

**Food habits of adolescents (16-19 years) in the
Manzini region, Swaziland**

RACHEL H. MANANA (née Gumbi)

Dissertation
Masters of Consumer Science General
University of Pretoria ©

Supervisor: Dr AT Viljoen

May 2014



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

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RACHEL H. MANANA (née Gumbi)

Dissertation submitted in partial fulfilment of the requirements for the degree
Masters of Consumer Science
in the Faculty of Natural and Agricultural Sciences
Department of Consumer Science, University of Pretoria ©

Supervisor: Dr AT Viljoen

May 2014

DEDICATION

This study is dedicated to:

- My late husband, Lawrence Kimpi Manana who was always a source of my inspiration and never failed to encourage me to further my studies
- My late parents, Pastor Petros and Mrs. Idah Gumbi for their love and prayers for me
- My late and only brother, Thomas who paid for my high school education giving me the basis from which to begin my academic journey
- My late and dear sister, Thobekile who looked forward to my completion, but regretfully just missed my graduation
- My daughter, Samu and her family and my sons, Sandiswa and Abanjalo who consoled me throughout all challenging times.

DECLARATION

I, **Rachel Hlengiwe Manana (née Gumbi)** declare that this dissertation for the Masters degree of Consumer Science General as submitted to the University of Pretoria is my own work that has not been previously done and submitted by anyone else neither at the University of Pretoria nor any other tertiary institution.

Signature .....

Date 2015-01-31.....

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- My Church members, family and friends that I have no space to mention but who supported me all the time.

ABSTRACT

FOOD HABITS OF ADOLESCENTS (16-19 YEARS) IN THE MANZINI REGION, SWAZILAND

By

RACHEL HLENGIWE MANANA (GUMBI)

Supervisor: Dr AT Viljoen

Department: Consumer Science

Degree: Masters in Consumer Science General

In this study the goal was to explore and describe the food habits of adolescents (16-19 years old) residing in the Manzini region of Swaziland, and to determine the extent to which traditional, fast and snack foods are included in their eating patterns. Scant information is available on the food habits of Swazi adolescents. This life stage is characterised by physiological and behavioural changes that could affect their eating patterns. In the literature, concerns are raised about the food habits of this age group in both developing and developed countries due to the noted prevalence of chronic diseases associated with non-communicable diseases such as obesity, diabetes and coronary heart diseases.

In Swaziland, there seems to have been a progressive shift in food consumption patterns characterised by a move away from the traditional to a more Western-orientated food culture. This transition in food patterns is due to various social, economic and cultural changes that are closely associated with urbanisation, modernisation, migration and acculturation.

The human ecological perspective, as theoretical perspective, combined with a quantitative research design was used to determine and describe the food habits of adolescents in the study area. Simple stratified random sampling was done and 301 Form 4 adolescents from six high schools in Manzini formed the sample. A pre-tested, self-administered questionnaire containing both open and closed-ended questions was used to collect the data. Information gathered was on the current eating patterns and the extent of snack and fast food consumption, including the familiarity, preference and frequency of consumption of traditional foods.

It emerged that the respondents' regular eating pattern comprised three or more meals a day. The majority ate breakfast that can be described as a bread-based meal. Maize continues to be the staple food and forms part of at least one or more meals a day. The frequent inclusion of rice as part of lunch and supper is increasing. Either meat or chicken is served with rice or stiff maize meal porridge at least three to four times a week. Only a small percentage of respondents reported a daily consumption of fruit and vegetables. This general low consumption rate raises a concern as it means that most of the adolescents were not having fruit and vegetables every day. It was encouraging to see that traditional Swazi foods continue to feature prominently in the eating patterns of this study group. This is supported by their positive attitude towards these foods as reflected in their level of familiarity and frequent consumption of them. Contrary to what is reported worldwide, the consumption of snack and fast foods is relatively low as the majority indicated indulging in these only three or four times a week. With the exception of the low fruit and vegetable intake, their eating patterns can be described as fairly good.

Based on these results, recommendations are made that appropriate nutrition education and nutrition curriculum planning be done in schools to promote increased vegetable and fruit consumption and discourage the consumption of unhealthy food options.

KEY WORDS:

food habits, adolescents, eating patterns, meal composition, traditional Swazi foods, familiarity, food preference, food frequency.

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Chapter 1: THE STUDY IN PERSPECTIVE

1.1 BACKGROUND AND INTRODUCTION

The adolescent period is characterised by critical phases of physical, psychological, social and behavioural changes (Viner, Ozer, Dennis, Marmot, Resnick, Fatusi & Currie, 2012; Sawyer, Afifi, Biakemore, Bruce, Ezeh & Patton, 2012; Dapi, Omoloko, Janlert, Dahlgren & Hanglin, 2007; Story, Neumark-Sztainer & French, 2002). Studies worldwide and throughout many sub-Saharan African countries, reveal concerns about the food habits of this age group as they are renowned for consuming snacks and fast foods that are high in fat and sugar content (Voorend, Norris, Griffiths, Sedibe, Westerman & Doak, 2012; Sdrali, Anisiadou, Goussia-Rizou & Costarelli, 2010; Seubsman, Kelly, Yuthapornpinit & Sleigh, 2009; Olumakaiye, Funke & Ajayi, 2007; Mattson & Helmersson, 2007; Dapi *et al.*, 2007; Dlamini & Lowrey, 2005; Bower & Sandall, 2002).

The consequence of this fast and snack food consumption is the global pandemic of obesity and a rapid rise of non-communicable diseases (NCDs), such as diabetes, high blood pressure and coronary heart diseases that are estimated to reach epidemic levels in the developing countries and become major causes of 60% of deaths worldwide (Popkin, Adair & Ng, 2011; Steyn, Labadarios & Nel, 2011; Giles, 2010; Popkin, 2006; Mafunda, Chatora, Rufaro, Ndambakuwa, Nyarango, Kosia, Chifamba, Filipe, Usman & Sparks, 2006). The undesirable outcomes of obesity are either psychosocial, such as poor self-esteem, isolation or health-related conditions that include cardiovascular diseases, cancer and death (Boutelle, Fulkerson, Neumark-Sztainer, Story & French, 2007). Results from the SANHANES-1 study conducted recently in South Africa indicated that the prevalence of obesity and overweight was 24.8% and 39.2% respectively for females aged 15 years and older compared to 20.1% and 10.6% of males who were overweight and obese (Shisana, Labadarios & Rehle *et al.*, 2013), which confirms the severity of the problem in southern Africa.

Recent findings also report an increase in overweight and obesity problems even in the poorest countries of sub-Saharan Africa, South Asia and other countries with higher income levels across the globe (Popkin *et al.*, 2011; Vorster, 2010; Giles, 2010; Mafunda *et al.*, 2006). It is stated that obesity is a result of dual forces of globalisation and modernisation, coupled with changes in food supplies that have a direct effect on food choices (Kittler, Sucher & Nahikian-Nelms, 2011:11-12; Giles, 2010; Seubsman *et al.*, 2009; Raschke & Cheema, 2007).

This change is referred to as a nutrition transition, defined as a stepwise sequence of characteristic changes in dietary patterns and nutrition intake associated with periods when populations are undergoing demographic transitions due to societal, economic and cultural change (Popkin *et al.*, 2011; Kittler *et al.*, 2011:11-12; Delisle, 2010). These demographic transitions are closely related to urbanisation, modernisation, migration and acculturation (Kittler *et al.*, 2011:11-12; Raschke & Cheema, 2007; Popkin, 2004).

A move away from a traditional to a Western-orientated food culture and its practices is part of the process of nutrition transition, which results in the progressive replacement of traditional foods and food patterns with those associated with a Western-orientated pattern (Madanat, Lindsay & Campbell, 2010; Raschke & Cheema, 2007). This is similar to what is reported in other urban areas in Africa (Macintyre, Venter, Kruger & Serfontein, 2012; Popkin *et al.*, 2011; Vorster, 2010; Dapi, *et al.*, 2007; Weinberger & Swai, 2006). The undesired outcomes of the nutrition transition usually culminate in increased risks associated with non-communicable diseases, such as obesity, diabetes and coronary heart disease.

Earlier studies on the Swazis by Beemer (1939), Jones (1963) and Ogle & Grivetti (1985a) provided robust evidence that during the late 1930s up to the mid-1980s Swazis still followed a very tradition-oriented eating pattern. A study conducted by Kgaphola and Viljoen (2000) at the end of the twenty-first century among a group of rural Swazi households confirmed that change is taking place regarding the food consumption patterns of Swazi people from a traditional to a Western-orientated pattern. This is similar to what is reported in other areas in Africa, such as Tanzania, Cameroon, South Africa, Nigeria as well as the West Africa and the Mediterranean region (Bibiloni, Martinez, Lull, Pons & Tur, 2011; Olumakaiye, Atinmo, Olubayo-Fatiregun, 2010; Dapi *et al.*, 2007; Weinberger & Swai, 2006; Kgaphola & Viljoen, 2000). An unpublished report by Dlamini and Lowrey (2005) indicates that there seems to be an erosion of Swazi traditional patterns in both rural and urban areas especially among the youth of Swaziland. Similar evidence is reported in other urban sub-Saharan areas in Africa, such as South Africa, East Africa and Cameroon and is attributed to urbanisation, economic growth and acculturation (Macintyre *et al.*, 2012; Raschke & Cheema, 2007, Dapi *et al.*, 2007; Vorster *et al.*, 2005; Kgaphola & Viljoen, 2000).

1.2 PROBLEM STATEMENT

Studies at the turn of the century report that food habits of adolescents have become a cause of concern worldwide (Sawyer *et al.*, 2012; Hamilton, 2011; McNaughton, 2011; Dapi *et al.*, 2007; Story *et al.*, 2002). The eating patterns of adolescents indicate a prevalence of high fast food consumption and snacking that has earned them the name of a “snacking generation” with a renowned inadequate intake of healthier food options such as fruits and

vegetables (Rieth, Morreira, Fuchs, Morreira & Fuchs, 2012; Hunt, Fazio, Mackenzie & Moloney, 2011; Sdrali *et al.*, 2010).

As far as the researcher could establish, there is no information on the current food habits of the Swazi adolescents. Compelling evidence of a prevalence of overweight and obesity amongst adolescents in all the regions of Swaziland, particularly in the urban areas, underscores the need to investigate the current food habits of Swazi adolescents and to see how the nutrition transition has contributed to these adverse consequences (Bandora, 2010:33; Swaziland Vulnerability Assessment Committee, 2010:17). Conducting such a study would be beneficial because available statistics indicate that this group accounts for a large and growing segment of the Swazi population (Marope, 2010: 27; Manzini Town Planning Scheme Report, 2010). This group should be aware of the importance of striving for an improved health status.

Against this background, this study seeks to explore and describe the food habits of adolescents (16-19 years) in the peri-urban area of the Manzini region of Swaziland (Figure 1.1), and to determine to what extent traditional, fast and snack foods are included in their



FIGURE 1.1: LOCATION OF MANZINI, SWAZILAND IN SOUTHERN AFRICA

diets as there is a lack of information on the dietary habits of adolescents in the Kingdom of Swaziland. The findings of the study will provide information on the food habits of Swazi adolescents that could form the basis of recommendations for nutrition interventions and the planning of nutrition curricula in schools.

1.3 JUSTIFICATION

This study undertakes to provide a current and systematic inquiry into the complex area of food habits with particular reference to adolescents in Swaziland, thereby closing the knowledge gap that presently exist on this issue. To justify the need for this investigation attention will also be given to the familiarity, frequency of consumption and preference for certain foods, including traditional foods. This is required in order to initiate and facilitate meaningful consumer education and nutritional interventions to curb the increased occurrence of obesity in Africa's youth.

Knowledge and insight into the food habits of the Swazi adolescents could be of further value and contribute in two other important areas related to consumer and nutrition education: first, the planning of appropriate nutrition subject curricula for high schools in Swaziland; and to ensure that adolescents in Swaziland receive school meals that are acceptable and nutritious.

1.4 RESEARCH OBJECTIVES

1. To determine and describe the current food habits of the Swazi adolescents aged 16-18 years in the Manzini region of Swaziland (henceforth referred to as the study group).
2. To determine and describe the extent to which traditional Swazi foods are included in the eating patterns of the study group, including their familiarity, preference rating and frequency of consumption
3. To determine and describe to what extent fast and snack food are consumed by the study group
4. To explore and describe the influence/contribution of the external and internal environments on the food habits of the study group

1.5 RESEARCH DESIGN AND METHODOLOGY

In this explorative and descriptive study, a quantitative research approach was employed. Data for this cross-sectional study was collected by means of a pretested survey questionnaire. The questionnaire measured different dimensions of food habits.

1.6 DELIMITATIONS OF THE STUDY

The study was confined to Form 4 learners in six high schools in the the peri-urban areas of Manzini, Swaziland.

1.7 OUTLINE OF THE REPORT

Chapter 1: The study in perspective

This introductory chapter has provided the background to the study, stated the research problem and highlighted its importance. The purpose and aim of the study were specified.

The outline of the rest of the research report is as follows:

Chapter 2: Theoretical perspective and conceptualisation

The second chapter provides an overview of the background and justifies the theoretical perspective of this study. It further presents the theoretical framework in terms of the various environmental factors that influence food habits. The food choice process and an overview of the traditional eating patterns of the Swazi people are discussed to further contextualise the food patterns of the study group.

Chapter 3: Adolescence as a life stage

In this chapter, an account of the literature reviewed on the adolescent life stage is given. A description of adolescence as a life stage and the various physical, cognitive and psychosocial developmental tasks that have to be completed during this life stage, and how they contribute to the formation of food habits, are discussed.

Chapter 4: Methodology

The research design is laid out in this chapter providing information on the research design, stating the objectives of the study and showing their links to the conceptual framework designed for the study. The sample and sampling methods, including the development of the measuring instruments, the data collection and analysis procedures are also explained. Measures taken to combat error and to ensure data quality are also stipulated. A brief description of the study area is included in order to contextualise the study.

Chapter 5: Results and discussions

The fifth chapter presents a discussion of the interpretation of the results with regard to the variables measured.

Chapter 6: Conclusion, evaluation and recommendations of the study

This chapter provides the conclusions drawn from the major findings of the study on food habits of adolescents and the implications that result. The study is evaluated, recommendations are made and suggestions for future research are given.

1.8 CHAPTER CONCLUSION

This introductory chapter has given the background, a statement of the problem and explained the study. It included the research objectives, methodology followed, delimitations of the study and a report outline. The next chapter will look into the justification of the theoretical perspective of the study and the various external and internal environments that influence food habits.

Chapter 2: THEORETICAL PERSPECTIVE

2.1 INTRODUCTION

This chapter conceptualises the key constructs used in this study on adolescents' food habits. The justification and explanation of the theoretical perspective of the study are given together with a brief overview of the factors that influence and guide the food choice process and food habits. In order to contextualise the food patterns of the study group, an overview of the traditional food habits of the Swazi people is described in the last section of this chapter.

2.2 HUMAN ECOLOGICAL PERSPECTIVE

The human ecological perspective was chosen as the theoretical perspective for the current study because it offers a holistic approach to the study of food habits, thereby helping us to fully understand how the complex matrix of interacting forces impact on human food patterns (Bryant, Dewalt, Courtney & Schwartz, 2003:2; Pelto, Goodman & Dufour, 2000:2). This model allows one to fully appreciate the way human food choices are influenced by the biological, socio-cultural and physical environmental factors and their contribution to food processing, production, distribution and consumption (Bryant *et al.*, 2003:2). It draws its theory from conceptual models developed by Pelto *et al.* (2000), Sobal, Khan and Bisogni (1998) as well as Jerome, Pelto and Kandel (1980).

This perspective is thus suitable for explaining the factors that influence individual's food choices and to illustrate the reciprocity of the numerous complex environmental factors that influence human food consumption behaviour (Viljoen, 2009:45; Bryant *et al.*, 2003:2; Story *et al.*, 2002; Pelto *et al.*, 2000; Sobal *et al.*, 1998). This section, therefore, deals with the justification and discussion of the theoretical perspective.

The human ecological systems perspective as described by Bubolz and Sontag (1993:419) and Boyden and Millar (1977:264) postulate that humans are both biological and social beings. Human beings have the ability to interact with various environments both at macro and micro levels, and are also capable of adapting to each of these environmental levels (Viljoen, 2009:45 Story *et al.*, 2002; Bubolz & Sontag, 1993; 419 Sims & Smiciklas-Wright, 1978:173; Boyden & Millar, 1977:264). The interaction occurs in a rather reciprocal manner in that the factors both influence and are also influenced by one other, which means that humans have the ability to respond to the environments by altering and or developing them in order to change each of them to suit themselves (Bubolz & Sontag, 1993:419 and 421). This therefore means that environments do not remain static, but are dynamic or fluid

as a result of these changes caused by humans. Although humans change or alter the environment where they live, they are ultimately also shaped by their environments.

Various resources are essential for the processes required to sustain one's environment. The human ecological perspective emphasises the importance of the creation, use and management of resources, opportunities and constraints by human beings in their environment. The way people adapt and develop their environments contributes to environmental stability and sustainability.

There is, therefore, interdependency between the natural, physical, and the socio-cultural environments on which humans depend for their survival (Bryant *et al.*, 2003:11; Bubolz & Sontag, 1993:419; Boyden & Millar, 1977:264). This relationship of interdependency also exists in the way the parts and wholes are connected in natural ecosystems. Life and the various environments are inseparable parts of a greater whole. The elements of the human ecological perspective thus include both people and their environments (Bubolz & Sontag, 1993:419).

Bubolz and Sontag (1993:419-421) therefore present a clear distinction between the quality of human life and that of the environment. The human ecological perspective clearly brings in the facet of interdependence between humans in congruence with their environments because there is a reciprocal relationship between humans and their physical and social environments (Bryant *et al.*, 2003:11; Boyden & Millar, 1977).

The human ecological perspective, as contended by Bubolz and Sontag (1993:419), is based on several core assumptions that are used to guide this study, namely,

- All parts of the environment are interrelated and influence each other
 - Humans interact with multiple environments
 - Humans respond to, change, develop, act on and modify their environments
 - Environments do not determine human behaviour, but pose constraints as well as possibilities and opportunities for humans.
- **All parts of the environment are interrelated and influence each other**

The natural, physical environment in which human beings live comprises climate, soil, water, plant and animal life. It therefore determines the type of food cultivated or grown for consumption in an area (Bryant *et al.*, 2003:11). Human beings have the ability to develop and improve the products of the natural environment through the use of technology such as advanced cultivation, processing, preservation and distribution techniques to produce more food for human consumption. This human and natural environment interrelationship therefore actually determines the type of food available for

consumption through these technological impacts or improvements. That means that each of the environments is interconnected in a specific way and will impact on what is available as food.

An example

Maize grows well in most of the regions of Swaziland, especially the Highveld, because of the favourable climatic conditions offered in this physical, natural environment. Due to the widespread availability of maize, it became an important component of the Swazi people's diet and is regarded as the staple food of this group (Swaziland Agriculture Business Year Book, 2013; Dlamini & Mdziniso, 2005; Ogle & Grivetti, 1985a; Beemer, 1939).

Humans have the ability to use certain modern technological methods and techniques to process a variety of maize products. These technological approaches contribute to making this food more acceptable (Bryant *et al.*, 2003:11). Modern technology uses sophisticated techniques to process maize in various forms such as samp, mealie rice, mealie meal and other products such as maize snacks manufactured by extrusion technology (i.e. Fritos and Big Corn Bites).

- **Humans interact with multiple environments**

Humans have a complex interaction with various environments such as the natural, economic, political and socio-cultural environments. The food choice process is guided by these environments as they determine availability, accessibility, affordability and acceptability of food from which the individual chooses food. These environments are discussed in section 2.3 and indicate how and where each one functions in the food choice process.

An example

The indigenous green leafy vegetables, such as *ligusha* (*bidens pilosa*) and *chuchuza* (blackjack) are readily available in summer when there is abundant rain in Swaziland. The availability of these vegetables to people living in the areas where they grow contributes to the acceptance of these indigenous vegetable varieties as food for the preparation of relishes. The people living in these areas will in turn respond or interact with the natural environment by collecting them as food and by using technology, a product of the socio-cultural environment, to prepare them as relishes.

- **Humans respond to, change, develop, act on and modify their environment.**

Adaptation is a continuous process in all ecosystems. Humans strive for survival, and will respond to different environments in order to survive. In this process they adapt to, change, develop or modify environments for their own benefit (Bubolz & Sontag, 1993:433). Since human adaptation is dynamic, it manifests constant change and development.

An example

Due to the innovative ability humans possess, new technologies are constantly being developed and this has been particularly marked since the era of industrialisation with its emphasis on mechanisation. In terms of food, this has led to various new forms of food being developed due to improved technology of processing, preserving and preparing it. The emergence of convenience foods serves as an example. Changes in people's meal patterns and food contexts are largely seen to be due to changes in work patterns. For example, nowadays there are many women working outside the home or joining the labour force due to the changes in the socio-cultural environment of people. Their economic contribution to family income has played a significant role in improving the economic situation in their families - ultimately this affects family food practices. They have the financial power to procure food they want, especially convenient varieties, since they are too busy to cook. In response, convenience foods are on the increase the industry now accommodates these instant changes. These societal changes have come about through modernisation and urbanisation (Bryant *et al.*, 2003:60-62).

- **Environments do not determine human behaviour, but pose constraints as well as possibilities and opportunities for humans**

In the view of Bubolz and Sontag (1993:433), the environments in which humans live can either restrict or promote their well-being, and this is determined through the adequacy of the environment, the choices made and the availability of resources. Adequacy of the environment implies the range of choices perceived by individuals as based on the resources available, their needs, values and management practices.

An example

Swaziland's ecological zones allow for certain crops to either grow well or not at all in certain regions. For example, most vegetables do not grow well in the Lowveld due to the dry, arid climate of the physical environment. They grow well naturally in the Middelveld where natural conditions favour them. The dry conditions of the Lowveld

thus inhibit or constrain the growth of certain indigenous and cultivated vegetables (Ogle & Grivetti, 1985a). To overcome this, humans altered or modified the environment through the use of technology by means of modern agricultural practices such as mechanical planting, fertilisation and irrigation. The next section deals with the factors influencing food habits and how they contribute to the food choice process.

2.3 FACTORS INFLUENCING FOOD HABITS

The model by Viljoen (2009:23), presented in Figure 2.1, illustrates the environmental levels and their interrelations and how they contribute to food habits and the food choice process. These environmental levels are distinguished as two broad groups, the external and internal environments, where the external environment comprises of the macro-, exo- and meso-environments, and the internal environment of the micro-environment. In Figure 2.1, these are represented by the natural and physical, economic and political, socio-cultural and individual environments respectively. Each of the groups of environments is briefly explained to illustrate their contribution to food habits and the food choice process as an integral part of food habits.

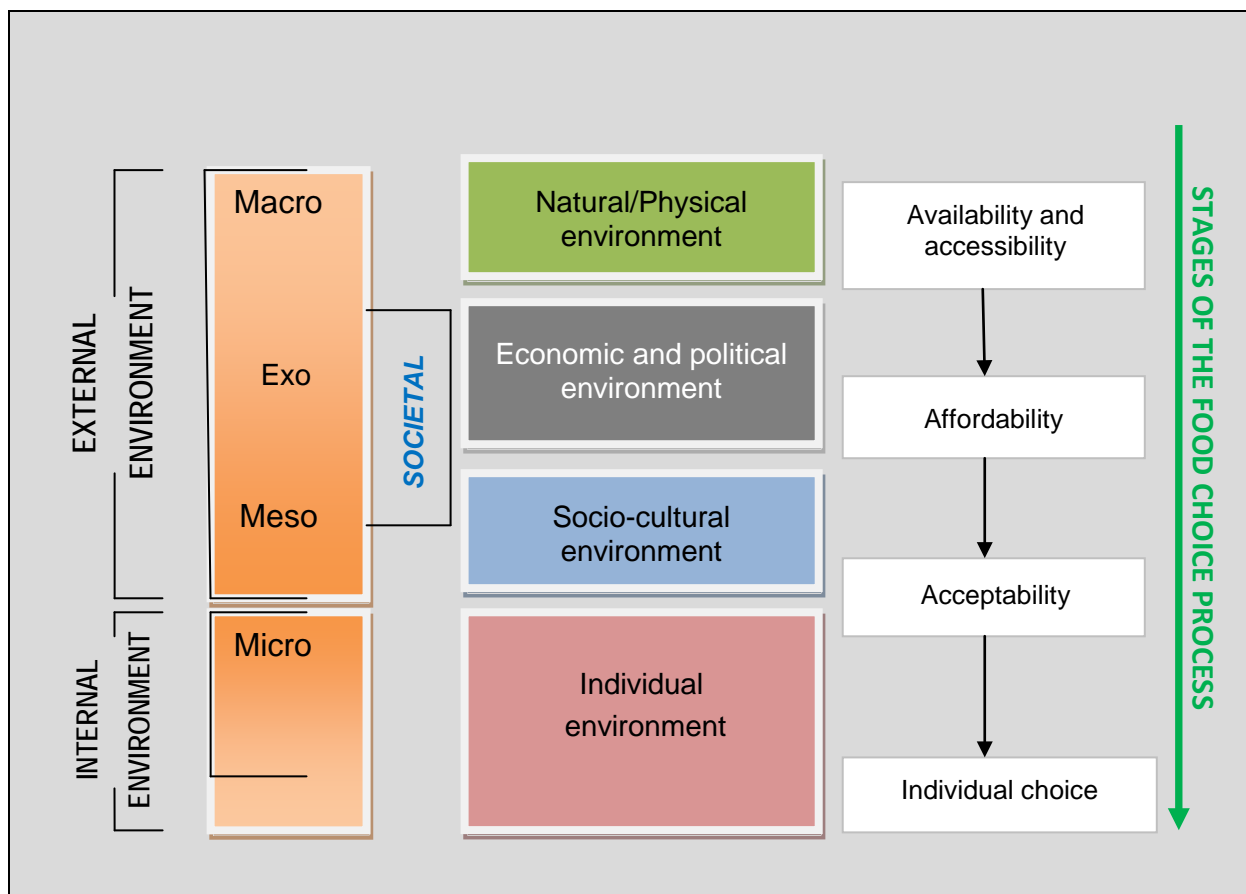


FIGURE 2.1: THE FOOD CHOICE PROCESS (Viljoen, 2009:23 & 279)

Food habits are “the practices and associated attitudes that determine the way in which individuals or groups of individuals in response to social and cultural pressures

select, consume and utilise portions of the available food supply” (Mead,1945:13). Food habits are thus rather complex and diverse, and are influenced by an array of interrelated factors, which can be grouped into external and internal environmental factors (Kittler *et al.*, 2011:2; Bryant *et al.*, 2003:11; Viljoen & Gericke, 1998; Parraga, 1990). The external environmental factors will be discussed first, followed by those from the internal environment.

2.3.1 External Environmental Factors

This environment consists of three environments namely; the natural or physical environment, the political, the economic and the socio-cultural environments.

2.3.1.1 Natural and physical environment

The natural and physical environment refers to the natural and structural environments in which mankind lives. The natural environment includes the climate, soil and water resources together with plant and animal life which are closely associated with and affect food availability. The physical environment includes the human-built environment with infrastructures such as shopping centres, stores, roads and railroads (Story *et al.*, 2002). The natural environment is thus likely to create constraints or opportunities for food production by providing suitable conditions for the production and growth of some plants and animals or not. Bryant *et al.* (2003:11) mention, for example, that the environmental conditions in a desert area may not provide favourable agricultural opportunities, but the ecosystem could be relatively rich in edible wild plants and animals. The physical environment within a community setting that has infrastructural features such as supermarkets, green grocers, restaurants and fast food outlets contributes to the accessibility and availability of foods (Holsten, Deatrick, Kumanyika, Pinto-Martin & Compher, 2012; Faber, Oelofse, Van Jaarsveld, Wenhold & Jansen van Rensburg, 2011; Sobal & Bisogni, 2009; Story *et al.*, 2002).

2.3.1.2 Economic and political environment

The economic and political environments include the political and economic systems that determine the way in which the production, distribution, exchange and consumption of goods, including foods, are managed (Bryant *et al.*, 2003:13; Pelto *et al.*, 2000:2). The political system has structures such as government, legislation, policies and controls that impact on food marketing. The economic system is closely related to aspects such as family income, price of food, marketing strategies and consumer demands as well as the ability people have to purchase food (Holsten *et al.*, 2012; Larson, Story & Nelson, 2009; Bryant *et al.*, 2003:297).

Economic studies on food choice have shown that household income and food costs directly influence food selection and often override considerations such as healthfulness, social desirability or even the taste of food (Sobal & Bisogni, 2009; Messer, 2007:15). Hence, individuals not only choose food based on availability, but their choice is also influenced by whether or not it is available at a price they can afford. This implies that the higher the disposable income, the wider the choice and the variety of food consumed (Hunt *et al.*, 2011; Sobal & Bisogni, 2009; Messer, 2007; Feldman, 2005).

2.3.1.3 Socio-cultural environmental factors

The socio-cultural environment embraces the two environments that jointly form the twin concept 'socio-cultural'. Culture represents the patterns of behaviour, whereas society refers to the people who participate in the culture and thus give it concrete expression (Kittler *et al.*, 2011:6; Ferraro, 2006:19-20). Culture it is not only dynamic, but is also diverse, embracing symbolic, social and economic facets. These all shape and influence food choice, patterns and habits (Olumakaiye *et al.*, 2010; Messer, 2007:4; Blades, 2001). The socio-cultural environment deals with how people share the same culture in a society. It is, therefore, the larger external environment in which the individual or group functions, comes into contact with, and interacts with other groups, societies and communities (Bryant *et al.*, 2003:12).

Culture refers to a shared understanding amongst individuals or groups making them unique from others (Kittler *et al.*, 2011:6; Ferraro, 2006:19; Feldman, 2005; Bryant *et al.*, 2003:12). People in a culture normally have a common understanding that also manifests through their material artefacts that include their food habits and cuisine (Bryant *et al.*, 2003:12-13). Simply put, culture is the potential that people have to enable them to share ways of thinking, feeling and creating ways of behaviour that emanate from social interaction with others. For this reason, members of a social group are able to share norms, beliefs, attitudes and values about food in an identifiable social manner (Kittler *et al.*, 2011:6; Ferraro, 2006:19; Bryant *et al.*, 2003:190-209). Those values or ideas about food develop as traditions within a culture over time. The food eaten, methods for preparation used and meal patterns each form an important part of cultural identity (Kittler *et al.*, 2011:7).

Culture as a construct is, however, not a single entity, but includes three components namely technology, social organisation and ideology (Bryant *et al.*, 2003:12). Each of these components will be discussed in the subsections that follow.

i. Technology

In the context of this study, as suggested by Bryant *et al.*, (2003:12), technology refers to that part of culture that deals with the development of techniques and strategies to obtain food. It includes the knowledge, practices, techniques and tools a group uses to produce, store and preserve food. The core survival strategy for obtaining food in a culture is thus through the employment of technologies in pursuit for subsistence activities for food getting, storing, cooking and preservation (Guerrero, Claret, Verbeke, Vanhonacker, Enderli, Sulmont- Rosse, Hersleth & Guardia, 2012). This is made possible through sharing ideas within a group of people sharing the same culture (Bryant *et al.*, 2003:12). The eating habits of a people of a culture or ethnic group are often a reflection of their material culture and technological advancement (Kittler *et al.*, 2011:11; Fieldhouse, 1995:18). The impact of industrialisation, urbanisation and globalisation has, for example, brought about vast changes in the availability and accessibility of food in modern societies (Kittler *et al.*, 2011:12). Various authors also share the opinion that other technological influences have contributed to modern changes in food choices and food habits such as mass media and advertising (Vereecken, Todd, Roberts, Mulvihill, & Maes, 2009; Saelens, Sallis, Nader, Broyles, Berry & Taras, 2002).

ii. Social organisation

Social organisation describes the way in which a social group organises its members into families, communities and other groupings. It also includes the norms that regulate relationships, the allocation of work within the household and how the day is organised. Moreover, local patterns of leadership and authority are formulated (Bryant *et al.*, 2003:12). Social organisation is portrayed in people's food habits in many ways. For example, in traditional African cultures, men were given meat because it was regarded as a food with a high status value, whereas small children were given fermented food called *emas* (sour milk) (Huss-Ashmore & Curry, 1991). Children were deprived of meat because they were perceived as not having status in the community. Nevertheless, children are considered to represent the future in Swazi culture and society, translated as '*bantfwana ngumliba loya embili*,' (children represent the future generation); hence the assertion about them not having status is questionable.

iii. Ideology

Ideology includes the symbolic meanings and associated values placed on specific foods (Bryant *et al.*, 2003:13). It embraces the meaning of what constitutes food and meals as well as norms regarding the appropriate format and timing of meals (Bryant *et al.*, 2003:13; Fieldhouse, 1995:25). People's innermost feelings are, therefore, reflected in their food ideology and subsequent behaviour. It is also seen as an intangible part of culture (Ferraro,

2006:19). Ideology is a collective name referring to the values, attitudes, knowledge and beliefs which groups of people share with symbolic meanings to a range of things and experiences, like food and eating as part of culture (Ferraro, 2001:22; Fieldhouse, 1995:30).

