of stroke 8.9% and heart diseases 7.6% such as angina, chest pains and heart attack. Even though both genders show a great deal of disparities between the genders, it has been reported that the rate of all NCDs tend to increase with age. According to Peer et al. (2012) there was an increase in the prevalence of diabetes in both genders from 1990-2008, highest prevalence was recorded in the adult population.

SANHANES (2013), provides an extensive outline of the data on the state of NCDs and its associated risk elements. When examining the self- reported family history of the chronic conditions listed above, a high rate of occurrence was predominant in five provinces (Free State, Western Cape, Eastern Cape, KwaZulu-Natal and Northern Cape) out of nine. The province that had the highest rate of self-reported cases for all four NCD's was Free State; with high blood pressure (45.8%), high blood sugar (26.7%), stroke (14.5%) and heart diseases (14.2%) respectively (SANHANES, 2013: 70).

2.6 Undernutrition A Consequence of Food and Nutrition Security

The issues of food and nutrition security are still prevalent in certain population groups here in South Africa. The prevalence of food insecurity as outlined in data collected in a research conducted by NFCS and SANHANES, showed a decrease in the prevalence of food security from 52.3% of households in 1999 to an estimated 26% during the year of 2012 (Shisana et al., 2014). Conversely research conducted by SADHS (2016:145) found that an average of 45.6% of South Africans in 2012 was deemed to be food secure, however 28% of the population were exposed to the hunger risk. When examining the study on SANHANES, the definition outlined of food security was based on an indicator of hunger. This indicator was developed through the Community Childhood Hunger Identification Project (CCHIP) (Wehler et al., 1992).

However a study conducted by the SADHS (2016: 145) revealed that, the high rates in the prevalence of hunger is higher within urban informal settlements. The highest prevalence of

hunger in urban informal is 36.1%; compared to rural areas in which the prevalence is 32.8% and the urban formal was 19% (SADHS, 2016: 145). Moreover research has found that the African racial group categorized as black had the highest prevalence of food insecurity of about 30.3% respectively, followed by the coloured racial group 13.1% (SADHS, 2016:145). Another burden that is ascribed to food security and poverty is stunting which poses a huge threat to undernutrition compared to underweight and severe wasting.

Stunting is a resultant of chronic malnutrition, to be more specific it is a true reflection of nutritional deficiency and other illnesses occurring as a result of unhealthy diets during the growth and developmental stages of children (UNICEF, 2017). Labadarios et al. (2005) argues that the prevalence of wasting was 0.8% during the year 1999, the prevalence of underweight 3.7% and stunting was 21.6%. According to the estimates outlined by the SANHANES (2013: 206) the prevalence of wasting and severe wasting is 2.9% and 0.8%; underweight and severe underweight 5.8% and 1.1%; and stunting 15.4% and severe stunting 3.8% amongst all children between ages zero to fourteen years. Other forms of malnutrition are also evident. Studies have found that the prevalence of Anemia among women and Vitamin A deficiency in children has shown a decrease over the past decade, even though it remains high.

2.6.1 The Determinants of Over and Under Nutrition in South Africa

A person's nutritional status, growth and development can be defined by dietary and risk behaviour at an individual level. Nevertheless the WHO (2003) argues that the factors outlined in the sentence above will not occur in space but within an economic, political, environmental and social context that can promote their health or worsen it. Additionally the existence of under- nutrition is a resultant of multiple of singular etiological process. These include illnesses such as the prevalence of infectious diseases; environmental and social factors such as natural disasters and poverty (May & Timæus, 2014). The factors outlined above are usually associated with an absorbed nutrient intake, or decreased or both (Joosten & Hulst, 2008).

SANHANES (2013), the NFCS of 1999 and other related surveys (Saloojee et al., 2007) found that the leading determinants of under-nutrition prominent in South Africa include the following: lack of food; poor environmental hygiene with conditions that lead to infection; HIV/AIDS; Tuberculosis; sub-optimal intake of food due to early cessation of breastfeeding or low breastfeeding rates as well as recurrent infections. The rate of under-nutrition has been found to

be amongst the highest within the poor populations, whereby there's a highly notably percentage of black South African that reside in rural areas (Steyn et al., 2006). In the Southern region of Africa and elsewhere there are multiple determinants that have been found to play an influential role in the nutritional status of a person (Joosten and Hulst, 2008).

Over the period of time these factors often evolve, they become modifiable or non- modifiable thus they can either act directly or indirectly in influencing an individuals' nutritional outcome. When examining the non- modifiable risk factors associated with obesity, one should take note of the following factors such as genetic makeup, race, gender and age in an individual level (Jones-Smith et al., 2012; Owolabi et al., 2017; Mphekgwana et al., 2022; Nglazi & Ataguba, 2022). Modifiable risk factors encompass structural and social determinants associated with rapid urbanization, including behavioural factors. The risk factors mentioned above can be modifiable by policy interventions and adopting a healthy lifestyle.

2.6.2 The Prevalence of Covid-19/ Corona Virus and Its Impact on Food and Nutrition Security

Although the research for this thesis was undertaken prior to the Covid-19 pandemic (2020-2022), it is necessary to briefly comment on the impact of the pandemic on food security. When looking at the global statistics of the pandemic, studies show that by July 2020 there was an average of about 3,603,856 Covid-19 cases with a total of 95,093 deaths (NICD, 2022). On the 30th of January 2022 the NICD (2022) institute reported that there were an average of 2226 new COVID-19 cases in South Africa, with a total number of 3,605,222 laboratory confirmed cases. Additionally, COVID-19 fatalities recorded within the same time period were 95,022 (NICD, 2022). Willy et al. (2020) has found that, COVID-19 result to negative economic growth, that tenuously affect the economy, food system and health support services. In a global scale, researchers have found that the COVID-19 pandemic has hit hard in the agricultural and food sector. According to May and Mentz- Coetzee (2021) the pandemic occurred when farmers were in the verge of transforming their agricultural sector with expectations of improving the food security of the country.

The prevailing disruptions brought by COVID-19 on food and agriculture have put the food security of people from different regions on the line (Zurayk, 2020). Such disruptions together with the strict lockdown measures have an effect on factors relative to food systems such as food demand. May and Mentz- Coetzee (2021: 02) argue that the negative impacts of the pandemic

have "a potential to disrupt positive trends in food systems that existed before the before the pandemic, including declines in undernutrition and improved nutritional outcomes". A larger portion of the most vulnerable population group often suffer the most consequences as the cases of infections increase. "Different government departments and other stakeholders have adopted measures to reduce the spread of the virus, and thus influence the global food systems" (Siche, 2020: 6). According to Willy et al. (2020), the spread of the Corona virus has been associated with acute health and socio-economic repercussions within the African continent.

Since the outbreak of COVID-19 many studies such as Kerr (2020); Siche (2020); and Willy et al. (2020) have been dedicated to evaluate and verify the impact of the virus on agriculture, agricultural trade (Dauda, 2010; Barichello, 2020; Mouloudj et al., 2020) and consumer food demand responses (Moseley and Battersby, 2020; Pais et al., 2020; May and Mentz-Coetzee, 2021). Research has found that despite the strict lock down measure that took place during the pandemic retail stores, restaurants and grocery stores were depleted promptly by consumers (Kolodinsky et al., 2020: 6). To effectively mitigate the negative effects of COVID-19 on food security, there should be initiatives that seek improve local productions and limited food supply chains (Seleiman et al., 2020). Furthermore the prevalence of the COVID-19 outbreak has yielded to major disruptions in global food supply chains, has raised more concerns about the nature of food security in the near future.

2.7 Conclusion

This chapter has provided an in-depth and a more detailed comprehensive discussion on the subject matter of this study with the help of relevant literature. The conceptual framework of reference included an outline of the dynamics of nutrition and food security, an examination of its elements such as its drivers. The relationship between food and nutrition security provided an outline of mixed evidence on the association between nutrition literacy; urbanization and urban food security; determinants of consumption patterns and food choices. The chapter further evaluated the consequences of nutrition and food security. As far as the research is concerned, the evidence and argument provided in this chapter, identifies that there is room for more research. Which is aimed to increase one's understanding of the current knowledge on the topic of food and nutrition security. This thesis serves as a contribution to this literature.

Chapter Three: Delineation of The Case Study Area (Khayelitsha)

Introduction to Chapter Three

The aim of this chapter is to give an outlined presentation of the information with regards to the selected case study area, and it will also present the methodological approaches employed in this study. The first parts of the chapter provide us with an extensive overview of Khayelitsha the case study area of this research. This chapter's outline will present the settlement history, the location, the socio-economic characteristics and the demographic profile. Later stages of the chapter will attend to the type of research design to be used in the study and the type of methodology that will be applied in this study that comprise of qualitative and quantitative methods of data collection.

3.1 A Brief Settlement History of The Study Area

The initial establishment of Khayelitsha in the early eighties was meant to accommodate Black Africans who resided in Cape Town and its surrounding areas, this was made possible by the apartheid government under the Group Areas Act (Seekings, 2013; Staff and Kelly, 2017). The Group Areas act made it possible for city planners of that time to demarcate specific areas for Black Africans and Coloured labourers. The main reasons for these two races to be removed was because the residential areas that were close to the city were reserved for the white settlers (Seekings, 2013).

Khayelitsha emerged in 1985, the establishment of the area occurred after the fall of the Pass Laws in 1987 and the Group Areas Act in mid-1991. The population of Khayelitsha rapidly rose at a phenomenal rate as it accommodated an influx of people who came from the Eastern Cape. These people came to Cape Town in search of better employment opportunities, better services and facilities (Seekings, 2013). To date, Khayelitsha is the fastest growing township in South Africa with an estimated population of 456 267 residents in 2023 (Western Cape Government, 2020). This population comprises of established and new residents, both affluent and poor and both young and old.

The area came to fruition in 1985 after the banning of the pass laws in 1987 and the collapse of the Group Areas Act in 1991. As the years passed by the area of Khayelitsha was a hub for people who came from the eastern cape in search of better social services, facilities and better employment opportunities (Seekings, 2013). This influx has made Khayelitsha to become the fastest growing township in South Africa with an average of 451 616 residents in 2022 (Western Cape

Government, 2020). Within the area of Khayelitsha there are varying degrees of social strata with new and old establishments that house the young, old, affluent and poor.

Figure 1: Map of Khayelitsha (Census, 2011)

3.2 Governance and Participation in Khayelitsha

The study area Khayelitsha forms an essential part of the Metropolitan Area of Cape Town. To fully make up for the political and governing structure of the metropole, there is a ward committee, sub-council, city council and ward council (City of Cape Town, 2012). As far as the governance of the case study area is concerned, the city council's obligation is to occupy the highest structure of governance (local governance) in Cape Town. The main function of the city council is to make decisions on the budget of the metropolitan, enters into agreements on service levels with private sectors that engage in business within the area (City of Cape Town, 2015). Additionally the city council's duty serves to set tariffs for services, rates, it also engages in the implementation of by-laws then decides on the metropolitan's budget. The city council's main role is to govern through the sub council within a given area.

The area that comprises of three to six neighbouring wards is known as the sub council, when defined in terms of geographical location (Kelly & Staff, 2017). The duty of the sub councils within the area is to serve as a mediator of the local communities and the City Council. All the stakeholders mentioned above are report to the manager. The manager is appointed by an executive

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mayor of the metropolitan, the duty of the executive mayor is to run and regulate the administrative affairs of the city's sub council (City of Cape Town, 2015). The sub councils render services to the residents by engaging with them on issues that affect the metropolitan. The services mentioned above include issues related to maintenance, requests of service delivery, reporting faults, planning and building applications and other related services. The city of Cape Town's metropolitan structure is made up of 24 sub councils (Seekings, 2013).

The jurisdiction of Khayelitsha falls under sub council nine and ten. Sub council nine comprises of six wards that can be found on the north- western section of Khayelitsha next to the N2 found in the east and north (City of Cape Town, 2013). There are also six wards in sub council ten which span the central part of Khayelitsha. The area Mitchel's Plain can be found on the western parts of Khayelitsha and the N2, Khayelitsha and Mitchel's Plain form boundaries (City of Cape Town, 2015). The northern and eastern parts of Khayelitsha form boundaries with the False Bay coastline and other sections of Khayelitsha. The wards mentioned above form a group of neighbouring suburbs that are managed together and they act as a link that connects its communities to the city (Kelly & Staff, 2017).

The person who is usually in control of each ward is called a ward councillor who gets voted for into office by all the registered voters of the community that they represent. The statement mentioned above means that ward councillors are politically affiliated leaders and their function is to serve as the chairperson of their ward committees. To determine and to assess the basic needs and priorities of the people, the ward councillor engages in constant communication with the people to determine their priorities and needs (Dinbabo et al., 2017). This medium of communication helps the ward councillor in making possible recommendations on issues that are affecting the ward directly. There is also community based organizations (CBO) which are voluntary organizations that represent and reflect the groups with common goals or interests. The organizations mentioned above comprises of ordinary people that engage in discussions of social, economic and political issues that are prevalent within the community.

3.3 Socio Economic and Demographic Profile
3.3.1 Population

The ethnic make-up of Khayelitsha is made up of predominantly 90.5% Black Africans, followed by 8.5% of Coloureds and a minority of 0.5% of Whites (Kelly & Staff, 2017). Western Cape Government (2020), the study area comprised of an estimate of about 442 721 people in 2020, 447 120 in 2021, 451 616 in 2022 and 456 267 in 2023, who come from different socio- economic backgrounds. Women are found to be dominating in the female to male ratio with a total of 52% of the female population and 48% of males (City of Cape Town, 2015; Kelly and Staff, 2017).

The Khayelitsha sub-district population female estimate presented by the Western Cape Government (2020), showed that there was a total of 226 297 women in 2020; 228 790 in 2021; 231374 in 2022, and 234 052 in 2023. On the other hand the Khayelitsha sub-district population estimate for males in 2020 was 216 424; 218 330 for 2021; 220 242 in 2022, and 222 215for 2023 (City of Cape Town, 2020). The above-mentioned statistics have made most of the households within the area to be headed by a youth population and a predominately female headed households (Khayelitsha Community Trust Annual Report, 2011).

3.3.2 Religion

The Christian religion is the most dominant religion in Khayelitsha, with an estimate of about 100 churches (City of Cape Town, 2013; StatSA, 2017). Besides the dominating Christian religion there is a small percentage belonging to the religion of Islam, with an average of 20 mosques. In Khayelitsha different congregations have erected structures and built their own congregations while others will often utilize any spaces (open land) that are available for worshipping (Seekings, 2013). The existence of many places of worship plays a crucial role in developing the resident's spiritual realm, physical well-being and humanitarian development programs (Kelly & Staff, 2017).

3.3.3 Education and Literacy Rate

The community of Khayelitsha has a handful of private schools, it has 33 registered public primary schools and approximately 19 registered public secondary school (City of Cape Town, 2015; StatSa, 2017). Despite the high number of formally built schools, the educational system and the quality of teaching in the area is quite low. According to Kelly & Staff (2016) most educators

employed in Khayelitsha are underqualified. Within the classrooms of Khayelitsha there is often inadequate learning facilities that are prerequisite of quality learning.

In site C, B and D of Khayelitsha students are often crowded in a single desk, with two or more people. The highly congested classrooms coupled with low quality education can yield to more students to drop out in high schools (Ibid, 2011). Most of the parents in Khayelitsha enrol their children in formal technical and vocational training, this also helps mitigate the number of dropouts. These technical and vocational training centres offer a wide range of training skills such as administration, technology, artisans (boiler makers), agriculture, building, plumbing, knitting and dressmaking (Ndingaye, 2005; City of Cape Town, 2012). The training programs outlined above become effective tools that provide the youth of Khayelitsha with skills that will help them in securing jobs or employment opportunities.

3.3.4 Socioeconomic Characteristics

The entrepreneurial spirit, rich culture and diversity of Khayelitsha has made it to become a vibrant township (Seekings, 2013). In contrast to the statement above Khayelitsha is amongst the most disadvantaged communities in Cape Town (Ndingaye, 2005). The community is cut off from the city's business Centre, this is an area whereby major works are concentrated (Ndingaye, 2005; Hall, 2013). Most of the economic activities in Khayelitsha are made up of informal trading, with limited retail functions with relatively few formal businesses (Ibid, 2016). The informal business in the community includes street vendors engaging on the sale of fruit, vegetables, red meat, art crafts and braai sausages.