2.3.2 Internal Environmental Factors

Together with the external environmental factors, internal, individual environmental factors influence the individual's food habits and food choices.

The individual or internal environment is rooted in the socio-cultural environment, and refers to the unique characteristics of the individual that affect their own food choices and preferences. They include the psychological, biological and physiological characteristics of an individual (Messer, 2007; Rozin, 2006:25-28; Bryant *et al.*, 2003:13). The psychological characteristics include the individual's knowledge, attitudes, beliefs and values that shape specific food choices (Rozin, 2006: 25-28; Sobal, Bisogni, Devine & Jastran, 2006:10; Sims & Smiciklas-Wright, 1978). The aspects are now discussed.

2.3.2.1 Biological and physiological characteristics

Biological characteristics refer to the energy and nutrient requirements of individuals or groups. The need for meeting the requirements for good nutrition is thus usually very high during adolescence (Olumakaiye *et al.*, 2010; Rolfes *et al.*, 2009:543-544). Adolescents, for example, experience an increase in appetite when they undergo the rapid spurt of growth in height and other changes to their bodies (Olumakaiye *et al.*, 2010; Dapi *et al.*, 2007:320). The energy needs of adolescents will differ based on their growth rate, gender, body composition and the level of physical activity in which they are engaged (Whitney & Rolfes, 2013:537; Rolfes *et al.*, 2009:543-544).

Increases in lean body mass, skeletal mass and body fat that occur during puberty results in the energy and nutritional needs that exceed those at any other life stage (Whitney & Rolfes, 2013:537; Brown, 2011:365). The boys' lean muscle mass increases due to the rising levels of testosterone while girls continue growing muscle mass and adding more body fat. Girls also begin to menstruate and this leads to a need for increased nutrients such as iron for blood formation, protein for body mass maintenance, as well as vitamin D and calcium for bone development (Whitney & Rolfes, 2013:537-8; Brown, 2011:365).

Physiological characteristics of an individual can influence food choices as well as psychological traits that include aspects such as the individual's sensory or taste preferences that are, in turn, determined by genetics and endocrinology (Sobal & Bisogni, 2009).

2.3.2.2 *Psychological characteristics*

Psychological or emotional characteristics are normative gauges about what, how and when food should be eaten. These factors allow individuals to be unique in their food decisions (Sobal & Bisogni, 2009; Sobal *et al.*, 2006).

i. **Knowledge**

Knowledge refers to what a person comprehends, the facts, information, skills and understanding gained through learning or experience about something, or simply being informed (Lally, Bartle & Wardle, 2011). Knowledge functions as a tool for an individual to make changes and can serve as a predictor of food consumption (Lally *et al.*, 2011; Story *et al.*, 2002). Knowledge is required for the selection of appropriate food for a specific situation or context (Lally *et al.*, 2011).

Since culture is learned, and food habits are part of culture, knowledge is gained with regard to food through the process of socialisation by means of modelling the transmission of beliefs, norms and values and through reward or punishment of certain behaviours (Hunt *et al.*, 2011; Mattsson & Helmersson, 2007; Ferraro, 2006:19; Ferraro, 2001:22-23). Food habits are formed during infancy and early childhood and are bound to be long-lasting. Parental influence is evident in children's dietary practices (Hunt *et al.*, 2011).

Story *et al.* (2002) emphasise the importance of knowing how, why and what to eat. Since eating behaviour of humans is a function of both individual and environmental influences, socialisation plays a significant role and has a strong influence in knowledge development from infancy up to old age (Mattsson & Helmersson, 2007; Messer, 2007; Bryant *et al.*, 2003: 197). It is through primary socialisation in the family that children learn and get to know the types of food readily available in the environment and which ones are edible and acceptable in their culture (Hunt *et al.*, 2011; Mattsson & Helmersson, 2007).

ii. **Attitudes**

Attitudes can be described as an enduring organisation of beliefs around an object like food (Botonaki & Mattas, 2010:629). For example, people may like or dislike a particular food based on the attitude they have about that food (Lally *et al.*, 2011; Hauser, Jonas & Riemann, 2011; Mattsson & Helmersson, 2007; Parraga, 1990). They give value to a certain item (Hauser *et al.*, 2011).

The individual's salient beliefs and the attitudes toward a particular food will either drive a negative or positive force towards

its acceptance because both an affective and a cognitive component is present (Hauser *et al.*, 2011; Rockeach, 1973:3-23). Together with values, attitudes about food serve as the foundation for individual food habits (Hauser *et al.*, 2011; Botonaki & Mattas, 2010:629; Fieldhouse, 1995:86). If one has a positive attitude towards a particular food, this usually indicates that the food is likely to be consumed (Hauser *et al.*, 2011; Botonaki & Mattas, 2010:629; Mattsson & Helmersson, 2007; Norris & Pettifor, 2006).

iii. Beliefs

According to Rockeach (1970:1-13), a belief is “a simple proposition, conscious or unconscious, inferred from what a person says or does”. A food belief system is influenced by one’s attitude towards the food and the values held about it. Consequently, food beliefs can be associated with one’s ideas about health, age or physiological states and even social feelings or emotional needs. Attitudes and beliefs are important individual variables in food choices. This means that since they are mental images, they guide appropriate behaviour with regard to food choice. Together with values, beliefs are enduring and difficult to change (Hauser *et al.*, 2011; Botonaki & Mattas, 2010:629). They are part of a society’s conceptions regarding the way food affects the human body (Bryant *et al.*, 2003:93).

iv. Values

Values are “abstract and enduring concepts that help to give meaning to attitudes, norms, beliefs and behaviour” (Botonaki & Mattas, 2010:629). Compared to attitudes, values are said to be more stable over time and centrally connected to people’s cognitive structure, hence important in determining human behaviour (Botonaki & Mattas, 2010:629). According to Hauser *et al.* (2011), there exists a close relationship between values and attitudes in that values cannot be separated from attitudes as they are responsible for shaping them.

Values are defined as “enduring beliefs centrally located within one’s total belief system” (Rockeach, 1970:1-13). They are principles or philosophies held by an individual that guide the way of conduct, behaviour or the manner in which a person interacts with others. Values are determinants of what is desirable and undesirable (Botonaki & Mattas, 2010:629).

Values are closely associated with norms and the prestige placed on food, or with the social status associated with food, such as an appropriate choice, and they have a strong influence on food choice (Hauser *et al.*, 2011; Botonaki & Mattas; 2010:629; Wetter, King & Baer, 2001:515). They are ingrained and are invisible in the day-to-day life of an individual (Kittler *et al.*, 2011:12). Values reflect what people desire as food, and what is held in high esteem, yet beliefs reflect or constitute a socially constructed and shared view of what should or should not be regarded as food (Hauser *et al.*, 2011). People’s beliefs about food values

contribute to their food habits. How the food choice process, as identified as an integral part of food habits, functions will now be discussed.

2.4 Food Choice Process

The food choice process forms an important part of food habits as it deals with how people select and consume food (Sobal & Bisogni, 2009). It is therefore important to understand the food choice process as it part of human eating behaviour. Apart from the factors that influence food habits, there are four important elements that guide the food choice process. These are availability, accessibility, affordability and acceptability, as illustrated in Figure 2.1.

2.4.1 Availability

Availability is an important factor in the food choice process as it determines the type of food that is likely to be selected or chosen since it is obtainable (Holsten *et al.*, 2012; Jaeger, Bava, Worch, Dawson & Marshall, 2011; Faber *et al.*, 2011; Raschke *et al.*, 2006; Bryant *et al.*, 2003:210). Culture also plays an important role in food availability and, together with the economic and political environmental factors, it determines what food is produced and/or imported for consumption (Bryant *et al.*, 2003:210). In order to be accessible, food must be available (Bryant *et al.*, 2003:210).

2.4.2 Accessibility

Accessibility deals with making the available food reachable to consumers so that it is at their disposal. For an individual to access or choose any food, it must not only be available and accessible but also affordable (Sobal & Bisogni, 2009; Messer, 2005; Bryant *et al.*, 2003:13-14; Peltó *et al.*, 2000).

2.4.3 Affordability

Affordability refers to the ability to obtain food governed by the amount of money to purchase the available food, as well as the time, skills and facilities the consumer has for preparation and storage of the particular food (Larson *et al.*, 2009; Bryant *et al.*, 2003:14). Lack of money affects the individual's choice of food and its availability to the consumer (Vorster, 2010).

2.4.4 Acceptability

Food acceptability deals with the affective domain that depicts a person's liking or dislike for the particular food item (Cohuet, Marquer, Shepherd, Captier, Langendorf, Phelan, Manzo & Grais, 2012; Wetter *et al.*, 2001; Hughes, 2000). Acceptability is thus a perceptual and evaluative construct that deals with feelings and emotions, or a specific mood that determines the likes and dislikes for a certain food. In turn this is influenced by the sensory

attributes of the food (appearance, texture, taste, flavour) and involves the behavioural aspects of food choice (Cohuet, *et al.*, 2012; Sobal & Bisogni, 2009; Conner & Armitage, 2002:10). Although food acceptability is embedded in the cultural background of the people, it does not depend on it completely as individual taste and preferences also come into play. For example, everybody from the same cultural background may not find all the available food acceptable because of their individual taste preferences (Rozin, 2006:23 ; Bryant *et al.*, 2003:86; Fieldhouse, 1995:27). This could be due to the sensory perceptions they have about the food, such as smell, taste and texture (Sobal & Bisogni, 2009). The food choice process is therefore complex and influenced by a range of interrelated factors that include environmental, cultural and personal factors. Understanding these conditions conveniently leads into the next section that deals with the traditional food habits of the Swazi people and how they have changed over time up to the situation found at beginning of the 21st century.

2.5 TRADITIONAL FOOD HABITS OF THE SWAZI PEOPLE

In order to contextualise the current food habits of the study group, a brief overview of the development and changes in the food habits of the Swazi people will be presented from the limited documentation on the topic. Culture is generally accepted as a means by which humans adapt to their environments. It is also known that culture is an interacting and changing system, and food habits, as part of culture, are therefore also subject to change (Viljoen, 2009:4; Rozin, 2006:12; Kgaphola & Viljoen, 2004; Fieldhouse, 1995:1). In this section a brief overview of the traditional food sources of the Swazi people will be given, including what and when new food items were introduced and adopted as part of the Swazi diet. This will be followed by a description of the current eating patterns of the Swazi people to illustrate how the newly introduced foods are incorporated into this group's eating patterns.

2.5.1 Traditional food sources

Traditional foods (see Addendum E) are those foods which are locally or regionally consumed by individuals for some time. They can depict the cultural heritage of a particular society (Guerrero, *et al.*, 2012; Trichopoulou, Soukara & Vasilopoulou, 2007). Swaziland is ecologically diverse with four different ecological zones namely, the Highveld, Middleveld, Lowveld and Lubombo Mountains (Ogle & Grivetti, 1985b; Jones, 1963:21-25; Beemer, 1939). Each region's climatic influence on what is grown is different (Beemer, 1939; Kuper, 1980). For example, in the Highveld, there are more indigenous green leafy vegetables such as *chuchuza* (black jack), *imbuya* (amaranthas spp), and *ligusha* (bidens pilosa) due to the temperate climatic conditions experienced especially in spring and summer (Ogle & Grivetti, 1985b:7-11; Kuper, 1980). The Middleveld has a variation of edible "weeds of agriculture" which refers to the wild vegetables or those that grow naturally (Ogle & Grivetti, 1985c:34).

The Lowveld and Lubombo regions have limited agricultural production due to poor rainfall. The dry conditions inhibit the growth of indigenous and cultivated vegetables as well (Ogle & Grivetti, 1985a:198).

Historically, the Swazis lived on what the natural environment had to offer (Jones, 1963:40). It helped the Swazis to procure an adequate supply of food. This had an impact on the traditional diet as it depended on what was available (Beemer, 1939). Since technological developments were not advanced, their food sources were derived from cultivation, gathering, hunting and keeping livestock (Ogle & Grivetti, 1985 a, b & c; Jones, 1963: 49-50; Beemer, 1939). These are discussed briefly in the subsections that follow.

2.5.1.1 Cultivation

The primitive agricultural activities involved the cultivation of homestead gardens where various crops were grown such as cereals, legumes and vegetables.

i. Cereals

The cereals that were cultivated included sorghum, millet and later maize (*Zea maize*). The latter was regarded as important due to being readily available and became the staple cereal for the Swazi people (Kgaphola & Viljoen, 2000:70; Ogle & Grivetti, 1985a:204; Coetzee, 1982; Jones 1963:67-68; Beemer, 1939). Maize grew well in the Highveld, and sorghum and millet in the Lowveld as these grains are renowned for withstanding drought (Jones, 1963:68).

ii. Legumes

The available types of legumes that were grown included peanuts, mungbeans, jugo beans, lentils, cowpeas and sesame seeds (Jones, 1963:69), which were usually stored in granaries, bags or baskets in food huts of the Swazis (Beemer, 1939). The Middleveld region produced a better yield of these legumes in comparison to the other less favourable ecological zones for these crops (Jones, 1963:69). Beans especially are used widely in Swaziland as they grow well in most of the regions and ecological zones of the country (Dlamini & Mdziniso, 2005).

iii. Vegetables

Cultivated vegetables included a variety of cucurbits, for example, pumpkin (*ematsanga/tintsanga*), vegetable melons (*emajoti*) and gourds (*emaselwa*), as well as yellow and white sweet potatoes (*bhatata*). The leaves of pumpkin, cowpeas and *emadumbe* (*cilocasia antiquorum*) were used as a vegetable relish to complement the staple food, maize, when other foods such as legumes or meat were not available to use as a relish with

the staple food (Beemer, 1939). These were usually planted among the maize plants (Beemer, 1939; Jones, 1963:69-71).

2.5.1.2 Gathering

The foods that were gathered included indigenous vegetables such as green leafy vegetables, roots and tubers and wild fruits. This was done in spring and summer although some were available during the winter months (Kgaphola & Viljoen, 2000:70; Ogle & Grivetti, 1985c; Jones, 1963:69). The cultivated food was supplemented by these indigenous vegetables and fruits that grew naturally in certain regions of Swaziland (Ogle & Grivetti, 1985 a; Beemer, 1939). Examples of such vegetables are *umsobo* (*solanum nigrum*), *emahala* (aloe), *emakhowe* (mushrooms), *inshubaba/inkakha* (*momordica* species), *chuchuzza* (*bidens pilosa*) (Ogle & Grivetti, 1985c; Jones, 1963:70; Beemer, 1939).

As early as 1939, the gathering of fruit from indigenous trees or plants was noted. The wild fruits were eaten in their half ripe state by the children before the pests could ravage them (Jones, 1963:71; Beemer, 1939). Fruits from the veld were gathered and commonly used as snack foods. Those documented included monkey orange (*umkhwakhwa*), quinine berry (*umfomfo*), and marula (*emaganu*) (Kgaphola & Viljoen, 2000).

Children usually gathered certain insects that were used as source of food and served as part of the traditional meal. Examples are caterpillars, termites, locusts, grasshoppers and flying ants that were usually fried for food and were hunted in different ways (Ogle & Grivetti, 1985b; Jones, 1963:50). Swazi children used to chase locusts and grasshoppers, hunt for the flying ants from their anthills and pick caterpillars from the green foliage during summer (Jones, 1963:50).

2.5.1.3 Livestock

The Swazis derived great pride in keeping livestock (Beemer, 1939). Rearing animals was a common practice as the livestock were regarded as a symbol of wealth and status. Cattle were not kept as a source of food, but slaughtered for special occasions or used for religious and ceremonial purposes (Jones, 1963:72; Beemer, 1939). They were also reared for milk production and labour (Ogle & Grivetti, 1985). Milk was consumed as *emasi* (sour milk) prepared from finely ground sorghum or maize meal (*emasi lavutjiwe*).

In addition, sheep, goats and chickens were used as sources of food (Jones, 1963:71-74). The eggs from chickens were also eaten. They were only given to the men. Women and young girls were prohibited from eating them as it was believed they would lust after men (Jones, 1963:74). Pork was disliked by many, based on certain beliefs (Kgaphola & Viljoen, 2000; Jones, 1963:71; Beemer, 1939).

2.5.1.4 Hunting

From the work of Beemer in 1939, it was reported that the people hunted wild animals, including game. However, hunting has declined because wild animals have become scarce. The traditional Swazi adult males hunted many kinds of buck when the King opened his hunting grounds (Jones, 1963:50).

2.5.2 Traditional eating patterns of the Swazi people

The Swazi people have very specific meal patterns and ideas about the composition of their meals, as will be pointed out in the discussion that follows.

2.5.2.1 Meal patterns

Meal patterns refer to the number of meals eaten a day and includes the specific composition of the different meals (Viljoen, Botha & Boonzaaier, 2005). Traditionally, Swazis followed a pattern of serving two meals a day that consisted of stiff maize-meal porridge served with either a relish or side relish for both breakfast and supper (Beemer, 1939).

Thirty years later, Jones (1963) reported that although this meal pattern is still followed, certain changes in the meal patterns were observed. A shift from the traditional two meals a day to a Western-orientated pattern of serving three meals a day was noted in some households. At the time of the study by Kgaphola and Viljoen in 2000, this pattern was confirmed. A similar pattern is reported in other African countries (Olumakaiye *et al.*, 2010; Temple, Steyn, Mayburgh & Nel, 2006; Labadarios, Steyn, Maunder, Macintyre, Gericke, Swart, Huskisson, Dannhauser, Vorster, Nesamvuni & Nel, 2005).

2.5.2.2 Meal composition

Together with the change in the meal pattern, a change in the composition of Swazi meals has also been noted. As far back as the end of the nineteenth century, *emasi* (sour milk) was the core food in the Swazi diet where the morning meal consisted of *emasi* (sour milk) with sorghum, whereas the evening meal consisted of *emasi* (sour milk) and a crushed maize grain (*umcaba*) (Jones, 1963:66). From the 1980s studies report that a typical Swazi meal pattern comprised three meals a day and was followed by the majority of the households. Supper resembled breakfast and lunch with more non-traditional variety such as rice, chicken, beef or pork dishes being included (Kgaphola & Viljoen 2000:70; Ogle & Grivetti, 1985). A midday meal on the other hand, consisted of stiff maize meal porridge and a side dish.

Evening meals resembled those of lunch and breakfast. Some communities would use leftover food from their midday meal, or they might cook maize meal porridge and a relish from scratch as an alternative with that normally used for lunch (Kgaphola & Viljoen, 2004:18). The Sunday meal was often important and regarded as a 'culinary highlight of the week' (Kgaphola & Viljoen, 2004:18). This meal included dishes such as rice, fried or roasted chicken, salads and cooked vegetables such as pumpkin, potatoes and cabbage.

In between meals

The snacking habit, though irregular, was reported up to the late 1930s. The kind of snacks consumed consisted of wild root vegetables *emadumbe* (taro), jugo beans (boiled and carried to the fields), wild fruits, roasted groundnuts or a fermented mealie meal beverage (*emahewu*) (Beemer, 1939), as well as sugar cane sticks, leftovers and bread (Kgaphola & Viljoen, 2000; Ogle and Grivetti, 1985c; Jones, 1963:71-83; Beemer, 1939). However, these eating habits are reminiscent of people living in rural settings. By the time of the study by Jones in 1963, the snacking pattern continued although food items were reported as being eaten throughout the day, compared to the late 1930s where it was irregular.

Weekend pattern

Modern Swazis have shifted from the traditional culture of serving two meals a day. According to Kgaphola & Viljoen (2000), three meals were eaten. These tended to be Western-orientated and included some foods usually eaten at breakfast, lunch and supper. The changes in the type of food of the Swazi people during the past century as reported by different scholars from 1939-2000 is presented in Table 2.2.

Since the 1960s there seems to have been a progressive shift in the Swazi diet from a traditional to a Western-orientated food culture and patterns that are currently replacing traditional Swazi foods and food patterns.

This shift is a result of many factors such as acculturation, migration, modernisation, urbanisation, education and Westernisation as noted by Kgaphola and Viljoen in 2004. These changes have an influence on the eating habits of individuals (Kittler *et al.*, 2011:11; Zingoni, Griffiths & Cameron, 2009; Uusitalo, Sobal, Moothoosamy, Chitson, Shaw, Zimmet & Tuomilehto, 2005; Viljoen *et al.*, 2005; Raschke *et al.*, 2006; Bourne, Lambert & Steyn, 2002).

TABLE 2.2: FOOD TYPES EATEN BY SWAZIS REPORTED IN LITERATURE FROM 1939 UP TO 2000

FOOD GROUPS	Pre-1940 Beemer 1939	1960s Jones 1963	1980s-2000 Ogle and Grivetti, 1985 Cappetta - 1983	1990s Huss-Ashmore & Curry 1991	Post-2000 Kgaphola & Viljoen 2000 – 2004
Cereals	Maize (Zea maize) Sorghum Millet Rice	Maize Sorghum Millet Rice	Maize - - Rice	Maize Sorghum - Rice	Maize - - Rice
Green leafy vegetables (collected)	<i>Imbuya</i> (Amaranthus) <i>Ligusha</i> (Bidens pilosa) <i>Chuchuza</i> (black jack) <i>Inshubaba/inkakha</i> (mormodica species) <i>Umdzayi</i> (asclepias affins) Sweet potato leaves Taro leaves <i>Silele</i> (portulaca oleracea) <i>Umsobo</i> (solenumnigrum) - - - - - -	<i>Imbuya</i> (Amaranthus) <i>Ligusha</i> (Bidens pilosa) <i>-Inshubaba</i> (mormodica Species) - - - <i>Umsobo</i> (solenumnigrum) - - <i>Umindzebele</i> (Zantedesckia) - - -	<i>Imbuya</i> (Amaranthusspp) <i>Ligusha</i> (Bidens pilosa) <i>Chuchuza</i> (blackjack) - - - <i>Silele</i> (portulaca oleracea) <i>Umbidvo</i> (variety of fresh Leaves from the veld. - <i>Umindzebele</i> (zantedesckia) <i>Likhowe</i> (mushroom) <i>Emahala</i> (bitter gourd) (zantedesckia) - - <i>Liklolo</i> (orevia)	<i>Imbuya</i> (Amaranthus spp) <i>Ligusha</i> (Bidens pilosa) <i>Chuchuza</i> (blackjack) - - - <i>Silele</i> (portulaca Oleracea) <i>Umbidvo</i> (variety of fresh leaves from the veld. - <i>Umindzebele</i> (zantedesckia) <i>Likhowe</i> (mushroom) <i>Emahala</i> (bitter gourd) (Zantedesckia) <i>Sibhadze</i> (peocedenum) <i>Liklolo</i> (orevia)	<i>Imbuya</i> (Amaranthus sp) <i>Ligusha</i> (Corchorus Bidens) <i>Chuchuza</i> (bidenspilosa) Sweet potato leaves taro leaves - - - - - - - -
Vegetables (Cultivated)	Sweet potato Melons Pumpkins Gourds Taro Cassava	Sweet potatoes Melons Pumpkins Gourds - - - - -	- Melons Pumpkins Gourds - - Onions Cabbage Tomatoes Spinach Potatoes	- - - - - - - - - -	Pumpkin leaves Carrots - - - - - -

FOOD GROUPS	Pre–1940 Beemer 1939	1960s Jones 1963	1980s–2000 Ogle and Grivetti, 1985 Cappetta - 1983	1990s Huss-Ashmore & Curry 1991	Post–2000 Kgaphola & Viljoen 2000 – 2004
Vegetables (Cultivated) cont.					Beetroot Peppers Chillies Okra
Vegetables (purchased)	- - - -	Onions Cabbage Tomatoes Spinach Potatoes	Onions Cabbage Tomatoes Spinach Potatoes Lettuce Carrots Beetroot Green peppers	Onion - Tomatoes	Onions - Tomatoes Spinach - - Carrots Beetroot Green peppers Chillies Okra
Legumes	Beans Cowpeas Peanuts Mung beans Sesame Seeds Jugo beans	- Cowpeas Peanuts - - -	Beans Cowpeas Peanuts Mung beans - Jugo beans Lentils		Cowpeas - Peanuts Mung beans - - Jugo beans - Butter beans Sugar bean
Indigenous fruits (collected)	Wild figs <i>Emaganu</i> (marula) Monkey grape Wild rape Wild meddler Water berries	- - <i>Umkhwakhwa</i> <i>Umfomfo</i> (caphelenthus natalensis)	- <i>Emaganu</i> (marula) Indegenious/wild fruits of 110 species resported- including some (guavas) <i>umkhiwa</i> (figs) <i>Umtfundvuluka</i> (sour plums)	Wild figs <i>Emaganu</i> (marula) - - Wild meddler <i>Tineyi</i> (berries) Black monkey orange Mulberries	- <i>Emaganu</i> (marula) <i>Ukhwakhwa</i> <i>Umfomfo</i> (caphalenth natalensis)

FOOD GROUPS	Pre-1940 Beemer 1939	1960s Jones 1963	1980s-2000 Ogle and Grivetti, 1985 Cappetta - 1983	1990s Huss-Ashmore & Curry 1991	Post-2000 Kgaphola & Viljoen 2000 – 2004
Indigenous fruits (collected) <i>cont.</i>			<i>Tincozi</i> (black berries) <i>Liklolo</i> (<i>Grevia flaverscens</i>)	<i>Gcumgcum</i> (<i>physalis</i>)	
Fruits (Cultivated)	- - - - -	Pawpaws Mangoes Citrus fruits Bananas Peaches	- - - - -	- - - - -	Pawpaws Mangoes Citrus fruits Bananas
Meat	Chicken Goats (frequent use for meat) Game (for meat) Cattle (for meat) - -	Chicken Goats - - - Fish Sheep	Chicken - - Beef Fish - Offal -	Meat - - - - - - -	Chicken Goats - Cattle & goat (used for Special occasions) - - Sheep
Dairy Foods	Milk <i>Emasi</i> (Sour milk)	Milk and milk products <i>Emasi</i> (Sour milk)	Milk <i>Emasi</i> (Sour milk)	Powdered milk	- <i>Emasi</i> (sour milk)
Insects	Caterpillars Termites Locusts	Caterpillars Termites Locusts	Caterpillars Termites Locusts	- - -	Caterpillars - -
Other	Eggs -	Eggs -	Eggs -	- Sugar	- -
Beverages	- Traditional beer (<i>Tjwala</i>) - - -	- Traditional beer (<i>Tjwala</i>) in traditional Occasions - -	<i>lidokwe</i> (gruel) - - <i>Emahewu</i> (fermented maize porridge)	- - -	<i>lidokwe</i> (gruel) Traditional beer on traditional ceremonies or ancestral worship <i>Emahewu</i> (fermented maize meal porridge)

TABLE 2.3: MEAL PATTERNS OF THE SWAZI PEOPLE DURING THE PAST CENTURY AS REPORTED BY DIFFERENT SCHOLARS

FOOD GROUPS	Pre-1940 Beemer 1939	1960s Jones 1963	1980s Oggle and Grivetti, 1985 Capetta - 1983	1990s Huss-Asshmore & Curry 1991	Post-2000 Kgaphola & Viljoen 2000-2004
Meal Patterns <i>Number of meals</i>	Two (2) meals per day	Two (2) meals a day	Two (2) meals a day	Three (3) meals a day	Three (3) meals a day
Meal composition	<p>First: Porridge and relish</p> <p>Evening:- Two (2) dishes Stiff maize meal porridge and side dish</p>	<p>First: <i>Emasi</i> and sorghum porridge</p> <p>Midday:- Two (2) dishes Stiff maize meal porridge and a side dish</p> <p>Evening:- <i>Emasi</i> and porridge from boiled crushed maize</p>	<p>First: Porridge and relish Examples of relishes: Legumes Wild edible leaves + peanuts Cabbage Pumpkin leaves Spinach Meat stew</p> <p>Evening:- Porridge and relish</p>	<p>Breakfast: Sour porridge Bread with paste and tea</p> <p>Midday:- Rice Meat Bread Cabbage Tomato Onions</p> <p>Evening:- -</p>	<p>Breakfast: Sour porridge Bread with paste and tea</p> <p>Midday:- Porridge Substituted with rice, samp and beans Mealie rice and phuthu (dried crumbly porridge)</p> <p>Evening:- Resembled breakfast and lunch Other non traditional varieties added-rice Chicken, beef or pork</p>
In-between meals	<p>Snacked on: Jugo beans Sugar cane Wild fruit Roasted groundnuts Leftovers, bread and <i>Emahewu</i> (fermented maize meal beverage)</p>	<p>Snacked on: Jugo beans Sugar cane Wild fruit Roasted groundnuts Leftovers, bread and <i>Emahewu</i> (fermented maize meal beverage)</p>	<p>Snacked on: Groundnuts Leftovers Bread <i>Emahewu</i> (fermented maize meal beverage)</p>	- -	<p>Snacked on: Tea and soft drinks</p>

2.6 CHAPTER CONCLUSION

In this chapter, the concept of food habits has been discussed including the factors that influence them. The theoretical perspective of the study was introduced and the assumptions of this perspective helped to form the basis of discussion in relating them to the eating patterns of an individual. The chapter also provided information about the contemporary eating patterns and meal compositions of the Swazi people and how these have evolved over time due to the effects of Westernisation, industrialisation and urbanisation. The next chapter will address the adolescent life stage and the formation of food habits during this stage of their lives.

Chapter 3: ADOLESCENCE AS A LIFE STAGE

3.1 INTRODUCTION

This chapter gives an overview of adolescence as a life stage and its influence on the formation of food habits. The consequences of food habits on the growth and development of adolescents are discussed, including the future implications food habits might have on the person's health status and well-being.

3.2 ADOLESCENCE AS A LIFE STAGE

Adolescence is concerned with the changes that occur when a person develops from a child to an adult. Defining adolescence as a life stage can be problematic, a characteristic that can be attributed to individual differences that emerge during the process of completing biological maturation (McDaniel & Robin, 2012; Steyn, 2010). Hence several views on the issue are found especially as far as determining an acceptable chronological age for this stage of life (Adler, 2012; Viner *et al.*, 2012; Bibiloni *et al.*, 2011; Oogarah-Pratap, 2007; Gouws, Kruger & Burger, 2000:3). However, there is general consensus in the literature that defining adolescence is not easy.

Adolescence is described by the World Health Organization (WHO, 2010) as the time in a person's life within the range of 10-19 years of age during which the individual experiences physical, emotional, psychosocial and cognitive changes while becoming an adult (Sawyer, *et al.*, 2012; Bibiloni *et al.*, 2011). These changes are transitional and consequently dynamic (Viner *et al.*, 2012; Oogarah-Pratap, 2007; Subratty, Imrit & Johwaheer, 2002).

Routledge (2005) argues that an adolescent is a person in the 10 to 19 year age range. Gouws *et al.*, (2000:3) are of the view that the generally accepted age starts between 11 and 13 years old and ends between the ages of 17 and 22 years old. Zopiatis and Pribic (2007:768) define adolescence as a human development stage between 13 and 18 years of age spanning the time from the onset of puberty to completion of maturation. Rolfes *et al.*, (2009:544) and Whitney and Rolfes (2013:537), differ slightly and describe adolescence as a time in a person's life where the growth spurt begins at the age of 10 to 11 years for females, and 12 to 13 years for males.

During this life phase, adolescents go through certain developmental tasks that relate to their physical, cognitive and psychosocial development (Neumark-Sztainer, Larson, Fulkerson, Eisenberg & Story, 2010; Christie & Viner, 2005). Apart from these tasks, this life phase is

divided into three developmental phases that adolescents experience, namely early, middle and late adolescence (Sawyer *et al.*, 2012; Christie & Viner, 2005). Each stage is characterised by new emotional, cognitive and social skills and a concern about their body image (Catalona, Fagan, Gavinl, Greenberg, Irwin, Ross & Shek, 2012). The aspects are now discussed.