There are other services that can be found within the community these are repair works, hair dressing, mechanical workshops and a car wash amongst others. There is also formal work that can be found within the community that includes security services (10%), domestic work (19.4%), skilled manual labour (15.2%), service work (15.2%) and unskilled manual labour (11%), (Seeekings, 2013; City of Cape Town, 2015). There are fewer job opportunities that are offered by the formal business sector mainly because there are few informal jobs. A majority of the residents in Khayelitsha have resorted to the informal sector for employment and job creation opportunities. According to research reports the unemployment rate amongst the age group of 15- 64 years is 38%, within this percentage a majority of 50% of young men aged 23 are unemployed (Ndingaye, 2005; Seeekings, 2013; City of Cape Town, 2015).

Furthermore, the households of Khayelitsha reportedly earn a low average income when compared to other communities found within Cape Town (Ndingaye, 2005; Seekings, 2013). For example most families in the community have an average annual income that is R20 000 compared to the city's average annual income of R40 000 (Census, 2011; Kelly, 2013; City of Cape Town, 2015). A majority of the households, about 73.7% earn an income of R1 and R 3 200 on the other side there's a population of about 18.8% that have no source of income (Census, 2011; City of Cape Town, 2013). To help with the unemployment rate faced by the majority of residents in Khayelitsha, the government offers support in the form of social grants (Ndingaye, 2015; Dinbabo et al., 2017; Kelly and Staff, 2017). Residents of the community receive an average of about 10 000 disability grants, 87 000 child support grants and 11 000 old age pensions on a monthly basis (SASSA, 2016).

3.3.5 Housing Facilities

There is an average of 44.6% of residence that are found in (squatter camps) informal settlements (City of Cape Town, 2015). A majority of 57.45% of the population occupy informal settlements with poor infrastructure that lack a number of basic services (sanitation), social amenities (parks), and are overcrowded (Ndinagaye, 2005; Kelly, 2013). The above statement is evidence that the issue of security and housing in the area should be a prioritized issue. Available research by (City of Cape Town, 2013; Dinbabo et al., 2017; Kelly & Staff, 2017) argue that an average of one in three people in Khayelitsha walk a distance of about 200 metres to access water, this is evident despite a majority of 61% that have piped water in their houses or yards. In terms of proper sanitation facilities 6.6% of the population use bucket toilet systems, 3.4% uses chemical toilets, 4.1% utilize septic toilets while 10% have no access to toilets (Dinbabo et al., 2017).

3.3.6 Health Status in Khayelitsha

There has been a high prevalence of communicable and non-communicable diseases in Khayelitsha. The Khayelitsha Community Trust Annual Report (2017) and the City of Cape Town (2015) argue that there was a high HIV rate of infection amongst pregnant women 31.1%, with a 70% of TB/HIV co- infection. In 2003 the area witnessed a decline on the infant mortality from 42 deaths per 1000 child births to 32 per 1000 live births in 2015 (Ibid, 2011). The reduction in infection rates can be attributed to the implementation of Antiretroviral (ARV) and the Prevention of Mother to Child Transmission (PMTCT) programs that were rolled out in the township. Even

though the interventions of HIV/AIDS, the epidemic is one of the leading causes of deaths in children between the ages of 1-4. Dinbabo et al. (2017) has noted that another major concern in the area is the high prevalence of being overweight and obese.

3.3.7 Criminality and Violence in Khayelitsha

Seekings (2013) argues that because of their harsh living conditions residents of Khayelitsha often consider crime, thus moving around after dark is a major constraint and it is a main source of social anxiety that occurs even in daytime. Due to the high prevalence of crime, the township of Khayelitsha has been ranked to be amongst the highest rates of reported murders in the country. The statistics outlined by the police have found that between 2012/2013 there was an estimation of about 354 murders that were committed (Khayelitsha Commission of Inquiry, 2014).

According to the Khayelitsha Commission of Inquiry (2014), a total of 41.3% of respondents in the area have been a victim or had to experience crime. Gangster-ism is ripe in the area and the community members have once experienced certain form of criminal vices, these include amongst others theft, common robbery and armed robbery. Available evidence gives the suggestion that the number of criminal offences that are reported to the police have a ratio of six out of ten reports on the committed offences. Moreover there is a strong compelling evidence that suggests that the young adults in Khayelitsha experience recurring forms of violence in different stages of life, covering areas such as social vices of entertainment, public gatherings, schools and within their communities (Ndingaye, 2005; Seekings, 2013; Kelly & Staff, 2017).

The township of Khayelitsha is currently under significant development that intends to transform the lives of its inhabitants despite its demographic and socio-economic description. According to Smith et al. (2016) the community of Khayelitsha has been reserved to be turned into a fully functioning suburb by the 2020, that is why Khayelitsha has remained to be one of the urban renewal nodes. Since the proposed year of development, Khayelitsha has been transformed into a township whereby the community members are in collaboration with its governing structures, private sectors and other relevant stakeholders to create a better living environment. Since the transformation process, the area has created different social amenities such as the race- course, public swimming pools, libraries, rehabilitation centres, shopping malls, social housing and other facilities (Khayelitsha Commission of Inquiry, 2014).

According to the Khayelitsha Commission of Inquiry (2014) the closing statement mentioned on the paragraph above, has made the township to be a tourist host or destination and example would be the Lookout Hill, which has been marked as a tourist hub. The area has been a tourist destination that has attracted the attention of celebrities who visit the place from time to time to bear witness to the traditional craftworks (Smith et al., 2016; Dinbabo et al., 2017). This gives a suggestion that the township of Khayelitsha and its community members have higher chances of creating a brighter future even though the area still needs further developments. The township has steered the direction of growth to its full potential.

Khayelitsha is currently undergoing a significant transformation despite its socio-economic background. Due to the cooperation of the community members, government, and private investors, Khayelitsha is gradually becoming a safe and harmonious environment. There are various businesses (formal and informal) that can be found within Khayelitsha. The informal sector comprises of different businesses such as street vendors, restaurants, fruit and vegetable hawkers.

On the formal sector side there are three prominent shopping centres; Khayelitsha Shopping Centre the largest mall in the area, Site B Shopping Centre and Site C Plaza (Dinbabo et al., 2017). Tourism in Khayelitsha is increasing for an example Lookout Hill is a hub venue for township tours. Researchers like Smith et al. (2016); Kelly and Staff (2017), argue that Khayelitsha's increase in traditional workmanship has created an exposure for the township and from time-to-time Hollywood celebrities visit the area.

3.4 Research Design and Methodology

3.4.1 Research Design

Scholars such as Hiver & Al-Hoorie (2019), and McKinley (2019), argue that research design acts as a blueprint on how research will be conducted. For Babbie and Mouton (2001), an appropriate research design has the ability to gather relevant information to answering specific research questions. There are two key research designs that are found within the research field of social sciences. These are namely the primary collected data and secondary data analysis (Abbott, Mckinney, 2013). A method that has been popularized, secondary data analysis which will be the research's point of departure has become an increasingly popular method of enhancing an overall efficiency of research. Additionally, it involves the use of primary collected data from previous research as means of addressing a different discourse (McKinley, 2019).

According to (Cordray, 2001; Smith et al., 2011; Brink et al, 2012), this approach strengthens the confidence in findings gathered from the primary research it also enhances cost efficiency. This research will then draw on primary data, based on a research that was conducted by the ISD (Institute for Social Development in 2017 at the University of the Western Cape which covered a topic on food choices. The study was conducted in Cape Town and targeted areas such as Khayelitsha and Mitchells Plain. The study used a mixed method for data collection that involved quantitative and qualitative approach.

Research conducted by ISD provides primary set of data that is more relevant to this research, as the information that was gathered will act as a guideline in answering the research questions conveyed by this proposal. The study made it possible to identify the type of impact that exist in gender differences on the eating patterns, consumption insights of food in our societies. The design of this research has been crafted in a manner that can be able to examine our assumptions on the kind of influences that household food choices and consumption patterns might create on consumer behaviour (Dinbabo et al., 2017).

3.4.2 Sampling Approach

As far as qualitative research is concerned the process of sampling occurs at different stages, while collecting data, while interpreting and reporting on it. The purpose of sampling is to make statistical inferences and observations about a certain population. Sampling involves the process of statistically selecting a subset (sample) of a population of interest (Campbell et al., 2020). Random sampling is the most recommended sampling method in the field of social science research. However according to Campbell et al. (2020), this does not suggest that it is the only technique that is applicable to achieve representativeness.

A two-stage cluster technique was used in a study conducted by the ISD research team. The first cluster involved selecting households using a probability proportion to size and the second involved an actual selection of households. There were a total selection of 2120 respondents from 532 houses in Khayelitsha and 2100 respondents gathered from 519 houses in Mitchell's Plain. The quantitative and qualitative data that will be analysed by this research will be from the 532 households from Khayelitsha. When broken down the 2120 respondents of Khayelitsha comprise of 710 children from the ages of five to eleven years and 1410 adult respondents between the ages of eighteen and more. The data collection process started on 19th of May 2016 to 29th June 2016.

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Each respondent was given a two-hour time frame to complete an individual interview. Data gathered include information relating to the respondents' weight management practices, health awareness status, eating habits and perceptions of obesity. Moreover data gathered utilized a 24-hour recall on a respondents' diet that focused on respondents' food choices, consumption patterns, employment status, household characteristics, household profile, BMI and income sources. With reference to the statement outlined above this study's intention is to conduct an evaluation of household food choices, consumption patterns and health implications; therefore the attention focused on adult population. The information brought from this research revolves around the demographic profile, weight management practices, socio- economic characteristics, perceived health status, and eating patterns, income source and income levels of the respondents.

The primary study had a total of 50 semi- structured interviews that were conducted in Khayelitsha. Within the 50 interviews, 20 were conducted with children (age 5-11) and the remaining 30 were conducted with adults between the ages of (18 and above). The interviews were carried in such a way that they gave the researchers an in-depth insight on complex factors influencing food choices, consumption patterns and the health implications. According to Henning (2004), interviews functioned as 'communicative events' that help in revealing the thoughts or feelings of participants regarding specific issues such as food choices and weight management practices.

Moreover, there were three Focus Groups Discussions (FGDs): the first one was conducted with a mixed group of females and males, the second one was with children only and the third one was with women only. The duration of focus groups lasted up to two and a half hours with respondents that came from different areas in Khayelitsha with a minimum of seven to twelve participants. The information on the qualitative research presented in this study was extracted from interviews that were semi- structured and focus group discussions. Furthermore the use of qualitative data in this study was obtained from responses on factors that influence food choices, consumption patterns, weight management practices and health implications.

To efficiently extract the information, there was a need to examine the relevance of the information gathered if they answer the research questions posed in the study. Sensitive and confidential information was kept on the recruitment process, the field work experience of fieldworkers and the methodology on qualitative data collection process. The above mentioned acted as the base to the provision of careful and consistent data collection processes. There was a need to access these

records so that the recorded interviews can be thoroughly checked for accuracy and clarity of responses from the participants. Moreover the interviewing procedure was checked to ensure that they adhered to the stipulated research protocols. The interviews conducted were in compliance with the protocol and accurate. Moreover the interviewing procedure was checked to ensure that they adhered to the stipulated research protocols.

3.4.3 Qualitative Data Analysis

According to Mihas (2019) "the notion of quality is essential to the nature of things" this statement was made in an attempt to distinguish between qualitative and quantitative data. The word quality is often used to depict the question of why, when how, what and where of a thing- its ambience and essence. Qualitative research can then be referred to the characteristics, descriptions, metaphor, meanings, concepts, definitions and symbols of things. Cohen (2007) on the other hand defines qualitative research as a process of making sense from themes, categories, regular similarities, corresponding patterns, opinions of situations and research participants' views. There is a common objective that is reached by scholars in defining qualitative data analysis even though they can define or interpret it in different ways. The analysis of qualitative data requires an inductive process whereby data is organized into identified patterns and certain categories (Mihas, 2019).

The main study conducted by Dinbabo et al. (2017) consisted of a total of 50 semi-structured interviews that were conducted in the study area of Khayelitsha. Out of the 50 interviews 30 comprised of adults' participants between the ages of 18 and above; 20 were conducted with children aged (5-11). The analysed qualitative data found in this study was obtained from the interviewed transcripts relating to the factors that influence eating patterns and food choices of the people that reside in Khayelitsha.

The focus of this research was to interview 30 adult participants from the ages of eighteen years and above. The first stages of the analytic process worked through each transcript to get rid of texts that are not directly related to the research topic. After the refining process of the transcripts, the text was divided into "meaning units", that categorized each text into codes. Meaning units when defined according to Mostyn (1985), cited in Amada, et al. (2020) refers to a discrete sentence, series, or phrase that conveys one set of perception or related ideas. The structural and thematic approaches guided the coding process.

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As far as the development of themes is concerned, codes had to be identified and developed. This process allowed for the data organizing process to be based on emerging categories and themes. The research questions acted as a guideline for the development of codes as the process of analysing the data evolved, codes were merged into relevant categories. As this process commenced there was a need to develop descriptive statements derived from documents, observational notes and the participant's quotes obtained from interview transcripts. After the assignment of preliminary codes, the information was grouped into themes. This process allowed the researcher to compare and contrast each coded narrative until all categories had developed into identifiable structure.

The process mentioned above according to Bowen (2009), does not only help with the process of refining thematic patterns, it assists in creating a structure that can be narrated in a logical, reliable and valid relationship between the questions posed within the research and the research findings. After the preliminary analysis there was a need to perform an inductive and detailed conventional analysis of the research content. This analysis involved a more detailed category formation and coding guided by the data with intentions of describing and exploring rather than to confirm or prove an observed phenomenon. In specific terms the narratives were read over and over again, this resulted in separate texts fragments to be assigned with the thematic codes to help with answering the research questions by using words altered by the participant.

3.4.4 Quantitative Research

Kumar (2010) defines quantitative data analysis as a discourse in social sciences whereby a researcher takes an informed decision on what to study, asks specific narrow questions, and engages in the collection of quantifiable data from participants. It also involves a process whereby the researcher analyses numeric values with statistics, followed by conducting an enquiry in an objective and unbiased way (Hiver & Al-Hoorie, 2019). In quantitative research there is an emphasis on collecting and analysing information in numerical terms and collecting scores that measure distinct attributes of individuals and organizations.

Additionally, quantitative research involves an emphasis on the procedures of comparing groups or factors relating to individuals or groups in experiments, surveys and correlational studies (McKinley, 2019). For this particular study the researcher shall engage on the analysis of quantitative data gathered by the ISD on perceived health status, demographic characteristics,

eaten patterns and income levels in Khayelitsha, this will be done using a structured questionnaire. The research focused on respondents from Khayelitsha which covered a total of 532 households. There were a total of 2120 respondents from Khayelitsha, comprising of 710 children and 1410 adult respondents. The focus of the research was based on the 1410 adult respondents between the ages of eighteen and more.

For Babbie and Mouton (2001) univariate data analysis involves an analysis of singular variables. This leads to the establishment of descriptive statistics which allows for the researcher to be able to give a description of the trends in data. The above mentioned is also essential in determining the kind of relationship that exist between the variables. Descriptive statistics shall be presented for this study with the use of demographic information like education, income level, gender, religion and age. The study shall also consider the application of descriptive statistics on the types of food consumed by the people of Khayelitsha. To depict the above-mentioned statement the data will have to be presented in the form frequencies and measurements will be expressed in the form of a pie chart, a bar- graph and tables.

3.4.5 Research Hypothesis

The research seeks to prove this underlying assumption:

The impact of television, food choices and household food consumption patterns are not homogeneous and health implications show variations in each household.

3.5 Operationalization and Measurement of Key Variables

According to Babbie and Mouton (2001) the operationalization process must intend to provide an applied implication of the main theoretical concepts that are used in the study's hypothesis or question. In this research, these ideas are inclusive of dependent variables (consumption patterns and weight regulation) and the independent variables (one's socio-economic status).

The socio-economic status: Is measured using different forms of proxy variables such as income and education. The process of measuring the variables outlined above acts in correspondence with a set of indicators that are thoroughly defined and can be stated as follows;

Income Status: Measures how much income one earns on a daily, weekly or monthly basis.

Eating Habits: Is measured by an individual's eating frequency together with the types of foods consumed and food elasticity (how much shelf life does the food have).

Education: This is measured by the highest educational level attained.

Weight Control Practice: This can be measured by tracking one's physical activities (dietary practices and physical exercise) that is directed at weight control.

Chapter Four- Eating patterns in Khayelitsha

Introduction to Chapter Four

The intention of this chapter is to give an outline of the quantitative data   of the research, followed by a detailed discussion of the quantitative research findings. The findings discussed in this chapter are derived to inspect the relationship between food choices, consumption pattern and the underlying health implications in Khayelitsha. Moreover the quantitative data analysis seeks to give a response to the research questions outlined in the first chapter. The initial stages of the chapter will give an outline of the quantitative characteristics of Khayelitsha, access to basic social services, determinants of food choices, weight management practices and health status.