- **Early adolescence**

During early adolescence, there are obvious major biological and physical growth developments that take place at the onset of puberty. They are often due to a complex interaction of hormones released by both the pituitary and sex glands (Bassett, Chapman & Beagon, 2008; Story *et al.*, 2002:7; Gouws *et al.*, 2000:3). These changes vary between girls and boys where girls reach menarche and experience pubertal changes such as breasts that begin to bud and pubic hair development (Rolfes *et al.*, 2009:544). Boys on the other hand, will have enlarged testicles, deepening of the voice, facial hair and genital growth (Sawyer *et al.*, 2012; Christie & Viner, 2005).

Other external changes involve an increase in height and mass that might change the body proportions of the young person (Neumark-Sztainer *et al.*, 2010; Story *et al.*, 2002). The growth spurt that often affects skeletal and muscular proportions differently in individuals may cause clumsiness and poor coordination. There is a difference of opinion regarding when the timing of the growth spurt starts (Sawyer *et al.*, 2012). It seems as if it is affected by age, although it does not depend on it specifically, thus some adolescents complete the growth spurts before others even begin (Story *et al.*, 2002). Therefore, the physical appearance of adolescents of the same chronological age covers a wide range (Sawyer *et al.*, 2012).

The fast physical growth consequently causes an increased demand for energy and nutrients (Dapi *et al.*, 2007; Rolfes *et al.*, 2006:536; Story *et al.*, 2002). The need for nutrients during adolescence is thus higher than at any other life stage. Hunger is therefore an important physiological drive that determines food intake during this life stage. It is for this reason that an adequate diet is important for growth and development (Story *et al.*, 2002).

Concurrent with the biological changes, is the psychological development where adolescents begin to discover their personalities. At this time, their thinking skills begin to develop and become more concrete with tendencies of assessing or thinking about their body images or changes in relation to shape and size (Forehand, 2012; Sawyer *et al.*, 2012; Packard, 2012). It causes them to develop either positive or negative images and they are mainly concerned about their sexuality, especially girls (Sawyer *et al.*, 2012; Story *et al.*, 2002). These changes continue to affect them physically and even in their social relationships. Noteworthy is the

intense relationships they begin to develop with peers due to their newly acquired sense of independence. This often leads to a drawing away from their parents which can cause conflict situations. The young adolescent might also engage in exploratory behaviours such as smoking, violence and other deviant behaviours such as early sexual practices (Adler, 2012; Sawyer *et al.*, 2012; Christie & Viner, 2005).

- **Middle adolescence**

In middle adolescence, the biological changes in girls often indicate the end of puberty and them reaching menarche. Their bodies begin to take on into a characteristic female body shape with fat deposits developing particularly on the hips. With boys, the physical growth continues, their voices that began to deepen in early adolescence will begin to break at this stage. The development of pubic and facial hair also continues and they are likely to experience their first ejaculation (McDaniel & Robin, 2012; Sawyer *et al.*, 2012; Adler, 2012; Christie & Viner, 2005).

They also develop psychologically in a variety of ways. Their thinking ability gets sharper at this time. They begin to acquire a marked ability to think in a more abstract manner, become more capable of setting long term goals and show that they have the power to reason morally (Sawyer *et al.*, 2012; Forehand, 2012; Adler, 2012; Christie & Viner, 2005). There are also noted emotional and social developmental changes amongst adolescents during this phase. They tend to develop a distinctive autonomy and distance themselves from their parents and family members. In this regard, the need for acceptance among their peers becomes greater as they drift away from their parents. At this stage they might even adopt unacceptable forms of behaviour (Sawyer *et al.*, 2012; Basset *et al.*, 2008; Christie & Viner, 2005).

- **Late adolescence**

Late adolescence is characterised by the puberty period coming to an end in boys. The physical development continues at this stage especially with boys. There is a gentle increase in muscle development and body hair (Christie & Viner, 2005). During this late physical development stage, the abstract thinking processes that began in middle adolescence become more complex or abstract especially on career decisions, religious and political ideologies, societal roles and personal identity (Sawyer *et al.*, 2012). Socially, this stage is characterised by a feeling of poor self-identity, a continued drive to independence and a strong reliance on friendships (Sawyer *et al.*, 2012; Christie & Viner, 2005; Van der Spuy, De Klerk & Kruger, 2003). The developmental tasks (physical, cognitive and psychosocial) associated with each of these development phases of adolescence are now briefly described.

3.2.1 Physical development

Physical development deals with the biological and physical growth and development that takes place from the onset of puberty in early adolescence (Brown, 2011:358). It is due to the result of a complex interaction of hormones released by the pituitary and sex glands which affect all organs including the brain, causing rapid growth and physical changes. In girls from age 8 to 16 breast developments, fat deposition on the hips and vaginal growth are observed. The onset of menstruation further results in increased iron requirement. Boys on the other hand, experience increased skeletal and lean body mass between the age of 12 to 17 years. They also begin to ejaculate. Energy needs of adolescents vary as they are determined by the current growth rate, gender, body composition and physical activity (Whitney & Rolfes, 2013:537). This time of rapid development could cause problems and stress to adolescents, as they become sensitive about their appearance and self-image (Gouws *et al.*, 2000:10). Such sensitivity results from physical and socio-psychological developments and changes that occur during this life stage (Routledge, 2005). These physical changes in adolescents have a significant influence on their energy and nutrient requirements which are relatively higher for boys because they grow faster than girls (Whitney & Rolfes, 2013:537; Brown, 2011:358).

3.2.2 Cognitive development

Cognitive development refers to everything concerning knowing, perception and imagination. This is a time when adolescents' thinking and reasoning develop (Packard, 2012; Sawyer *et al.*, 2012). These thought processes are either abstract or concrete depending on the stage of development and actually go hand in hand with each stage of adolescent development. During early adolescence, children think more about the present than the future and their thoughts are mainly concrete with limited abstract reasoning and speculation about what is possible or actual (Sawyer *et al.*, 2012; McDaniel & Robin, 2012; Dapi *et al.*, 2007).

In middle adolescence, they develop a strong awareness of moral and social values and the meaning of life. The tendency to think abstractly often continues although some may revert to concrete thinking especially when under stress (Catalona *et al.*, 2012).

When they reach late adolescence their abstract thinking that was established during the middle adolescence would be fully developed, and they no longer rely on their peers for self-evaluation. At this time, adolescents are able to manage problems even those that are complex as they become more stable in making life decisions (Adler, 2012; Sawyer *et al.*, 2012).

The level of cognitive development during late adolescence allows adolescents to develop a great deal of autonomy and independence. This is also reflected in their food choices, as they begin to eat more meals away from home and start to develop their own individual food consumption patterns (Sawyer *et al.*, 2012; McNaughton, 2011; Bassett *et al.*, 2008; Videon & Manning, 2003; Story *et al.*, 2002). It is thus not uncommon for adolescents to spend a great deal of time away from home due to school, social or community activities and job commitments, hence the frequency of eating meals with the family decreases (Hunt, *et al.*, 2011; Lachat, Bao Khanh; Huynh, Verstraeten, Nago, Roberfroid & Kolsteren, 2011).

3.2.3 Psychosocial development

Psychosocial development includes the formation of a personal identity when adolescents begin to attach meaning to themselves or develop a 'sense of the self' in an attempt to answer the question of "who they are" (Sawyer *et al.*, 2012; McNaughton, 2011; Gouws *et al.*, 2000:10). New forms of behaviour begin to emerge that relate to issues that matter to them such as the creation of a body image, a self-concept with a sense of independence and development of their own moral and value systems (Catalona *et al.*, 2012; Viner *et al.*, 2012; Dapi *et al.*, 2007; Story *et al.*, 2002; Narsha, Studervant, Bonnie, & Spear 2002). Briefly discussion on these three particular forms of behaviour follows.

3.2.3.1 Body image and self-concept

The physical development experienced during the early adolescent stage becomes an important factor in the formation of a body image that deals with what adolescents wish to be. A sense of self and a concern about their looks, especially amongst girls, prevails. At this stage, adolescents also fantasise about certain people they would like to be in the process of forming their own self-identity, establishing the sex role and as well as occupational and ethnic identity (Adler, 2012; Sawyer *et al.*, 2012; Bonnie & Spear, 2002). They also idolise certain individuals in the public eye, the kind of people they hero-worship.

Adolescents also have a tendency to perceive their bodies in a rather unique way. This has a strong effect on their psychological well-being in that it often either obstructs or improves the formation of their body image. It is thus important for adolescents to develop a good sense of identity and be ready to accept the changes that occur in their body. Furthermore they should continue maintaining a good self-image and develop feelings that they are their own person (Sawyer *et al.*, 2012; Bassett *et al.*, 2008; Story *et al.*, 2002).

Adolescent's self-concept will ultimately be influenced by factors such as those which they perceive as how others think of them; a situation that has a bearing on their eating patterns since they find it very humiliating when the significant others make fun of their clumsiness

and appetite differences i.e. either large or small. They like to conform to the social behaviour and norms of their peers and believe in the way they themselves perceive and evaluate them (Catalona *et al.*, 2012; Bassett *et al.*, 2008; Gouws *et al.*, 2000:10). Consequently, the time of psychosocial and physical development also brings about new emotional, cognitive and social skills (section 3.2.2).

3.2.3.2 Independence

Due to the formation of the self, adolescents tend to want to distance themselves from their family members and resort to forming more intense relationships with their peers as well as taking their own decisions in life. They begin to display some form of their own independence when away from the family socially, emotionally and economically (Neumark-Sztainer *et al.*, 2010; Bassett *et al.*, 2008; Story *et al.*, 2002).

3.2.3.3 Development of own morals and value system

During the time of late adolescence adolescents develop their own “moral and ethical value system” which translates into the formation of distinctive moral development based on values in which they believe (Sawyer *et al.*, 2012; Gouws *et al.*, 2000:101). Moral development refers to the customs, manners or behavioural patterns that conform to the standard of a particular peer group with regard to honesty, loyalty, responsibility and respect. This kind of development reflects the way in which adolescents develop the ability to differentiate between right and wrong (Gouws *et al.*, 2000:101). From the time of infancy, children grow up with norms which are either formal, or informal such as those that come from their traditional beliefs. These moral values and norms are acquired or transmitted to adolescents through informal learning which takes place in the home and community and through early childhood experiences, with formal school education that follows on (Rolfes *et al.*, 2006:536). Adolescents also tend to form their own personal and vocational goals (Sawyer *et al.*, 2012; Narsha *et al.*, 2002; Gouws *et al.*, 2000:101).

As the adolescents gain moral independence and a sense of responsibility, they are able to choose between right and wrong and accept further responsibility for the choices and decisions they make. When they grow older, they become more comfortable when thinking for themselves and arriving at their own decisions, weighing up choices against each other and relying less on parents and their peer groups (Catalona *et al.*, 2012; Narsha *et al.*, 2002; Gouws *et al.*, 2000:101).

Values refer to the abstract psychological realities located in the human mind emanating from principles that will regulate their thinking and behaviour. These are some examples of values:

- i. Respect for other human beings
- ii. Good interpersonal relations
- iii. A sense of treating others the same way they would like to be treated
- iv. Being trustworthy, telling the truth and commanding respect (Gouws *et al.* 2000:101).

Psychosocial development is distinguishable through the early, middle and late stages of adolescence with each stage characterised by new emotional, cognitive and social skills and a concern about their body image (Catalona *et al.*, 2012; Narsha *et al.*, 2002).

3.3 THE FORMATION AND DEVELOPMENT OF FOOD HABITS

This section deals with the theory on how food habits are formed and further developed during adolescence.

3.3.1 Socialisation

Socialisation is the process during which culturally valued norms of behaviour are passed on or transmitted from one generation to the next (Hunt *et al.*, 2011). It is a vital learning process in every society through which societal values are transmitted and usually starts in childhood (Hunt *et al.*, 2011; Worth, 2007; Fieldhouse, 1995:41; Parraga, 1990). The process of socialisation and acquisition of food habits is illustrated in Figure 3.1.

Figure 3.1 illustrates the socialisation process as three separate stages, namely primary, secondary and resocialisation. As this study deals with adolescents, only primary and secondary socialisation applies and will be discussed.

3.3.1.1 Primary socialisation

Primary socialisation refers to the socialisation that occurs early in life. Children are born without a culture (Shah, 2012), and therefore have to learn and adapt to the cultural norms and behaviour of the culture into which they are born. Food habits are part and parcel of culture and are formed early in life (Shah, 2012; Johnson, Sharkey, Dean, McIntosh & Kubena, 2011; Kittler *et al.*, 2011:7). The family is the primary socialisation unit and teaches infants and young children what to eat as it is responsible for providing food and nourishment for the young child. Thus food habits are transmitted through the process of primary socialisation mainly via the immediate family and friends of the child (Levin & Kirby, 2012; Johnson *et al.*, 2011; Hunt *et al.*, 2011).

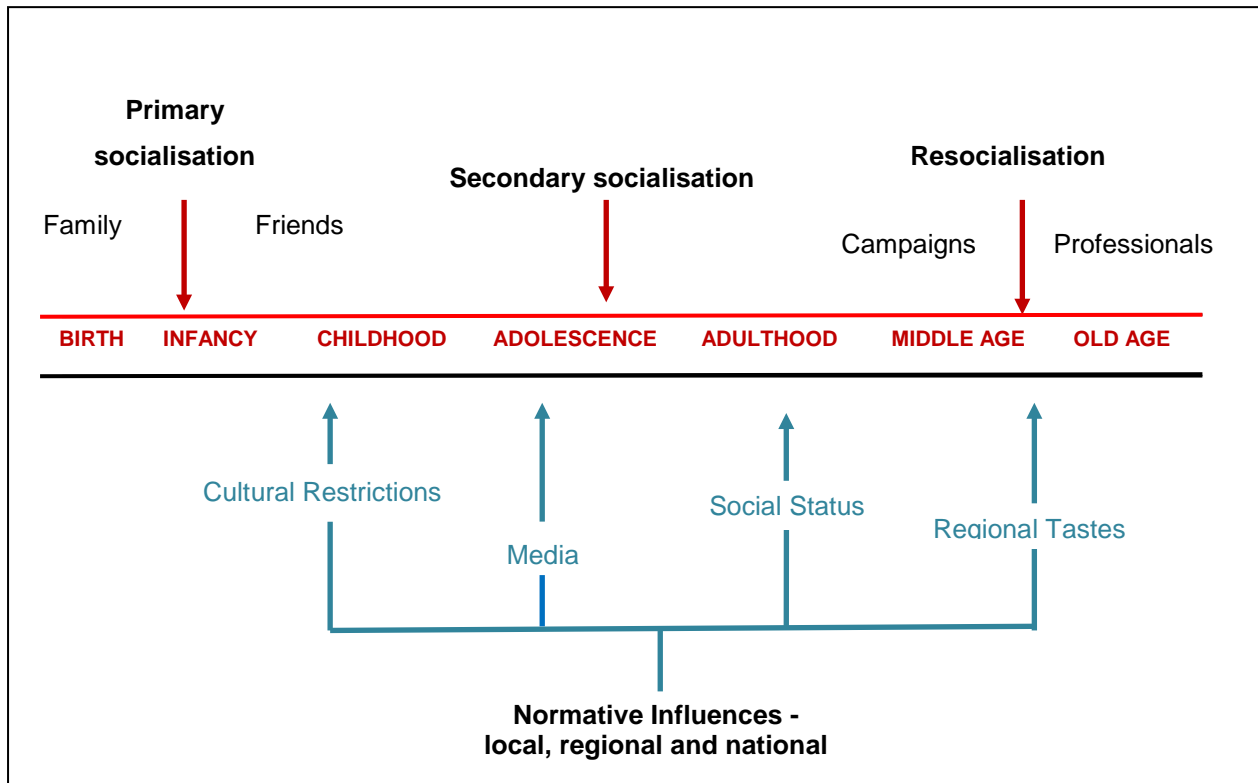


FIGURE 3.1: SOCIALISATION AND THE ACQUISITION OF FOOD HABITS (Fieldhouse, 1995:4)

In that way, young children learn to like what the culinary culture in which they are raised prescribes to them as food (Levin & Kirby, 2012; Kittler *et al.*, 2011:7; Fieldhouse, 1995:21). The type and characteristics of the family in which children are raised also determines the amount and type of food available for consumption. This will depend largely on the socio-economic status of that family and the skills they have in preparing that particular food served (Levin & Kirby, 2012; Hunt *et al.*, 2011; Burgess-Champoux, Larson, Neumark-Sztainer, Hannan & Story, 2009; Fulkerson, Story, Mellin, Leffert, Neumark-Sztainer & French, 2006; Parraga, 1990:663).

Mothers usually have a greater influence on the children's diet than other people in their lives (Levin & Kirby, 2012; Johnson *et al.*, 2011). This is largely due to the fact that they have most control on the type of food that comes into the home. Children will make their food choices based on the type, amount and quality of food available for consumption in the home (Johnson *et al.*, 2011).

3.3.1.2 Secondary socialisation

As the children become older, they are more exposed to other socialisation agents such as the school and friends that constitute secondary socialisation (Marmot, Resnick, Fatusi &

Currie, 2012; Shah, 2012; Kubik, Lytle & Story, 2005; Videon & Manning, 2003; Fieldhouse, 1995:41). There could be conflicting interests between what is taught at home and what is taught or experienced at school with regard to food habits, although the food habits acquired at home are likely to dominate (Fieldhouse, 1995:41). Peer influence becomes more prominent during this life stage, as it has a significant influence on what adolescents eat (Sawyer *et al.*, 2012; Gross, Pollock & Braun, 2010; Bassett *et al.*, 2008; Contento, Williams, Michela, & Franklin, 2006).

3.3.2 Adolescent food habits

Food habits of adolescents have been widely documented in the literature (Rieth, *et al.*, 2012; McNaughton, 2011; Voorend *et al.*, 2010; Steyn *et al.*, 2011; Boutelle *et al.*, 2007; Videon & Manning, 2003; Story *et al.*, 2002; Cavadini, Decarli, Dirren, Caudey, Narring & Michuad, 1999). Various concerns are raised with regard to how healthy adolescent food choices are (Bower & Sandall, 2002:64; Story *et al.*, 2002). Significantly this has become a subject of current research (Robinson, Berwel & Higgs, 2013; Levin & Kirby, 2012; Feeley, Musenge, Pettifor & Norris, 2011; McNaughton, 2011) as adolescents are renowned for unhealthy food choices due to habits of frequent snacking, skipping of meals and high junk food consumption (Levin & Kirby, 2012; McNaughton, 2011; Story, 2010; Dapi *et al.*, 2007; Pratap-Oogarah, 2005). A low intake of fruit and vegetables is also reported (Rieth *et al.*, 2012; Peltzer & Pengpid, 2010; Feeley *et al.*, 2011; Gross *et al.*, 2010; Pearson, Biddle, & Gorely, 2008). The consequences of these habits on their future health are a matter of concern since it is often difficult to intervene when observing the poor habits of adolescents at a time when they are striving for independence (Bassett *et al.*, 2008). Their eating habits are then highly influenced by their peers, because adolescents generally are more wrapped up in relationships outside the family, and are hence definitely susceptible to effective/considerable peer pressure (Catalona *et al.*, 2012; Voorend, *et al.*, 2012; Oogarah-Pratap, 2007; Story *et al.*, 2002).

Adolescents have the tendency to eat when they want to and this is often driven by convenience and regulated by the amount of time they have (Rolfes *et al.*, 2006:538). They are then prone to fall into the habit of irregular eating due to their busy schedules. This may lead to skipped meals and high snack and fast food consumption that could result in negative health consequences because of the high energy fat, sugar and salt intake (Rieth *et al.*, 2012; Bassett *et al.*, 2008:305).

The snacking behaviour of adolescents is thus a great cause for concern (Popkin *et al.*, 2011; Bassett *et al.*, 2008:305; Oogarah-Pratap, 2007; Videon & Manning, 2003). Snack foods (chips, soft drinks, candies, cakes, cookies, chocolates) are high in energy, sugar, fat

and salt, and this could contribute to weight gain and a poor quality diet if such foods are eaten regularly (Feeley *et al.*, 2011; Popkin *et al.*, 2011). A study carried out by Oogarah-Pratap (2007) revealed that snacks often provide a quarter of adolescents' daily food energy intake. Snacks are often high in fat and sodium and low in calcium, iron, vitamin A, vitamin C, folate and fibre. While adolescents have a preference for snacks, it is ultimately their lack of knowledge that precludes them from consuming healthy snacks because they do not know how to combine food from different food groups (Oogarah-Pratap, 2007).

The frequency with which adolescents join their family for the main meal of the day is inclined to decrease and since working parents are usually too busy to cook or are unable to find time to eat as a family, snacking behaviour gradually becomes common practice (Hunt *et al.*, 2011; Videon & Manning, 2003:366). Influences such as parents, friends and peers as well as changing socio-structural factors such as urbanisation, modernisation, globalisation and acculturation could all contribute to the observed increase in adolescents' snacking behaviour (Steyn *et al.*, 2011).

When adolescents have poor eating patterns such as skipping meals, eating away from home and snacking, they are affected in many ways that could lead to the development of nutritional disorders (Bonnie & Spear, 2002) which, in turn, are likely to cause other disturbing eating, dietary and physical conditions such as obesity, anorexia nervosa, bone diseases, dental decay and micronutrient deficiency (Vorster, 2010; Zopiatis & Pribic, 2007; Dapi *et al.*, 2007; Story *et al.*, 2002). The high intake of energy-dense foods and a low intake of fruits and vegetables will also culminate in poor health outcomes (Rieth *et al.*, 2012; Feeley *et al.*, 2011; Peltzer & Pengpid, 2010; Gross, *et al.*, 2010).

Rapid growth and development cause an increased demand for energy and nutrients (Dapi *et al.*, 2007; Rolfes *et al.*, 2006:538; Story *et al.*, 2002). The need for specific nutrients during adolescence is higher than at any other time in a person's life. Associated with this is the fact that hunger, an important physiological drive, determines food intake in a particularly noticeable way during this life stage. It is for this reason that a balanced diet is essential for growth and to ensure optimum development (Story *et al.*, 2002). Due to their psychosocial stage of development, adolescents tend to develop unhealthy eating habits (Akman, Akan, Izbirak, Tanriover, Tilev, Yildiz, Tektas, Vitrinel & Hayran, 2010; Bester & Schnell, 2004).

3.4 CHAPTER CONCLUSION

In this chapter adolescence as life stage was described and the physical, cognitive and psychosocial development changes that occur were highlighted. The formation and development of food habits through the processes of primary and secondary socialisation

are noted and supported by a brief review of the current literature on the implications of established food habits.

The next chapter will deal with the research methodology of the study.

Chapter 4: RESEARCH METHODOLOGY

4.1 INTRODUCTION

This chapter outlines the research methodology followed for this investigation. It provides the plan for this research project that will be followed to reach an answer to the research problem. The research design, the sample and the sampling procedure, the development of the measuring instruments, the actual data collection process and the way in which the data was analysed are described. Measures taken to ensure quality data and appropriate ethical conduct during the research process are also pointed out.

4.2 RESEARCH DESIGN

The research design is a master plan that gives the methods and procedures used for data collection and analysis that enables the researcher to carry out and implement the research project (Creswell, 2013:50; Neuman, 2011:201; Kumar, 2011:94). This quantitative study can be described as explorative and descriptive, as well as cross-sectional as it investigates the relationship between the food habits of adolescents and the influence of the different environmental factors.

Explorative research is undertaken for several reasons. First, when a researcher wishes to examine a new interest or when the study topic itself is relatively new. Second, to satisfy the researcher's curiosity and desire for a better understanding of a particular issue and in the third place to test the feasibility of undertaking a more extensive study and to experience its central constructs (Creswell, 2013:49-50; Neuman, 2011:200-204; Babbie & Mouton, 2001:79-80). The current study was undertaken to explore and describe the food habits of Swazi adolescents. A descriptive approach is aimed to give an insight into a phenomenon (Babbie & Mouton, 2001:79-80).

On the other hand a descriptive study also tends to emphasize the portrayal of a specific individual, social event, group company or social artefact. One may, for example, wish to stress the frequency with which a specific characteristic or variable occurs within a sample. The description may range from a narrative type to that of a structured statistical analysis (Babbie & Mouton, 2001:81). Descriptive studies attempt to explore a phenomenon to more fully define it or to differentiate it from others (Kruger & Gericke, 2004:37). This study sought to examine and describe the food habits of Swazi adolescents in the Manzini region of

Swaziland in order to present a detailed report as guided by stated research aims and specified objectives and sub-objectives.

4.3 AIMS AND OBJECTIVES

The research aims to explore and describe the food habits of adolescents 16-19 years in the peri-urban areas of Manzini in Swaziland and to determine to what extent these young people are familiar with traditional Swazi foods.

The following objectives and sub-objectives are formulated:

- (i) To determine and describe the current **food habits** of the **Swazi adolescents** aged 16 -19 years in the Manzini Region of Swaziland (henceforth referred to as the study group)
 - ❖ To determine and describe the **eating patterns** of the study group at meals and in-between meals on **weekdays**
 - ❖ To determine and describe the **eating patterns** of the study group on **weekend days**
 - ❖ To determine and describe the **frequency of consumption** of foods usually included in the eating patterns of the study group
 - ❖ To determine and describe the **type of foods** the study group consumes at special occasions.
- (ii) To determine and describe to what extent **traditional Swazi foods** are included in the eating patterns of the study group, including their familiarity, preference rating and frequency of consumption of traditional Swazi foods
 - ❖ To determine and describe how **familiar** the study group is with traditional Swazi foods
 - ❖ To determine and describe the **preferences of** the study group for traditional Swazi foods
 - ❖ To determine and describe the **frequency of consumption** of the study group regarding traditional Swazi foods
 - ❖ To determine and describe the occasions **when** the study group consumes traditional foods
 - ❖ To determine and describe the **attitudes/opinions** of the study group towards the use of traditional Swazi foods.
- (iii) To determine and describe the extent to which **fast and snack foods** are consumed by the study group

- ❖ To determine and describe the **familiarity, preference rating and frequency** of consumption of fast and snack foods by the study group
 - ❖ To determine and describe **when** the study group uses fast and snack foods
 - ❖ To determine and describe **where** and with **whom** the study group consumes fast and snack foods.
- (iv) To explore and describe the influence and/contribution of the **external and internal** environment on the food habits of the study group
- ❖ To explore and describe the influence and/contribution of the **external environments** on the food habits of the study group (the natural, economic and socio-cultural).
 - ❖ To explore and describe the influence and/contribution of the **individual environment** in terms of knowledge, beliefs, attitudes and values on the food habits of the study group.

4.4 CONCEPTUAL FRAMEWORK

The purpose of a conceptual framework (Figure 4.1) is to give a graphical representation of the concepts to be studied, by indicating the relationships among them. A conceptual framework gives structure and direction to a study in linking the various concepts applicable to the study systematically. The analysis and interpretation of the findings from the data about the food habits of adolescents related to an interpretation of the conceptual framework.

Figure 4.1 depicts that an individual's food habits are influenced by both external, (natural/physical, economic and political and socio-cultural) and internal (individual, physiological and biological) environmental factors.

The natural environment which includes climate, soil and water resources together with the plant and animal life and the physical environment affect food **availability**. These have an impact on food consumption because people are prone to eat and like what is **available and accessible** in their area of residence. The political and economic environment on the other hand, includes the political and economic systems that determine the way in which the production, distribution, exchange and consumption of including foods are managed (Bryant *et. al*, 2003:13; Pelto, *et al.*, 2000:2). Individuals not only choose food based on availability, but their choice is also influenced by the **affordability** of the food.

The socio-cultural environment is the larger external environment in which the individuals or groups function, come into contact with and interact with other groups, societies and communities. For this reason, members of a social group are able to share the norms,

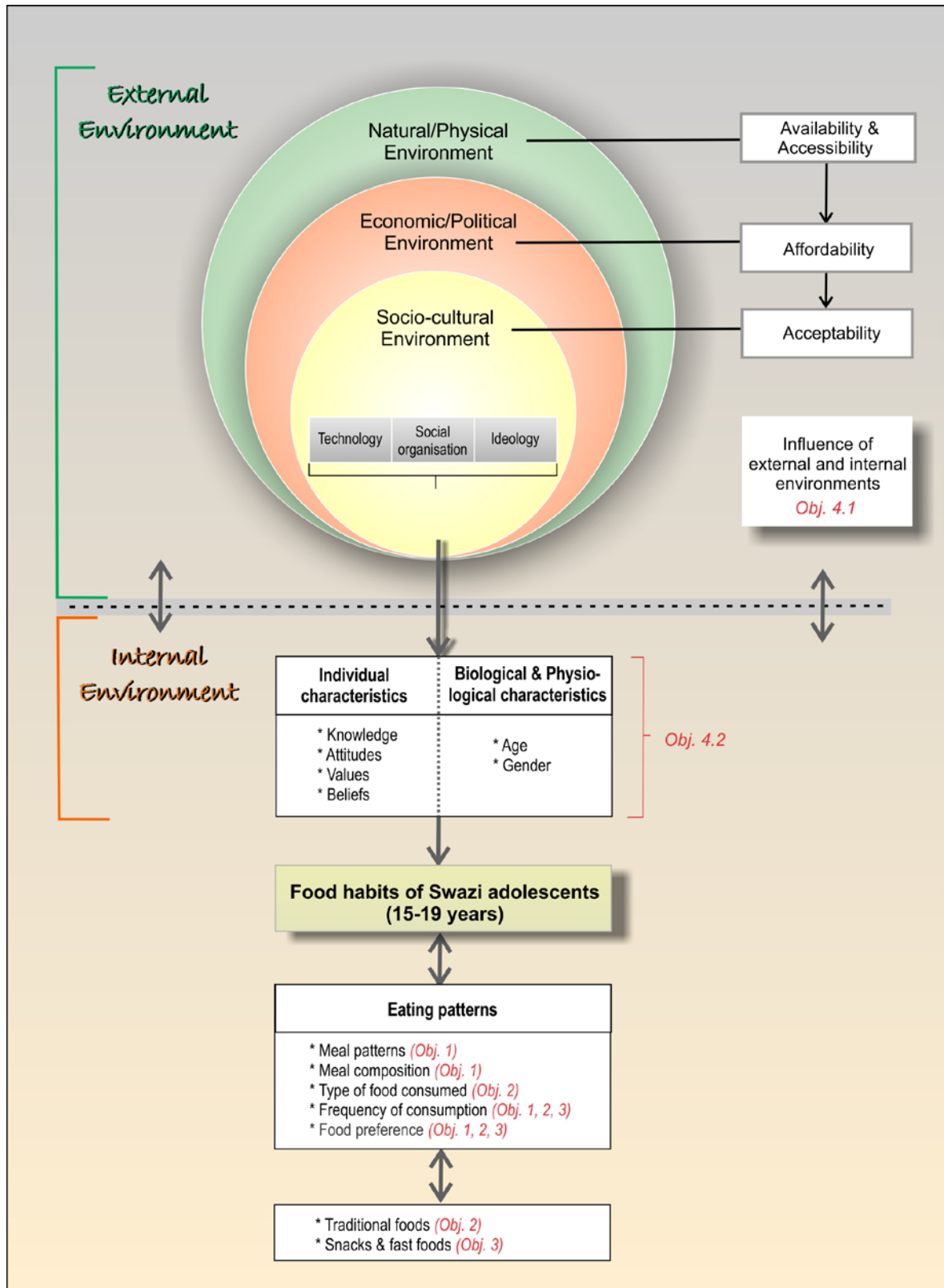


FIGURE 4.1: CONCEPTUAL FRAMEWORK (Adapted from Viljoen & Gericke, 1998; Sims & Smiciklas-Wright, 1978)

beliefs, attitudes and values about food in an identifiable social and cultural manner (Bryant *et al.*, 2003:190–209). This determines which food will be chosen from the available and

affordable foods because they are **acceptable** for consumption by the individual or group in that specific culture. The internal environment on the other hand, refers to the individual's characteristics that link to knowledge, attitudes, values and beliefs taking the biological factors, age and gender, into consideration too. The biological/physiological factors, for example, influence the energy and nutrient needs of the individual and together with the psychosocial and cultural factors influence the individual's food preferences, taste and sensory perceptions of food (Story *et al.*, 2002). These personal characteristics are used by the individual to choose or select food from what is available and acceptable. Food choice and acceptance are culturally and individually determined. Therefore the cultural backgrounds, together with individual characteristics, determine the food choice of an individual (Reed, McIlveen-Farley & Strugnell, 2003).