A detailed discussion will then follow on the factors of food choices with reference to the research hypothesis that was developed in the methodology section. In the methodology section we made an emphasis on one thing. That is, the research hypothesis stated that Food choices and household food consumption patterns are not homogeneous and health implications show variations in each household. The chapter's concluding section will present a qualitative analysis of the respondent's dietary behaviour and weight management strategies.

4.1 Household Characteristics of Khayelitsha (The Case Study Area)

4.1.1 Gender and Age Distribution of The Case Study Area

The study area of Khayelitsha had a total of 1410 adult respondents that participated in the study. The primary studies in which this research draws its insight from was conducted in 2017 at the University of Western Cape, by the ISD department. As it can be evident in figure 5.1, the ratio of the sample was 63% female and 37% male respectively. The above percentages depict obvious difference in gender ratios. As far as statistical analysis is concerned the differences outlined above are noted as default findings due to the varying ratios. According to the City of Cape Town (2012) the gender statistics from 2011 observed that in Khayelitsha there are more females than males, this confirms the female to male ratio depicted below.

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Figure 4.1: A Pie Chart Representing Gender Distribution of Respondents.

The Gender Distribution of Respondents

37.27%

62.73%

Female   Male
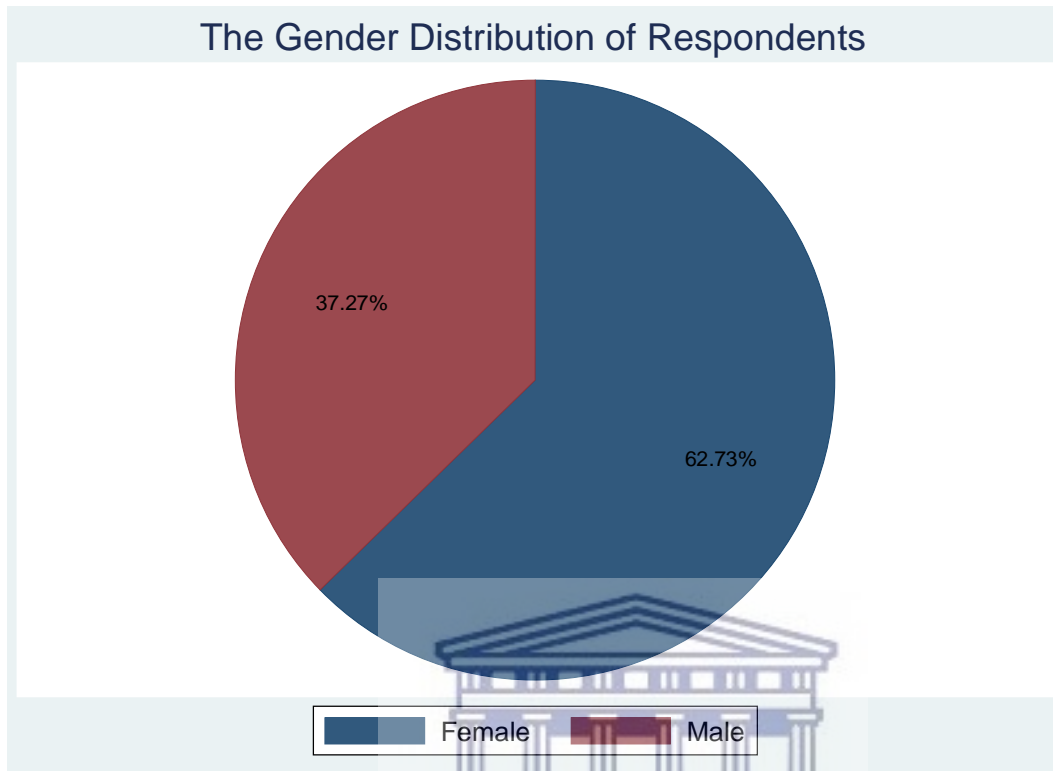
Survey data, 2017.

4.1.2 Racial Distribution of The Case Study Area

In South Africa's historical records racial segregation remains a distinctive feature to its population, which prevails in political, economic, environmental and social aspects. Up to date the racial segregation as a categorical element still has a major impact on the distribution and availability of opportunities, programs and resources that are aimed at developing the country and its population. That is why it is an important factor, to take the racial dynamics in to consideration when studying the socio- economic status of South African townships. This research had to explore the respondent's racial distribution. As it is shown in Table 5,2, the majority of respondents were 'Black Africans' 99.5%, Coloured were 0,3 % and Asians 0.2% respectively. The percentages mentioned above do not come as a surprise, because they depict what is normally expected in a former black township.

The Racial Distribution of Respondents

Table 4.1.2: The Racial Distribution of Respondent

Race	Female (n= 878	Male (n=528	Total (n=1 404
Don't Know	1.25%	0.57%	1.%
Refused	0.23%	0.19%	0.21%
Indian	0.1%	0.4%	0.2%
Black	99.43%	99.62%	99.50%
Coloured	0.5%	0%	0.3%
Total	100%	100%	100%

Survey data, 2017.

4.1.3 The Age Distribution in Khayelitsha

The age category was divided into three age cohorts, the age category of 18- 39 years had 550 females and 324 males with a total of 874 respondents an recorded a percentage of 62.92% and 37.07% respectively. The 40- 60 age category had a total of 278 females, 189 males with a total of 467 and a percentage of 59.52% and 40. 47% in that order. When looking at the 65 and above age cohort results have shown that there are 47 females and 15 males with a total of 62 and a 75. 81% and 24.19%. When looking at the distribution of the respondents it can be noted that the female population are dominating in all age categories.

Table Showing Age Category of Respondents

Table 4.1.3: Age Category of Respondents

Age Category	Female	Male	Total
18- 39	550	324	874
40- 60	278	189	467
65+	47	15	62
Total	875	528	1403

Survey data, 2017.

4.1.4 Marital Status of The Case Study Area

When it comes to the respondent's marital status, Table 4.3 shows that a majority of 63.7% had never been married, 28.8% are married, 2.8% are cohabitating, 2.6% are widowed and 2% had divorced. Amongst those who are married, men constitute the majority of about 33.5%, while

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https://etd.uwc.ac.za/

women make 25.9% in that order. When looking at the case of those respondents that have never been married, a majority of 65.4% are women and 60.7% are men. In support of the figures mentioned above, Biney et al. (2021) has observed that there are low marriage rates amongst Black African women in South Africa. When looking at the widowed participants, there is a high majority of women 3.6% compared to 1.2%; the divorce rates between the genders were correspondingly 2.6% women and 0.8% men.

A Table Showing the Marital Status Of Respondents

Table 4.1.4: Marital Status of Respondent

Marital Status	Female (n=868	Male (n=516	Total (n= 1 384
Never Married	65.44%	60.66%	63.66%
Married	25.92%	33.53%	28.76%
Cohabitation	2.19%	3.88%	2.82%
Divorced/ Separated	2.16%	3.88%	2.82%
Widowed	3.46%	1.16%	2.60%
Refused	0.4%	0.00%	0.22
Total	100%	100%	100%

 Survey data,2017.

4.1.5 Religious Affiliation of the Case Study Area

Various researchers such as Schoeman (2017); Cabrita & Erlank (2018) argue that many lives of South Africans have been shaped by religion in many ways it also influences people's dietary habits, socio-economic lifestyle and physical activity. The relationship that exists between a person's dietary behaviour and religion for the population of Khayelitsha remains salient because the mosque and churches have an institutionalized primacy. As shown in Table 4.4, there is a dominating majority of 85.2% who are reported to be Christians. This is a direct indication that the study was conducted in a Christian dominated area. Other respondents had reported to being 13.5% traditionalists, within this faith males held the majority of 17.9% and females were 10.9% in that order.

Table Showing the Religious Affiliation of Respondents

Table 4.1.5: Religious Affiliation of Respondents

Religion	Female (n=877	Male (n=526	Total (n= 1 403
Traditionalists	10.95%	17.87%	13.54%
Christians	87.57%	81.37%	85.25%
Don't Know	1.25%	0.57%	1.00%
Refused	0.23%	0.19%	0.21%
Total	100%	100%	100%

Survey data, 2017.

4.1.6 Education Attainment of The Case Study Area

It is widely believed that education has the ability to increase one's employability and help them to sustain positive choices; therefore, education remains an important mechanism for enhancing an individual's wellbeing (Dinbabo et al. 2017). Obtaining education remains one of the most critical demographic elements to consider, because it gives an explanation of peoples informed decisions with regards to how they live their lives. The information provided in Table 5.5 shows the educational attainment of the sampled respondents.

A Table Presenting the Educational Attainment of Respondents

Table 4.1.6: Educational Attainment of Respondents

Educational Attainment	Female (n=876	Male (n=526	Total (n=1 402
Primary Education	10.05%	11.98%	10.77%
Secondary Education	70.32%	70.72%	70.47%
Technical College	7.76%	3.99%	6.35%
Tertiary (University)	7.76%	7.41%	7.63%
Don't know	0.91%	3.23%	1.78%
No Education	2.97%	2.66%	2.85%
Refused	0.23%	0.00%	0.14%
Total	100%	100%	100%

Survey data, 2017.

As depicted on table 5.5 10.8% of the participants have completed primary school, a majority of 70.4% of the participants in Khayelitsha have completed secondary education, 7.6% tertiary education. Nevertheless, the overall results from the study revealed that females were more educated than their male counterparts and have completed higher education.

4.1.7 Employment Status of the Case Study Area

When looking at the employment opportunities Seekings (2013) argues that in Khayelitsha there are few formal jobs with limited government paid jobs, this makes the area to constitute a large informal commercial trading. The City of Cape Town (2015) found that a substantial proportion of workers within the township belong to the informal and low skilled category. The above statement means that there are a few proportions that earn low incomes in Khayelitsha. In order to determine the economic position of the participants' responses, the research had to analyse their employment status. Table 5.6 that follows gives us an illustration of Khayelitsha's employment status.

Table Representing the Employment Status of Respondents

Table 4.1.7(a): Employment Status of Respondents

Employment Status	Female (n=68	Male (n= 44	Total (n112
Employed for salary/ wages	32.35%	38.64%	34.82%
Self- employed	1.47%	6.82%	3.57%
Out of work and looking for work	7.35%	9.09%	8.04%
Retired	19.12%	18.18%	18.75%
Student	4.41%	0.00%	2.68%
Unemployed	35.29%	27.27%	32.14%
Total	100%	100%	100%

Survey data, 2017.

As shown in Table 5.6, that a majority of the about 35% of the respondents are employed, 32.1% remain unemployed, followed by an 18.8% that have retired and an 8% of the population are out of work. Additionally, the male to female proportion of those that are employed and earn wages,

or a salary was 38.6% of men when compared to 32.4% of females. Furthermore, the proportion of the people who are self- employed in the case study area was 6.8% and 1.5% in that order for men and women. When it comes to those who are unemployed and are searching for employment, a bulk of the population 9.1% were men while women were 7.4% respectively. In the case of those individuals that have never experienced employment in Khayelitsha was 27.3% for men and 35.3% for women respectively.

Table Showing the Employment Status of Respondents in Khayelitsha

Table 4.1.7(b): Employment Status of Respondent

Employment Status	Female	Male	Total
Employed for Wages	22	17	39
Self Employed	1	3	4
Out of Work/ looking	5	4	9
A Student	3	0	3
Retired	13	8	21
Unemployed	24	12	36
Not Applicable	7	2	9
Temporary	12	5	17
Permanent	10	14	24
Total	97	65	162

Survey data, 2017.

When looking at employment in Khayelitsha it can be seen that there are 22 females employed for wages and 17 males. Moreover 24 females and 12 males are unemployed, those that are employed on a permanent basis had 10 females and 14 males. There are also those respondents that recorded to be employed on a temporary basis with 12 females and 5 males, there are also those who are employed for wades with 22 females and 17 males. There are 5 females that are out of work and 4 males, furthermore there are 3 males that recorded to be self-employed and one female. Lastly there are 13 females and 8 males that have retired from their place of work.

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4.1.8 Income Levels of the Case Study Area

The income status of the respondents is an important variable in this study, this is mainly because it gives a representation of the basic measures of a person's socioeconomic status. As presented in Table 5.7 the basic income of the participants was R1201- R3600. A majority of about 58% of the population in the study were found to be earning below R3600 per month. The City of Cape Town (2013) also reported similar findings from the study, whereby it found that the households that fall within the lower bracket of income category had an average of 63%, about 16.5% of them have no source of income.

As far as gender distribution is concerned, there were marked variations that were observed in the study. Additionally, the study found that there was a portion that earn between R2401 and R3600, 23.9% are women and men at 20.8% respectively. An almost similar proportion was that of the population that earns between R1201 and R2400, 28.3% for women and 18.1% for men. There is also an additional high percentage of men at 7.9%, women at 7.6% that earn within the income bracket of R3601 and R4800 that were found in the study.

Table Representing the Monthly Income of Respondents

Table 4.1.8 (a): Respondent's Monthly Income

Monthly Income	Female (n= 92	Male (n=72	Total (n=164
No income	1.09%	0.00%	0.61%
R1- R1200	6.52%	16.67%	10.98%
R1201- R2400	28.26%	18.06%	23.78%
R2401- R3600	23.91%	20.83%	22.56%
R3601- R4800	7.61%	8.33%	7.93%
More than R4800	14.13%	16.67%	15.24%
Don't know	10.87%	12.50%	11.59%
Refused	7.61%	6.94%	7.32%
Total	100%	100%	100%

Survey data, 2017.

With reference to the household monthly income, those that earn from R1- R1200 the male population had the majority of earners 12 with a 66.67% total percentage. In the income bracket

of R1201- R2400, a majority of earners were the female population with 26 respondents with 66.67% on the other hand the male population had 13 respondents with 33.33 percent. Again the female population had a majority of respondents 22 in the R24001- R3600 income bracket with a percentage of 59.45% the male counterparts had 15 respondents with 40.54 percent. The income bracket of R3601- 4800 had 7 females and 6 males with a percentage of 53.85% and 46.15% respectively. With those that have an income bracket of more than 4800, there were 13 female and 12 males with a percentage 52% and 48% in that order.

Table Representing Household Monthly Income of Respondents

Table 4.1.8 (b): Monthly Income of Respondent

Household Monthly Income	Female	Male	Total
Don't Know	10	9	19
Refuse	7	5	12
No Income	1	0	1
R1- R1200	6	12	18
R1201- R2400	26	13	39
R2401- R3600	22	15	37
R3601- R4800	7	6	13
More than R 4800	13	12	25
Total	92	72	164

Survey data, 2017.

4.1.9 Income from Social Grants

When looking at respondents' alternative source of income, the analysis of data as shown in Table 5.7, depicts that a majority of about 40.4% of the respondents do receive Child Support Grant (CSG), followed by 34.8% of the population that are old age grant beneficiaries, 7.9% benefit from disability grants and foster care grants are 3.2% in that order. Within the category of the 40.4% who are recipients of CSG, 43.6% are women, men make 36.1% respectively. When looking at the old age grant women take the majority at 40% when compared to 29% men. The above-

mentioned results give an indication that in Khayelitsha, there's a high percentage of dependency rate when it comes to government social services or grants.

Table Showing Income from Social Grants

Table 4.1.9 (a): Household Income from Social Grants

Government Grants	Female (n=92	Male (n=72	Total (n= 479
Child Support Grants (CSG).	43.62%	36.11%	40.36%
Old Age Grants (OAG).	39.56%	28.57%	34.78%
Disability Grants (DG).	7.14%	8.82%	7.89%
Foster Care Grants (FCG).	2.35%	4.35%	3.25%

Survey data, 2017.

When looking at the grant recipients in Khayelitsha, Disability grant to be specific an average of 7.89% of the population are recipients and 92.11% did not receive the grant. Moreover the old age grant had an average of 34.78% and a majority of 65.22% said they did not receive old age grant. Foster care grant recorded a percentage of 3.25% and a 96.75% majority did not receive the foster care grant. Lastly when focusing on child support grant, a percentage of 40.36% did receive the grant and 59.64% did not receive.

Table Showing Social Grants in Khayelitsha

Table 4.1.9 (b): Household Income from Social Grant

Type of Social Grant	Recipient	Frequency	Percent	Cumulative Frequency	Total
Disability Grant	Yes No	12 140	7.89 92.11	7.89 100	152
Old Age Grant	Yes No	56 105	34.78 65.22	34.78 100	161

Foster Care Grant	Yes	5	3.25	3.25	154
	No	149	96.75	100	
Child Support Grant	Yes	67	40.36	40.36	166
	No	99	59.64	100	

Survey data, 2017.

4.2 Food Choices in Khayelitsha

The following section will provide an outline of the social and physical determinants of food choices in Khayelitsha. This will be done by outlining important variables, consumption patterns (meal patterns), consumption of fruits and vegetable, consumption of fried foods, excess removal of fat from meat, the effect of watching television on food choices, health perception and the prevalence of obesity in Khayelitsha.

4.2.1 Meal Patterns

The meaning the word 'meal pattern' is used to give a description of an individual's eating patterns like dinner, lunch and breakfast (Leech et al., 2015). Studies conducted by many researchers have shown that eating during the day reduces the impact of hunger or its sensations, thereby reduces the intake of energy (Holmback et al., 2010; Wang et al., 2014). Additionally, it has been reported that dietary related behaviours like eating heavy foods as well as skipping breakfast are associated with a higher risk of access weight gain (Mattes, 2014; Murakami & Livingstone, 2015; Watanabe et al., 2014). As far as the study is concerned it remains a crucial matter to get an understanding of how weight gain can be correlated with different eating patterns.

The following table 5.8 gives an illustration of the meal patterns of the case study area's population. It can be observed from the table 5.8 below that a majority of the population in Khayelitsha usually eat breakfast, lunch or dinner on an average of 4-5 days a week. On the other, while the regular consumption pattern requires 6-7 days a week regularly, records show that only 22. 04%, 20.3% and 31.2% of the population in Khayelitsha have breakfast, lunch and dinner in that order. There is a low percentage intake recorded for participants that eat lunch on a regular basis. As shown in the study it is also supported by research conducted by Patnode et al. (2007),

the study found that over 70% of the inhabitants of Cape Town based black South African adults go to school without eating breakfast.

Table Representing Breakfast Lunch and Supper Consumption

Table 4.2.1(a): Table Representing Breakfast, Lunch and Supper Consumption

Meals Per Day	Breakfast (n=794	Lunch (n=790	Supper (n=795
0-1 day/ week	9.19%	8.10%	2.39%
2-3 days/ week	19.40%	19.87%	3.90%
4-5 days/ week	49.12%	50.89%	61.51%
6-7 days/ week	22.04%	20.25%	31.82%
Total	99.75%	99.11%	99.62%

Survey data, 2017.

The table below represents meal patterns (breakfast, lunch, and supper) in Khayelitsha. When looking at the frequency of meal patterns (breakfast). There is a high consumption rate for participants who eat breakfast four- five days a week, with 248 females and 142 males, followed by those who eat vegetables six to seven days a week with 116 females and 59 males. With reference to those that eat breakfast 2-3 times a day had 95 females and 59 males, there were 39 females and 34 males that recorded to eat breakfast one day a week. There's also a high number of respondents that have recorded to eat lunch and supper four to five times a day, with 266 females for lunch and 314 females for supper. Males on the other hand recorded 136 for eating lunch for 4- 5 days a week and 175 for supper. There were 97 females that eat lunch 6- 7 days a week and 153 females for supper, males had 63 for lunch and 100 for supper.

Table Representing Meal Patterns in Khayelitsha

Table 4.2.1(b): Table Representing Breakfast, Lunch and Supper Consumption

Meal Patterns	Time For Breakfast			Time For Lunch			Time To Eat Supper		
Frequency of Meal Patterns	Female	Male	Total	Female	Male	Total	Female	Male	Total
Not Applicable				0	2	2	0	1	1
Don't Know				1	2	3	2	0	2

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Refused	1	1	2	1	1	2			
0-1 day/week	39	34	73	37	27	64	11	8	19
2-3 days/week	95	59	154	94	63	157	20	11	31
4-5 days/week	248	142	390	266	136	402	314	175	489
6-7 days/week	116	59	175	97	63	160	153	100	253
Total	499	295	794	496	294	790	500	295	795

Survey data, 2017.

4.2.2 The Consumption of Fruits and Vegetables

An important determinant of a person's nutritional status is determined by their dietary behaviour. For a balanced healthy lifestyle and healthy living, it is a necessity for one to consume nutritious foods. For the possibility of a healthy lifestyle the consumption of fruits and vegetables is largely encouraged because these are highly concentrated with essential nutrients. From the table 5.9 below it is evident that the respondents consume more fruits than vegetables, with 64% of fruit consumption.

In contrast to the above-mentioned statement, the proportion of respondents who consumed vegetables regularly was very low, 20% in Khayelitsha. The overall prevalence percentage of insufficient fruit and vegetable (FV) intake was 68.5% with the mean intake of 4 servings of FV among adults. This is less than the daily intake recommended by WHO of 5 servings of FV (Peltzer and Phaswana- Mafuya, 2012), while the urban 27-44% and rural 12-18% of South Africans who consumed fruits (Steyn et al., 2006).

Table Representing Fruit and Vegetable Consumption

Table 4.2.2(a): Fruit and Vegetable Consumption

Fruits and Vegetable Consumption	Fruits (n=791	Vegetables (n=793
Don't eat	0.76%	0.4%
Never	2.4%	1.4%
Seldom	45.89%	15.4%
Often	26.8%	32%
Always	24.15%	50.8%

Survey data, 2017.

On the fruit and vegetable consumption it can be noted that females are the majority consumers of fruits and vegetables. There are 222 females that recorded to eat fruits seldom, 144 eat fruit often, 117 females always eat fruit, 12 said they never eat fruits and 3 females do not eat fruits. For males those who eat fruits seldom are 141, 74 males always eat fruits, 68 males said they eat fruits often, 7 said they never eat fruits and 3 males do not eat fruits. Female participants tend to dominate even on the consumption of vegetables with 244 that always eat vegetables, 160 said they eat vegetables often, 86 eat vegetables seldom, 8 females never eat vegetables and one female does not eat vegetables. There are 159 males that always eat vegetables, 94 males eat vegetables often, 36 males eat vegetables seldom, 3 males never eat vegetables and two males do not eat vegetables.

Table Showing Fruit and Vegetable Consumption

Table 4.2.2(b): Fruit and Vegetable Consumption

Fruit & Vegetable Consumption	Consumption of Fruits			Consumption of Vegetables		
Frequency of Consuming Fruits	Female (n=498	Male (n=293	Total (n=791	Female (n=499	Male (n=294	Total (n=793
Don't Eat	3	3	6	1	2	3
Never	12	7	19	8	3	11
Seldom	222	141	363	86	36	122
Often	144	68	212	160	94	254
Always	117	74	191	244	159	403
Total	498	293	791	499	294	793

Survey data, 2017.

4.2.2 Food Choices in Khayelitsha

The table below presents the food choices in Khayelitsha, the twelve food groups are categories derived from thirty six food items identified as main food consumed in the last 24 hours by the respondents before the interview. The population of Khayelitsha has a high- level on the consumption of cereal with a total of 26. 97 %, these range from samp (staple food made of maize), rice, mealie meal (for stiff pap/ porridge) and bread. Meat such as, beef products, beef, pork and

chicken recorded a percentage of 17.05; followed by beverages like carbonated drinks, coffee, and tea at 14.39%. There was a low consumption rate of 1.70 % in fish and 1.77 in fruits such as mango and orange.

Food Choices Khayelitsha

Table 4.2.3: Food Choices Khayelitsha

Food Choices	Total
Meat (beef, pork, chicken) 17.05	**17.05**
Beverages (Tea, coffee, cold drinks)	**14.39**
Legumes (peas, beans, nuts)	**2.35**
Condiments (spices, pepper)	**6.13**
Milk (yoghurt, cheese)	**5.95**
Sweets (sugar)	**5.83**
Fish (including canned)	**1.70**
Cereals (mealies, maize)	**26.97**
White roots (potatoes)	**5.98**
Fruits (mango, orange)	**1.77**
Vegetables (spinach, cabbage)	**7.91**
Fats and Oil (Butter)	**3.97**

Source: Field Survey, 2016 (Dinbabo et al., 2017: 77).

4.3 An Evaluation OF Healthy Eating Practices in Khayelitsha
4.3.1 The Consumption of Fried Foods

The resultant effects of consuming fried foods are far reaching and tend to be a great concern. Too much consumption of fried foods can cause more harm to the human body, this is mainly because they are a source of unneeded and harmful fat or calories (Boakye, 2019). Those who tend to consume a lot of fried foods remain at high risks of non-communicable diseases like heart diseases and diabetes. Data gathered from the survey indicate that 43.51% of the population do not eat fried foods when they are away from home, as compared to 18.5 that do not eat fried foods at home.

There are also those who said they consume fried foods when they are at home and away 14.53% and 13.37% respectively. Another factor to take note of is the proportion of respondents who eat fried foods more than once a week. An average of about 67.40% and 43% of respondents that eat

fried foods more than once a week. It can be concluded from the analysis outlined above that fried food consumption is more prevalent in many households. Conversely there is a greater percentage of households that choose to eat these foods at home rather than outside their homes.

Consumption of Fried Foods

Table 4.3.1 Consumption of Fried Foods

Consumption of fried foods	Fried Foods Eaten at the Home			Fried Food Eaten outside of the home		
Frequency of Consuming Fried Foods	Female (n=491	Male (n=288	Total (n=799	Female (n=482%	Male (n=283%	Total (n=765
Never	17.52%	18.75%	17.97%	43.98%	43.11%	43.66%
Once a Week	14.66%	13.54%	14.25%	10.58%	14.13%	11.90%
2-3 times a week	62.53%	59.72%	61.49%	42.12%	38.16%	40.65%
4-6 times a week	2.85%	5.21%	2.31%	2.07%	2.83%	2.35%
Daily	2.24%	2.43%	2.31%	1.24%	1.77%	1.44%
Total	100%	100%	100%	100%	100%	100%

Survey data, 2017.

4.3.2 The Removal of Visible Fat Before Eating

Schonfeldt et al. (2013) argues that an effective fat reduction strategy and calorie intake is to constantly remove all visible skin or fat from meat before consuming it. The above-mentioned strategy constitutes larger role of a healthy eating pattern that is aimed at avoiding excess saturated fats. A third proportion of the household population within the study have been found to always remove all the visible fat from meat before eating was 32.3% respectively. Table 5.11 below shows that an average of about 21.3% respondents removes most of the visible fat in meat and a minority of 7.9% only remove a small portion of the visible fat found in meat. With reference to chicken

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skin a majority of about 33.9% of the female population often remove chicken skin before eating the meat compared to 29.4% of the male population.

Removal of Visible Fat from Meat

Table 4.3.2: Removal of Visible Fat from Meat

Removal of visible fat from meat before eating	Female (n= 492	Male (n= 289	Total (n= 781
Remove none	32.32%	34.95%	33.29%
Remove most	21.34%	21.11%	21.25%
Does not eat meat	3.25%	3.81%	3.46%
Remove all visible fat	33.94%	29.41%	32.27%
Remove small part of fat	7.93%	7.96%	7.94%

Survey data, 2017.

Removal of Visible Fat from Chicken

Table 4.3.2.1: Removal of Visible Fat from Chicken

Removal of chicken skin	Female (n= 490	Male (n= 288	Total (n=778
Don't eat chicken	2.86%	1.04%	2.19%
Removes none	42.65%	47.57%	44.47%
Seldom	6.94%	6.60%	6.81%
Often	12.45%	14.58%	13.24%
Always	33.67%	29.51%	32.13%

Survey data, 2017.

4.4.1 Ownership of Resources in Khayelitsha

When looking at the ownership of assets in Khayelitsha, a majority of the population owns mobile phones 96.05% followed by Television 91.53%, refrigerator 89.58% and then radio had an average of 74.39% respectively. The percentages mentioned above depict the four most common assets that are being owned by households in Khayelitsha. Those who own a laundry machine recorded a percentage of 42.08%, freezer owners recorded a percentage of 34.23%, computer owners had a percentage of 14.88%. When looking at the ownership of other assets, motorcycle had the least percentage of 0.56%, followed by ownership of landline phone with 5.66% and bicycle with 6.78% in that order. The percentages outlined in the sentence above were the three least owned assets in Khayelitsha.
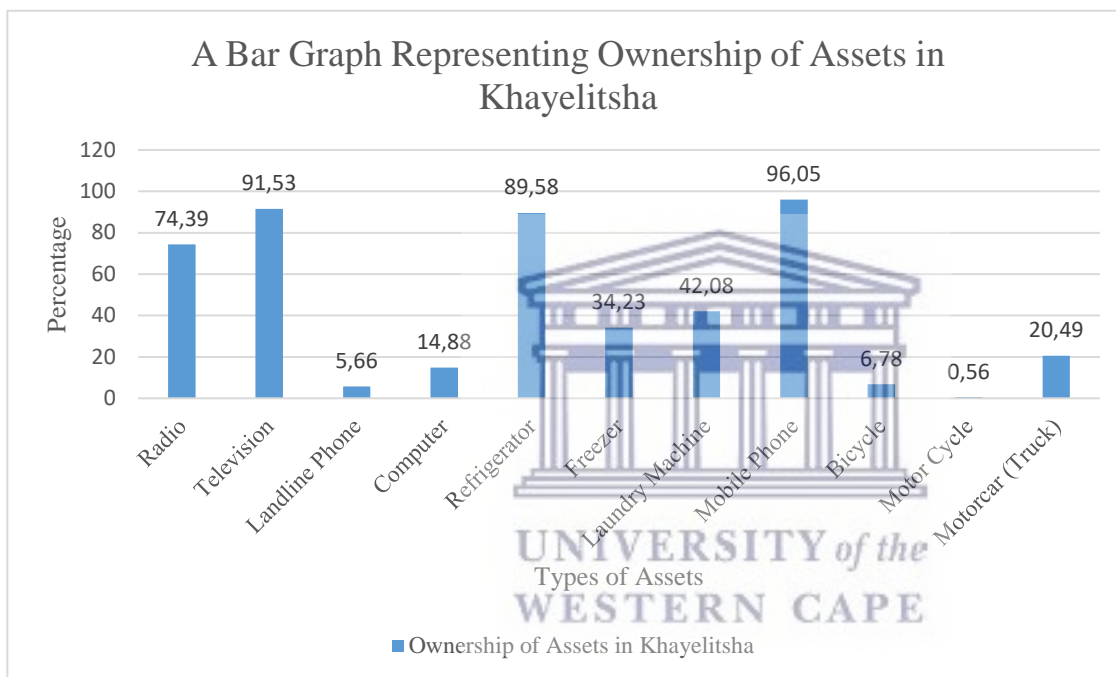
Survey data, 2017.

Figure 2: Bar Graph Representing the Ownership of Assets in Khayelitsha

4.4.2 Influence of Television on the Choices of Food

The digital and social media' ability to advertise food and beverages on television has a strong influence on a consumer's perception together with their decision to buy (Avery; 2017; Folkvord et al., 2020). Another note-worthy factor found within the respondents was that, spending a lot of time watching TV can have an influence on weight gain (Dinbabo et al., 2017). Within the study responses from the influences of television on food choices eaten by the respondents were analysed. As it can be shown in the tables 5.12 below, a total

of 41.6% of the respondents have strongly agreed to the assumption that their food choices are largely influenced by television adverts. In contrast a majority of the respondents 50.5% gave an indication that adverts from television tend to have little or no influence on their food choices.

Another interesting discovery was that a majority of men (46.2%) in Khayelitsha when compared to women (38.8%) strongly agreed or have agreed that the food they buy and consume is influenced by TV adverts. On the question of whether the population used most of their leisure time by browsing the internet or watching television, recorded a total of 60% that affirmed to the above-mentioned question. Conversely from these results, a conclusion can be drawn that television has an influential role when it comes to food choices and the eating habits of respondents.

According to North and Kotze (2001) the findings that are depicted below strongly agree with their study that was conducted in South Africa. The study found that over 50% of the respondents from the study have agreed others have strongly agreed that television adverts are not helpful only when a person wants to locate the best available product but also influences their buying decisions with a percentage of 27.47% (North & Kotze, 2001).

Influence of television on food choices presented in the table below.

Table 4.4.2: Influence of television on food choices

	TV advert influences my food choices		I spent more time watching TV or browsing the internet	
	Female (n= 473	Male (n= 266	Female	Male
Strongly agree	12.3%	17.3%	17.5%	18.8%
Agree	26.6%	28.9%	14.7%	13.5%
Indifference	10.6%	11.3%	62.5%	59.7%
Disagree	26.2%	20.7%	2.9%	5.2%
Strongly disagree	24.3%	21.8%	2.2%	2.4%

Survey data, 2017.

4.5 Household Health Perception and Weight Management Practices

4.5.1 Perception of Health of the Case Study Area

A person's health status when defined refers to a person's relative level of illness and wellness; this takes in to account the pressure of physical and biological dysfunction, symptoms and a functional impairment (Kaleta et al., 2009). A perceived health status or perceptions of health are subject to an individual's status of health (Abdel Wahed et al., 2020). Some individuals might have the assumption that they are healthy, even though proper examination they might be found with chronic illnesses. Others also have a tendency of engaging in self-diagnosis, whereas there is zero evidence of diseases in their systems. An average of 22.4% of the population as shown in table below rated themselves into having an excellent health status, 12.90% has rated theirs as being very good and an average of 34.20% rated as good.