The two-way arrow (Figure 4.1) between the blocks titled 'Food habits of Swazi adolescents' and 'Eating patterns' (meal pattern, meal composition, type of food consumed and frequency of consumption) represent the reciprocal interrelationships that make eating patterns an integral part of food habits. It includes foods consumed in a particular pattern at specific meals and in-between meals. The two-way arrow between the 'Eating patterns' and 'Traditional and snacks/fast foods' shows that these foods are part of the study group's eating patterns.

The main concepts of the study as highlighted in the lower half of the conceptual framework will be discussed in the following section.

4.5 CONCEPTUALISATION

Food habits refer to the way in which humans select, consume and utilise portions of the available food supply in response to social and cultural pressures (Mead, 1945:13). Food habits are further guided by the accessibility, availability, affordability and acceptability of food (Williams, Thornton, Ball & Crawford, 2011).

Eating patterns refer to the recurring pattern in which an individual chooses, prepares and consumes food from the available and acceptable food choices for a specific meal or snack. The eating patterns involve the specific combination of foods that are used as a meal or a snack as well as the distribution of the meals and snacks through the day. Eating patterns therefore describe the meal composition and meal distribution of an individual or a group (Viljoen & Gericke, 1998:90).

Meal refers to the event of eating including what is eaten. It could also include criteria such as the time of the day, e.g. breakfast, midday meal or evening meal. It could be defined in terms of what and how much is consumed during the meal or food event and the typical

combinations (courses) consumed to define it as either a light or heavy meal (Meiselman, 2008).

Meal composition refers to the food components or food items served or consumed at an eating occasion or event (Kgaphola & Viljoen, 2004).

Meal patterns refer to the number and distribution of meals through the course of a day (Viljoen *et al.*, 2005).

Traditional foods are considered part of a cultural group's culinary heritage and are those foods that have been part of a person's or group's eating patterns for a long time, having been transferred from one generation to another through habit and knowledge. Traditional foods often consist of locally grown, readily available and affordable food. For example, a traditional staple food for Swazi people is maize and its varied products (Guerrero, *et al.*, 2012; Trichopolou, 2007).

Snacks refer to food and or beverages that are consumed between meals. These are often items with a high sugar and/or fat content such as potato crisps, confectionery, chocolates, sweets or and fruits. These are popular foods among children and adolescents (Meiselman, 2008; Bower & Sandall, 2002:17; Hamilton, Mcliveen & Strugnel, 2000). The concept of snack refers to an unstructured event without any rules of combination and sequence.

Fast foods refer to food produced in a 'ready-to-eat-mode' in special outlets external to the traditional home meal setting (Feeley *et al.*, 2009).

Frequency of food consumption indicates how often an individual consumes or intends to consume a specific food item during a predetermined period that could be a day, week, month, year or season (Viljoen & Gericke, 1998:90).

Food Preference could be described as the degree of like or dislike of a particular food. Food preference therefore indicates an individual's personal motivation to choose a specific food from the available, acceptable food (Viljoen & Gericke, 1998:90).

4.6 OPERATIONALISATION

This deals with how the researcher will measure the concepts or variables used in the study (Neuman, 2011:206; Babbie & Mouton, 2001:98). The process of operationalisation therefore delineates the measurements used (DeVos, Strydom, Fouche & Delport, 2005:193). A questionnaire was the instrument used to operationalise the research objectives and sub-objectives of the study of food habits. It consisted of both open- and close-ended questions

which were easy to read and understand. This is done to allow respondents to answer without any difficulty (Babbie & Mouton, 2001: 237).

4.7 MEASURING INSTRUMENT

As explained in Chapter 2, food habits are influenced by multiple factors, hence a multi-dimensional approach was followed to measure this construct. To determine the food habits of the Swazi adolescents in the Manzini region a questionnaire that measures the different dimensions of food habits was developed (see Addendum D). This questionnaire consisted of seven sections that measured different aspects of food habits including the consumption patterns of snack, fast and traditional foods.

Section A:	Demographic information
Section B:	Usual eating patterns
Section C:	Non-quantitative food frequency questions
Section D:	Familiarity, preference and frequency of consumption of traditional foods
Section E:	Consumption patterns and attitudes towards traditional foods
Section F:	Food consumption at special occasions
Section G:	Familiarity, preference and frequency of consumption of snacks and fast foods.

Section A: Demographic information

Closed and open-ended questions were used to collect information on the demographic profile of the participants. Factors that influence food habits such as age, gender, ethnic and religious group to which they belong; the educational background of their parents/guardians, their employment status and type of occupation were determined.

Section B: Eating patterns and meal composition

In this section, questions were asked on the number of meals and what was consumed during meals as well as in-between meals in order to determine the frequency of consumption and composition of meals and snacks on weekdays, weekend days and on special occasions. A number of open-ended questions were given to identify the reasons why meals, if any were skipped, how weekend meals differed from weekday ones and with whom meals outside the home were eaten.

Section C: Non-quantitative food frequency questionnaire (NQFFQ)

The frequency of consuming foods was determined using the food frequency questionnaires which relate to the frequency which certain foods are consumed. The questionnaire was used to indicate the consumption per day, week, and month or at special occasions.

Section D: Familiarity, preference and frequency of consumption of traditional foods

In this section the familiarity, preference and frequency of consumption of selected traditional Swazi foods were determined. A 5-point Likert-type scale was used to determine the degree of preference of various commonly known traditional foods.

Section E: Consumption patterns and attitudes towards traditional foods

In this part of the questionnaire, the context in which traditional Swazi foods were consumed, and the attitude of the respondents towards traditional foods were measured by means of open-ended and closed-ended questions.

Section F: Food consumption at special occasions

In this section, open-ended and structured questions were asked. The respondents were requested to indicate the special occasions they participated in and to list the kind of foods served or consumed at these occasions.

Section G: Familiarity, preference and frequency of consumption of snacks and fast foods

Items in this part of the questionnaire captured information on the familiarity of participants with snacks and fast foods. The questions sought participant preferences of the snacks and fast foods as well as the frequency with which the foods are consumed.

Table 4.1 summarises the objectives and sub-objectives and gives their main concepts together with the dimensions and indicators of each concept and how they were measured in the study.

TABLE 4.1: OPERATIONALISATION

OBJECTIVES/SUB-OBJECTIVES	CONCEPTS	DIMENSIONS and indicators	QUESTIONNAIRE
1. To determine and describe the current food habits of the Swazi adolescents aged 16-19 years in the Manzini Region of Swaziland (henceforth referred to as the study group).			
1.1 To determine and describe the eating patterns of the study group at meals and in-between meals and on weekdays	Eating patterns Weekdays	Meal patterns Meal composition Mondays to Fridays	Section B Q1 – Q4
1.2 To determine and describe the eating patterns of the study group on weekend days	Eating patterns Weekend days	Meal patterns Meal composition Saturdays and Sundays	Section B Q5 – Q6
1.3 To determine and describe the frequency of consumption of foods usually included in the eating patterns of the study group	Frequencies of food consumption	Daily Weekly Monthly	Section B Q7 & Q9 Section C
1.4 To determine and describe the type of foods the study group consumes at special occasions	Special occasions	Birthdays Weddings Funerals/Tombstone unveiling Traditional/ritual ceremonies	Section F Q1 – Q2 Section C Section D
2.To determine and describe the extent to which traditional Swazi foods are included in the eating patterns of the study group, including their familiarity, preference rating and frequency of consumption			
2.1 To determine and describe how familiar the study group is with traditional Swazi foods	Type of traditional/ indigenous foods: Familiarity with traditional food Familiarity	Type of foods consumed Cereals, meat, vegetables, fruit, legumes etc.	Section D Section E- Q1 Section F- Q2

OBJECTIVES/SUB-OBJECTIVES	CONCEPTS	DIMENSIONS and indicators	QUESTIONNAIRE
2.2 To determine and describe the preferences of the study group for traditional Swazi foods	Preferences	Preferences for traditional foods	Section D
2.3 To determine and describe the frequency of consumption of the study group regarding traditional Swazi foods	Frequency of consumption	Daily Weekly Monthly Occasionally When available	Section D
2.4 To determine and describe the occasions when the study group consumes traditional foods	The occasions when traditional foods are consumed	Birthdays Weddings ceremonies, civil and traditional (<i>umtsimba</i>). Funerals and tombstone unveiling (<i>kwembula litje</i>) Traditional ritual ceremonies (<i>kuhlabelaemadloti</i>)	Section E Q3
2.5 To determine and describe the attitudes of the study group towards the use of traditional Swazi foods	Attitudes	Opinions Perceptions	Section E Q4 – Q5
3. To determine and describe to what extent fast and snack food are consumed by the study group			
3.1 To determine and describe the familiarity, preference rating and frequency of consumption of fast and snack foods by the study group	Familiarity Preference rating Frequency	Familiarity	Section B Q4-Q7 Section B Q9 Section C Q1 Section G
3.2 To determine and describe when the study group uses fast and snack foods	Frequency	(Daily, weekly, monthly, occasionally)	Section B Q4, Q7 Section G
3.3 To determine and describe where and with whom the study	Context / situation	Location	Section B

OBJECTIVES/SUB-OBJECTIVES	CONCEPTS	DIMENSIONS and indicators	QUESTIONNAIRE
group consumes fast and snack foods		Company	Q8,10,11,12,13
4. To explore and describe the influence/contribution of the external and internal environments on the food habits of the study group			
4.1 To explore and describe the influence/contribution of the external environment on the food habits of the study group (natural/physical, economic and socio-cultural)	External environment	Physical / Natural Economic Political Socio-cultural Family	Section A Q1 Q15 – 14 Section B
4.2 To explore and describe the influence/contribution of the individual environment (knowledge, beliefs, attitudes and values) on the food habits of the study group	Internal environment (individual)	Knowledge Attitudes Beliefs Values	Section D Section E Q1 – 5

4.8 PILOT TESTING OF QUESTIONNAIRE

Pilot testing of the questionnaire was done by administering it to Form 4 learners (16 -19 years) from a school that was not part of the sample as it was not selected according to the sampling procedure followed. But the characteristics of these respondents were similar to those to be selected as the final study group. A pilot study is not only a trial run of the main inquiry but it also serves to test the questionnaire for readability and comprehension (Creswell, 2013:52; Neuman, 2011:80; De Vos *et al.*, 2005:206). Minor changes were made to remove ambiguous phrasing.

To ensure reliability, the researcher adhered to the following procedures regarding the implementation of the questionnaire used for data collection:

- i. ensured that the question wording was factual and produced the required responses,
- ii. pilot tested to ascertain the required length of time taken to answer the questions and to assess the level of difficulty. Some questions that proved to be difficult were modified and simplified and changed according to the results of the pilot test.

4.9 STUDY AREA AND POPULATION

The study was conducted in the Manzini region. The regional capital city is Manzini city which is recognised as 'the Commercial Hub of Swaziland' (Manzini Town Planning Scheme, 2010). The Manzini City population is generally youthful with about 41% are younger than 19 years of age of whom 21% are between the ages 10-19 years, with slightly more females (22%) than males (20%) in the under 19 age group (Marope, 2010:31). The 16 -19 years olds constitute about 11% of the city population (Manzini Town Planning Scheme, 2010). According to the Swaziland Annual Vulnerability Assessment and analysis Report of 2008, there were about 20 000 young people in high schools aged 16 -19 years attending school in this region. There were 58 high schools in the Manzini region in 2009, and eight of these were specifically situated in the peri-urban (transition zone between the city and rural areas) settlement areas of Manzini city (Swaziland Annual Vulnerability Assessment and Analysis Report, 2008).

4.10 SAMPLE AND SAMPLING

Simple stratified random sampling procedures were used to ensure that a fair selection of participants was achieved as recommended by Walliman (2005:27) and Kumar (2011:203). The strata included Form 4 learners (through stratified sampling) from 6 high schools in the peri-urban area of Manzini, Swaziland. Learners who were in Form 3 or Form 5 who could have fallen within the targeted age range (16-19 years) were not included in the study. They were engaged in external examinations when the questionnaire was being administered.

The number of schools required was randomly selected to ensure that the researcher was not biased, a common data collection practice (Creswell, 2013:49-50; De Vos *et al.*, 2005:195). Each school had a register of the total number of enrolments (boys and girls) on which to base the population size. The available records showed a total of about 1 000 pupils in Form 4. A sample of 301 adolescents participated in this study. There were distributed among 6 schools such that about 50 respondents came from each school. The adolescents in the Manzini region have similar characteristics in terms of ethnicity to the entire population of adolescents in Swaziland.

4.11 DATA COLLECTION

Arrangements were made in advance with the principals of the participating schools to select a convenient date, time and venue for data collection of those respondents who were willing to participate in the study. Consent forms had been handed out to all the Form 4 learners in the participating schools before the data collection commenced. Informed consent was sought from both the learners and their parents or guardians beforehand (see Addendum C for examples of the forms). These had to be returned on the appointed day of the data collection. Only those who had submitted their signed forms could participate. Data was collected during May and June, 2009.

The researcher, with the help of a research assistant, explained the procedure to be followed when filling in answers to the questions given in the questionnaire. They also helped the learners understand the contents of the document when they were uncertain. While the respondents were completing the questionnaires; both the researcher and the assistant were present throughout the session to assist the learners who had questions and to supervise the process. Care was taken to prevent learners from influencing each other and to check that the questionnaires were completed with all questions answered when the learners returned their forms. This procedure was meant to minimise error in the responses and to eliminate nonsensical data.

The survey questionnaires were administered in one of the learners' own classrooms with which they were familiar. This helped to ensure that the respondents could write and express themselves freely and comfortably without feeling threatened in strange surroundings. They assembled during either their sports hour or study time in their school time table so that they did not miss out on their lessons.

4.12 DATA ANALYSIS

The responses were then coded. Data capturing was done by entering it on a Microsoft Excel spreadsheet and thereafter screened for errors and corrected. Data from the study was entered into the Statistical Analysis Software package (SAS) Version 9.2 and BMPD

and analysed by means of descriptive statistics, in particular percentages, frequencies, means, the median and the mode. The analysis of the preference data was calculated through the means procedure where median and mode values were determined.

4.13 DATA QUALITY

It is important that valid and reliable data is obtained when conducting a study (De Vos *et al.*, 2005:160). In order to assure the validity and reliability of the study, these aspects were carefully addressed.

4.13.1 Validity

Validity indicates whether the empirical measure obtained accurately reflects the concept it intends to measure (De Vos *et al.*, 2005:160).

Content validity deals with the content of the measuring instrument. This implies that the measuring instrument must cover the full range of meanings that are included in the variables being measured (Neuman, 2011:212; De Vos *et al.*, 2005:161). The following steps were taken to ensure content validity:

- a. The questionnaire was developed based on a comprehensive review of literature on the topic of food habits. It was evaluated by experts in the field of Consumer Science and a statistician at the University of Pretoria.
- b. As part of the pilot test, the questionnaire was judged for readability, clarity and comprehension. Beside the content validity, the panel of experts was asked to evaluate the questionnaire for both face and content validity.

Face validity is concerned with the question whether the measuring instrument measures what it claims to measure (Neuman, 2011:212; Kumar, 2011:179; De Vos *et al.*, 2005:161). The panel of experts evaluated the questionnaire for content, structure and face value.

Construct validity is concerned with the meaning of the construct and what it is factually measuring and how and why it operates the way it does (De Vos *et al.*, 2005:162). It also refers to the relevance of the theory that embraces the variables of the study. An extensive review of the literature including the theory on the formation of and factors influencing food habits was conducted.

4.13.2 Reliability

Reliability refers to the extent to which a measurement procedure is stable or consistent and will give similar results under similar or comparable conditions (Neuman, 2011:214; De Vos *et al.*, 2005:165). The greater the degree of consistency and stability that the instrument has,

the greater will be its reliability, although it is often difficult to have perfect reliability (Neuman, 2011:208-209). However, certain measures were taken in order to improve reliability.

There was a clear conceptualisation of the construct, 'food habits'. This was done to ensure that the wording of the question was factual and produced the required response. Triangulation was also done through the inclusion of the Food Frequency Questionnaire (FFQ) in order to measure different aspects of the construct of food habits.

The questionnaire was also tested through pilot testing it with a group of Form 4 learners who would not form part of the sample. This was done to further ensure the instrument's reliability and to also help determine how much time would be needed to complete the questionnaire.

4.14 ETHICS

Threefold action was taken to adhere to the guidelines for ethical conduct when engaging human subjects in research. First, permission to collect data in schools was obtained from the Chief inspector of secondary/high schools at the Ministry of Education and Training (MOET) who authorised the regional education officer (REO) of the Manzini Region, an officer under the Ministry of Education, to facilitate communication with the head teachers in the region (see Addendum A for a copy of the Regional Education officer approval letter to head teachers).

Second, to get parental consent, letters (Addendum B) were given to the learners to ask their parents to sign the document that would grant them permission to participate in the research. Moreover the learners themselves were also allowed to choose whether or not to participate in the research. The respondents were told in the preliminary notification letter, in the instructions and on the questionnaire form that all information would be treated confidentially and anonymously. They were also told not to make any marks on the questionnaire that would reveal their identity.

The research proposal was submitted to the Ethics Committee of the Faculty of Natural and Agricultural Sciences at the University of Pretoria (UP) before data collection began and ethical approval was granted (EC090209-007).

4.15 CHAPTER CONCLUSION

This chapter has explained the research design and the methodology followed to achieve the aims and objectives of this research. The conceptual framework for this study was presented and the main concepts explicated. The operationalisation of the main concepts was summarised in table and instruments used in measuring each concept were indicated.

The sampling procedure for selecting the respondents and the techniques used in the data collection and analysis were given, as were measures used to ensure data reliability and validity. The results and their discussion will be presented in the next chapter.

Chapter 5: RESULTS AND DISCUSSION

5.1 INTRODUCTION

This chapter presents, describes and discusses the results of the study. The discussion of the results will be according to the research aims and objectives presented in the previous chapter. The interpretation of the results is also presented

5.2 SAMPLE AND DEMOGRAPHIC PROFILE

Sample

The results of the study are based on the responses of a sample of 301 Form four learners from six high schools in the peri-urban areas of Manzini. A total of 320 questionnaires were distributed of which 301 (94%) were usable.

Demographic profile of respondents

The demographic information of the respondents was obtained from both closed-ended and open-ended questions. The results are portrayed in Table 5.1.

The age distribution of the participants ranged between 16 and 19 years which is largely due to the age at entry into school which is six years in Swaziland. The ages of the majority (88; 30%) were 17 years of age which is the expected age in Form 4, the selected source for drawing the sample. The participants were homogenous in their demographic characteristics as most were of Swazi origin (273; 91%) and the majority (293; 98%) belonged to the Christian religion.

The majority of the respondents (199; 82%) were from families where either one or both of the parents were in fulltime employment and indicated as breadwinners of the household. Some of the participants (71; 31%) came from families where the breadwinner was self-employed or engaged in private business such as running a taxi business; trading as a hawker or in the car wash business. For the majority of the respondents the father (110; 39%) followed by the mother (98; 35%) were regarded as the household breadwinners. They were mainly professionals such as teachers or nurses.

In the majority of cases (206; 70%) no family member received a government grant of any type. The fact that there were participants who indicated the presence of a recipient of a grant in the family is worth noting. It suggests that, although either the mother or father could be providing for the family, these participants were likely to be part of an extended family

structure that hosts at least three generations. It can therefore be inferred that the grant recipient would be a grandparent receiving an old-age pension.

TABLE 5.1: DEMOGRAPHIC PROFILE OF RESPONDENTS (n=301)

Characteristics	n	%
Age		
16 years old	57	19
17 years old	88	30
18 years old	66	22
19 years old	49	17
>20 years old *	18	7
Gender		
Female	151	51
Male	147	49
Ethnic group		
Swazi	273	91
Zulu	10	3
Coloured	7	2
Mozambican	6	2
Zimbabwean	1	-
Religious group		
Christian	293	98
Muslim	3	1
Household breadwinner		
Father	110	39
Mother	98	36
Mother & Father	23	8
Other	48	17
Breadwinner's job		
Professional: Doctor/ Nurse/ Teacher	81	35
Self Employed: Business/ Taxi	71	31
Typist/ Clerk/ Assistant/ Office Worker	47	21
Domestic Worker/ Gardner/ Worker Contract	25	11
Hawker/ Car Washer	5	2
Grant recipients in the family		
Yes	88	30
No	206	70
Type of grant		
Old age	50	54
Pension	23	25
Other (charity)	20	21

* Gouws *et al.*, (2000:3) indicated that the adolescent stage ends between the ages of 17 and 22 years as denoted by the results in Table 5.1, i.e. 7% (18) were above 20 years old.

The household size and family structure of the respondents as part of their social environment was also determined and is presented in Table 5.2.

The results (Table 5.2) show that about half of the respondents (137; 49%) came from households consisting of 5-7 people, the rest were either from smaller families, 2-4 people, 21%, 59 in number, or larger families of 8-9 people comprising 30% (83) of the total sample. The respondents came from either nuclear families (124; 41%) with just over a quarter (27%) being extended families (80 in number). The results also highlight the prominence of single parent families as one in every four (74; 25%) respondents came from such families. Only 5%, (14) of the respondents came from child-headed families. The household size and family structure of the respondents is similar to the general South African family size and structure (Wittenberg & Collinson, 2007).

TABLE 5.2: HOUSEHOLD SIZE AND FAMILY STRUCTURE (n=301)

Household size	n	%
2-4 people	59	21
5-7 people	137	49
8 and more	83	30
Family Structure	n	%
*Nuclear Family	124	41
**Extended Family	80	27
Single Parent	74	25
Child Headed	14	5
Other	6	2

***Nuclear family:** a family comprising of parents who are usually married who live under one roof with their children. This type of family is commonly found in Western societies.

****Extended family:** a family made up of people who are related living together, usually including more than one generation. It is common in most African societies.

With respect to household appliances (Table 5.3) the majority (85%), of the households have stoves. It emerged that a stove was the most mentioned appliance by the respondents which is to be expected as cooking is the major activity. A high percentage (75%) of the households, also have a refrigerator which a hot climate requires. Microwave ovens and deep freezers were less common, as 47% and 55% respectively, had these in their households. These could be seen as luxury items as were some specialist appliances, useful although not a necessity.

The availability of the appliances in the household reflects the socio-economic status of the household. Apart from the above appliances, respondents also indicated that radios and televisions were owned by 87% (262), and 83% (251) respectively, reflecting a typical urban society.

TABLE 5.3: HOUSEHOLD APPLIANCES IN THE FAMILY

Appliance	n	%
Stove	256	85
Refrigerator	226	75
Deep freezer	166	55
Microwave oven	140	47
Other (coffee maker, electric kettle, toaster)	86	29

5.3 CURRENT FOOD HABITS OF THE RESPONDENTS

Data was gathered on the respondent's current food habits. Questions were asked regarding eating patterns on weekdays and weekends, the number of meals and what they usually eat or drink (3-4 times a week) for breakfast, lunch, supper and in-between meals. Open-ended questions were used to gather information on the type of food eaten by the respondents (Addendum A for questionnaire). The eating pattern on weekdays will be discussed, first, followed by a discussion on the eating pattern over weekends.

5.3.1 Current eating patterns on weekdays

Patterns were determined by questions on the meal patterns and composition on weekdays. Figure 5.1 indicates the number of meals consumed a day.

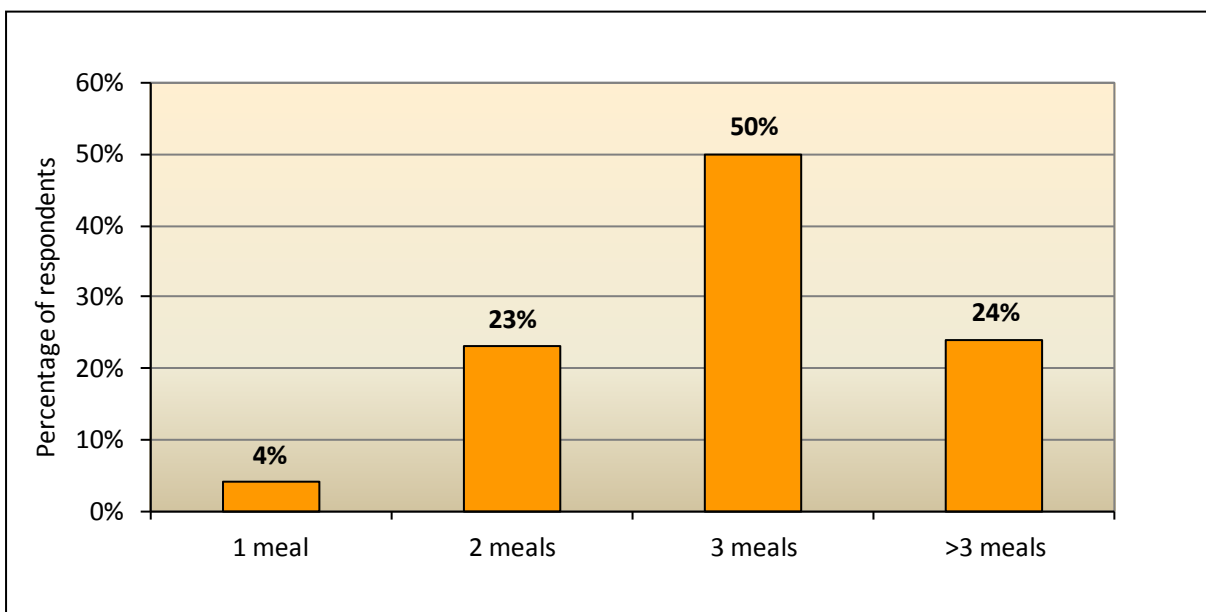


FIGURE 5.1: NUMBER OF MEALS EATEN PER DAY ON WEEKDAYS (n=301)

5.3.1.1 *Weekday meal patterns*

The majority of the respondents (222; 74%) ate three or more meals a day. Twenty three percent of the respondents indicated that they still followed the traditional eating pattern of consuming two meals a day, and only 4%, (11) consumed one meal a day. The results therefore indicate that the majority of the respondents (222; 74%) follow a Western-orientated meal pattern by enjoying three or more meals a day. This tendency of moving towards a Western-orientated meal pattern was also reported by other studies conducted among the Swazi people (Kgaphola & Viljoen, 2000; Ogle & Grivetti, 1985a; Jones, 1963:79) and in South Africa among black children (Temple, Steyn *et al.*, 2006; Labadarios *et al.*, 2005). These results also concur with studies done in other sub-Saharan countries (Olumakaiye *et al.*, 2010).

Reasons for breakfast consumption. Apart from the number of meals eaten, the respondents also had to indicate if they usually ate breakfast and to give reasons why they did so or not. Those who consumed breakfast gave the following reasons why breakfast is consumed. The majority (75; 31%) regarded it as healthy to consume breakfast; others (42; 18%) thought that it is necessary in order to provide energy; and that it stimulates appetite (33; 14%). A few regarded it as the most important meal of the day (21; 9%) or the fact that the meal is prepared at home (12; 5%). Those who did not eat breakfast gave reasons for omitting breakfast that related to time constraints (23; 10%), lack of money (16; 7%) and allergic reactions (13; 5%).

These findings are similar to the results of the Unicef Report (2007) that states that it is common in Swaziland for school-going children to enjoy breakfast. This pattern is also in line with recent studies amongst adolescents in Greece and South Africa where regular breakfast consumption is reported amongst adolescents (Sdrali, *et al.*, 2010; Temple *et al.*, 2006; Labadarios *et al.*, 2005). The results, however, differ from those reported in European studies (Hallstrom, Vereecken, Ruiz, Patterson, Gilbert, Catasta, Diaz, Gomez-Martinez, Gross, Gottrand, Hegyi, Lehoux, Mouratidou, Widham, Astrom, Moreno, & Sjostrom, 2011; Spear, 2002:28; Bower & Sandall, 2002; Hamilton *et al.*, 2000) where it was reported that adolescents do not have an appropriate breakfast and are most likely to skip this meal.

5.3.1.2 *Weekday meal composition*

As part of the eating pattern, data on the weekday meal composition was gathered. The results of the weekday breakfast, lunch, supper and in between meals follow.

Breakfast composition. Foods consumed for breakfast are portrayed in Figure 5.2. Breakfast can be described as a bread-based meal as most of the respondents (219; 73%) indicated

that they ate bread. The findings are consistent with the studies conducted in South Africa that indicated that bread forms part of the breakfast and lunch composition for the majority of the South African population (Tshivanambi, 2007:86; Viljoen *et al.*, 2005; Viljoen & Gericke, 1998). Similar findings are reported in studies on the eating patterns of adolescents in Finland and the United Kingdom (Seiluri, Lahelma, Rahkonen & Lallukka, 2011; Bower & Sandall, 2002).

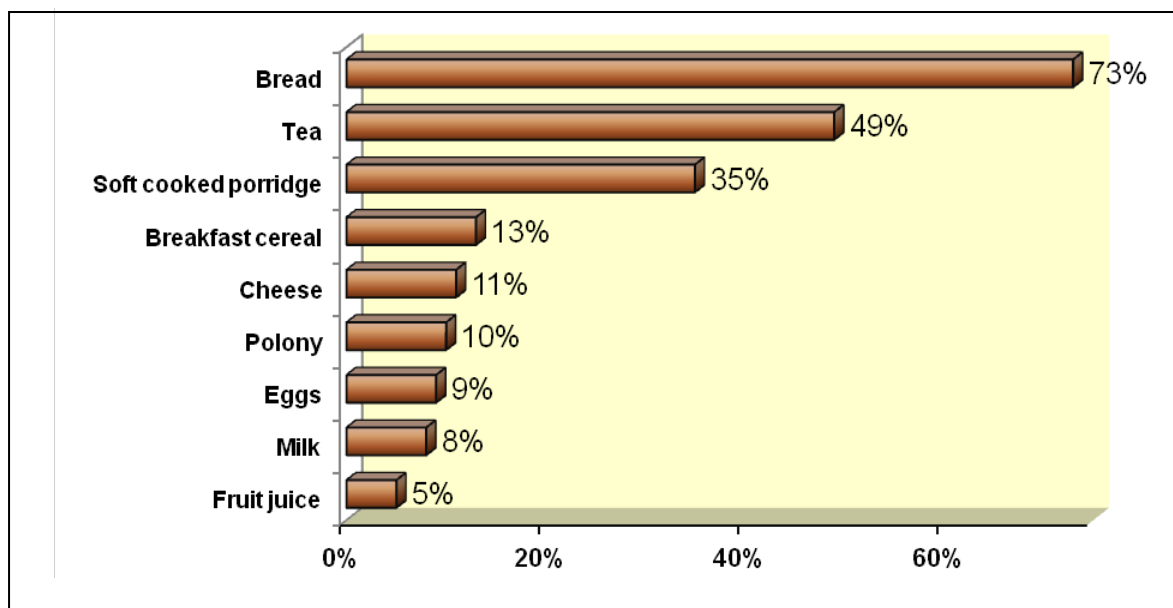


FIGURE 5.2: DAILY BREAKFAST COMPOSITION ON WEEKDAYS (n=299)

Forty nine percent (147) of the respondents indicated that they consumed tea at breakfast. Kgaphola and Viljoen (2004:18) also reported that tea has become frequently consumed as a beverage by the modern Swazi people. A similar trend was reported in a National Food Consumption Survey among South African children where tea was frequently consumed and in line with studies conducted among black South Africans by different authors who indicated that bread and tea were popular in the meal patterns of the South African population (Matla, 2008; Tshivanambi, 2007:86; Viljoen *et al.*, 2005:50; Labadarios *et al.*, 2005; Kgaphola & Viljoen, 2000; Viljoen & Gericke, 1998:94).

Thirty five per cent of the respondents included a soft cooked porridge prepared from maize meal, oats, or mabele (sorghum meal porridge) as part of their breakfast. The results indicate that these respondents maintained the traditional practice of including a soft cooked porridge for the first meal of the day as reported by previous studies (Kgaphola & Viljoen, 2000; Ogle & Grivetti, 1985a; Jones, 1963; & Beemer, 1939). Other foods included for breakfast by some were breakfast cereals (weetbix, cornflakes, rice crispies, and muesli) (40; 13%), cheese (32;

11%), polony (31; 10%), eggs (26; 9%), milk (23; 8%) and fruit juice (15; 5%). These were consumed in small amounts and the consumption of milk was markedly low.

Lunch composition. Foods consumed for lunch are portrayed in Figure 5.3.

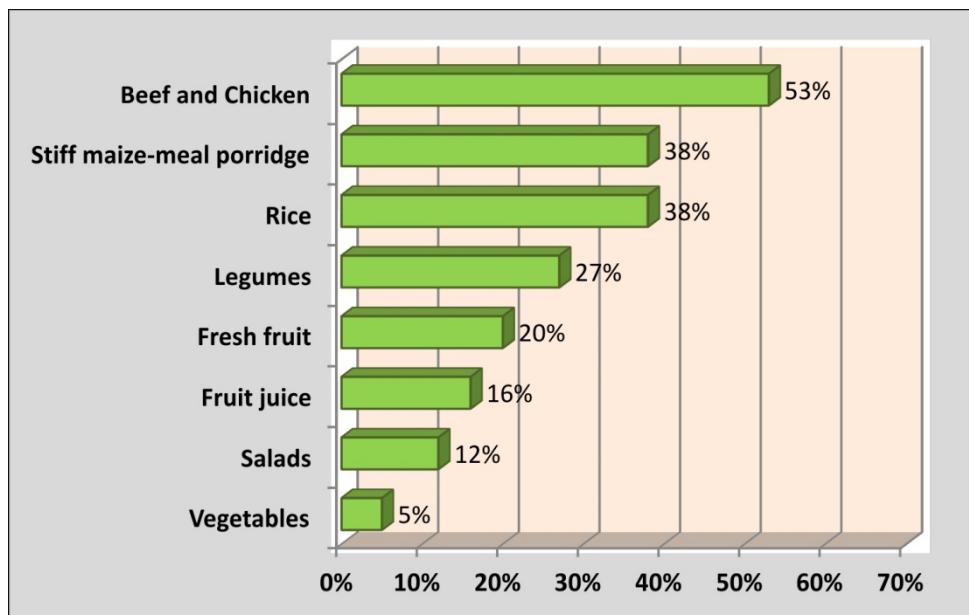


FIGURE 5.3: LUNCH COMPOSITION ON WEEKDAYS (n=301)

The majority of the respondents (160; 53%) reported that meat was part of their luncheon meal. The type of meat consumed was either beef or chicken. Apart from meat, a large number (114; 38%) respectively indicated that stiff maize meal porridge and rice were included for lunch. Twenty seven per cent (83) of the respondents had legumes for lunch. Other foods consumed for lunch were fresh fruit (60; 20%), fruit juice (47; 16%), salads (37; 12%) and cooked vegetables (16; 5%).

Supper composition: Foods consumed for supper are portrayed in Figure 5.4.

The majority (264; 64%) of the respondents had meat (beef or chicken) for supper. More than half of the majority of the respondents reported that they consumed both beef and chicken for lunch and supper (53% and 64%) respectively. Meat was traditionally considered a prestigious food and was mainly consumed on special occasions (Ogle & Grivetti, 1985; Kuper, 1980; Jones, 1963:84). A possible explanation for the more frequent consumption of meat is because it has become more available and accessible in both urban and rural areas in Swaziland as a food item (Kunene & Fossey, 2001).

Stiff maize meal porridge 58%, (174) and rice 49% (146) were consumed by more respondents for supper than at lunch-time. Salads were consumed at supper by 24% (73) and cooked vegetables by 16% (47) of the respondents, showing a low consumption of vegetables

either cooked or raw. This pattern is similar to that reported for lunch. Legumes were included for supper by only 13% (56). Other foods consumed for supper by some respondents were fruit juice (28; 9%), fresh fruit (13; 4%) and *phuthu* (traditionally crumbly porridge) and sour milk (11; 4%).

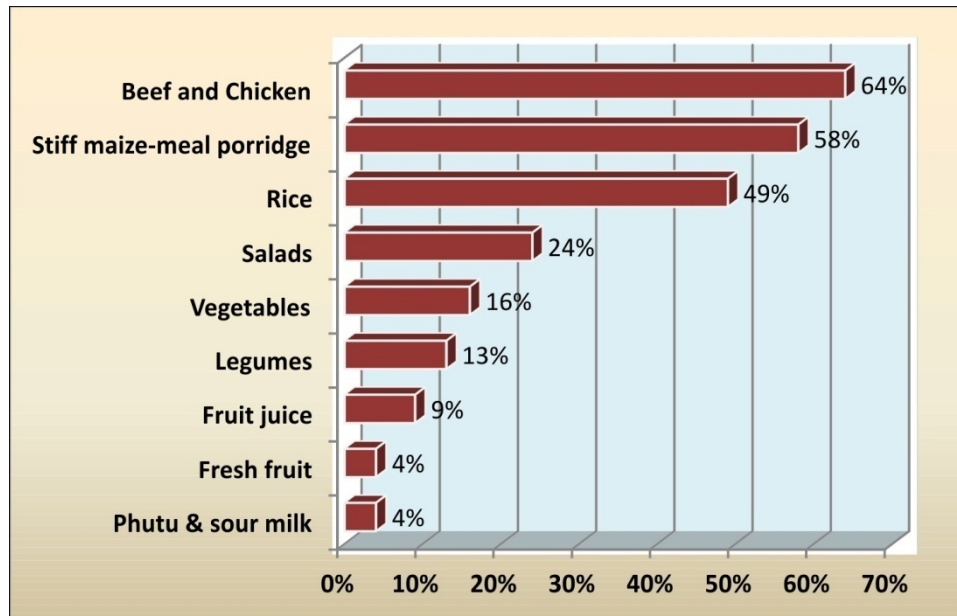


FIGURE 5.4: SUPPER COMPOSITION ON WEEKDAYS (n=216)

In-between meal composition: Respondents were asked to indicate what they usually consumed in-between meals. Figures 5a, 5b and 5c respectively depict the results of what is consumed between breakfast and lunch (a), between lunch and supper (b) and after supper (c).

Figure 5.5 shows that in-between the three meals, the study group consumed snacks regularly. Foods that were found to be consumed mostly in-between meals were biscuits, bread, fruit juice, savoury snacks, fresh fruit and fruit juices. Those who snacked in-between lunch and supper regularly consumed fresh fruit and fruit juices throughout the day. At least 15% of the respondents either snacked on fresh fruit or fruit juice between breakfast and lunch or between lunch and supper or after supper.

Besides using fresh fruit and fruit juices, the results given in (Figure 5.5a) indicate that the respondents who reported on in-between meal snacking also consumed bread and savoury snacks. There were more respondents consuming bread (29%) than savoury snacks such as popcorn, Niknaks, Twiggles and chips (products commercially imported and manufactured) from South Africa as 22%, (44) revealed eating these items between breakfast and lunch. Judging from the results in (Figure 5.5b), snacking was less common between lunch and supper - it was reported by $\leq 15\%$ of the respondents. Some of them reported snacking on fresh fruit and/or fruit juice at this time while others either consumed savoury snacks (12%) or

bread (10%). Results in Figure 5.5c show that biscuits (49%) were often eaten after supper. The habit of snacking on fresh fruit (15%) and/or fruit juices (15%) rather than on bread (10%) and/or savoury snacks was common after supper.

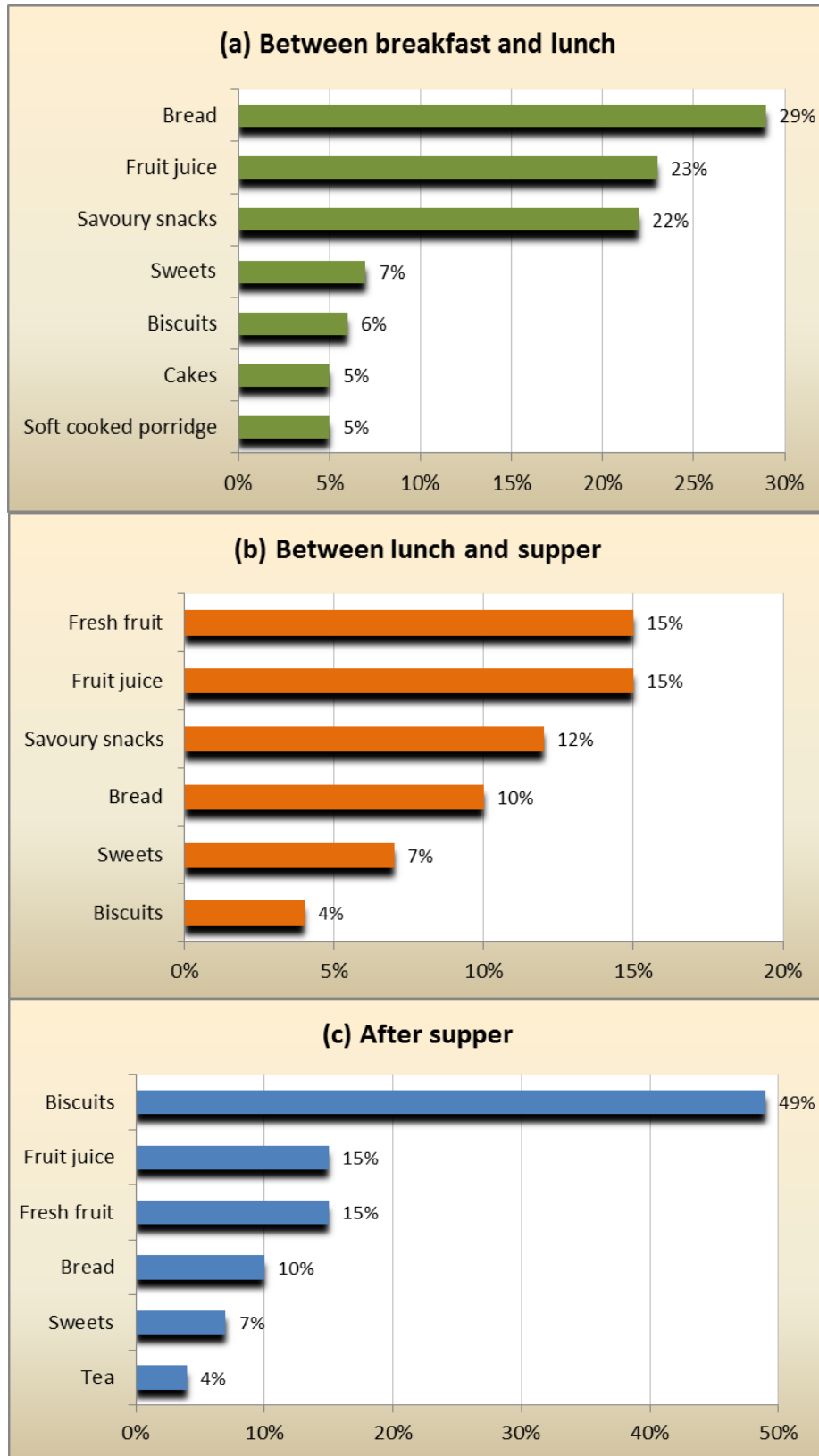


FIGURE 5.5 (a),(b),(c): IN-BETWEEN MEAL COMPOSITIONS ON WEEKDAYS

The results reveal a regular pattern of snacking in between meals by the study group and seem popular amongst the Swazi adolescents. This is similar to the tendency reported in other studies on adolescents (Levin & Kirby, 2012; Hunt *et al.*, 2011; Feeley *et al.*, 2011; Olumakaiye *et al.*, 2010; Oogarah-Pratap, 2007) which documented that the snacking habit between meals has increased among adolescents.

5.3.2 Current eating pattern on weekend days

The respondents were also asked to indicate if their weekend eating pattern differed from the weekday eating pattern. They were asked to indicate the differences in their weekend eating pattern in an open-ended question. The majority of the respondents (55%, 161) said that their weekend pattern changes with regard to the type of food eaten and the number of meals. The majority consumed three meals that were more Western-orientated during weekend days. The respondents were asked in an open-ended question to indicate the difference in their Saturday and Sunday eating patterns.

5.3.2.1 Saturday eating pattern

The majority of the responses (61%) referred to rice, salads, meat, baked products, juice and fizzy drinks as being consumed. Forty one per cent of the responses mentioned that traditional foods such as porridge, legume dishes, *emasi* (sour milk) sour porridge and indigenous vegetables were consumed. Only 11% of the respondents reported that fast foods or take away foods were enjoyed on a Saturday. The changes in the Saturday eating pattern could be grouped into two distinct groups. On the one hand, there were those who consumed more expensive Western-orientated foods while there were those consumed more traditional dishes.

5.3.2.2 Sunday eating pattern

The respondents were asked in an open-ended question to indicate how different their Sunday eating pattern was from other days. The most outstanding changes the eating pattern on a Sunday were that the majority (82%) of the responses revealed that the main meal is enjoyed at midday and the main meal comprised rice, chicken (or other meat), salads, juice, or fizzy drinks. Only a small percentage, 17%, indicated that the traditional foods were included as part of the Sunday meals. Only four per cent consumed fast foods on a Sunday.

5.3.2.3 Frequency of consumption of home-cooked and meals away from home

Respondents were asked to indicate on a 4-point scale how often they consumed home-cooked and meals away from home. A 4-point interval scale was used to capture the frequency of consumption a week as either 5-7 times a week, 3-4 times a week, 1-2 times a

week or never. Figure 5.6 shows the results of the 278 respondents who answered this question.

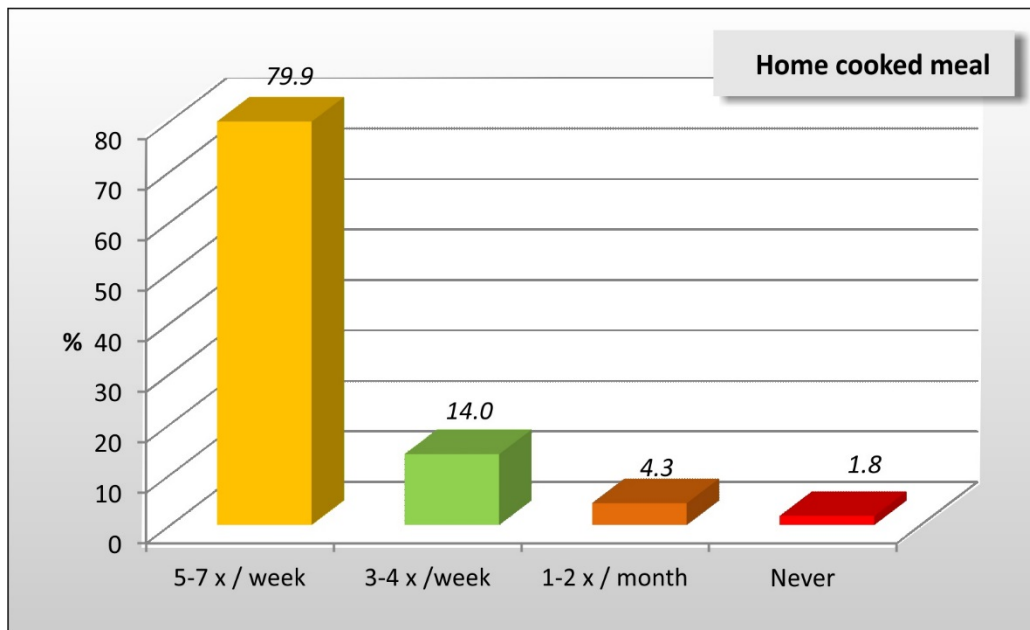


FIGURE 5.6: FREQUENCY OF EATING HOME-COOKED MEALS (n=222)

The majority of the respondents (222; 79.9%) consumed home-cooked food 5-7 times a week, whereas, 14.0% (39) indicated that they ate home-cooked food 3-4 times a week.

The results indicate that the practice of eating meals at home continues to exist amongst Swazis as reported by Jones in 1963. This is consistent with various studies that have reported this tendency among adolescents (Neumark-Sztainer *et al.*, 2010; Videon & Manning, 2003; Gillman, Rifas-Shiman & Frazier, 2000) and contrasts other studies where adolescents did not eat home-cooked food as often (Lachat *et al.*, 2011; Hunt *et al.*, 2011; Neumark-Sztainer *et al.*, 2010; Burgess-Champoux *et al.*, 2009).

5.3.2.4 Food consumption context

Respondents were also asked to indicate how the meals were eaten in their families or households and to indicate the people with whom they ate these meals and how often. The majority, (201; 73%) indicated that all members of the household ate food together at the table. Hunt *et al.* (2011) are of the opinion that eating together as a family has both emotional and social importance in that it brings about cohesion and socialisation of the family members.

A decline in the practice of having a family meal is associated with an increase in fast food consumption by the adolescents. Only 27% (75) of the respondents still followed the traditional practice where different age and gender groups are formed and ate separately as reported by

Beemer (1939) and Jones (1963).The results hence show a decline in the traditional practice where different age and gender groups normally ate together.

Respondents were also requested to indicate the frequency of consumption of meals away from home. Figure 5.7 indicates the frequency of consumption of meals away from home of the 296 respondents who filled in this question.

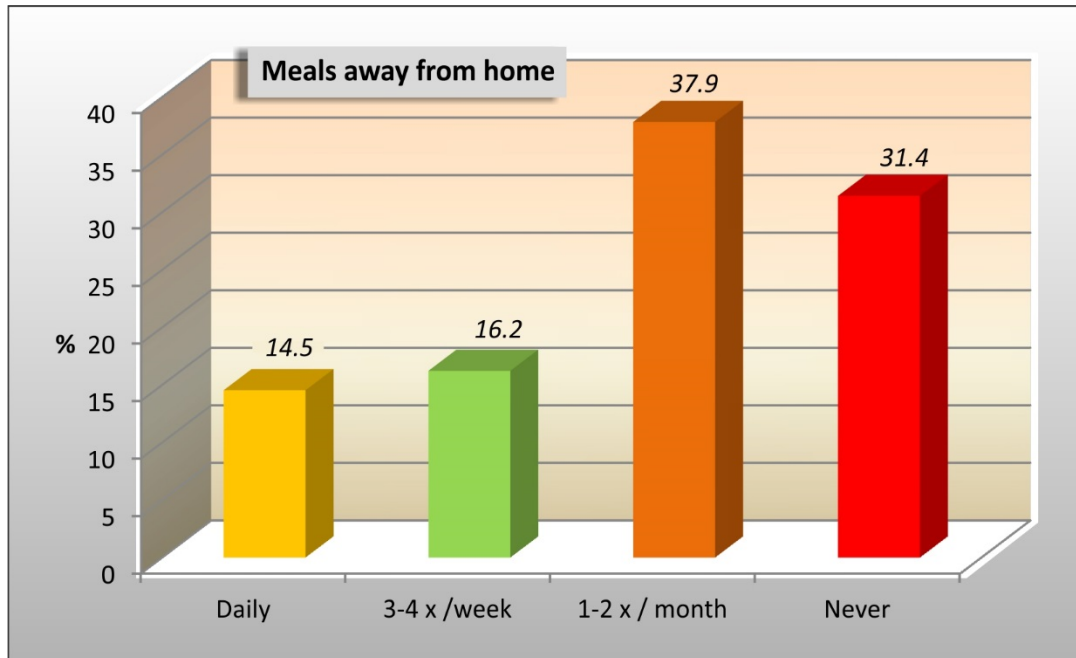


FIGURE 5.7: FREQUENCY OF CONSUMPTION OF MEALS AWAY FROM HOME (n=108)

The majority of the respondents (108; 37.9%) indicated that they ate meals away from home at least once or twice a month, and 16.2%, (48), ate meals away from home 3-4 times a week. In contrast, 14.5%, (43) indicated that they ate meals away from home daily and 31.4% (97) never ate meals away from home. This is consistent with studies in other parts of the world that indicate that adolescents are fond of eating meals away from home with their peers (Lachat *et al.*, 2011; Hunt, *et al.*, 2011; Neumark-Sztainer *et al.*, 2010; Beasley, Hackett & Maxwell, 2004; Videon & Manning, 2003; Bower & Sandall, 2002; Brown *et al.*, 2000; Neumark-Sztainer, Story, Perry & Casey, 1999). According to Hunt *et al.* (2011), the tendency to eat meals away from home is more common in a situation where the mother is employed. It can also be caused by peer independence (Story *et al.*, 2002).

The results in Figure: 5.8 indicate with whom meals away from home were consumed by the 185 respondents who indicated this.

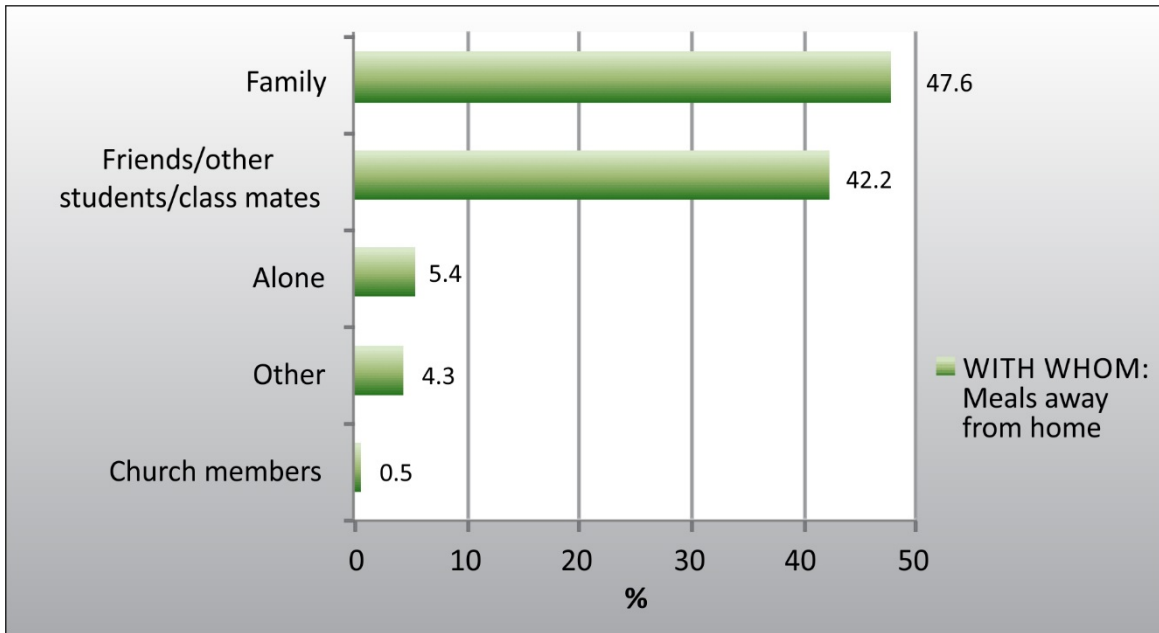


FIGURE: 5.8: WITH WHOM ARE MEALS CONSUMED AWAY FROM HOME (n=185)

Figure 5.8 indicates that the meals eaten away from home were mainly eaten with family members (81; 47.6%) or friends/classmates (78; 42.2%).

The respondents had to also indicate in open-ended questions when these meals were eaten away from home. The results are given in Figure 5.9.

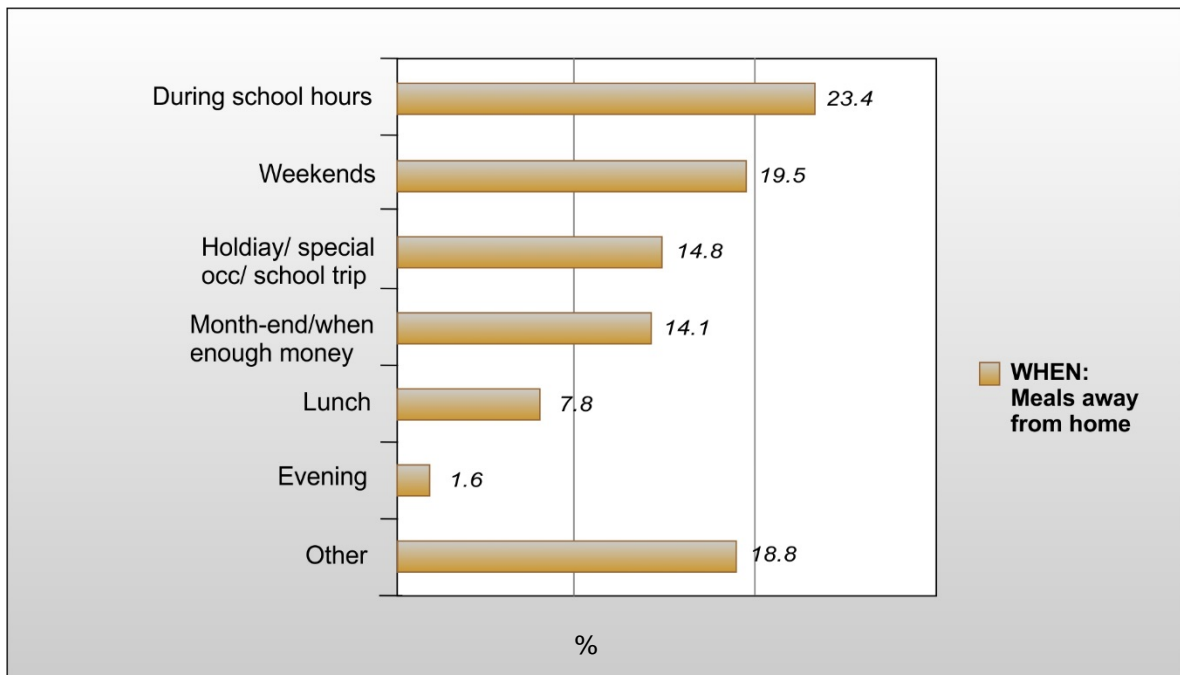


FIGURE 5.9: WHEN ARE MEALS CONSUMED AWAY FROM HOME (n=128)

The results of the 128 respondents show that, of those who ate meals away from home, 23.4%, (30) did so during school hours, 19.5% (25) over weekends, and 14.8% (19), on

special occasions/holidays. As expected, the respondents spend many hours of the day at school and were more likely to consume food away from home during school hours. The respondents had to indicate the locations or places where meals were most often consumed away from home. Figure 5.10 portrays the results of the 190 respondents who reported on this.

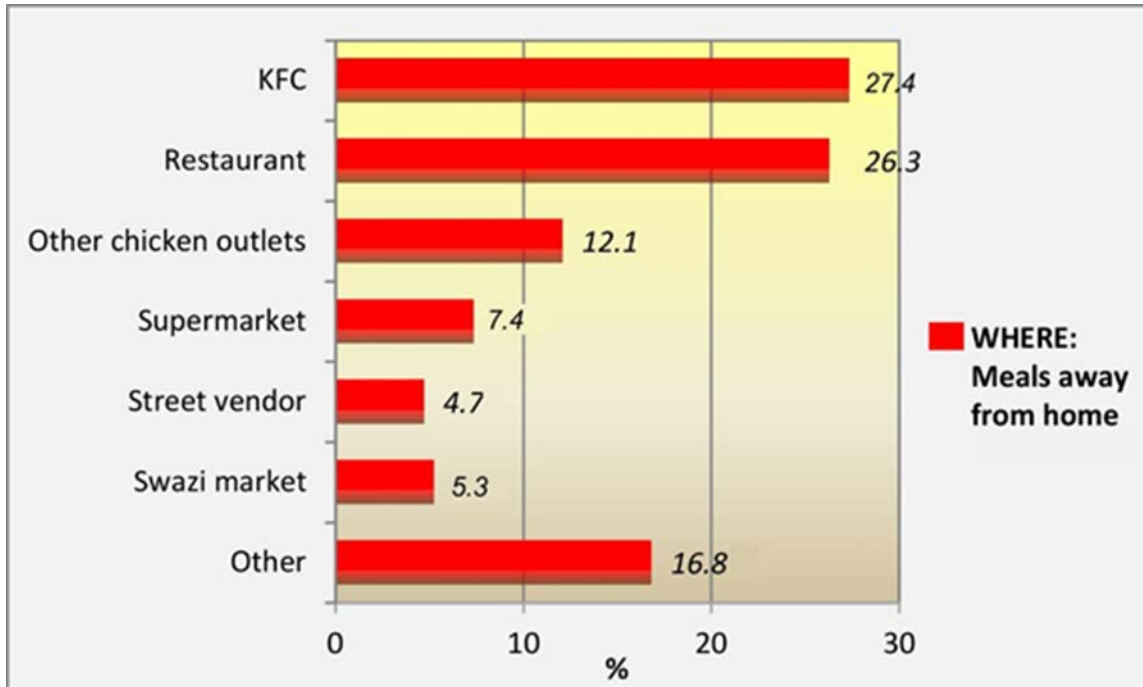


FIGURE 5.10: WHERE ARE MEALS CONSUMED AWAY FROM HOME (n=190)

Most of the respondents had these meals at Kentucky Fried Chicken (KFC) (58; 27.4%) and in restaurants (51; 26.3%). The results show an inclination towards the use of chicken, which is supported by the results on the lunch and supper eating patterns given above. It seems as if chicken is a popular menu choice of the study group.

5.3.3 Frequency of consumption of food usually included in the eating pattern

To measure the extent to which certain food items were consumed by the respondents, a non-quantitative food frequency questionnaire was used. This served as a check and triangulation of the reported current eating patterns and to get a more comprehensive overview of the eating pattern. The non-quantitative food frequency questionnaire included the food items listed in each of the following groups: breads and bread-like items, spreads and accompaniments to bread, cereals, vegetables, fruit, meat and processed meat, fish, other protein food, dairy beverages and puddings. The frequency of consumption was determined as either daily, 3-4 times a week, once a week, once a month, on special occasions or never.

Bread appears to be the staple food of the sample. Figure 5.11 depicts the frequency of consumption of bread and bread rolls.

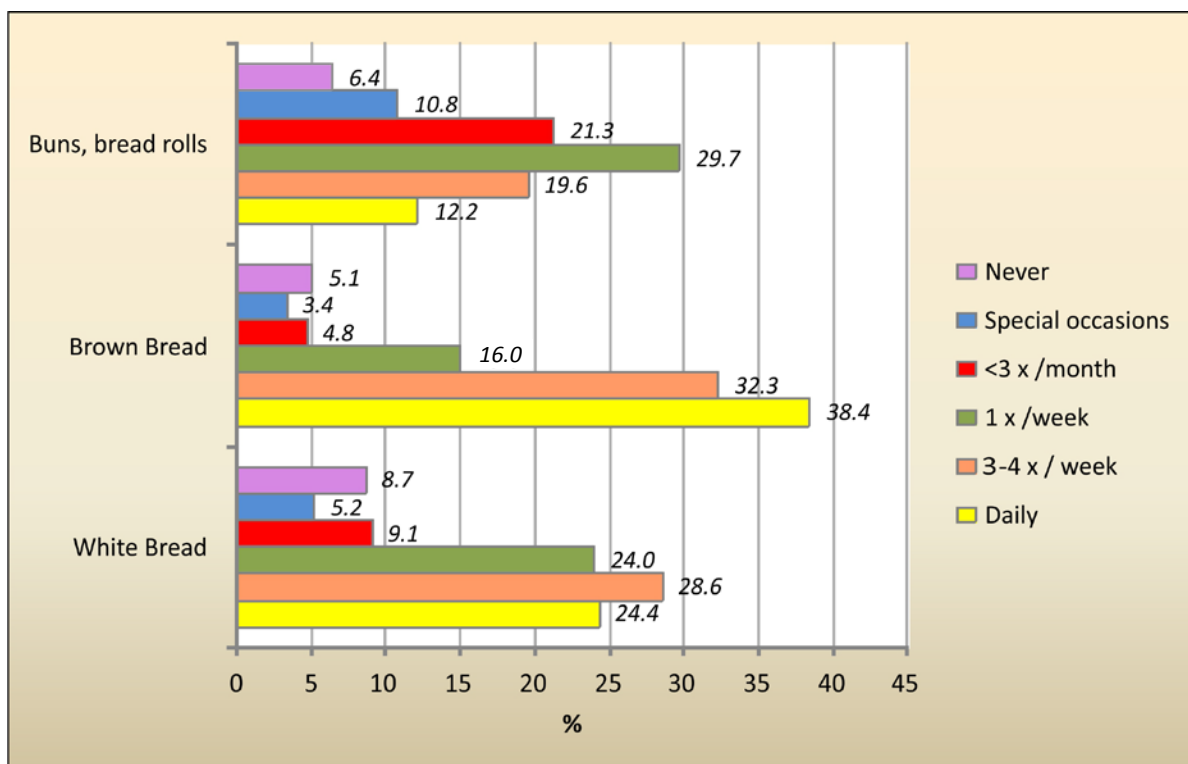


FIGURE 5.11: FREQUENCY OF THE CONSUMPTION OF BREADS (n=296)

Of the 296 respondents, most (113; 38.4%) consumed brown bread daily and 32.3% (95) consumed brown bread at least three times a week. Only 70 (24.4%) consumed white bread daily, whereas 28.6% (82) did so 3-4 times a week. The results point out that white bread was consumed by a smaller number of respondents in comparison to brown bread. The bread consumption frequencies were similar to the patterns reported in South African studies (Tshivanambi, 2007:86; Viljoen, *et al.*, 2005:50; Viljoen & Gericke, 2001; Viljoen & Gericke, 1998:94). Brown bread was consumed more often than white bread due to the fact that brown bread was more affordable and tasty (Labadarios *et al.*, 2005). The two studies by Kgaphola and Viljoen, (2004) and Huss-Ashmore and Curry, (1994) also found similar results with regard to the type of bread consumed in Swaziland.