Additionally, there is a portion of a population in Khayelitsha who reported to have a fair health status were 23.5% and 6.2% have perceived theirs as poor. Additionally when looking at the perceived health status of both women and men, the research has found certain differences. An example that has been tabulated shows that a majority of women perceive themselves as having an excellent status of health, for men there was an average of 20.10% respectively. Moreover there are those responded that have perceived themselves as having a poor health status in Khayelitsha with 6.2% which a relatively small percentage. The results of health perceptions found within this study have records that are somewhat lesser than the reported findings from StatSA (2016), whereby 50.1%, 36.1% and 12.0% of the respondents were found with excellent, good and poor health status respectively.

Health Perception of Respondents

Table 4.5.1: Health Perception of Respondents

Perception of health	Female (n= 463	Male (n=268	Total (n=731
Excellent	23.76%	20.15%	22.44%
Very Good	13.82%	11.19%	12.86%
Good	33.48%	35.45%	34.20%
Fair	22.46%	25.37%	23.53%
Poor	5.62	7.09%	6.6%

Survey data, 2017.

4.5.2 Educational Level and Weight Control

As shown on the table below those respondents that have a high educational have been recorded to participate in more weight regulation activities than those that have a lower educational background. In numerical terms, there is a total of 6.71% of the respondents that have obtained a university education and engage in physical exercise. A total of 0.13% of the respondents that only had primary education gave an indication that they do engage in physical exercises with attempts to reduce weight. In contrast to the above-mentioned statistics, the category of respondents that have primary education only and use diet pills were (0.81%) this recorded percentage is higher in participants that have obtained a university education (0.18%) in that order.

A Table Representing Educational Attainment and Weight Control Practices

Table 4.5.2: Educational Attainment and Weight Control Practices

Weight Control	None	Primary	Secondary	Technical	University
Fasting	0.35%	0.21%	1.32%	0.24%	0.62%
Diet Pills	0.45%	0.81%	0.94%	0.22%	0.18%
Special Diet	0.06%	0.23%	1.75%	0.66%	0.12
Exercise	0.03%	0.13%	3.24%	1.87%	6.71%
Eat less food, foods low in fat or less in calories	2.69%	0.36%	0.86%	1.68%	1.65%
No weight control	96,42	98,26	91,89	95,33	90,72

Survey Data, 2017.

4.5.3 An Evaluation of Overweight and Obesity in Khayelitsha

The prevalence of obesity and overweight in Khayelitsha will be outlined in the following section. In more specific terms this section will give an outline of the participant's BMI results, with reference to the BMI cut-off guidelines proposed by the World Health Organization. According to WHO (2016) the guidelines of these cut-off are as follows BMI for being underweight (≤ 18.5); BMI for having a normal weight (≥ 18.5 and < 24.9); BMI for being overweight (≥ 25.0 and ≤ 29.9); those who fall in the first

category for being obese (BMI>=30.0 and <=34.9); Second category for being obese (BMI>=35.0 and <=39.9); third category for being obese (BMI>=40).

A total of about 38.9% of the participants were found to be obese, with 22.59% that were found to be overweight. There was also a total of about 28.7% of respondents that had a normal weight and 12% who were underweight. When giving an analysis of overweight and obesity from a gender-based perspective, males recorded higher rates with 45%, females had an average of 36.07% of being overweight. Additionally, there is an interesting pattern that was observed that includes those that fall within the category of normal weight range, 26.23% females and 23.79% males respectively. The above-mentioned results shows that there is a high level of being obese and overweight for both genders. There was no significant difference in the gender distribution of obesity, that can yield to a conclusion that a certain gender (males) was vulnerable to being obese than the other (females).

Perception of Being Overweight and Obesity in Khayelitsha

Table 4.5.3: Perception of Being Overweight and Obesity in Khayelitsha

Weight Status	Female (n=450	Male (n=298	Total (748
Obese	36.07%	44.66%	38.9%
Overweight	22.95%	16.99%	22.59%
Normal weight	26.23%	23.79%	28.07%
Underweight	14.75%	14.56%	11.23%

Survey data, 2017.

A cross-sectional study that consists of 998 adults in Buffalo City Metropolitan Municipality (BCMM), conducted an assessment of overall and central obesity (CO), weight to height ratio (WHTR), wait to hip ratio (WHR) and waist circumference (WC) (Owolabi et al., 2017). The study Olwolabi et al. (2017), revealed that the prevalence of CO was 67,0%; 71.10%; and 58.0% by WHTR, WHR, and WC respectively (Owolabi et al., 2017). Moreover it has been found within the study Olwolabi et al. (2017) that, an average of about 41% of participants have shown a very high health risks, 33% had no associated health risk and 13% had high or increased health risk.

A secondary data analysis conducted by Ngalazi and Ataguba (2022) analysed seven consecutive nationally representative household survey. The focus of the study was on the was on the 1998 and 2016 South African Demographic Health Survey, conducted in 2008, 2010- 2011, 2012, 2014- 2015 waves of

the National Income Dynamic Survey comprising of sociodemographic and anthropometric data (Nglazi & Ataguba, 2022). The changes in patterns of being overweight and the prevalence of obesity amongst non-pregnant women and women of childbearing age (WCBA) were investigated. The study found that the prevalence of obesity and overweight amongst WCBA in South Africa increased from 51.3% to 60'0% and 24,7% to 35,2% between 1998 and 2017 (Nglazi & Ataguba, 2022). The prevalence of overweight and obesity amongst WCBA showed variations in age, location, socio-economic status of women, and population group.

Additionally Mphekgwana et al. (2022) conducted a cross-sectional population study that covered 51 villages that were primary selected in the DIMAMO surveillance area in the Capricorn District of the province of Limpopo. The investigation by Mphekgwana et al. (2022) focused on 154 girls, 140 boys who were under the ages of 18 together with a total of 294 adults who were 18 and above. The results showed that a total of 167 participants with an average score of 57% were found to be overweighed and a total of 127 participants were found to be within the normal weight range. There were significant gender differences within the study, whereby girls and women were found to be more obese than boys or males. Furthermore overweight recorded a higher prevalence of obesity where the (p-value< 0.05) respectively (Mphekgwana et al., 2022). The study's recommendations was that, households with their children should be targeted by public health interventions so as to reduce the prevalence of overweight and obesity in South African citizens.
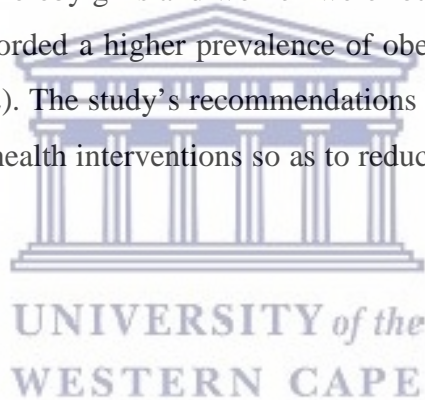
4.6 Qualitative Data Analysis of The Study Area

The following chapter will give an outline of the findings derived from the analysis of qualitative data. The information that is outlined in the following section will focus on the view, perceptions of respondents derived from their attitudes towards weight regulation strategies and consumption patterns. The information presented in this section will give a highlight of the insights and opinions of the sampled population. The information presented here matches the quantitative findings presented in the previous chapter.

4.6.1 Consumption Patterns of The Respondents

Adequate consumption patterns play an effective role in the developmental process and the overall quality of life. The literature presented provides us with the prudent and the western patterns, these are the two main consumption patterns. Taylor et al. (2019), defines the prudent as the diet that has a low consumption rate of sugar, processed foods (meat) and red meat with a high intake of fruit and vegetables. In contrast the western eating pattern is a diet that has a low consumption of vegetables and fruit with a high consumption rate of refined sugar grains, fast foods, red meat and processed meat (Shareghfarid et al., 2020). Those countries that are currently undergoing an economic transition have adopted the western pattern of food consumption.

South Africans who are urban dwellers have been found by many researchers to have shifted their consumption patterns towards adopting a more western- driven diet (Popkin, 2006; Reardon, 2008 and Ronquest- Ross et al. (2015). A study that examined eating patterns in South Africa Ronquest- Ross et al. (2015) have witnessed a shift in consumption patterns towards an increase on the intake of sugar-sweetened beverages. In his argument Ronquest- Ross et al. (2015), blames the globalization of the world markets which have witnessed changes in income disparities and the cost of food which play a major role in determining which foods to be consumed.

Ronquest- Ross et al. (2015), argues that for Black African women the price of food becomes the most important factor that is often considered when they go out for their household's grocery shopping. To give support to the statement outlined above some of the respondents within this study have stressed out that their disposable income and the cost of food items have a direct influence on their eating patterns. An apparent example would be that of our respondent Kelly who asserted that she loves and enjoys

eating vegetables but because she could not afford to buy them, she does not eat them often. She made the following remarks:

> [I]f I could eat [vegetables] every day, you know if the money is there because it seems to be very expensive nowadays. So, if I could eat it every day, I would eat it every day. I eat it when I can.

The views shared by Kelly have been commonly outlined by Maryam who shared similar sentiments about expensive food prices from shops, she does not believe that some people adapt to a healthy eating lifestyle. "To be like a healthy person it costs… it's not on not for the lower-class people maybe the [rich] people that is if there are any, they can still afford to eat things like that".

Margaret another respondent shared the following insights:

> I won't lie; I go to the Somalian shop to ask for credit around the 20th of the month. I get whatever I don't have on credit, even electricity. I get it from them. I take credit, and then repay them when I have money.

In Khayelitsha and elsewhere income plays an important role in the accumulation of food items and has a significant impact on the participant's eating habits, this is evident in the views that have been shared by Kelly, Maryam, and Margaret.

The quantitative findings depicted in the previous chapter serve as frame of reference that gives support to the views and insight presented by Kelly, Maryam and Margaret. The quantitative findings revealed that there was a greater expenditure on cereal foods for the population that earns between R1- 1200 and less on fruits and vegetables. It is also evident that in many households with inadequate income cannot adapt to heathier food choices, even though they hold an awareness of the implications of consuming unhealthy foods. The consumption of nutritious and healthy foods is only carried out when the costs of foods is not an issue.

The arguments outline on the paragraph above agree with the findings derived from other studies. These studies have noted that one's ability to consume healthy and nutritious food items is directly associated with having sufficient income and the ability to afford the costs associated with the unstable food prices. Various researchers such as Carlson and Frazao (2012); Wiggins and Keat (2015), suggest that the process of maintaining a healthier lifestyle is more expensive when compared to an unhealthy diet. In

more simple terms in the verge of higher food prices, or when healthy foods are no longer affordable, the less affluent people are left with no choice but to prioritize quantity opposed to quality. Research conducted by Temple et al., (2011) argues that healthy foods in retail or convenience store can cost up to 69% this percentage has surpassed a normal South African diet. It is sufficient to say that a healthy and nutritious diet or lifestyles is not a reality that can be experienced by a lot of South Africans, as it remains unaffordable to many.

4.6.2 Culture and Eating Habits

According to Di Cagno et al. (2013) culture when defined, refers to the existence of a shared set of ways of life, norms, values and shared beliefs of a common group of people. Culture plays an important role in our lives as it dictates or controls the way, type, time and place to consume certain foods (Thompson, 2018). Conversely other research conducted by Gergely and Csibra (2020) argues that culture can have an influence on the different kinds of food that a person should be exposed to.

The are other important factors that are at play in shaping one's culture. For an example there is a view presented by Bronfenbrenner (1986), which states that the existence of macro-systems like cultural norms, values and beliefs together with social settings can shape the perspective of an individual or households towards accommodating, accepting and adapting to a certain dietary behaviour. As far as the school of thought is concerned, the intention of the researcher was to provide an analysis of responses that relate to how society's ascribed values shape a respondent's food choices.

There were interesting views brought by the participants on how culture played an influential role on their food preferences. Rose for an example, said: "I like pap. We are Sotho people here at home. We were raised on pap."

The insights from Rose were articulated further by Palesa who noted that:

> I like eating... Most of the times I cook traditional Xhosa meals. Mostly I cook imifino [a meal that is made up of spinach, bitter greens and maize-meal] or uMngqusho [A meal that is cooked with samp and beans]. I don't like eating Western food. I prefer Xhosa meals.

There was a more unique response which was given by a participant that goes by the name of John, his insightful view on food choices was linked to spirituality. He outlined that he only consumed 'vital' foods, his description was as follows:

Food that is clean and vital into our souls. Also, the food that we eat must be colourful, into your eyes. In Babylon language you can say beautiful, but it actually looks terrific. But the food you prepare and eat must always catch your eye and be natural. Definitely, when there is no cow, blood, it is healthy.

The views and opinions expressed above were insights from respondents that took part in the study which suggested that the existence of culture in our societies have a strong influence on their eating habits. The presence of culture can play an important role in the promotion of unhealthy and healthy consumption patterns. For an example an individual's eating habit or their ability of preferring certain foods can be regarded as healthy foods in their household (Birch & Bloom, 2007), this food preferences might also be rejected as it might go against a person's cultural belief. Moreover parents that usually follow a specific fixed diet, a vegan diet for example have higher chances of introducing a vegan cuisine to their children. Researchers like Fisher et al. (2002); and Young et al. (2004) suggest that, by observing on the eating habits of their parents, children are more likely to adopt their eating behaviours.

4.6.3 Weight Control Practices

The WHO (2016) has noted that in order to keep up with the increasing rate of being overweight and obese, an individual should be able to engage in physical exercise and also maintain a healthy diet. Hamilton (2008) argues that one of the risk factors that can contribute to gaining access weight is lack of physical activities. With reference to the many benefits attached to engaging in physical exercises, Ronquest- Ross (2015) argues that a large population of South Africans do not engage in physical exercises on a regular basis. The statement outlined above has been confirmed by research conducted by Micklesfield et al. (2014), the study has shown that an average of 43%- 49% of South Africans who are between the age group of fifteen years and older do not engage in physical activities more frequently.

The section that follows intends to explore a respondent's subjective views that are related to weight management practices. It will also give an outline of the challenges faced by the respondents as the attempt to undertake such endeavours. As it has been depicted by the quantitative section, respondents who engage in exercises have an average of 24.6%. This low percentage in participants that engage exercise serves as a confirmation that there are low levels of physical exercise for the residents of Khayelitsha. For an example, one of the respondents named, Joyce had this to say; "l am very passive

for exercising" … [I am] very lazy". Joyce has stressed that many of the residents that live in Khayelitsha do engage in physical activities (exercise).

The insights shared by Joyce was further supported by Simone who stated that:

> I hate it with a passion. I started walking for a while and then I just stopped… I just hate exercising. I just wish there is an easier way out than to exercise [laughs]. I tell myself no. I sweep here, and I do everything that's enough exercise for me (daily chores).

It should be evident that some of the respondents have the urge or desire of engaging in physical activities especially outdoors, but there are rising concerns that relate to the security and safety which stifle these desires. An example Debbie noted that:

> This is a very cruel area and people are scared to go out because they 'gonna' get robbed or maybe killed. She added and said, that is why people are scared to run early mornings. The views shared by Debbie had been supported by another participant Joyce who stated that [Y]ou would say you are jogging and the next thing, you get robbed there.

Sthembiso did not share the same sentiments of fear, for him he jogs on a regular basis "seven days" a week. Another participant Menzi also stressed that: "every day after supper l exercise" and proceeded to say, "there are some people who join me".

Other respondents had attempted to avoid the stigma of being overweight is the reason why they constantly engage in physical activity. For an example, Richard noted that:

> Eishh! My friend's sister, she is very huge, that is what encourages me…. I don't want to look like that. Just by seeing her, you [will] understand what I am saying. I mean, she is heavy-overweight. She can hardly move, and she is just a few years older than me. She is in my age group, but just to see her it is enough for me to control my weight.

There was another insight from, Zukanye who opined that:

> Yet when you have a [slimmer] body you can dress well… For example, with us younger people your husband will lose interest in you when you are fat. He will be thinking 'What happened to the [young lady] I married?' Just because you are fat.

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We should carefully understand that engaging in weight management practices are mostly triggered by perceptions of body weight. For an example it is only those people who perceive themselves as being overweight or obese that are more likely to lose weight or engage in weight management practices. Moreover there is a percentage of individuals who are with excess weight but do not categorize themselves being overweight or obese, they are less likely to engage in weight management practices or physical activities. For example Noxolo opined that: "If l lose a lot of weight l would go for a check up to make sure l am not sick and just losing weight". The weight management intervention plans should be designed in a manner that caters for the personal and social dynamics that are associated with.