The consumption of buns or bread rolls in comparison to brown and white bread was not as frequent. A total of 29.7% (88) consumed buns or bread rolls once a week and only 12.2%, (36) indicated that they ate buns or rolls daily. This could be attributed to the fact that buns or rolls are more expensive than loaves of bread.

Figure 5.12 depicts the frequency of consumption of bread-like foods. This group included muffins, rusks, Swazi and Chelsea buns.

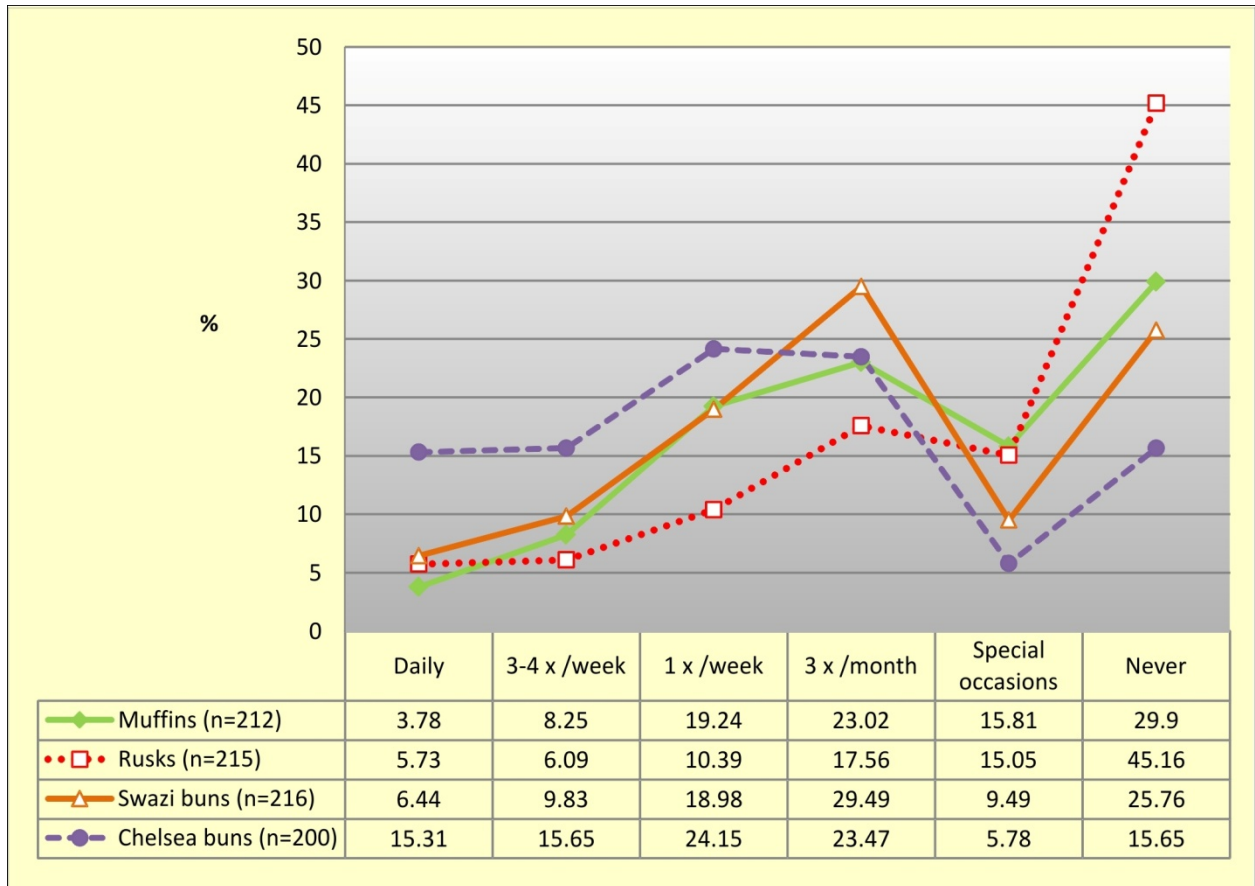


FIGURE 5.12: FREQUENCY OF THE CONSUMPTION OF BREADS-LIKE FOODS

The graph reveals that Swazi buns, Chelsea buns and muffins were consumed regularly. Of those respondents who ate these confectionaries, 71 (24.15%), consumed Chelsea buns once a week. Swazi buns, Chelsea buns and muffins were consumed by some respondents less than three times a month. Frequencies were fairly similar: Swazi buns 29.49% (87), Chelsea buns 23.47% (69) and muffins 23.02% (67) of the respondents. The possible explanation why the adolescents consumed these items regularly could be due to the fact that these were commonly sold in most tuck shops and by street vendors in Swaziland as well as the fact that they are affordable. Rusks were never consumed by most respondents (126; 45.16%). A possible explanation could be that they are an expensive item and not part of the traditional Swazi food culture.

The frequency of consumption of the spreads and accompaniments to bread is reflected in Figure 5.13. This includes spread like jam, peanut butter, cheese and margarine.

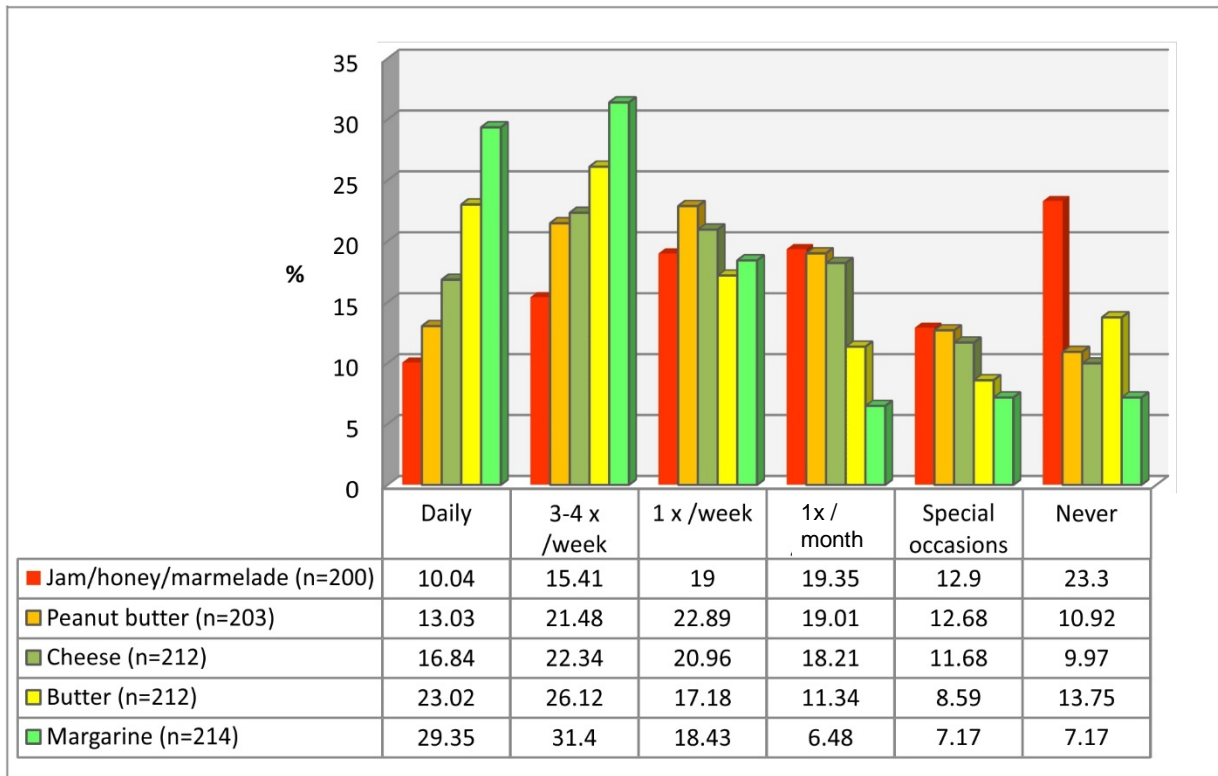


FIGURE 5.13: FREQUENCY OF THE CONSUMPTION OF SPREADS AND BREAD ACCOMPANIMENTS

Margarine on bread was used daily by 29.35%, (86) of the respondents and 31.4%, (92) consumed it 3-4 times a week. Twenty six per cent (76) used butter 3-4 times a week, whereas 23.02% (67) used it daily. Peanut butter was consumed by 22.89% (65) once a week and 21.48% (61) did so 3-4 times a week. From these results, it seems that the spreads most frequently used on bread were margarine, butter and peanut butter. The results are similar to the South African studies by Labadarios *et al.*, (2005) and Viljoen and Gericke, (2001) where margarine was reported to be frequently consumed with bread. The results, however, contradict the observation made by Kgaphola and Viljoen, (2004) in a study among selected Swazi households where bread was used mainly with peanut butter and jam and margarine was used less frequently. Jam/honey/marmalade was eaten by 19% (53) of the respondents either once a week or once a month. Only 15.41%, (43) ate these 3-4 times a week. There were 22.34% (65) who consumed cheese 3-4 times a week and 20.96% (61) did so once a week indicating that cheese is becoming popular nowadays as more people are consuming it more often.

The frequency of cereal consumption was also determined. Figures 5.14, 5.15 and 5.16 show the results.

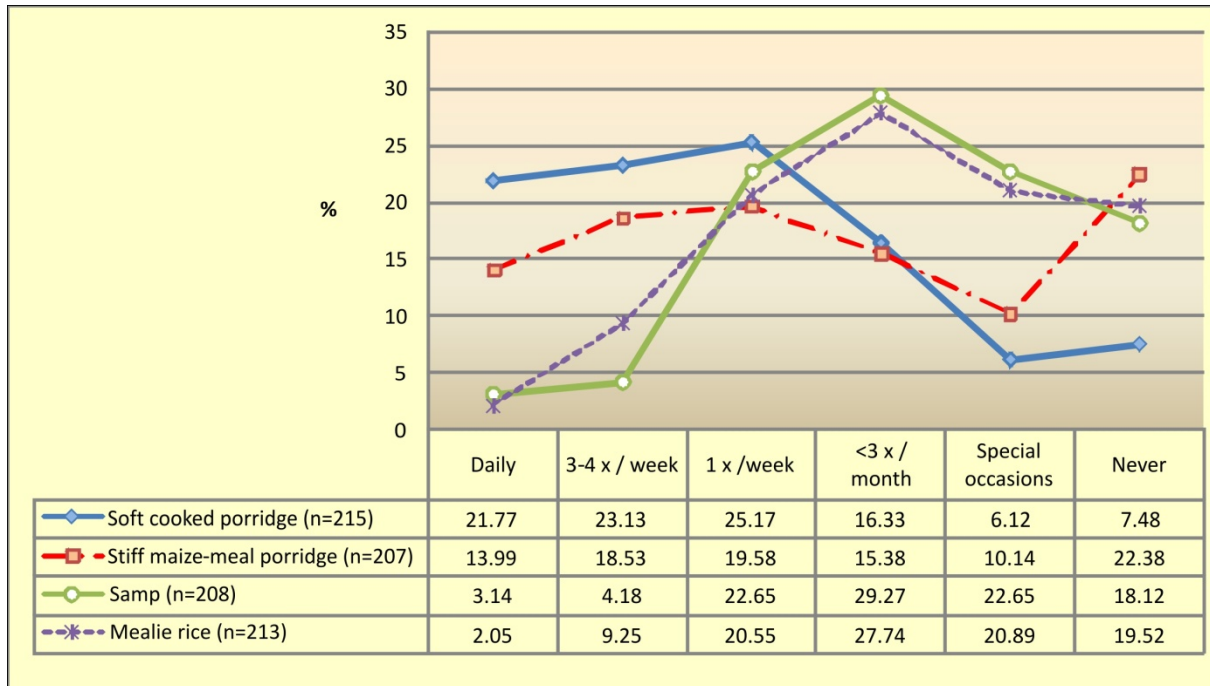


FIGURE 5.14: FREQUENCY OF THE CONSUMPTION OF MAIZE DISHES

Figure 5.14 shows that soft cooked porridge was consumed by most respondents (74; 25.17%) once a week, and 3-4 times a week by 23.13% (68) and another 21.77%, (64) consumed soft cooked porridge daily. Stiff maize meal porridge was consumed by most respondents (56; 19.58%) once a week, and 3-4 times a week by 18.53% (53) and another 13.99%, (40) consumed stiff maize-meal porridge daily. The results indicate that soft cooked porridge in comparison to stiff maize meal porridge was consumed by a relatively larger number of respondents, and also forms an important part of their breakfast meal (Figure 5.2). The results confirm that many of the respondents still follow the traditional custom of enjoying these cooked porridges prepared from maize as reported in previous studies (Viljoen *et al.*, 2005; Kgaphola & Viljoen, 2004; Huss-Ashmore & Curry, 1991; Ogle & Grivetti, 1985a; Kuper, 1980; Jones, 1963:66; Beemer, 1939).

Samp was consumed by nearly a third of the sample (84; 29.27%) less than 3 times a month and by 22.65%, (65) once a week. A negligible 3.14% (9) of the respondents consumed samp daily. Mealie rice was consumed by 27.74%, (81) once a month and by 20.55% (60) once a week. There were few, 2.05% (6) who ate mealie rice daily. The results show that samp and mealie rice were not eaten frequently when compared to the maize porridges. This could be attributed to the fact that samp normally takes longer to cook and both these food items are generally more costly when compared to maize meal.

A comparison between the frequency of consumption of stiff and soft porridges and breakfast cereals and rice is given in Figures 5.15 and 5.16.

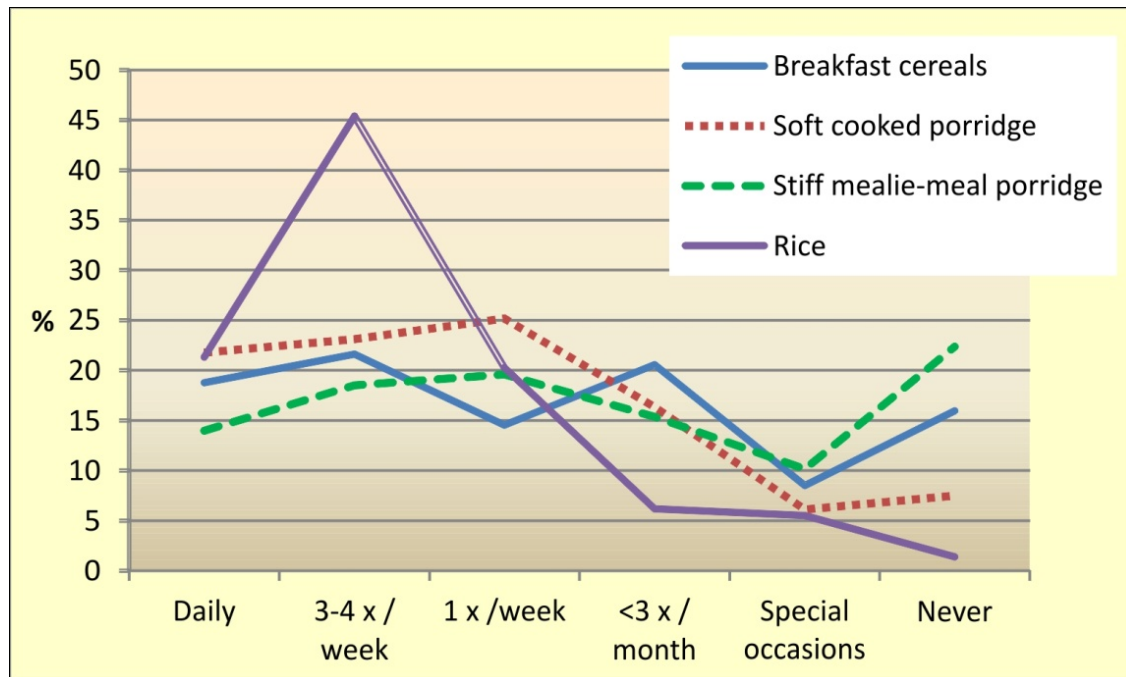


FIGURE 5.15: COMPARISON OF THE FREQUENCY OF CONSUMPTION OF PORRIDGES, BREAKFAST CEREALS AND RICE

Figure 5.15 shows that soft cooked porridge (mealie meal, oats and *mabele*) was consumed daily by 21.77% (64) and 3-4 times a week by 23.13% (68) as well as once a week by 25.17% (74). Stiff maize meal porridge was consumed by 13.99% (40) daily, whereas 18.53% (53) consumed it 3-4 times a week. Most respondents 19.58% (56) consumed stiff maize meal porridge once a week. Cooked soft maize meal porridge was eaten traditionally as the first meal of the day, whereas stiff maize meal porridge was eaten daily with the main meal together with a side dish or relish. The results confirm that many of the respondents still follow the custom of enjoying soft and stiff cooked porridges daily as reported in previous South African studies (Viljoen *et al.*, 2005; Kgaphola & Viljoen, 2004).

Rice was consumed by 21.31% (62) daily. The largest number of respondents 45.36% (132) consumed rice 3-4 times a week. Only 20.27% (59) ate rice once a week. The frequency of consumption confirms the results of increased rice consumption for lunch and supper (Figures 5.3 and 5.4). This pattern is common among many other southern African populations as reported by various studies (Viljoen *et al.*, 2005; Kgaphola & Viljoen, 2004; Viljoen & Gericke, 2001; Popkin, 2004; Huss-Ashmore & Curry, 1991; Ogle & Grivetti, 1985; Jones, 1963:68).

Figure 5.16 compares the frequency of consumption of cereals that were not part of the traditional eating pattern of the Swazis.

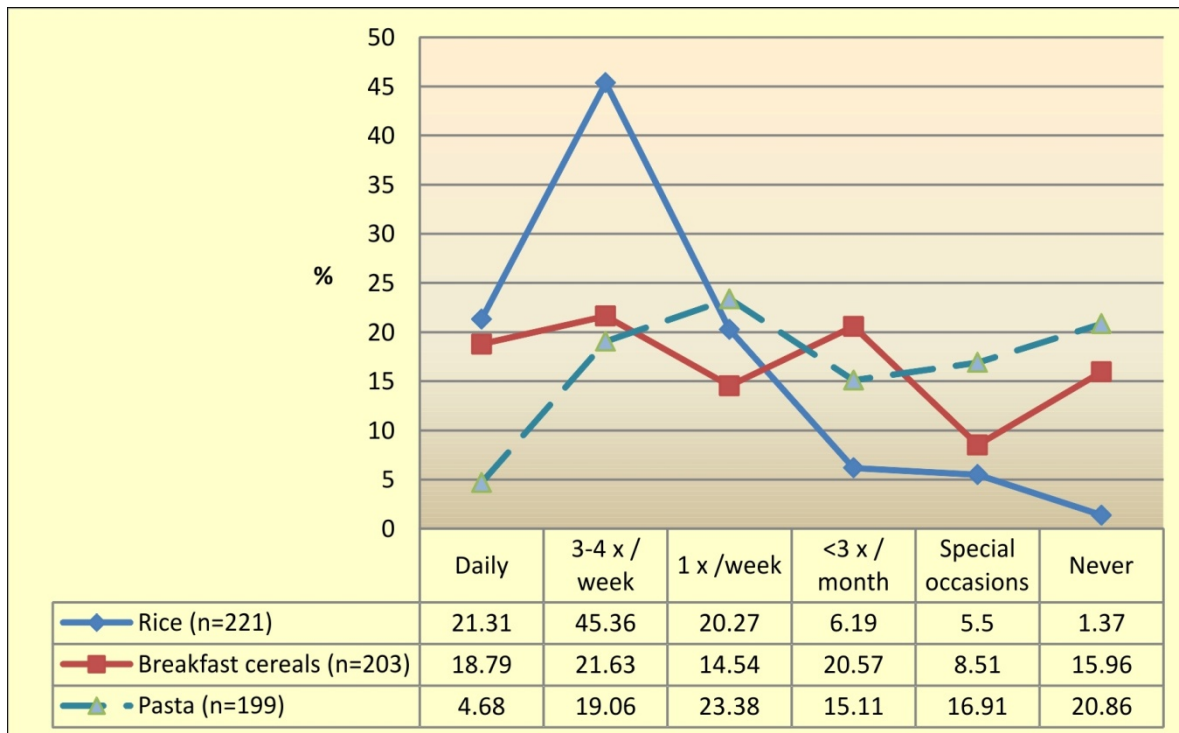


FIGURE 5.16: COMPARISON OF THE FREQUENCY OF CONSUMPTION OF RECENTLY INTRODUCED CEREALS

More than 73% of the 221 respondents consumed rice frequently. Of these, 45.36% (132) consumed rice 3-4 times a week. Another 21.31% (62) consumed rice daily. There were few (59; 20.27%) who consumed it once a week. The breakfast cereals (Weetbix, Cornflakes) were consumed by most respondents (61; 21.63%), 3-4 times a week and another 18.79%, (53) ate these food items daily. There were few, (41; 14.54%) who ate these cereals once a week. Pasta (macaroni/spaghetti) was consumed by 23.38%, (65) once a week and 19.06% (53) did so 3-4 times a week. A total of 16.91% (47) had pasta on special occasions. There were very few (13; 4.68%) who consumed it daily. However, 20.86% of the respondents (58) never consumed pasta, possibly because it was not made available to them.

The cereals named in Figure 5.16 have only been generally available in recent times and so were not part of the traditional meal patterns of the Swazis. However, from the results, a change in the eating patterns is noted. Rice, pasta and breakfast cereals are now eaten frequently. Although the frequency of consumption of pasta is not on a daily basis, it is becoming popular as 23.38%, (65) consumed pasta once a week. The results also indicate a high consumption frequency of rice in comparison to the traditional maize meal porridge.

The frequencies of consumption of vegetables are portrayed in Figure 5.17. Vegetables were grouped into salads, green leafy vegetables, yellow vegetables and others.

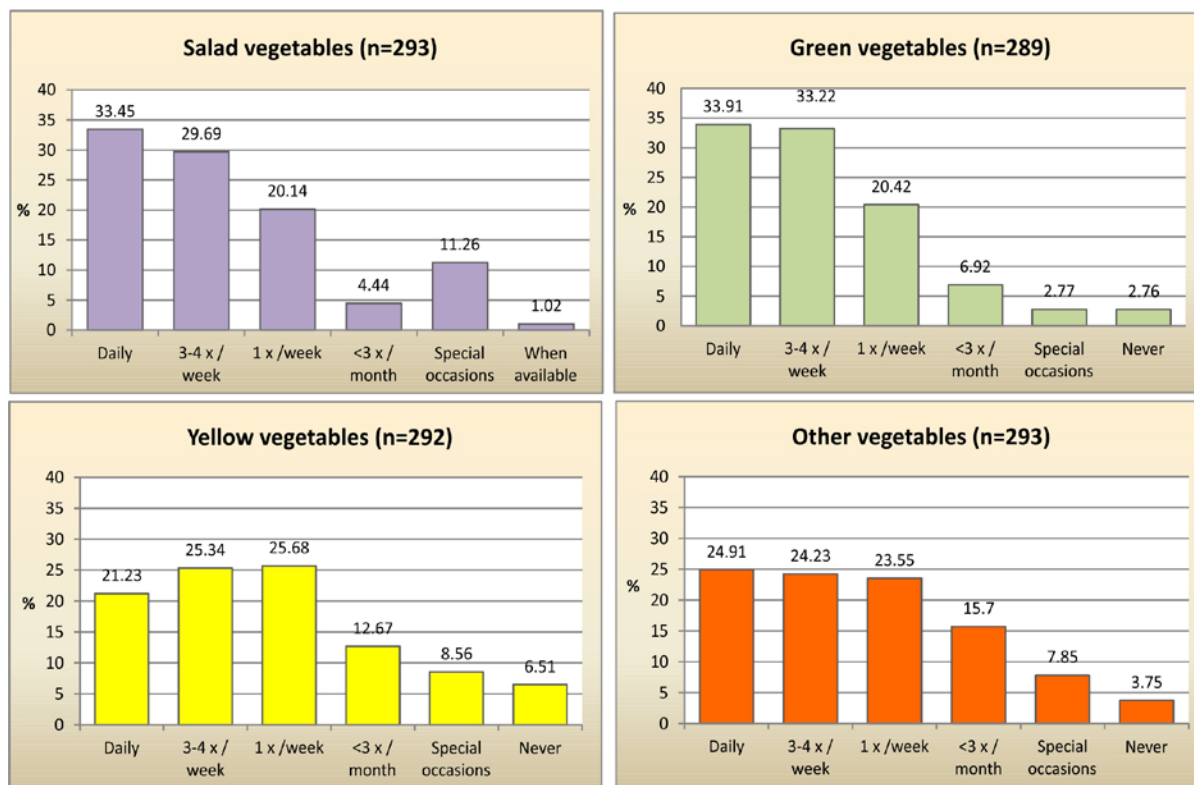


FIGURE 5.17: FREQUENCY OF CONSUMPTION FOR DIFFERENT VEGETABLES

The results in Figure 5:17 indicate that a third of the respondents 33.45% (98) consumed salads (beetroot, lettuce, cucumber, tomatoes and sweet peppers) daily, whereas 29.69% (87) consumed these 3-4 times a week. The graph also shows that there were some, 11.26% (33) of the respondents who ate salads only on special occasions. A total of 33.91% (98) consumed the green vegetables (broccoli, green beans, peas, and spinach) daily. A regular consumption of these vegetables is recorded as 33.22% (96) and 20.42% (59) respectively consumed green vegetables 3-4 times a week and once a week. Most respondents (25.68% (75) consumed yellow vegetables (butternut, carrots, pumpkin) at least once a week. There were some 21.23% (62) who consumed yellow vegetables daily. Only 8.56% (25) used them on special occasions. The other vegetables (potatoes, cauliflower, mushrooms, onions, sweet potatoes, mealies) were in contrast, consumed by few (23.55%) once a week. Forty nine per cent consumed other vegetables 3-4 times a week or a daily basis.

It is recommended that an individual eats at least five portions of vegetables and fruits daily. However, the results indicate a low consumption of vegetables by most respondents. It is a concern that the study group did not adhere to the recommended dietary guidelines. It is reported that Swazis mainly consumed either cultivated or wild leafy vegetable dishes as a side dish or relish (Kgaphola & Viljoen, 2004; Ogle & Grivetti, 1985(a); Jones, 1963: 69). A similar pattern of the frequency of consumption of these wild green leafy varieties is reported

in South Africa (Kepe, 2008; Modi, Modi & Hendriks, 2006; Odhav, Beekrum, Akula, Naidoo & Baijnath 2007).

The frequency of consumption of fruit is portrayed in Figure 5.18. Fruits were grouped into citrus, vitamin-A rich fruits, dried, tinned and other fruits.

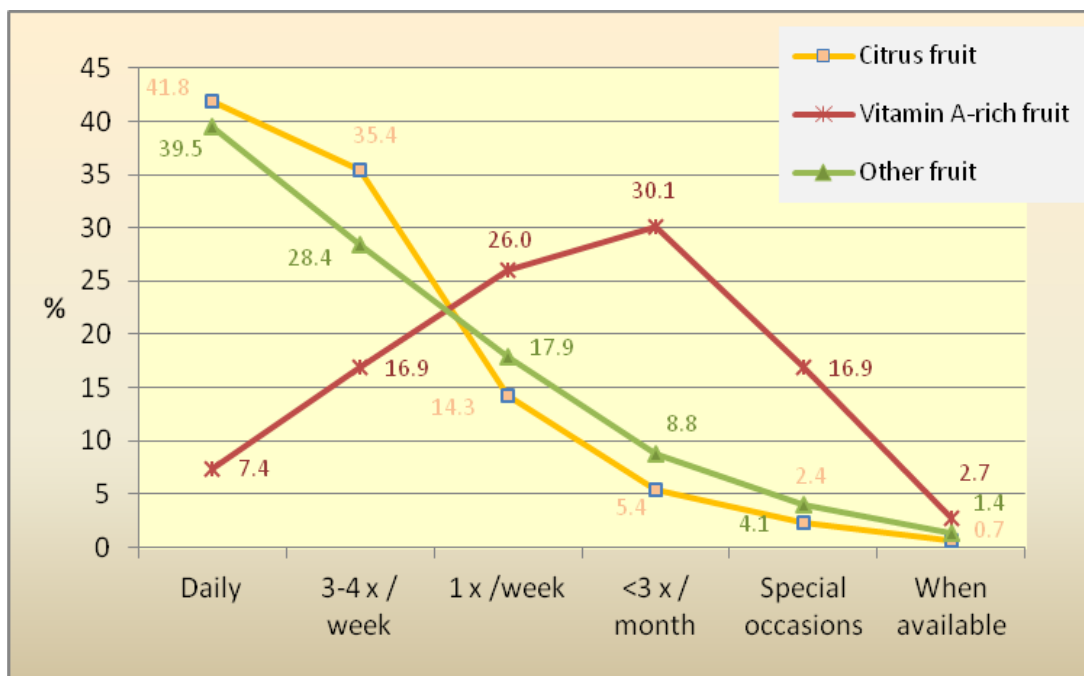


FIGURE 5.18: FREQUENCY OF CONSUMPTION FOR DIFFERENT FRUITS

A total of 41.8% (123) of the respondents consumed citrus fruits daily and 35.4% (104) did so 3-4 times a week. A low consumption of vitamin A-rich fruits (yellow peaches, mangoes, paw-paw and pineapple) by the respondents is indicated as 30.1% (89) consumed these fruits less than 3 times a month. The other fruits (grapes, bananas, apples, pears and litchis) were consumed daily by 39.5% (117) and 4% (12) consumed them only on special occasions.

Respondents were also requested how frequently they consumed tinned and dried fruit.

Tinned fruits were consumed once a month by 19.8% (57) of the respondents and 25.4% (73) consumed tinned fruits on special occasions. Thirty two per cent (91) of the respondents indicated that they never consumed tinned fruits. Dried fruits were consumed by 23.3% (67) on special occasions and 42.9% (123) never consumed dried fruits.

The results indicate low fruit consumption by the respondents except for citrus fruit. This concurs with the findings of Kgaphola and Viljoen, (2004) who noted a low consumption of some fruits in their study of selected Swazi households at ka-Mantsholo in the Badplaas district. A similar pattern was found amongst black populations where a low consumption of both fresh and tinned fruits was reported (Pelzer & Pengpid, 2010). It appears from the results

that the frequency of consumption of tinned and dried fruit was lower compared to fresh fruit. This could be because they are far -more expensive.

The frequency consumption of meat is given in Figure 5.19. The various types of meat include: chicken, beef, pork, goat meat, mutton or lamb.

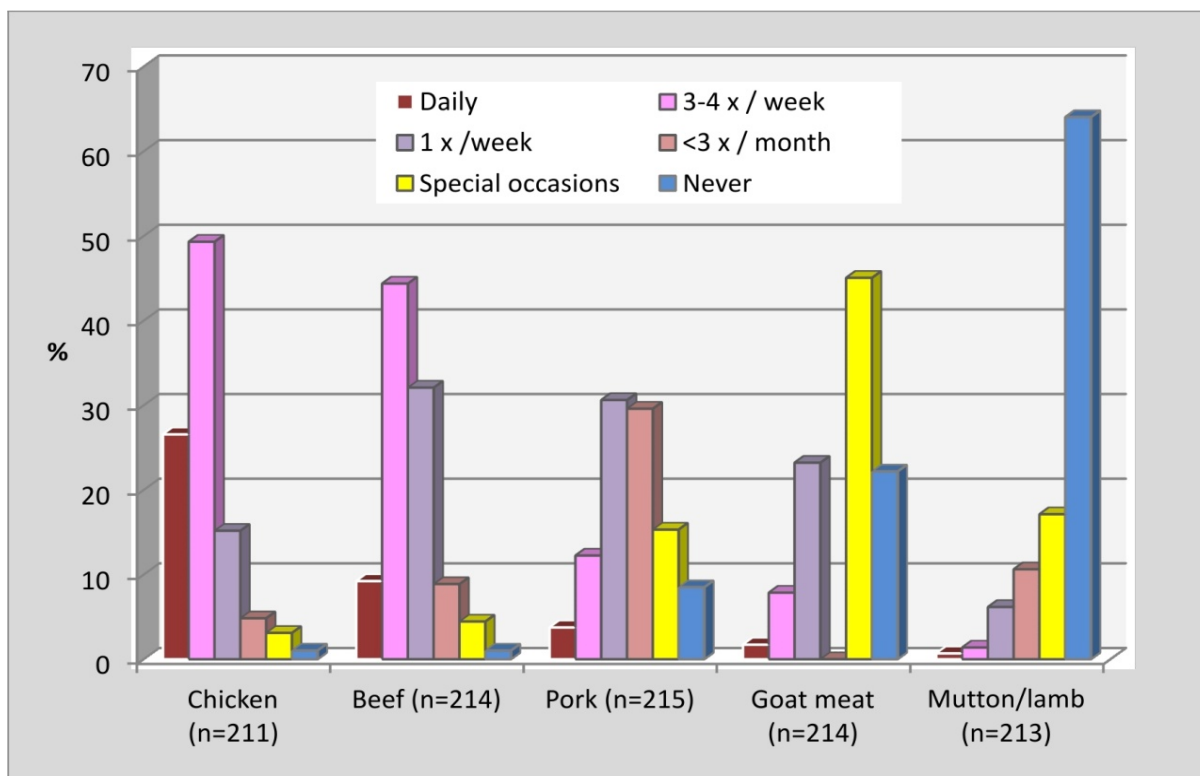


FIGURE 5.19: FREQUENCY OF CONSUMPTION OF MEAT

Chicken and beef were consumed more frequently in comparison with pork and goat meat. Most respondents 49.3% (143) consumed chicken 3-4 times a week and 15.2% (44) consumed it once a week. Forty four per cent (130) indicated that beef was consumed 3-4 times a week and 32.1% (94) consumed it once a week.

Most respondents consumed pork, goat and mutton/lamb not as often, as these were eaten once a week at most. Goat meat, was consumed on special occasions by 45.1% (132) of the respondents, whereas lamb was not eaten as frequently and nearly two-thirds (187; 64.0%) of the respondents said that they have never eaten it. Only few 17.1% (50) ate mutton on special occasions. The results indicate a high consumption frequency of chicken compared to beef. This was also indicated in the lunch and supper eating patterns (Figures 5.3 and 5.4).

Pork is not frequently consumed as 8.5% (25) acknowledged to have never eaten pork. A possible explanation for this low frequency of consumption could be related to the fact that traditionally pork was not a popular meat as noted in previous studies (Kgaphola & Viljoen, 2004; Ogle & Grivetti, 1985; Jones, 1963:190; Beemer, 1939). Another explanation could be

related to the religious beliefs where eating of pork is prohibited because it is believed to be unclean (Jones, 1963:190).

Goat meat was not consumed regularly except on special occasions by 45.1% (132) of the respondents yet another 23.2%, (68) reported consuming goat meat less than 3 times a month and a few (22.2%, 65) had never eaten goat meat. Goat was considered an important meat in the cultural context of many African societies including Swaziland. It is used for ceremonial and ritual purposes as part of their cultural traditions (Singwane & Abul, 2007).

The results also show a low consumption of mutton. The possible explanation for the low consumption could be related to cultural reasons. For the Dlamini clan that forms the majority among the Swazis, it is a taboo to eat mutton/sheep. They refrain from consuming these animals because they are used in death rites (Kuper, 1980; Jones, 1963:86). As a result, even a woman expecting a Dlamini child is forbidden to eat mutton or lamb (Jones, 1963:86).

Figure 5.20 indicates the frequency of consumption of processed meats. These include bacon, ham, Russian sausages, boerewors, Vienna sausages and polony.

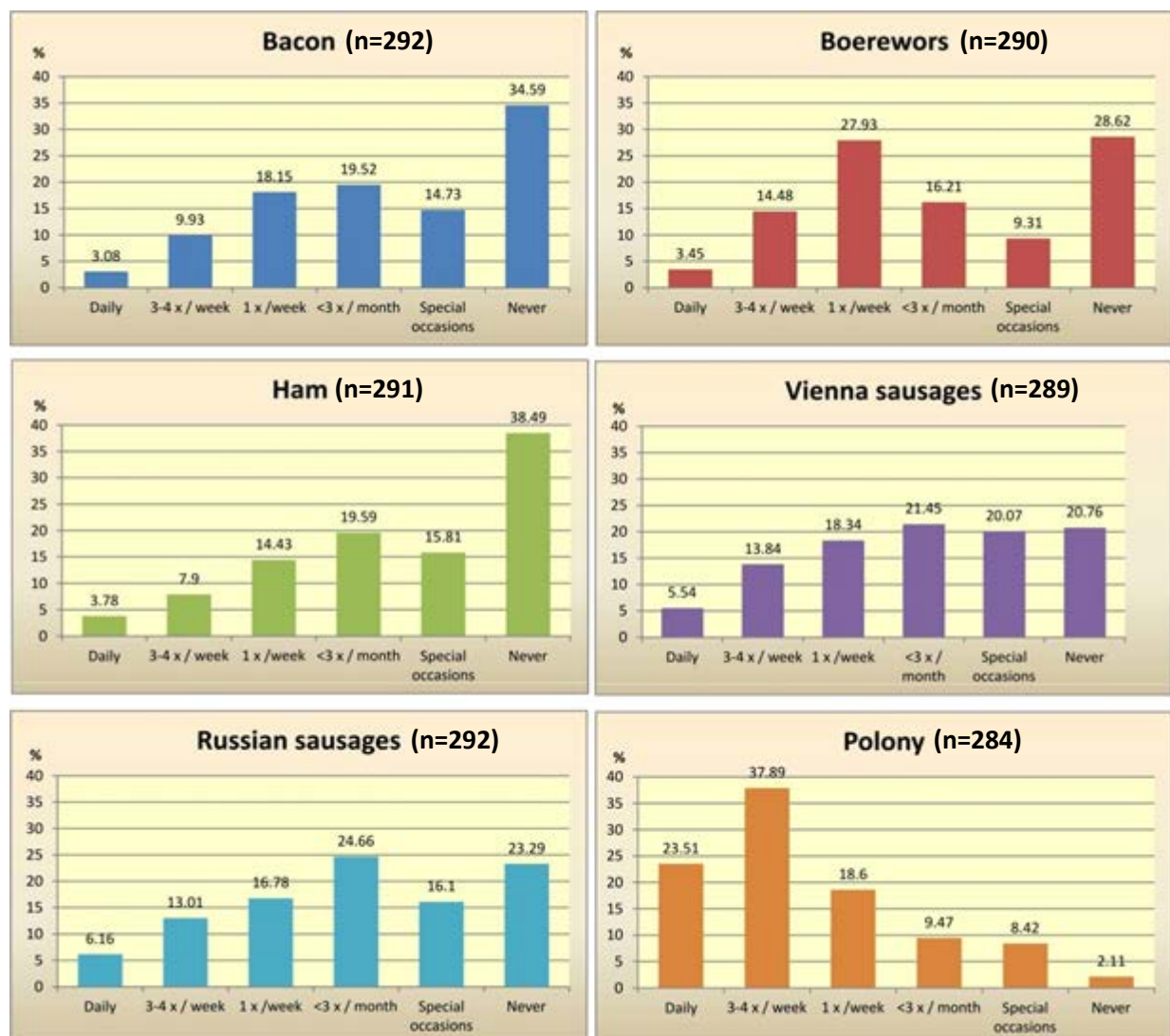


FIGURE 5.20: FREQUENCY OF CONSUMPTION OF DIFFERENT PROCESSED MEATS

Figure 5.20 indicates that bacon and ham followed the same trend with a very low consumption on a daily basis and a high non-consumption. Polony on the other hand was being consumed 3 to 4 times a week. This could be attributed to the fact that polony was more affordable than the other processed meat products. There were only few who claimed to have never eaten polony.

Only 3.08% (9) of the respondents consumed bacon daily. There were some 19.52% (57) of the 292 respondents who consumed bacon less than 3 times a month. Most respondents 34.59% (101) never ate bacon. Quite a number of respondents of the 290 consumed boerewors (81; 27.93%) whereas 16.21% (47) ate this processed meat once a month. Only 3.45% (10) ate it daily. Less than a third (83; 28.62%) never ate boerewors. There were few of the 291 respondents 19.59% (57) who consumed ham once a month and 15.81% (46) did so on special occasions. A large number (112; 38.49%) never consumed ham. A possible reason why bacon and ham were not regularly eaten could be because these are products derived from pork which is also not regularly included in the eating patterns of the respondents as explained above.

Vienna sausages were consumed by 21.45% (62) of the 289 respondents once a month and 20.07% (58) only had this processed meat on special occasions or never at all. Consumption was also in frequent weekly, 18.34% (53) once a week and 13.84% (40) 3-4 times a week, whilst only 5.54% (16) did so daily. As a processed meat Russian sausages were mostly consumed once a month by (72; 24.66%) of 292 respondents, in contrast to 23.29% (68) who never ate Russian sausages. Some 16.78% (49) had Russian sausages once a week or more indicating a low frequency of consumption of this product. Polony was consumed more frequently than the rest of the processed meats as 23.51% (67) eat it daily and as many as 37.89% (108) consumed it 3-4 times a week indicating a high or frequent consumption rate. A very small percentage (6; 2.11%) reported never to eat polony.

The frequency of fish consumption is portrayed in Figure 5.21.

Fried fish, (with or without chips), were consumed more frequently in comparison to sardines. However, in comparison to fried fish, a significant number of respondents had never eaten sardines.

Fish and chips were consumed less than three times per month by just over a quarter (85; 29.62%) of the 287 respondents, yet another quarter (68; 23.69%) had this fish dish only once a week, 13.59% (39) 3-4 times a week and another 17.07% (49) consumed fish and chips only on special occasions. Fried fish alone was eaten once a month by 35.03% (103) of the respondents, 25.51% (75) once a week, followed by 13.61% (40) who never had fried fish. The results show an infrequent consumption of fried fish where 16.33% (48) consumed it on

special occasions. Only a negligible number of respondents, 1.7% (5) reported to consuming fried fish daily.

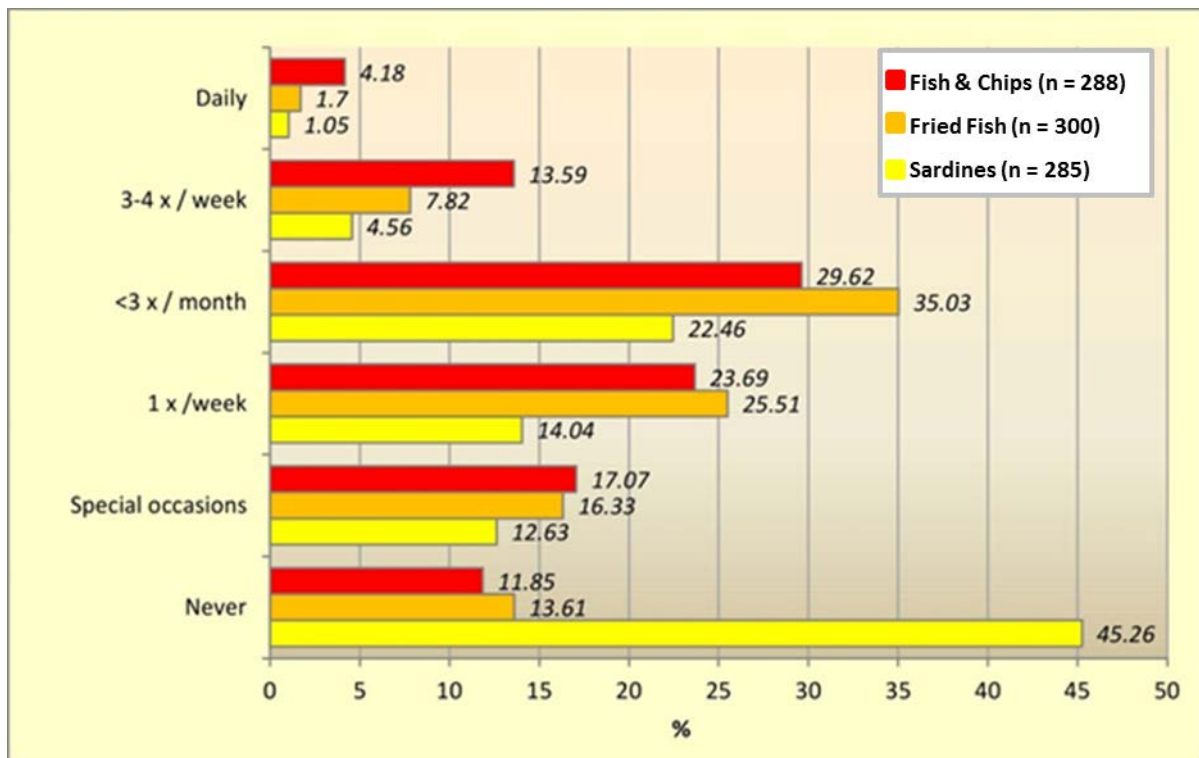


FIGURE 5.21: FREQUENCY OF FISH CONSUMPTION

Sardines, on the other hand, were consumed less than three times a month by some (64; 22.46%) of the 285 respondents, and once a week by 14.04% (40). There were some, 12.63% (36) who ate sardines on special occasions. Most respondents, 45.26%, (129) never ate sardines as tinned fish. The results indicate that fish generally has a low frequency of consumption except for fried fish, where the consumption is notably more frequent when compared to the other fish dishes.

The low consumption of fish could be attributed to its high cost and lack of availability. Swaziland is a landlocked country and imports fish either frozen or tinned from neighbouring South Africa and Mozambique (Bandora, 2010:32; Russell, 1986).

The frequency of consumption of eggs, egg dishes and macaroni dishes were also determined. Figure 5.22 shows the results.

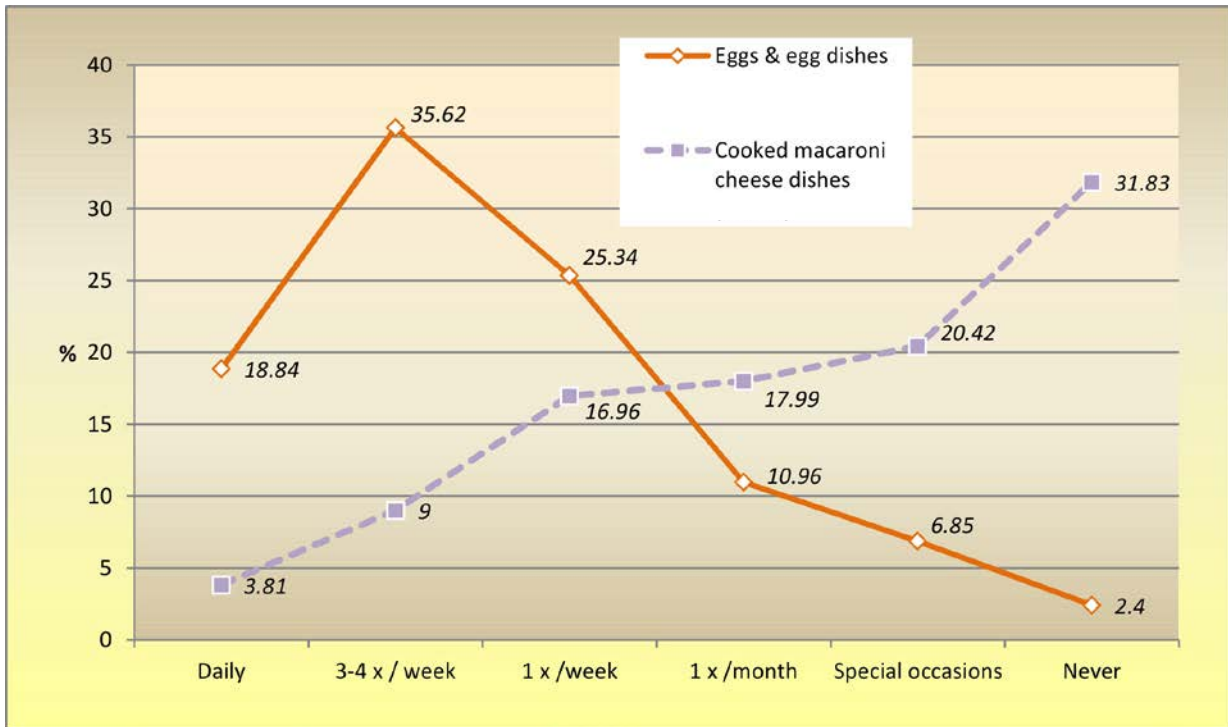


FIGURE 5.22: FREQUENCY OF CONSUMPTION FOR EGG AND CHEESE DISHES (n=292)

Results from Figure 5.22 show a higher consumption of egg and egg dishes on a frequent basis in comparison to a low daily and weekly consumption of cooked macaroni dishes. The majority of the 292 respondents (104; 35.62%), consumed eggs and egg dishes 3-4 times a week and 18.84%, (55) consumed egg and egg dishes on a daily basis. Another 25.34% (74) did so weekly.

A low frequency of consumption of cooked macaroni dishes is observed, as 17.99% (52) consumed these types of dishes once a month and 16.96% (49) did so once a week. There were some, 20.42%, (59) who consumed cooked macaroni and cheese on special occasions. Most respondents, (92; 31.83%) never consumed cooked macaroni and cheese dishes. The increase in the consumption of egg dishes contradicts the traditional trends where infants, children and women were forbidden from eating eggs. Young people, especially girls were prevented from eating eggs due to the belief that they would lust after men, and also boys would go after women if they ate eggs (Jones, 1963:75; Beemer, 1939). The current frequency of consumption pattern indicates a different trend where eggs are used more often, possibly because this belief has been discarded or because eggs are now more available and affordable in Swaziland. An infrequent consumption of cheese and cheese dishes by the respondents is also noted. The possible explanation could be attributed to the fact that cheese is expensive and therefore not affordable for most of the respondents' families thus mostly eaten occasionally or never.

The frequency of consuming dairy foods was also determined. Figure 5.23 shows the results.

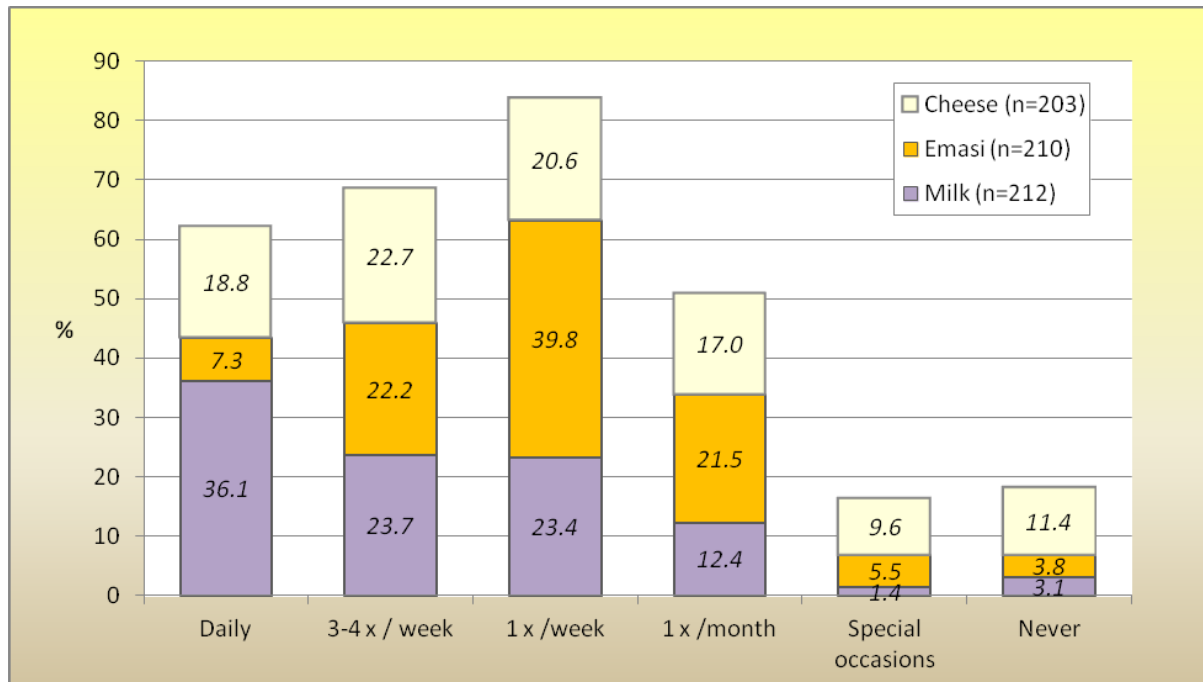


FIGURE 5.23: FREQUENCY OF CONSUMPTION OF DAIRY PRODUCTS (n=291)

A considerably high intake of milk daily is apparent when compared with *emasi* (sour milk) which is consumed at least once a week, with cheese consumption relatively/generally low (Figure 5.22). Some respondents (105; 36.08%), out of 291, consumed milk on a daily basis, 23.71% (69) 3-4 times a week and even fewer (68; 23.37%) only once a week. The results show a considerably high intake of *emasi* (sour milk) as 39.79% (115) of the respondents consumed *emasi* once a week. Only a few, 22.15%, (64) of the respondents drank *emasi* (sour milk) 3-4 times a week. In comparison to milk and *emasi* (sour milk), a low frequency of consumption of cheese was indicated as 22.7%, (64) of the respondents consumed cheese 3-4 times a week and another 20.57% (58) ate it once a week.

Traditionally, milk and *emasi* (sour milk) were popular foods that were given to the children while men ate meat (Kgaphola & Viljoen, 2004; Huss Ashmore & Curry, 1991; Jones, 1963:74; Beemer, 1939). The results support the fact that, *emasi* (sour milk) and milk continue to be consumed by Swazi adolescents.

The frequency of consumption of tea, coffee, milk and *mageu* as beverages was also determined (Figure 5.24).

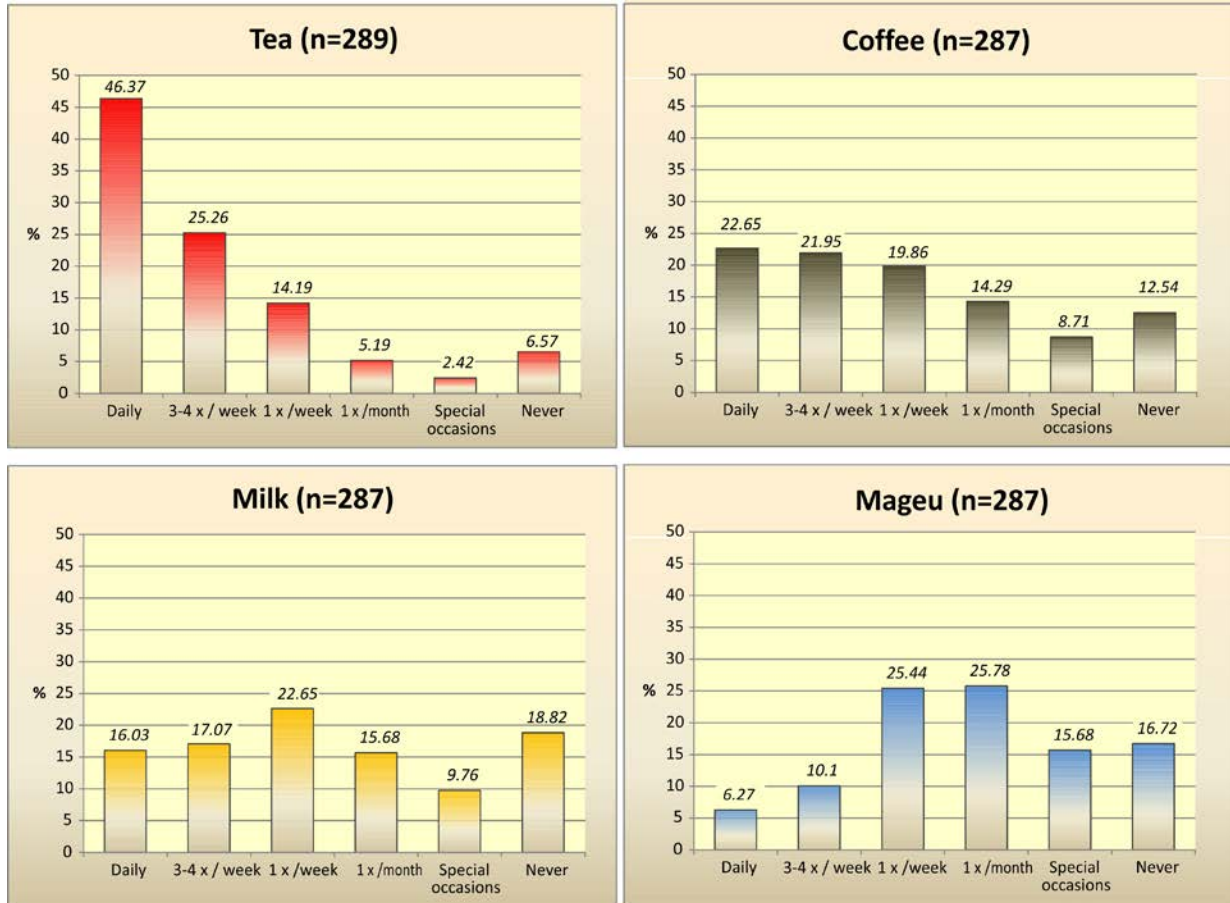


FIGURE 5.24: FREQUENCY OF CONSUMPTION OF VARIOUS BEVERAGES (n=289)

Figure 5.24 indicates considerable higher tea consumption in comparison to the other beverages. Tea was consumed by most respondents (134; 46.37%) of the 289 respondents on a daily basis. Another 25.26% (73) drank tea 3-4 times a week. Only 22.65% (65) drank coffee daily, whereas 21.95%, (63) consumed it 3-4 times a week. The results indicate that coffee, in comparison to tea, was consumed by fewer respondents. Milk as a beverage was consumed by 16.03% (46) of the respondents daily. Most respondents, 22.65%, (65) consumed milk once a week. There were some who reported that they never drank milk 18.82%, (54) as a beverage. The *mageu* as a beverage was consumed once a week by 25.44%, (73) of the participants and 25.78% (74) did so once a month. There were (15.68%) who indicated that they consumed *mageu* either occasionally or never.

The results show that tea is consumed regularly while on the other hand, there seems to be a decline in the consumption of *mageu*. The results concur with the findings by Viljoen and Gericke (2001) who noted that *mageu* as a beverage has been largely replaced by tea because tea is easier and more convenient to prepare. From the results, it can be concluded that the respondents do not really consume milk as a beverage.

The frequency of consumption of desserts and sweets was determined and results are given in Figure 5.25.

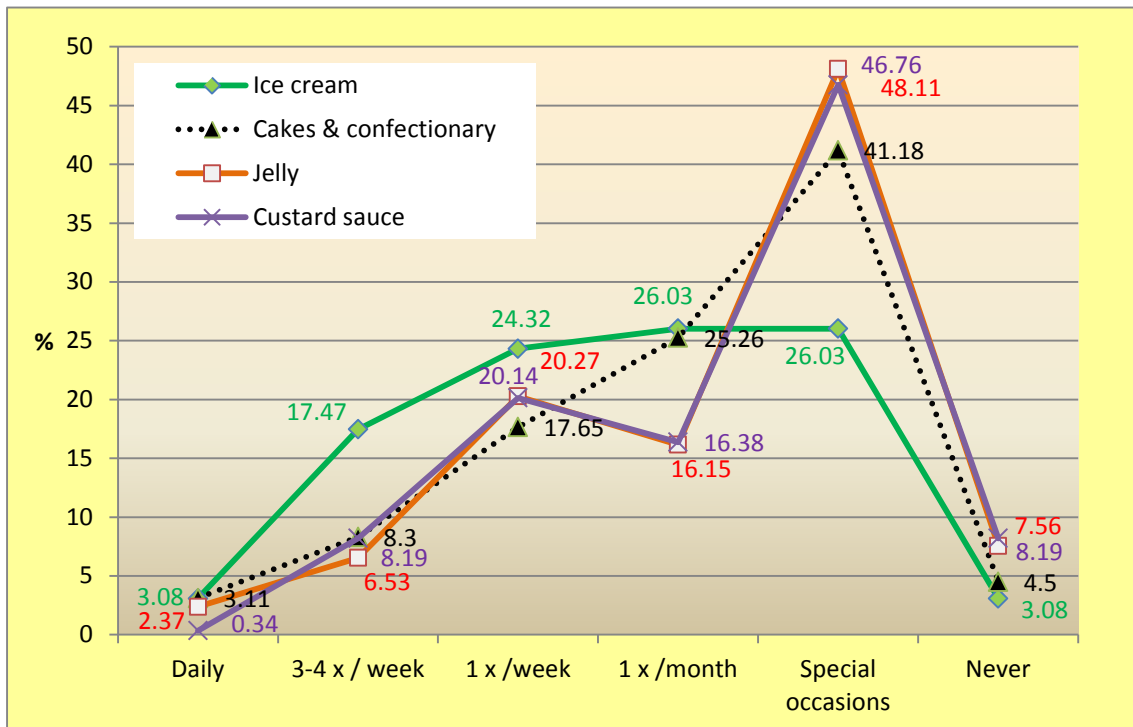


FIGURE 5.25: FREQUENCY OF CONSUMPTION OF DESSERTS/SWEETS (n=289)

Ice cream was consumed by some respondents (76; 26.03%) of the 292 respondents once a month and on special occasions. Another 24.32% (71) consumed it once a week. There were some 17.47%, (51) of the respondents who consumed ice cream 3-4 times a week. The frequency of consuming jelly and custard sauce followed the same pattern. These were respectively consumed by 20.3%, (59) of the 291 respondents once a week and 16.15%, (47) of the respondents once a month. Most respondents, 48.11% (140), consumed jelly and custard sauce, and 46.76% (137) did so on special occasions. The similarity in the frequencies for custard sauce and jelly indicates that the respondents usually eat custard sauce together with jelly.

Most of the 289 respondents, 41.18%, (119) consumed cakes / confectionery on special occasions, whereas 25.26%, (73) consumed cakes once a month. The results indicate a general infrequent consumption of desserts with the exception of ice cream. The tendency to consume cakes on special occasions seems to be similar to a Western-orientated pattern, where cakes are usually served on such occasions. Cakes and confectionery were never served at traditional special occasions, as meat and traditional beverages were the traditional celebratory foods (Kgaphola & Viljoen, 2004; Ogle & Grivetti, 1985a; Jones, 1963:78-80; Beemer, 1939).

The respondents were also requested to indicate their responses on the type of food they consumed on special occasions. A discussion on food consumed on special occasions follows.

5.3.4 Food consumed on special occasions

Information was gathered on the type of special occasions that the respondents attended and the type of food consumed at these occasions. Closed-ended and open-ended questions were used to indicate in which special occasions the respondents usually participated. They also had to list the type of food served at these celebrations. The special occasions included birthday parties, civil weddings, traditional ceremonies, funerals and/or tombstones unveiling and traditional/ritual ceremonies.

Table 5.4 gives the results on the number of respondents who participated in these occasions.

TABLE 5.4: PARTICIPATION IN SPECIAL OCCASIONS

Occasion	%	n
Birthday	73	220
Civil weddings	67	201
Traditional wedding	63	190
Funerals/ Tombstone unveiling	40	121
Traditional rituals	24	72
Other (ancestral worship and cleansing ceremonies)	9	27

Most of the respondents indicated that they attended birthday parties, civil weddings, traditional weddings, funerals or tombstone unveiling ceremonies. Only a few 24% (72) revealed that they participated in traditional rituals, possibly due to the generation gap theory which assumes that there is a difference in the social values between the youth, especially adolescents and their parents where the youth often look down upon some of the traditional aspirations or behavioural attitudes of their parents (Burnhart, 1996:888).