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Chapter 5: A Summary of Research Findings, Recommendations and Conclusions

Introduction to Chapter Five

The following chapter serves as the last and final chapter of this discourse. The chapter will begin by giving a brief outline of the main research findings that were obtained from the study. Additionally, this chapter will present some of the theoretical reflections and limitations incurred in this investigation. The last sections of this chapter will conclude with policy recommendation suggestions for the control and prevention of being overweight and obese in South Africa.

5.1 Research Findings Summary

The aims and objectives of this research as stated in the first chapter were to:

- To present the socio- demographic profile of Khayelitsha.
- To give an outline of the consumption patterns in poor urban areas.
- To examine the healthy eating practices in Khayelitsha.
- To study the household health perception and weight management practices.
- To study the influence of television on food choices.
- To propose new recommendations for policy review.

The research findings that have been presented and analysed in this research were obtained from an analysis of a larger study that was conducted in 2017. This study was conducted by the Institute of Social Development (ISD) researchers; their research focus was based on the topic of food choices and BMI indexes. The information that was gathered by the ISD researchers was the most suitable and relevant to our research topic to utilize when seeking for socio-economic challenges in poor urban communities. To become more specific this research evaluated the causal effects of income, culture and education on eating habits (consumption patterns), health status and weight control behaviours. The average monthly earnings of individuals were measured as their income status. Additionally, for the research to be able to effectively measure the education status of a respondent, the researcher used level of education obtained by the respondents.

To measure the consumption patterns of the respondents the researcher used the frequency of eating and the types of foods consumed (consumption of fried foods, fruits and vegetables). On the other hand,

weight management practices were measure by weight control related activities. The research questions of the study were as follows:

- o What is the socio- demographic profile of Khayelitsha?
- o What are the types of consumption patterns in poor urban households?
- o What are the types of healthy eating practices in Khayelitsha?
- o What influence does television have on food choices?
- o What is the overall household health perception and weight management practice?

5.2 Food Choices, Consumption Pattern, Weight Control and Health Status of Respondents

The analysed basket of goods of the respondents comprised of cereals like (maize, mealies); pasta (macaroni, spaghetti); bread (white & brown bread); processed meats; dairy products (cheese, yoghurt); oil fat (butter, cooking oil); soft drinks, fried chicken, fish, fruits and vegetables (Dinbabo et al. 2017:77). The research conducted by Dinbabo et al. (2017:77), revealed that about (94%) of bread, cereal and processed food were amongst the foods that were mostly consumed by the respondents. With reference to the consumption of vegetables and fruits within the study, the results recorded a low take amongst the respondents.

The findings outlined above do agree with many studies conducted by researchers such as, Faber et al. (2013) and Boakye (2019) that South Africans tend to consume less of the required amount of fruit and vegetables. Precisely cost was identified as the main barrier for the abundant consumption of fruit and vegetables. In terms of the consumption of fried foods and the removal of visible fat/ chicken skin meat before eating. The researcher has discovered that there is a high percentage of the respondent that consumed fried foods both at home and outside (81.7% and 56.4%) respectively.

It was further discovered that most of the respondents (33.3%) within the study neither remove visible fat from meat or (45.5%) chicken before eating. This gives a suggestion that there is a high rate of consumption of fatty foods amongst the respondents. This high rate consumption of fatty foods has been supported by the findings from a study conducted by Peltzer and Phaswana- Mafuya (2012) and Ronquest- Ross et al. (2015). Conversely when the above-mentioned variables were correlated with education status, the results obtained showed that the impact was not significant.

As far as weight control practices are concerned, the results obtained revealed that there is a low practice of weight regulation measures amongst the respondents. For an example only 24.6% of respondents have indicated that they do engage in exercise. Consecutively only 0,62% of respondents have reported that they have the ability of going 24 hours without food (fasting) this has been carried out as an attempt to manage and limit their weight gain levels. Existing factors such as limited resources, safety and security concerns are amongst the reasons for the limited weight management practices within the respondents as well as individual perceptions of their weight status.

Other resources such as swimming pools, jogging trails and gymnasiums that are used for effective weight management practices were found to be limited in the case study area. The above-mentioned findings are supported by a report from researchers like Dinbabo et al. (2017), Boakyae, (2019), that issues pertaining safety and limited facilities that stimulate exercise prevent most residents of Mitchell's Plain and Khayelitsha to engage in physical weight regulation activities.

5.3 The Relationship Between Income and Household Food Choices

A government social grant was one of the main sources of income for many of the households of Khayelitsha. The income received by theses household is not sufficient and yet they are still expected to pay for other household essentials and buy food. The prevalent low levels of education and employment has resulted to many of the population of Khayelitsha to rely on social grants. Additionally, the results of the study showed that, with the low levels of income and household food insecurity; an increased income will increase a household's ability to purchase and improve its access to food (Baiyegunhi & Makwangudze, 2013).

The study also revealed that a majority of the households bought their food once a month and in bulk. Most of the food brought in by households is purchased in towns, as food prices in town are regarded as cheaper than when sold at local supermarkets in Khayelitsha. Another reason for purchasing food in town is because of the variety of retail stores available than for their urban areas. Moreover, it was found that only a minority of households would rather prefer buying their foods at spaza shops which are usually a walking distance and can be accessible to them in any time of the day. However, households that have an increased income and purchasing power can improve a households' food security as more food can be produced or purchased from reliable sources.

Other discoveries related to the study Dinbabo et al. (2017); Boakye (2019) revealed that there is a positive relationship between food choices and income. Nevertheless, it was also found that the overall

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impact of income on food choices was not statistically significant. The reason for the above mentioned would be that the cost of food and low-income families were found to restrict the purchase and consumption of healthy foods. Ngema et al. (2018); Wekeza & Sibanda (2019) confirms the statement mentioned above, whereby his study revealed that South Africans cannot afford a healthy diet at large.

5.4 Limitations of The Study and Directions for Further Studies.

When giving an outlined interpretation of the research some methodological issues should always be taken into consideration. The first is as it has been stressed throughout the research that it is based on a secondary data analysis, there was no control of the outlined variables from the research questions. The second point regards the assumption that, the selections of the respondents were limited to those whose weight/ height were reported in the broader study. The above-mentioned limitations suggest that there was a selection bias in this current investigation. The third limitation involves the idea that all the responses were drawn from a single case study area (Khayelitsha). Therefore the findings that have been reported in this study are restricted to only one urban community in South Africa. The study of the food choices, consumption patterns and the health implication of a different study area would yield to different results.

The fourth limitation to the study is that it considered food choices or consumption patterns for a set of food basket, within a single period, population, area and not over time. Food price perceptions and changes in food choices and consumption patterns, derived from the increase of food prices have not been captured. The fifth limitation of the study is that it did not take into consideration the marginal changes in household food security due to the increase of food prices. Future research discourses should study the difference in household food security over time, while looking at the changes in food prices. The sixth limitation to the study has to do with the idea that other relevant factors like environmental and cultural influence were not given much attention in this study.

If we could fully consider the limitations outlined above, future research discourses should focus on investigating the relationship between the dietary patterns and socio-economic status in other poor communities in South Africa. Additionally, future related studies should give an evaluation of the factors that affect food price dispersion in South Africa. Furthermore, future studies should focus on examining the sociocultural influence of being overweight. In conclusion further studies should investigate the degree to which food choices and consumption patterns affects production sales and household consumption in different areas of South Africa.

5.5 Policy Recommendations

This investigation has shown that food choices, consumption patterns and health implications in South Africa is not a problem that is faced only by the rich but also by those who are less affluent. The rapid adoptions of the western style and standard of living together with increased urbanization have caused alterations in dietary behaviours of people with low income (Micklesfield, 2013; Dinbabo et al., 2017). With reference to the complexity of the driving forces of food choices, consumption patterns and health implications in South Africa as reported from the study. There is an arising need for an integrated approach that requires efforts from a wide range of stakeholders from both the private and the public sector as necessary tools of changing the health outcomes.

For households to be food secure the government should increase the minimum working wages for the economically active households and create new employment opportunities for urban households to improve their welfare status. Having an improved welfare status will result into an increase in a household's income; this will result to increased disposable income and purchasing power. By doing this, households will therefore be able to afford healthy food. There should be measures devised to keep people in school, with aims of reducing the educational backlogs and for people to be able to navigate for better access to employment opportunities that will increase their chances of being food secure.

Households usually incur longer distances with higher transport fares to get to urban stores, because of scarce retail outlets in their communities. Different stakeholders and businesses should then attempt to improve the availability of retail outlets. Having more retail outlets available in communities, means that household will not be traveling long distances while incurring high transportation costs to reach the market to purchase food. Government should encourage and give support to entrepreneurs, through subsidized funding, so as to establish and expand food retail outlets in urban areas. This initiative will create employment and boost the economic activities within the area of Khayelitsha.

For such attempts to be able to yield fruitful results established societal public health interventions should put focus on promoting proper diet patterns, regular engagement in physical activities and weight regulation would be important. Furthermore, with the ever increasing cost of food that is regarded as the barrier to eating healthy foods, there should be policies devised that will include certain measures so as to meet up with the demand of the less affluent, such as price reduction for healthy foods. For the above-mentioned strategies to be effective there is a need to take into consideration of factors such as culture, gender, and socio-economic status into account. Moreover, there should also be a multidisciplinary

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approach to the prevention of health-related implications that will fully address the social, environmental, cultural, psychological and biological factors is very crucial in producing the best outcomes.

5.6 Conclusion

This research evaluated the food choices, consumption patterns and health implication in South Africa, the urban area of Khayelitsha located within the study was used as a case study. After an extensive review of the presented literature the study showed that the health implications associated with consuming certain foods has become a major concern for South African government and its societies. Even though there were many factors reported to contribute to this rising trend, constant changes in dietary and lifestyle habits are all motivated by increasing urbanization and industrialization.

To be specific the high prevalence in the consumption of processed meat, soft drinks, sweets, sauces fats and oils with a combination of low or lack of physical activities amongst South Africans have led to increased levels of obesity and being overweight. Given that most South Africans are low income earners, there was an interesting discovery within the study's literature that the health implications associated with food choices was high in both the rich and poor communities. The observation mentioned above acts as the base for exploring the link between food choices consumption patterns and the health implications within the study.

The research conducted found that attitudes and intentions are strongly correlated to an individual's eating habit and weight regulation behaviours. Additionally, income and education level have been found to have a positive correlation with dietary related choices and excess weight gain are not problems associated with only the rich but the less affluent too. However, in contrast to our given hypothesis it has been found that neither income status nor educational level has been found to have a significant impact on diet and weight management practices. There are other factors that were found to be contributing on an individual's eating habits and weight management practices these included amongst others price of foods, perception of weight and advertisements from television.

5.7 Chapter Summary

This chapter has presented findings from both the quantitative and qualitative analysis of data in examining the relationship between socioeconomic status and dietary behaviours in relation to obesity. The findings were discussed in line with the research questions and objectives. The literature was extensively explored to support findings from both the quantitative and qualitative analysis. The chapter

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commenced by highlighting the socioeconomic characteristics of the respondents. It further described the eating habits and weight management practices of the respondents.

Both positivist and interpretive analyses of the findings have been provided. On the other hand, the qualitative evidence offered better insights into why respondents eat what they eat as well as why they engage or do not engage in physical activities to control their weight. The analysis revealed that while income and culture determine respondents' consumption patterns, perception of body size and security issues influenced their attitudes toward engaging in physical activity. The next chapter presents a summary of the findings, theoretical reflections, limitations of the study and areas for further research.

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7. Appendices

7.1 Ethics Declaration

7.1.1 Ethics for Abonga Mabusela

UNIVERSITY *of the* **WESTERN CAPE**

60 YEARS *of hope, action & knowledge*

16 November 2020

MR ATA Mabusela
Institute for Social Development
Faculty of Economics and Management Sciences

Ethics Reference Number: HS20/4/6

Project Title: Food security: An evaluation of food choices, household food consumption patterns and health implications: A case of Khayelitsha in the Western Cape Province of South Africa.

Approval Period: 22 May 2020 – 22 May 2023

I hereby certify that the Humanities and Social Science Research Ethics Committee of the University of the Western Cape approved the methodology and ethics of the above mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

Please remember to submit a progress report by 30 November each year for the duration of the project.

The permission to conduct the study must be submitted to HSSREC for record keeping purposes.

The Committee must be informed of any serious adverse event and/or termination of the study.

Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape

Director: Research Development
University of the Western Cape
Private Bag X 17
Bellville 7535
Republic of South Africa
Tel: +27 21 959 4111
Email: research-ethics@uwc.ac.za

NHREC Registration Number: HSSREC-130416-049

FROM HOPE TO ACTION THROUGH KNOWLEDGE.

7.1.2 Ethics for Dinbabo et al. (2017)

OFFICE OF THE DIRECTOR: RESEARCH
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12 May 2016

Dr M Dinbabo
Institute for Social Development
EMS Faculty

Ethics Reference Number: HS/16/3/1
Project Title: Food choices and Body Mass Index (BMI) in Adults and Children: evidence from the National Income Dynamics Study (NIDS) an Empirical Research from Khayelitsha and Mitchell's Plain in South Africa

Approval Period: 10 May 2016 – 10 May 2017

I hereby certify that the Humanities and Social Science Research Ethics Committee of the University of the Western Cape approved the methodology and ethics of the above mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval. Please remember to submit a progress report in good time for annual renewal.

The Committee must be informed of any serious adverse event and/or termination of the study.

Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape

FROM HOPE TO ACTION THROUGH KNOWLEDGE.

7.2. Questionnaire & Focus Group Discussions.

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INSTITUTE FOR SOCIAL DEVELOPMENT

HOUSEHOLD QUESTIONNAIRE

Introduction

The Institute for Social Development, University of the Western Cape with support from the European Union–Programme to Support Pro-poor Policy Development Phase II (EU-PSPPD II) and the Centre of Excellence in Food Security is conducting this survey. The purpose of this list of questions is to obtain your view on a wide range of themes relating to Food Choices and Body Mass Index. Specific themes for which information will be obtained include demography, employment and income sources, food consumption and sources, eating habits, weight management practices, perception of health status, and perceptions on obesity. These questions are targeted at household members who are adults (18 years and above) and children (5-11 years).
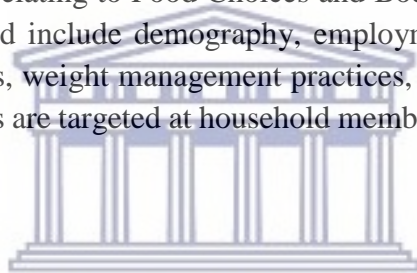
To be completed by Interviewer

0.1 Name of interviewer: _____ Interviewer Code: ▮▮

0.2 Date of Interview: ▮▮ /▮▮ /2016
  dd   mm

0.3 Interview Start Time: ▮▮ : ▮▮

0.4 Interview Finish Time: ▮▮ : ▮▮

0.5 Survey Site: ☐$_1$ Khayelitsha ☐$_2$ Mitchells Plain

0.6 Sub-Place Name: _____ Code: ▮▮▮▮▮▮▮▮

0.7 Enumeration Area Code: ▮▮▮▮▮▮▮▮

0.8 Language of Interview: ☐$_1$ English ☐$_2$ Afrikaans ☐$_3$ Xhosa ☐$_4$ Other

0.9 Case No: ▮▮▮▮▮▮▮

0.10 Cell No.: ▮▮▮▮▮▮▮▮

0.11 Household Size_____

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	SECTION A: HOUSEHOLD ROSTER (NB: *A household is defined as a person or group of persons living together and 'eating from the same pot*). This section is to be completed by the household head and/or spouse.													
1.Person Code	2. What is the name of this HH member? **[Please indicate name of household head first]**	3. What is this person's relationship to HH head?	4. What is the gender of this HH member?	5. What is the age of this HH member?	6. What is the marital status of this HH member?	7. What is the highest educational attainment of this HH member?	8. Is this HH member currently in school?	9. What is the religious affiliation of this HH member?	10. What is the race of this HH member?	11. What is the country of birth for this HH member?	12. If born in South Africa, in which province was this person born?	13. If born within Western Cape Province, in which city/town did this person live before moving to this place?	14. If born outside the Western Cape, in which year did […] move to the Western Cape?	15. Which of the following best explains this person's reason for moving to the Western Cape?
01														
02														
03														
04														
05														
06														
07														
08														

Relationship to HH head (Q3)	**Gender (Q4)**	**Marital status (Q6)**	**Highest educational Level (Q7)**	**Currently in School (Q8)**	**Religion (Q9)**	**Race (10)**	**Country of Birth (Q11)**	**Province of Birth (Q12)**	**Main reason for moving to Western Cape (Q15)**

1 ☐ HH head 2 ☐Spouse 3 ☐Son/Daughter 4 ☐ Brother/Sister 5 ☐Daughter-in-law/Son-inlaw 6 ☐Grandchild 7 ☐ Step child 8 ☐Parent/Parent-in- law 9 ☐ Other relative -7☐ Refused -8☐ Don't know	1 ☐ Male 2 ☐ Female -7☐ Refused -8☐ Don't know	1☐ Never Married 2☐ Married 3☐ Cohabitation 4☐ Divorced / Separated 5☐ Widowed -7☐ Refused -8☐ Don't know	1☐ None 2☐ Primary 3☐ Secondary 4☐Technical college 5☐ Tertiary (eg. university) -7☐ Refused -8☐ Don't know	1 ☐ Grade R 2 ☐Primary 3 ☐Secondary School 4 ☐Technical college 5☐Tertiary (eg. university) 6☐ No -7☐ Refused -8☐ Don't know	1☐Christian 2☐ Islam 3☐Traditionalists -7☐ Refused -8☐ Don't know	1☐Black 2☐Coloured 3☐ Indian 4☐ White -7☐ Refused -8☐ Don't know	1☐ South Africa 2☐ Zimbabwe 3☐ Zambia 4☐ Nigeria 5☐ Mozambique 6☐ Ethiopia 7☐ Somalia 8☐ Malawi 9☐ Other (Specify) -7☐ Refused -8☐ Don't know	1☐ Western Cape 2☐ Eastern Cape 3☐ Northern Cape 4☐ Mpumalanga 5☐ Gauteng 6☐ North West 7☐ Limpopo 8☐ Free State 9☐ KwaZulu-Natal 10☐Born outside SA -7☐ Refused -8☐ Don't know	1☐ Better housing opportunities 2☐ Better employment opportunities 3☐ Job transfer 4☐ Better education opportunities 5☐ Married someone living here 6☐ Other (Specify) -7☐ Refused -8☐ Don't know

SECTION B: HOUSEHOLD CHARACTERISTICS (*To be asked of household heads*)

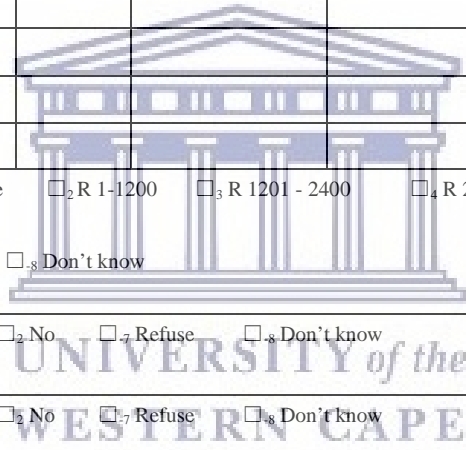|	
16. What is this household's **main** source of water?	☐₁ Piped (tap) water in dwelling ☐₂ Piped (tap) water on site or in yard ☐₃ Public tap ☐₄ Water-Carrier/tanker ☐₅ Borehole on site ☐₆ Well ☐₇ Other (specify) _____ ☐₋₇ Refuse ☐₋₈ Don't know
17. How far is the water source from the dwelling?	☐₁ Less than 100m ☐₂ 100 - 200 m ☐₃ 201 - 500 m ☐₄ 501 - 999 m ☐₅ 1 km or more ☐₋₇ Refuse ☐₋₈ Don't know
18. What type of toilet facility is available for this household?	☐₁ Flush toilet with onsite disposal (septic tank / soak-away) ☐₂ Flush toilet with offsite disposal ☐₃ Chemical toilet ☐₄ Pit latrine with ventilation pipe (VIP) ☐₅ Pit latrine without ventilation pipe ☐₆ Other (specify) _____ ☐₋₇ Refuse ☐₋₈ Don't know
19. Is the toilet facility shared with other households?	☐₁Yes ☐₂ No ☐₋₇ Refuse ☐₋₈ Don't know
20. Does this household have access to electricity even if currently disconnected?	☐₁Yes ☐₂ No ☐₋₇ Refuse ☐₋₈ Don't know
21. What is the main source of energy/fuel for lighting for this household?	☐₁ Electricity from mains ☐₂ Electricity from generator ☐₃ Gas ☐₄ Paraffin ☐₅ Solar Energy ☐₆ Other (specify)

			☐-7 Refuse	☐-8 Don't know

22. What is the main source of energy/fuel for cooking for this household?	☐1 Electricity from mains ☐2 Electricity from generator ☐3 Gas ☐4 Paraffin ☐5 Solar Energy ☐6 Other (specify)
	_____ ☐-7 Refuse ☐-8 Don't know

23. Does your household have:	a.	A radio?	☐1Yes ☐2 No ☐-7 Refuse ☐-8 Don't know
	b.	A television?	☐1Yes ☐2 No ☐-7 Refuse ☐-8 Don't know
	c.	A non-mobile telephone?	☐1Yes ☐2 No ☐-7 Refuse ☐-8 Don't know
	d.	A computer?	☐1Yes ☐2 No ☐-7 Refuse ☐-8 Don't know
	e.	A refrigerator?	☐1Yes ☐2 No ☐-7 Refuse ☐-8 Don't know
	f.	A freezer?	☐1Yes ☐2 No ☐-7 Refuse ☐-8 Don't know
	g.	A washing machine?	☐1Yes ☐2 No ☐-7 Refuse ☐-8 Don't know
24. Does any member of this household own:	a.	A mobile phone?	☐1Yes ☐2 No ☐-7 Refuse ☐-8 Don't know
	b.	A bicycle?	☐1Yes ☐2 No ☐-7 Refuse ☐-8 Don't know
	c.	A motorcycle or motor scooter?	☐1Yes ☐2 No ☐-7 Refuse ☐-8 Don't know
	d.	A car or truck?	☐1Yes ☐2 No ☐-7 Refuse ☐-8 Don't know

SECTION C: EMPLOYMENT & INCOME (*NB: This captures employment status and income sources of household members who are adults (18+ years)*

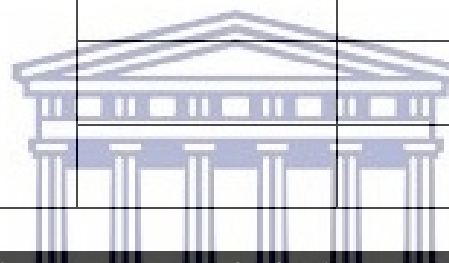| Person Code	Name of Respondent	25. Are you currently …	26. If employed for wages/salary, is it …?	27. Do you currently receive income from any of these Government grants?	28. Have you received any transfers (money/ food) from migrant	29. If answer to question 28 is *yes*, how much is this transfer? [**Please**	30. Have you transferred either money or food to	31. If answer to question 30 is *yes*, how much is this transfer?	32. In a typical week, how many hours do you spend at work?

		1□ Employed for wages/salary 2□ Self-employed 3□ Out of work and looking for work 4□ A student 5□ Retired 6□ Unemployed 7□Other, specify -7□ Refused -8□ Don't know	1□ Temporary 2□ Permanent -7□ Refused - 8□ Don't know	a. Disability grant 1 □ Yes 2 □ No -7□ Refused -8□ Don't know	b. Old age grant 1 □ Yes 2 □ No -7□ Refused -8□ Don't know	relatives in the last 30 days? 1 □ Yes 2 □ No [If no, skip to question 30] -7□ Refused -8□ Don't know	indicate amount…R]	relatives in the last 30 days? 1 □ Yes 2 □ No [If no, skip to question 32] -7□ Refused -8□ Don't know	[Please indicate amount…R]	[To be answered by mothers] State time in hours

33. How much does your **household** earn monthly?	□₁ No income □₂ R 1-1200 □₃ R 1201 - 2400 □₄ R 2401-3600 □₅ R 3601-4800 □₆ More than R 4800 □₋₇ Refuse □₋₈ Don't know

34. Does your **household** currently receive income from any of these Government grants?	a. Child support grant	□₁Yes □₂ No □₋₇ Refuse □₋₈ Don't know
	b. Disability grant	□₁Yes □₂ No □₋₇ Refuse □₋₈ Don't know
	c. Old age grant	□₁Yes □₂ No □₋₇ Refuse □₋₈ Don't know
	d. Foster care grant	□₁Yes □₂ No □₋₇ Refuse □₋₈ Don't know

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SECTION D-1: 24 HOUR DIETARY RECALL (*NB: This captures specific food items eaten the previous day before interview with household members who are adults (18+ years) and children (5-11 years)*). **[Please ask respondents everything they ate yesterday, the time they woke up to the time they went to sleep.]**

Person Code	35. Please indicate what day was yesterday. 1☐Sunday 2☐Monday 3☐Tuesday 4☐Wednesday 5☐Thursday 6☐Friday 7☐Saturday	36. Would you say the food you ate yesterday is typical of your everyday food intake? 1 ☐ Yes [**If Yes, skip to question 38**] 2 ☐ No -7☐ Refused -8☐ Don't know	37. If answer to question 36 is No, why? **[Interviewer ask for reasons]**	38. In the past 24 hours, indicate the types of food/beverage item consumed.	39. During what period was meal eaten? 1☐waking up to going to work, or starting the day's activities 2☐ During the morning at work or at home 3☐Middle of the day (Lunch time) 4☐During the afternoon 5☐At night (supper time) 6☐After dinner, before going to sleep	40. At what specific time was this food eaten?	41. Where was this food eaten? 1☐Prepared and eaten at home 2☐ Prepared at home but eaten outside (eg.in school or at work) 3☐Bought from outside home (eg. Fast food) 42. What was the size of the portion served? [in g or ml]

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SECTION D-1: 24 HOUR DIETARY RECALL (*NB: This captures specific food items eaten the previous day before interview with household members who are adults (18+ years) and children (5-11 years)*). **[Please ask respondents everything they ate yesterday, the time they woke up to the time they went to sleep.]**

Person Code	35. Please indicate what day was yesterday. 1☐Sunday 2☐Monday 3☐Tuesday 4☐Wednesday 5☐Thursday 6☐Friday 7☐Saturday	36. Would you say the food you ate yesterday is typical of your everyday food intake? 1 ☐ Yes [**If Yes, skip to question 38**] 2 ☐ No -7☐ Refused -8☐ Don't know	37. If answer to question 36 is No, why? **[Interviewer ask for reasons]**	38. In the past 24 hours, indicate the types of food/beverage item consumed.	39. During what period was meal eaten? 1☐waking up to going to work, or starting the day's activities 2☐ During the morning at work or at home 3☐Middle of the day (Lunch time) 4☐During the afternoon 5☐At night (supper time) 6☐After dinner, before going to sleep	40. At what specific time was this food eaten?	41. Where was this food eaten? 1☐Prepared and eaten at home 2☐ Prepared at home but eaten outside (eg.in school or at work) 3☐Bought from outside home (eg. Fast food) 42. What was the size of the portion served? [in g or ml]

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SECTION D-1: 24 HOUR DIETARY RECALL (*NB: This captures specific food items eaten the previous day before interview with household members who are adults (18+ years) and children (5-11 years)).* [**Please ask respondents everything they ate yesterday, the time they woke up to the time they went to sleep.**]

Person Code	35. Please indicate what day was yesterday. 1☐Sunday 2☐Monday 3☐Tuesday 4☐Wednesday 5☐Thursday 6☐Friday 7☐Saturday	36. Would you say the food you ate yesterday is typical of your everyday food intake? 1 ☐ Yes [**If Yes, skip to question 38**] 2 ☐ No -7☐ Refused -8☐ Don't know	37. If answer to question 36 is No, why? [**Interviewer ask for reasons**]	38. In the past 24 hours, indicate the types of food/beverage item consumed.	39. During what period was meal eaten? 1☐waking up to going to work, or starting the day's activities 2☐ During the morning at work or at home 3☐Middle of the day (Lunch time) 4☐During the afternoon 5☐At night (supper time) 6☐After dinner, before going to sleep	40. At what specific time was this food eaten?	41. Where was this food eaten? 1☐Prepared and eaten at home 2☐ Prepared at home but eaten outside (eg.in school or at work) 3☐Bought from outside home (eg. Fast food) 42. What was the size of the portion served? [in g or ml]

SECTION D-2: MEALS TAKEN AND SOURCES (*To be answered by household members who are adults (18+ years) and children (5-11 years)*)

Person Code	Name of Respondent	43. How much responsibility do you have for: 1☐None 2☐Less than half 3☐Half 4☐Most 5☐All -7☐ Refused -8☐ Don't know			44. In a typical week, where are most of your meals prepared? 1☐At home 2☐Out 3☐Don't eat meal -7☐ Refused -8☐ Don't know			45. How often do you eat any food, including meals and snacks, from a fastfood restaurant, such as Kentucky Fried Chicken, Hungry Lion, Zebros or another similar type of place? 1☐Never 2☐ One's a month 3☐once every two weeks 4☐1-3 times per week 5☐4 or more times per week -7☐ Refused -8☐ Don't know	46. Would you like to eat more healthily than you do? 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	47. If yes, please list the reasons you do not eat as healthily as you would like
		a. Food shopping?	b. Planning meals?	c. Preparing meals?	a. Breakfasts prepared?	b. Lunches prepared?	c. Suppers prepared ?			

48. For food purchased on the market with cash, where does your household normally buy them? [**choose only one**]	☐1 Spaza shop ☐2 Shoprite ☐3 Checkers ☐4 Pick n Pay ☐5 Spar ☐6 Taxi rank retail ☐7 Woolworth ☐8 Informal markets ☐8 Other, specify _____
49. Which of the following best explains your reason for buying from selected shop?	☐1 Easy access ☐2 I do not have enough money ☐3 The prices of their foodstuffs are very cheap ☐4 Their food stuffs are of high quality ☐5 Other, specify _____ ☐-7 Refuse ☐-8 Don't know

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50. How far do you travel to purchase food?	□₁ Under 200m □₂ 201-700 m □₃ 701- 1400 m □₄ 1401- 2100 m □₅ 2100⁺ m □₋₇ Refuse □₋₈ Don't know
51. On the average, how much does your household spend on food in a month?	R _____ □₋₇ Refuse □₋₈ Don't know
52. In the past week, has there been an instance where you attempted to buy food in your neighbourhood but could not access it due to unavailability?	□₁Yes □₂ No □₋₇ Refuse □₋₈ Don't know
53. If answer to question 52 is **YES**, which of the following actions did you take?	□₁ I do nothing about it □₂ I travel to nearby neighbourhood to buy that food item □₃ Ask from a neighbour □₄ I wait until it is available □₅ Other (specify) _____ □₋₇ Refuse □₋₈ Don't know

SECTION E: EATING HABITS (*NB: This captures eating habits of household members who are adults (18⁺ years) and children (5-11 years)).*

Person Code	Name of Respondent	54. In a typical week, how often do you eat the following meals? 1□ 0-1 day/week 2□ 2-3 days/week 3□ 4-5 days/week 4□ 6-7 days/week -9□ Not Applicable			55. In general, how often do you eat fruits? 1□ Don't eat fruit 2□ Never 3□Seldom 4□Often 5□ Always	56. In general, how often do you eat vegetables? 1□Don't eat vegetable 2□ Never 3□ Seldom 4□ Often 5□ Always	57. In a typical day, how many glasses of water do you take? 1□ 1-2 glasses 2□ 3-4 glasses 3□ 5-6 glasses 4□7-8 glasses 5□ 9⁺ glasses	58. How often do you eat fried food away from home? (e.g., fried chicken, fried fish) 1□Never 2□ once a week 3□ 2-3 times per week 4□ 4-6 times per week 5□ Daily	59. How often do you eat fried food at home? (eg. Fried chicken, fried fish) 1□Never 2□Once a week 3□ 2-3 times per week 4□ 4-6 times per week 5□ Daily	60. How much of the visible fat on beef, pork or lamb do you remove before eating? [**Please read out all of the options to respondent**] 1□Remove all visible fat 2□Remove most 3□Remove small part of fat 4□ Remove none 5□Don't eat meat -9□ Not Applicable	61. How often do you remove the skin from cooked chicken before eating? 1□Don't eat chicken 2□ Remove none 3□Seldom 4□Often 5□ Always -9□ Not Applicable
		a. Breakfast	b. Lunch	c. Supper							

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62. When buying or preparing food for your **household**, do your children have a say in what they prefer or would like to eat?	□₁ Never Applicable	□₂ Sometimes	□₃ Always	□₋₉ Not

SECTION F: EATING HABITS (*NB: This captures Parents (in particular, mother or caregiver's) concern about child's eating habits in household and at school if applicable. Asked to adults (18⁺ years)*)

Person Code	Name of Respondent	63. Are you concern about your child's eating lifestyle 1 □ Yes 2 □ No -7□ Refused -8□ Don't know	64. If child attends school, how often does the child take food to school 1□Never 2□Seldom 3□Sometimes 4□Often 5□Always -7□ Refused -8□ Don't know w	65. In the last day child attended school, did this child take food to school? 1□Yes 2□No -7□ Refused -8□ Don't know [**If interview takes place on weekend, last school day is Friday**]	66. If Yes Q65, what kind of food did the child take to school? [**Fill answer below**] -7□ Refused -8□ Don't know	67. Is this the usual food the child takes to school? 1□Never 2□Seldom 3□Sometimes 4□Often 5□Always -7□ Refused -8□ Don't know	68. How often does the child take food to school? 1□Never 2□Seldom 3□Sometimes 4□Often 5□Always -7□ Refused -8□ Don't know	69. How often do you inquire what the child eats from the feeding scheme? 1□Never 2□Seldom 3□Sometimes 4□Often 5□Always -7□ Refused -8□Don't know	70a. Does the child's school have a feeding scheme 1 □ Yes 2 □ No -7 □ Refused -8 □ Don't know	70b. Has your child ever complained that he/she does not like the food given at school? 1 □ Yes 2 □ No -7□ Refused -8 □ Don't know

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Q66. Write food type child took to school		

71. If Yes in Q63, what are your main concerns? **[Chose more than one if applicable]**	☐₁Child losing weight ☐₂Child gaining weight☐₃ Child eats too little ☐₄ Child skip meals ☐₅ Child eats too much candies and chips ☐₆ Child eats too frequently ☐₇ Child likes fatty food ☐-

SECTION G: WEIGHT MANAGEMENT PRACTICES (*NB: This captures weight management practices of household members who are adults (18⁺ years) and children (5-11 years)).*

Person Code	Name of Respondent	72. What is your actual	73. What is your actual	74. What is BMI of this	75. In a typical week, do you do any of the following to lose weight or to keep from gaining weight?		77. If answer to question 66 is	78. Which of the following best

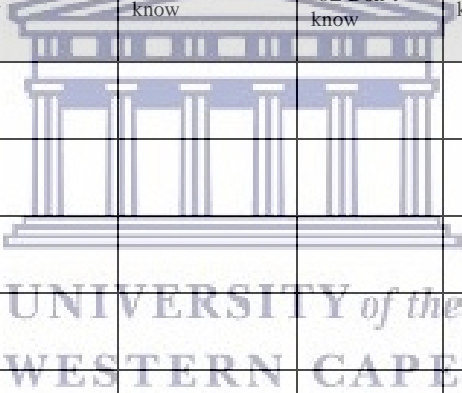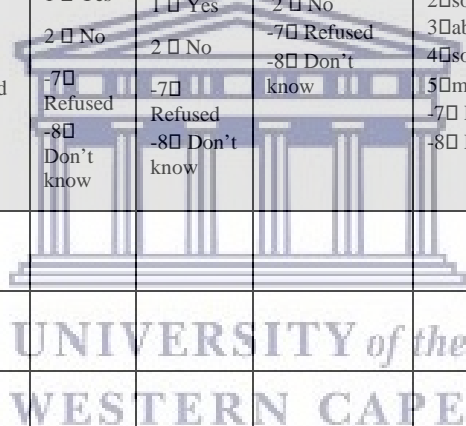| weight? (Measure using scale and record – in kg) -7☐ Refused	height? (Use height measuring device – in cm) -7☐ Refused	person from the scale reading	a. Exercise 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	b. Eat less food, fewer calories, or foods low in fat 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	c. Go without eating for 24 hours or more (also called fasting) 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	d. Take any diet pills, powders, or liquids without a doctor's advice 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	e. Other (specify)	76. Are you on a special diet? 1 ☐ Yes 2 ☐ No [**If no, skip to question 70**] -7☐ Refused -8☐ Don't know	yes, for how long have you being on diet? 1☐Under 1 year 2☐1-3 years 3☐4-6 years 4☐7-9 years 5☐10+ years -7☐ Refused -8☐ Don't know	explains your reason for being on a diet? 1☐ Weight reduction (low calorie) 2☐Low cholesterol 3☐Diabetic 4☐Other (specify) -7☐ Refused -8☐ Don't know

SECTION H: WEIGHT MANAGEMENT PRACTICES CONT'D. (*NB: This captures weight management practices of household members who are adults*
(18⁺ years) and children (5-11 years)).

Person Code	Name of Respondent	79. How often do you undertake the following physical activities?							80. Most of the time, adverts that I watch on TV about food influence what I eat 1☐Strongly Disagree 2☐Disagree 3☐Indifferent 4☐Agree 5☐Strongly Agree	81. I spend most of my leisure time watching TV or browsing the internet 1☐Strongly Disagree 2☐Disagree 3☐Indifferent 4☐Agree 5☐Strongly Agree
		a. Working out in a gym 1☐Never 2☐Seldom 3☐Sometimes 4☐Often 5☐Always -7☐ Refused -8☐ Don't know	b. Shopping 1☐Never 2☐Seldom 3☐Sometimes 4☐Often 5☐ Always -7☐ Refused -8☐ Don't know	c. Swimming 1☐Never 2☐Seldom 3☐Sometimes 4☐Often 5☐ Always -7☐ Refused -8☐ Don't know	d. Dancing 1☐Never 2☐Seldom 3☐Sometimes 4☐Often 5☐ Always -7☐ Refused -8☐ Don't know	e. Running 1☐Never 2☐Seldom 3☐Sometimes 4☐Often 5☐ Always -7☐ Refused -8☐ Don't know	f. Light cleaning **[Chores]** 1☐Never 2☐Seldom 3☐Sometimes 4☐Often 5☐ Always -7☐ Refused -8☐ Don't know	g. Jumping rope 1☐Never 2☐Seldom 3☐Sometimes 4☐Often 5☐ Always -7☐ Refused -8☐ Don't know		

SECTION I-1: SELF-PERCEIVED HEALTH STATUS & HEALTH CONDITIONS (*NB: This captures self-perceived health status of household members who are adults (18+ years) and children (5-11 years)*).

Person Code	Name of Respondent	82. In general, how do you perceive your health? 1☐Excellent 2☐Very Good 3☐Good 4☐Fair 5☐Poor -7☐ Refused -8☐ Don't know	83. Please indicate which of the following health conditions this person currently has						84. In comparison to other individuals of your age and gender would you say you are physically: 1☐much healthier 2☐somewhat healthier 3☐about the same 4☐somewhat less healthy 5☐much less healthy -7☐ Refused -8☐ Don't know	85. During the past 30 days, for about how many days did poor physical health keep this person from doing their usual activities, such as self-care, work, recreation or school? -7☐ Refused -8☐ Don't know
			a. Type 1 Diabetes 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	b. Type 2 Diabetes 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	c. Heart disease 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	d. Cancer 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	e. High blood pressure 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	f. High cholesterol 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know		

SECTION I-2: SELF-PERCEIVED HEALTH STATUS & HEALTH CONDITIONS CONT'D (*NB: This captures perceived health status of households*
(Household head and spouse if applicable)

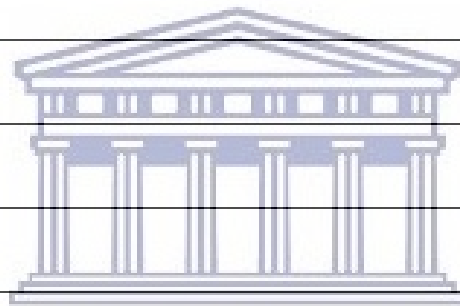| Person Code	Name of Respondent (household head and spouse if applicable)	86. For each of the family relations, provide details on their past health condition(s)											
		a. Father [**For each adult, tick all that apply**]	b. Paternal Grandfather [**For each adult, tick all that apply**]	c. Paternal Grandmother [**For each adult, tick all that apply**]	d. Father's brothers [**For each adult, tick all that apply**]	e. Father's sisters [**For each adult, tick all that apply**]	f. Mother [**For each adult, tick all that apply**]	g. Maternal Grandfather [**For each adult, tick all that apply**]	h. Maternal Grandmother [**For each adult, tick all that apply**]	h. Mother's brothers [**For each adult, tick all that apply**]	j. Mother's sisters [**For each adult, tick all that apply**]	k. Your brothers [**For each adult, tick all that apply**]	l. Your sons [**For each adult, tick all that apply**]	m. Your daughters [**For each adult, tick all that apply**]

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		$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable
		$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable	$\square_1$ Severe Obesity $\square_2$ Heavy $\square_3$ Normal Weight $\square_4$ Diabetes $\square_5$ Heart Problems $\square_{-9}$ Not Applicable

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SECTION J: KNOWLEDGE OF OBESITY (*NB: This captures knowledge of obesity of household members who are adults (18+ years) and children (5-11 years)*).

Person Code	Name of Respondent	87. In your opinion, how severe is the problem of overweight in this area? 1☐Very severe 2☐Somewhat severe 3☐Neither severe nor not severe 4☐Not very severe 5☐Not at all severe -7☐ Refused -8☐ Don't know	88. Have you received any training or health education on the causes and health risks associated with obesity? 1 ☐ Yes 2 ☐ No [**If no skip to question 81**] -7☐ Refused -8☐ Don't know	89. If answer to question 88 is **YES**, where did you learn about obesity and its risks?					90. What do you think is the **main** contributing factor to obesity? 1☐Poor eating habit 2☐ Lack of exercise 3☐Poverty 4☐Lack of knowledge about obesity 5☐Smoking and alcohol habits 6☐Family history	91. How would you describe your weight? [**Please show weight chart to respondent**] 1☐Very underweight 2☐Slightly underweight 3☐About the right weight 4☐Slightly overweight 5☐Very overweight 6☐I don't know -7☐ Refused -8☐ Don't know	92. How do you monitor your weight or body mass? 1☐I don't monitor my weight or body mass 2☐Scale 3☐How you look in the mirror 4☐How your clothes fit 5☐How other people tell me I look -7☐ Refused -8☐ Don't know
				a. Radio 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	b. Television 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	c. Mobile phone 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	d. In school 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	e. Newspaper			

93. What do you think can be done to control obesity?	

SECTION K-1: SCHOOL FEEDING PROGRAM *(This Section captures child food choices and eating habit outside the household. Only children 5-11 years are to answer this section)*

Child Code	Name of Respondent	94. What is your current grade (if child attends school? See Q8 Section A) **(Interviewer confirms with HH or person answering for the child)**	95. Does your school give food at school? 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know **[If NO skip to question 97]**	96. If Yes in 95, how often do you eat the food provided by the school? 1☐ Always 2☐ Sometimes 3☐Never -7☐ Refused -8☐ Don't know	97. Do you take food to school? 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	98. In the last 5 days of school, how many days did you take food to school? 1 ☐ Every day 2 ☐ One day 3 ☐ Two days 4 ☐ Three days 5☐ Four days 6☐ Never -7☐ Refused -8☐ Don't know	99. In the past 5days at school how many days did you not have anything to eat at school? 1 ☐ Every day 2 ☐ One day 3 ☐ Two days 4 ☐ Three days 5 ☐ Four days 6 ☐Never -7☐ Refused - 8☐ Don't know	100. At what period are you normally allowed to eat in school 1 ☐ First break and Lunch 2 ☐ Lunch time only 3 ☐ Anytime during class 4 ☐ Anytime outside class -7☐ Refused -8☐ Don't know	101. During lunch time do you buy food at school shop/ nearby spaza shop? 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	102. Does your Parent or caregiver give money to buy food at school 1☐ Always 2☐ Sometimes 3☐Never -7☐ Refused - 8☐ Don't know	103. Does your school prepare meal and ask pupils to bring money to buy? 1☐ Always 2☐ Sometimes 3☐Never -7☐ Refused -8☐ Don't know

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Child Code	Name of Respondent	104. What items do you usually buy on your way to school, at school or on your way back home? List below the kind of food you usually buy or eat on the way.									

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SECTION K-2: CHILD WATER INTAKE (*This Section captures child water intake at school*)

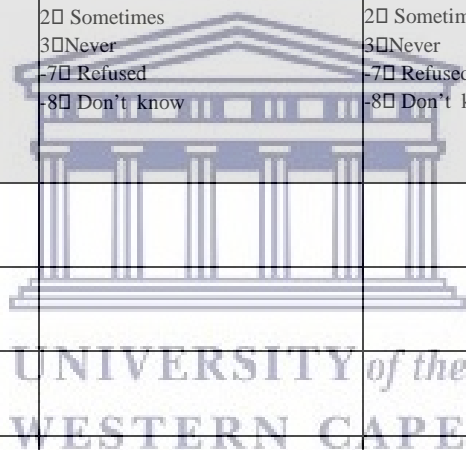| Child Code	Name of Respondent	105. Does your school have a running tap on the premises accessible to pupils 1☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	106. Does your classes have water and cups for pupils to drink water while in class 1☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	107. Do you have a water bottle 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	108. In the past 5 days of school, how often did you take your water bottle to school? 1 ☐ Every day 2 ☐ One day 3 ☐ Two days 4 ☐ Three days 5☐ Four days -7☐ Refused -8☐ Don't know	109. Are you allowed to drink water anytime in class? 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	110. Do you sometimes have juice /tea/milk or other drinks in your water bottle instead of water? 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know	111. What is the size of your water bottle (Please show child image to select from list?) 1 ☐ 300ml 2 ☐ 500ml 3 ☐ 750ml 4 ☐1000ml -7☐ Refused -8☐ Don't know	112. How many glasses of water do you drink per day? -7☐ Refused -8☐ Don't know	113 Do you drink all your water bottle content in school 1 ☐ Yes 2 ☐ No -7☐ Refused -8☐ Don't know

SECTION L-1: BEST INTEREST OF THE CHILD CONT'D (*What is your opinion about the following statement*)

Child code	Name of Respondent	114. Do you ask for food when you feel hungry 1☐ Always 2☐ Sometimes 3☐Never -7☐ Refused -8☐ Don't know	115. Do you ask for food when there is food in the house 1☐ Always 2☐ Sometimes 3☐Never -7☐ Refused -8☐ Don't know	116. Do you eat late because food is prepared late 1☐ Always 2☐ Sometimes 3☐Never -7☐ Refused -8☐ Don't know	117. Is your portion of food kept when you do not want to eat? 1☐ Always 2☐ Sometimes 3☐Never -7☐ Refused -8☐ Don't know	118. Do you sometimes skip meals at home 1☐ Yes 2☐ No -7☐ Refused -8☐ Don't know	119. Do you sometimes refuse to eat from neighbour's house? 1☐ Yes 2☐ No -7☐ Refused -8☐ Don't know	120. Do your parent stop you from eating food giving by neighbours/stranger 1☐ Always 2☐ Sometimes 3☐Never -7☐ Refused -8☐ Don't know	121. Do your parent stop you from eating fatty food 1☐ Always 2☐ Sometimes 3☐Never -7☐ Refused -8☐ Don't know

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SECTION L-2: BEST INTEREST OF THE CHILD (*What is your opinion about the following statement*)

Child code	Name of Respondent	122. Do you think the food you eat is what you like 1⬜ Always 2⬜ Sometimes 3⬜Never -7⬜ Refused -8⬜ Don't know	123. Do your parents ask for what you like to eat when they go shopping? 1⬜ Always 2⬜ Sometimes 3⬜Never -7⬜ Refused -8⬜ Don't know	124. Do you feel hungry shortly after eating a full meal? 1⬜ Always 2⬜ Sometimes 3⬜Never -7⬜ Refused -8⬜ Don't know	125. Do you think that your plate of food is usually too small 1⬜ Always 2⬜ Sometimes 3⬜Never -7⬜ Refused -8⬜ Don't know	126. Do you think food is served when you are no longer hungry? 1⬜ Always 2⬜ Sometimes 3⬜Never -7⬜ Refused -8⬜ Don't know

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CONTACT DETAILS

1	Apartment number (if any)	
2	Street Address (if any)	
3	Suburb or Local Area	
4	Town or City	
5	Post Code	
6	A landline we can contact this household on	
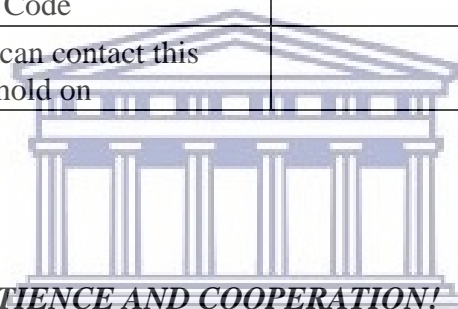
THANK YOU FOR YOUR PATIENCE AND COOPERATION!