The type of foods consumed at each of these ceremonies is given in Table 5.5.

Table 5.5 indicates that the types of foods eaten at birthdays included cakes, fizzy drinks, rice, meat, salads and snack foods. At weddings similar foods were served. It can therefore be concluded that the type of food served at birthdays and wedding ceremonies are modern or mainly Western-orientated.

TABLE 5.5: FOODS CONSUMED AT SELECTED CEREMONIES

Occasion			
Birthdays	Food Item	n	%
	Cakes (large variety)	145	29.7
	Fizzy drinks	97	19.8
	Rice and meat	83	17.0
	Salads	65	13.3
	Sweets	64	13.0
	Savoury snacks	35	7.2
	Weddings/ civil ceremonies	Food item	n
	Rice and meat	120	25.3
	Cakes (large variety)	114	24.0
	Salads	96	20.2
	Tea	71	14.9
	Beef	39	8.2
	Jelly/ custard	35	7.4
Traditional wedding (umtsimba)	Food item	n	%
	Porridge	87	27.1
	Beef	81	25.2
	Traditional beverage (<i>emahew</i>)	52	16.2
	Pap	52	16.2
	Traditional beer	49	15.3
Funeral/ tombstone unveiling	Food item	n	%
	Rice	51	25.6
	Salads	47	23.6
	Beef	40	20.1
	Pap and any meat	32	16.1
	Tea	29	14.6
Traditional/ ritual ceremonies (kuhlabelaemadloti)	Food item	n	%
	Beef	42	38.2
	Traditional beer	42	38.2
	Pap and any meat	26	23.6

At traditional ceremonies such as traditional weddings and rituals, traditional beer, the traditional beverage (*emahewu*) and beef or beef with porridge were reported as the main food choices. The tendency to serve traditional beverages at these special events still exists. The results are similar to a traditional pattern observed by Beemer (1939) and Jones (1963) who also reported that meat and traditional beer were associated as Swazi celebratory foods. From the results, it can be surmised that the respondents were more inclined towards consuming traditional foods both during the traditional weddings and at traditional/ritual ceremonies. However, a combination of traditional and Western-orientated foods were included at funerals/tombstone unveiling events.

5.4 CONSUMPTION OF TRADITIONAL SWAZI FOODS

In order to determine and describe which traditional foods were still eaten by the study group, traditional Swazi foods were listed and questions asked on their familiarity, preference and frequency of consumption. The respondents were also requested to indicate whether they ate traditional Swazi foods and to provide reasons for eating or not eating them. The majority 93%, (280) indicated that they did eat traditional Swazi foods. The reasons given for eating these foods varied, with some indicating that these foods were tasty and delicious and others saying that these foods were healthy. Some mentioned parental influence, indicating that their parents liked cooking and serving traditional Swazi foods to their children. Some even mentioned having been forced to eat traditional foods by parents who were proud of the Swazi culture and traditional foods. Lack of taste and a general dislike of traditional foods were given as reasons for not consuming traditional foods.

5.4.1 When traditional foods were eaten

The respondents had to also indicate when this food was eaten. Figure 5.26 shows their responses.

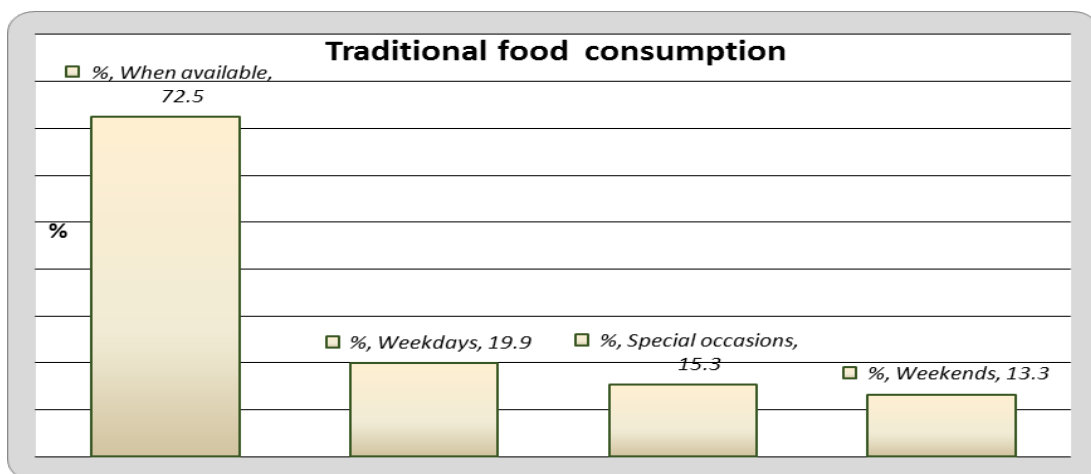


FIGURE 5.26: WHEN TRADITIONAL FOODS WERE EATEN (n=301)

Figure 5.26 shows that 19.9%, (60) of the respondents who reported on this ate traditional foods on weekdays, 15.3%, (46) on special occasions and 13.3%, (40) on weekends. The majority (218; 72%) ate these when available. This could imply that the respondents consumed traditional foods when it was prepared or in season.

5.4.2 Opinions regarding traditional Swazi foods

An open-ended question was asked where respondents were requested to indicate their opinions with regard to traditional Swazi foods. They gave positive and negative opinions. The positive opinions related to health, cultural identity and taste. Health-related opinions referred to a high nutrient content and being natural, while cultural identity related to pride and a continued interest in foods that were part of the culinary heritage of the Swazi people. Taste-related opinions referred to food being appetising and enjoyable. Other opinions related to affordability and availability of these foods as well as convenience in preparation.

The positive responses towards traditional Swazi foods are consistent with other research reports where traditional foods are said to be associated with health benefits, cultural identity, longevity, affordability and sustainability (Seubman *et al.*, 2009; Raschke & Cheema, 2007; Trichopoulou *et al.*, 2007; Raschke *et al.*, 2006; Grivetti & Ogle, 2000:38).

However, the negative opinions related mostly to the sensory properties of traditional foods such as bad smell, taste and a general dislike for traditional Swazi foods which some considered to be only suitable for old people.

5.4.3 Attitudes towards traditional Swazi foods

In addition, eight statements were included to determine their opinions and practices regarding traditional foods. They had to indicate their level of agreement or not with statements about traditional foods using the following scale: strongly disagree, disagree, agree and strongly agree.

The results reveal that positive perceptions are held by the study group as the majority agreed or strongly agreed with the statements. The levels of agreement indicated that these foods are perceived to be essential and good for health (189; 65%), as well as an important part of the cultural heritage (156; 56%) as many of the respondents indicated that these are still eaten in their homes (175; 61%) who agreed and another 16% (n=46) who strongly agreed. These statements confirm that the respondents still follow the Swazi culture of eating traditional foods at home. Most of the respondents ($\geq 45\%$) agreed that they liked traditional Swazi foods based on taste and enjoyment and even considered that traditional foods are suitable for serving to guests. Table 5.6 shows the results.

TABLE 5.6: RESULTS ON STATEMENTS ABOUT TRADITIONAL FOODS

	Strongly Disagree		Disagree		Agree		Strongly Agree	
	n	%	n	%	n	%	n	%
1. Traditional foods are essential for <i>good health</i>	3	1	9	3	88	30	189	65
2. Traditional foods are part of your <i>cultural heritage</i>	3	1	7	2	115	41	156	56
3. My family <i>enjoy</i> eating traditional foods	9	3	55	19	139	49	83	29
4. Most traditional foods are <i>tasty</i>	13	5	75	27	133	47	61	22
5. Traditional foods are <i>suitable to serve guests</i>	31	11	83	29	131	46	40	14
6. I <i>like</i> traditional Swazi food	9	3	14	5	161	56	103	36
7. <i>We often eat</i> traditional food <i>at home</i>	3	3	56	20	175	61	46	16
8. My <i>religion</i> allows me to use traditional food	20	7	52	18	128	45	82	29

5.4.4 Familiarity, preference and frequency of consumption of traditional Swazi foods

In order to determine and describe which traditional foods were still eaten by the study group, traditional Swazi foods were listed and questions were asked on its familiarity, preference rating and frequency of consumption. Familiarity was measured in terms of whether a food item was known and has been eaten before. Preference rating was measured by a five-point preference rating scale to determine the degree of liking or disliking of each food item where 1 on the scale represented “dislike very much” and 5, “like very much”. The frequency of consumption was measured in terms of how often a specific food item was consumed over a predetermined period. A total of 62 traditional foods were listed and grouped into seven groups namely: cereals and cereal products, legumes, indigenous and traditional vegetables, root vegetables, wild and other fruits, meat and insects. Using the data collected, further calculations were done to rate the respondents’ preferences for traditional foods. The median and mode values were calculated to indicate the preference of each food item. Smirnov, Lilliefors and Shapiro-Wilk tests for normality were done to compare the distribution of the responses to a normal distribution. This was done to check if the distribution of the responses is statistically different from a normal distribution.

The results, however, confirm that for traditional foods, snack and fast foods, a positive skewed distribution was obtained for food items disliked to disliked very much by the

respondents. Whereas, a negative skewed distribution was obtained for food items which were liked and liked very much. Normal distributions were not shown by the majority of the food items as it was an indicator of a neutral preference to a food item. Preference ratings were therefore grouped as high, neutral/medium and low: high preference is denoted by three asterisks (***) , a medium preference by two asterisks (**) and a low preference rating by one asterisk symbol (*).

5.4.4.1 Familiarity, preference ratings, and frequency of consumption of cereal porridges

Table 5.7 presents the respondent's familiarity, preferences and the frequency of consumption of traditional cereals porridges namely: *mabele* (sorghum porridge), *lipalishi* (stiff maize porridge), *emasi lavutjiwe* (sour milk with porridge), *sidvudvu* (pumpkin porridge), *sidlwadlwa* (sorghum porridge with beef stock), *Incwancwa* (sour porridge), *lijoti* (melon porridge) and *emahewu* (fermented mealie meal beverage).

TABLE 5.7: FAMILIARITY, PREFERENCE RATING AND FREQUENCY OF CONSUMPTION OF CEREAL PORRIDGES

Food Item	Familiarity				Food Preference			Food Frequency											
	Unknown		Never eaten		Median	Mode	Preference rating	Daily		3-4 x weeks		1 x week		< 3 x month		Special occasions		When available	
Porridges	%	n	%	n				%	n	%	n	%	n	%	n	%	n	%	n
<i>Mabele</i> (<i>mabele</i> /sorghum meal porridge)	12	35	12	35	4	4	***	4	9	9	18	10	21	3	7	2	5	71	147
<i>Lipalishi</i> (stiff maize meal porridge)	-	-	-	-	4	4	***	27	74	45	125	13	35	3	8	2	5	10	28
<i>Emasilavutjiwe</i> (sour milk with porridge)	4	11	4	13	4	5	***	2	6	10	26	17	44	17	43	2	5	51	130
<i>Emahewu</i> (fermented meal beverage)	2	5	1	3	4	4	***	6	8	8	21	17	43	7	19		28	51	22
<i>Incwancwa</i> (sour porridge)	1	4	1	4	4	4	***	18	48	16	43	19	50	4	11		113	-	-
<i>Lijoti</i> (melon porridge)	6	17	10	28	3	4	***	2	4	2	4	5	9	7	14		9	80	156
<i>Sidvudvu</i> (pumpkin porridge)	5	14	6	17	3	3	**	-	-	3	6	8	16	7	8	7	15	76	159
<i>Sidlwadlwa</i> (sorghum porridge with beef stock)	65	191	22	65	2	1	*	-	-	-	-	-	-	4	1	4	1	92	22

The option on the food frequency scale “**when available**” seemed to be marked by a large number of respondents most of the time. Although it could have been the easy way out, by marking this option, it is also realised that some of the traditional dishes are prepared from ingredients that are seasonal and could thus only be eaten when these are in season and available.

- **Familiarity**

The respondents were familiar with and had eaten *lipalishi* (stiff maize porridge). The majority ($\geq 88\%$) of the respondents were familiar with the other porridges prepared from the staple grains maize and sorghum, namely, *mabele* (sorghum meal porridge) *emasi lavutjiwe* (sour milk with porridge) *sidvudvu* (pumpkin porridge) and *incwancwa* (sour porridge). The exception was *sidlwadlwa* (sorghum porridge with beef stock) as 65% (191) of the respondents indicated that they were unfamiliar with it.

- **Preference rating**

The majority of the respondents gave the porridges a neutral or high preference rating, which indicated that porridges prepared from maize meal and sorghum were liked by the respondents. *Emahewu* (fermented mealie meal beverage) and the fermented porridge, *incwancwa* (sour porridge) also received a high preference rating.

- **Frequency of consumption of porridges**

As a staple food, *lipalishi* (stiff maize meal porridge), was consumed frequently as almost half (125; 45%) of the respondents indicated that they consumed it 3-4 times a week, 27% (74) did so on a daily basis and 13% (35) once a week. Most of the respondents indicated that porridges, such as *mabele* (sorghum meal porridge), *emasi lavutjiwe* (sour milk porridge), *sidvudvu* (pumpkin porridge) and *lijoti* (melon porridge) were consumed when these were available. *Incwancwa* (sour porridge), however, was identified as a dish served only on special occasions and *emasi lavutjiwe* (sour milk porridge) was also indicated by some to be consumed as often as 3-4 times a week or once a week, as 10% (26) and 17% (44), respectively, marked these options.

The results indicate a high preference rating for *emahewu* (fermented traditional mealie meal beverage), and *incwancwa* (sour porridge) by the adolescents possibly because these foods are also core foods of the Swazi diet (Kgaphola & Viljoen, 2004).

5.4.4.2 Familiarity, preference ratings, and frequency of consumption of dried or fresh mealies

Table 5.8 presents the familiarity, food preference ratings and frequency of consumption results of dishes prepared from fresh or dried mealies.

- **Familiarity**

The majority ($\geq 86\%$) of the respondents were familiar with dishes prepared from fresh or dried mealies, such as *sinkhwa sembila* (steamed fresh mealie bread), *lifutfo* (boiled green mealies) and *tinkhobe/emanqobo* (boiled dry maize kernels). A large number of respondents were unfamiliar with *jece* (steamed mealie meal bread), *sentangabomu* (fresh mealies with *emaselwa* and *emantongomane*) and *sijabane* (fresh mealies with pumpkin leaves and roasted ground peanuts). *Jece* (steamed mealie meal bread) was unknown to 42% (116), *sentangabomu* (mealies with *emaselwa* and *emantongomane*) unknown to 41% (120) and *sijabane* (fresh mealies with pumpkin leaves and roasted ground peanuts) to 46% (135) of the respondents.

TABLE 5.8: FAMILIARITY, PREFERENCE RATING AND FREQUENCY OF CONSUMPTION OF DISHES PREPARED FROM FRESH OR DRIED MEALIES

Food Item	Familiarity				Food Preference			Food Frequency												
	Unknown		Never eaten		Median	Mode	Preference rating	Daily		3-4 x weeks		1 x week		< 3 x month		Special occasions		When available		
	%	n	%	n				%	n	%	n	%	n	%	n	%	n	%	n	
Dishes prepared from fresh/dry mealies																				
<i>SinkhwaSembila</i> (steamed fresh mealie bread)	1	4	1	3	4	5	***	2	3	2	6	2	5	4	10	5	14	85	238	
<i>Jece</i> (steamed mealie meal bread)	42	116	18	51	3	4	***	3	3	3	3	4	3	7	4	-	7	82	78	
<i>Lifutfo</i> (boiled green mealies)	6	17	4	11	4	5	***	2	3	3	7	4	10	4	12	3	8		212	
<i>Umnqushu</i> (somp with beans)	14	40	11	30	4	4	***	1	4	4	9	9	19	8	16	12	24	66	136	
<i>Tinkhobe/emanqobo</i> (boil dry maize kernels)	5	15	6	19	3	3	**	2	2	2	5	2	13	4	12	5	10	85	181	
<i>Sentangabomu</i> (fresh mealies prepared with <i>emaselwa</i> and <i>emantongomane</i>)	41	120	24	72	3	3	**	1	1	1	1	2	2	7	7	6	6	82	79	
<i>Sijabane</i> (fresh mealies with pumpkin leaves and roasted ground peanuts)	46	135	32	94	2	2	*	1	0	-	2		-	8	4	12	6	80	39	

- **Preference rating**

The majority of the respondents gave *sinkhwa sembila* (steamed fresh mealie bread) and *lifutfo* (boiled green mealies) a high preference rating. Both *tinkhobe/emanqobo* (dried maize kernels) and *sentangabomu* (fresh mealies with *emaselwa* and *emantogomane*) received a

neutral preference rating. The exception was *sijabane* (fresh mealies with pumpkin leaves and roasted ground peanuts) which received a low preference rating indicating that it was disliked by the respondents.

- **Frequency of consumption of green or dried mealies**

Most of the respondents ($\geq 88\%$) reported consuming dishes prepared from fresh mealies (*steamed fresh mealie bread*) *lifutfo* (boiled green mealies) mainly when available. The exception was *sentangabomu* (fresh mealies prepared with *emaselwa* and *emantongomane*) and *sijabane* (fresh mealies with pumpkin leaves) which indicated an infrequent consumption. The possible reason could be that these were not prepared in the households of the respondents.

The fact that many respondents consumed dishes from fresh mealies when available could be attributed to the seasonality of green mealies. They are usually available in summer and the study was conducted during spring. This is to be expected, as those dishes from fresh green mealies can be prepared only when green mealies are in season. In the case of dishes prepared from dried mealies, a possible explanation for the infrequent consumption could be the long times involved in preparing and cooking dishes such as *tinkhobe* (boiled dried mealies) and *umnqhushu* (samp and beans).

The above results confirm that dishes prepared from maize and sorghum can still be regarded as Swazi staple food as reported in previous studies, on Swazi eating patterns (Kgaphola & Viljoen, 2004; Ogle & Grivetti, 2000; Huss-Ashmore & Curry, 1991; Jones, 1963:66; Beemer, 1939). This is also congruent with other studies conducted in African countries (Faber *et al.*, 2010; Raschke *et al.*, 2006).

5.4.4.3 Familiarity, preference rating and frequency of consumption of indigenous vegetables

Table 5.9 presents the familiarity, food preference ratings and frequency of consumption results of dishes prepared from indigenous vegetables. These include indigenous green leafy vegetables, including root and other vegetables.

Green leafy vegetables

- **Familiarity**

With the exception of *inshubaba* (bitter dried leaves in powdery form) the majority ($\geq 91\%$) of the respondents were familiar with the six indigenous green leafy vegetables listed. The majority of the respondents ($\geq 89\%$) indicated that they had eaten these. The exceptions

were *chuchuza* (black jack) and *inshubaba* (bitter dried leaves in powdery form) as 15% (44) and 22% (65) respectively indicated that they had never eaten them.

TABLE 5.9: FAMILIARITY, PREFERENCE RATING AND FREQUENCY OF CONSUMPTION OF INDIGENOUS VEGETABLES

Food Item	Familiarity				Food Preference			Food Frequency											
	Unknown		Never eaten		Median	Mode	Preference rating	Daily		3-4 x weeks		1 x week		<3 x month		Special occasions		When available	
	%	n	%	n				%	n	%	n	%	n	%	n	%	n	%	n
Indigenous green leafy vegetables																			
<i>Imbuya</i> (pig weed) <i>Amaranthus hybridus/caudurus</i>	9	25	9	25	3	4	***	0	1	1	3	4	9	6	13	4	8	85	187
<i>Ligusha</i> (a slimy green leafy vegetable) <i>Corchorus confusus</i>	1	2	3	9	4	4	***	1	2	4	11	3	9	5	14	2	6	84	220
<i>Titsanga</i> (pumpkin leaves/tops) <i>Cucurbits spp</i>	4	12	6	18	4	4	***	1	3	1	2	6	13	8	18	6	14	78	180
<i>Chuchuza</i> (black jack) <i>Bidens pilosa</i>	9	27	15	44	3	3	**	2	3	3	6	3	6	7	13	8	6	81	146
<i>Inkakha</i> (leaves of bitter gourd) <i>Momordica involucreta</i>	5	15	11	33	3	1	*	3	5	3	6	7	13	11	21	8	16	69	137
<i>Inshubaba</i> (bitter dried leaves in powdery form) <i>Momordica clementidae</i>	17	50	22	65	2	1	*	4	5	5	6	5	7	7	9	5	7	74	99
Other vegetables																			
<i>Likhowe</i> (wild mushroom) <i>Psalliotia campestris</i>	17	50	25	73	4	4	***	1	1	1	2	4	5	9	13	10	14	75	103
<i>Budzibi</i> (boiled pumpkin snack)	31	93	24	71	3	3	**	0	0	1	1	5	6	6	7	7	8	80	88
<i>Emahala</i> (a scaly whitish bitter vegetable) <i>Aloesaponaria / vanbaleni</i>	26	77	26	77	2	1	*	2	2	2	2	3	3	4	4	2	2	87	84
Root vegetables																			
<i>Bhatata</i> (sweet potato) <i>Ipomoea Batata</i>	0	0	1	2	5	5	***	3	8	9	25	6	17	19	43	4	12	62	171
<i>Emadumbe</i> (Livingstone potato) <i>Colacasia antiquorum</i>	47	139	26	77	4	5	***	2	1	2	1	16	10	5	3	5	3	70	43
<i>Emathapha</i> (taro)	8	24	11	32	4	5	***	4	7	2	4	5	9	9	18	5	10	76	149
<i>Ematabhane</i> (Zulu potato) <i>Ipomoea</i>	52	153	27	79	3	1	**	5	2	2	1	7	3	5	2	7	3	74	31

- Preference rating

Most of the respondents gave the indigenous green leafy vegetables *imbuya* (pig weed), *Ligusha* (slimy green leafy vegetable), *titsanga* (pumpkin leaves/tops) a high preference

rating. *Chuchuza* (black jack) received a neutral preference rating, and *inkakha* (bitter gourd) and *inshubaba* (bitter dried leaves in powdery form) received a low preference rating.

- **Frequency of consumption**

The majority ($\geq 74\%$) indicated that they consumed indigenous green leafy vegetables when available. The exception was *inkakha* (bitter gourd) which was consumed by some (137; 69%) when available. There was a small group (21; 11%) of the respondents who ate it fewer than three times a month.

Other indigenous vegetables

- **Familiarity**

A large number of the respondents were unfamiliar with *budzibi* (boiled pumpkin snack) and *emahala* (aloe saponaria, vanballenii) as they were unknown to 31% (93) and 26% (77) of the respondents respectively. The *likhowe* (wild mushroom) was unknown to 17% of the respondents and 25% (73) had never eaten wild mushroom.

- **Preference rating**

The majority liked *likhowe* (wild mushroom) and gave it higher preference rating compared to *budzibi* (boiled pumpkin snack) with the exception of *emahala* (aloe saponaria, vanballenii) which was a low preference item.

- **Frequency of consumption**

Most of the respondents ($\geq 74\%$, $n=99$) consumed these vegetables when available.

Traditional root vegetables

- **Familiarity**

All the respondents were familiar with sweet potato and the majority 99% (299) have eaten it. *Emadumbe* (Livingstone potato) was unknown to (139; 47%) of the respondents and never eaten by 26% (77), and *ematabhane* (Zulu potato) was unknown to 52% (153) of the respondents and never eaten by 27% (79). Eight per cent (24) did not know *emathapa* (taro) and it was never eaten by 11% (32) of the respondents.

- **Preference rating**

Bhatata (sweet potato) was rated as a high preference item, compared to *emathapa* (taro). *Ematabhane* (Zulu potato) was the only item that received a neutral and a low preference rating.

- **Frequency of consumption**

The majority ($\geq 62\%$) of the respondents consumed root vegetables only when available. The results in Table 5.9 indicate that all the indigenous vegetables were either liked or liked very much by the respondents. The results are consistent with existing literature on the general popularity of the wild green leafy varieties in Swaziland acknowledging that they contribute to the diversity of local diets (Dube & Musi, 2002; Grivetti & Ogle, 2000). Similar results were reported by Odhav *et al.*, (2007), Modi *et al.*, (2006) in Kwazulu-Natal and Pienaik, Verbeke, Vanhonacker, Guerrero & Hersleth (2009) in their study in six European countries.

The two green leafy vegetables, *inshubaba* (bitter gourd) and *inkakha* (wild green leafy vegetable with a bitter taste) each have a bitter taste which notably explains the low preference rating received. A possible explanation is that the respondents either did not like these vegetables because of their bitter taste or the fact that they were not often prepared. The low consumption of the other vegetables like *emahala* (aloe saponaria, vanballenii) and *likhowe* (wild mushroom) could be attributed to the fact that they normally grow wild, are seasonal and therefore not often prepared.

5.4.4.4 Familiarity, preference rating and frequency of consumption of indigenous and other fruits

Table 5.10 presents the results on the familiarity, preference ratings and frequency of consumption of wild fruits.

- **Familiarity**

All the respondents were familiar with and the majority (298; $\geq 98\%$) had eaten *ligwava* (guavas). Many ($\geq 88\%$) were also familiar with the other fruits namely *tincozi* (wild berries), *ligumence* (mulberries), *imfe* (sweet sorghum), *emantulwa* (wild medlar) and *emaganu* (marula). The exception was *vovovo* (aloe flower) which was unknown as 50% (151) of the respondents reported that they were unfamiliar with it. The other fruits that were unknown and never eaten by nearly half of the respondents (130; $\geq 45\%$) included *bukhwebeletane* (lantana), *umkhwakhwa* (black monkey orange) and *umfomfo* (strawberry bush).

TABLE 5:10: FAMILIARITY, PREFERENCE RATING AND FREQUENCY OF CONSUMPTION OF FRUITS

Food Item	Familiarity				Food Preference			Food Frequency											
	Unknown		Never eaten		Median	Mode	Preference rating	Daily		3-4 x weeks		1 x week		< 3 x month		Special occasions		When available	
Indigenous and other fruit	%	n	%	n				%	n	%	n	%	n	%	n	%	n	%	n
<i>Ligwava</i> (guava) Psidium guajava	0	0	1	3	4	4	***	1	4	5	13	1	3	2	5	5	14	86	246
<i>Lihwabha</i> (watermelon) ?	15	44	12	34	4	4	***	1	2	3	5	7	12	7	12	10	18	73	132
<i>Ligumence</i> (mulberries) Rubusniveusperv. Intercurrens/ Rosaefolius	4	12	3	10	4	4	***	1	3	3	8	2	4	3	8	2	6	89	225
<i>Tincozi</i> (wild berries) Syzgiumb cordatum	2	6	2	5	4	4	***	1	4	1	4	2	6	1	3	5	13	89	250
<i>Umfundvuluka</i> (sourplum) Xiemeniacafr	27	80	14	40	3	4	***	0	0	1	1	2	3	3	4	4	6	90	132
<i>Umfomfo</i> (strawberrybush) Cephalenthus natalensis	34	97	23	66	3	4	***	0	0	1	1	2	2	4	4	9	10	85	96
<i>Emaselwa</i> (wild melon) Tulbaghiaacutiloba	10	28	10	29	3	4	***	2	4	1	1	3	5	4	8	5	10	86	166
<i>Imfe</i> (sweet sorghum) sorghum vulgare	3	7	5	15	4	4	***	2	4	3	6	1	3	3	7	4		87	
<i>Emantulwa</i> (wild medlar) vangueriain fausta	6	18	9	25	4	4	***	0	1	1	2	2	4	2	5	3	6	92	201
<i>Emaganu</i> (marula) Sclerocarya	7	22	23	68	3	1	**	3	4	1	2	3	5	3	5	21	33	69	110
<i>Vovovo</i> (aloe flower) Cordylab africana	50	148	27	79	3	1	**	0	0	2	1	0	0	0	0	0	0	0	0
<i>Emakhiwa</i> (figs) Ficus spp	14	39	29	84	2	3	**	2	2	1	1	2	1	1	1	1	1	95	109
<i>Bukhwebeletane</i> (lantana) Lantana camara	45	130	23	65	3	3	**	2	2	2	2	0	0	0	0	3	2	94	62
<i>Umkhwakhwa</i> (black monkey orange) Strychnos madagascariensis	39	114	19	57	3	3	**	0	0	0	0	2	2	3	3	4	4	90	85

- Preference rating**

The majority gave *ligwava* (guavas), *lihwabha* (water melon), *ligumence* (mulberries), *tincozi* (wild berries), *Imfe* (sweet sorghum), *umfundvuluka* (sour plum), *emantulwa* (wild medlar), *umfomfo* (strawberry bush), *emaselwa* (wild melon) and *imfe* (sweet sorghum) a high preference rating. The possible explanation for this relates to the sweetness of these fruits and that they grow in abundance in Swaziland. The fruits, such as *emaganu* (marula), *vovovo* (aloe flower) and *umkhwakhwa* (black monkey orange) received a neutral preference rating perhaps because most of them grow wild in certain regions of the country.

- Frequency of consumption**

Emaganu (marula) was the only fruit indicated to be consumed on special occasions by more than 10% of the respondents. It is common practice in Swaziland to serve a marula

beverage prepared from *emaganu* (marula) at many cultural and ritual activities such as ancestral worship, traditional weddings and other royal ceremonies. The rest of the fruits were consumed by respondents whenever they were available. However, no respondents indicated consuming *vovovo* (sweet juice from a yellowish aloe flower) even when it was available. In the rural areas of Swaziland the aloe grows well where conditions are favourable but in Manzini, which is the Middleveld where the study was conducted the right soil and climatic conditions were possibly not available.

5.4.4.5 Familiarity, preference rating and frequency of consumption of legumes

Table 5.11 presents the familiarity, preference ratings and frequency of consumption of legumes and dishes prepared from legumes.

TABLE 5.11: FAMILIARITY, PREFERENCE RATING AND FREQUENCY OF CONSUMPTION OF LEGUMES AND DISHES PREPARED FROM LEGUMES

Food Item	Familiarity				Food Preference			Food Frequency											
	Unknown		Never eaten		Median	Mode	Preference rating	Daily		3-4 x weeks		1 x week		<3 x month		Social occasions		When available	
Legumes	%	n	%	n				%	n	%	n	%	n	%	n	%	n	%	n
<i>Emantongomane</i> (Groundnuts) <i>Arachis hypogaea</i>	8	0	9	0	5	5	***	9	26	13	36	12	33	11	30	2	7	54	153
<i>Tindlubu</i> (Jugo beans) <i>Voanazeiassp</i>	2	5	3	8	4	5	***	2	5	2	5	7	17	9	24	7	17	73	185
<i>Emabhontjisi</i> (Sugarbeans) <i>Phaseolus vulgaris</i>	2	6	1	3	4	4	***	8	20	12	32	20	53	18	46	3	8	39	102
<i>Tinhlumaya</i> (Cow peas) <i>Vignaspp</i>	6	19	9	27	3	3	**	1	2	3	6	4	9	7	15	4	9	81	176
<i>Mngomeni</i> (Mung beans) <i>Phaseolus mungo</i>	33	95	22	63	3	3	**	4	4	2	2	6	6	6	7	6	6	76	83
<i>Ludvonca</i> (Sesame seeds) <i>sesamumindcum</i>	67	197	18	54	3	3	**	3	1	3	1	6	2	3	1	6	2	78	25

- **Familiarity**

The majority of the respondents ($\geq 98\%$) were familiar with the legumes, *emantongomane* (groundnuts), *emabhontjisi* (sugar beans) and *tindlubu* (jugobean). The exceptions were

ludvoca (sesame seeds) and *mngomeni* (mung beans), as 67% (197) and 33% (95) of the respondents, respectively, indicated that these were unfamiliar to them.

- **Preference ratings**

The respondents rated *emantongomane* (groundnuts) and *emabhontjisi* (sugar beans) and *tindlubu* (jugo beans) as high preference items. The exceptions were *tinhlumaya* (cowpeas), *mngomeni* (mung beans) and *ludvonca* (sesame seed), which received a neutral preference rating.

- **Frequency of consumption**

Emantongomane (groundnuts) were consumed frequently, as 13% (36) of the respondents indicated that they consumed them 3-4 times a week, 12% (33) indicated that they did so once a week and 9% (26) consumed them daily. *Emabhontjisi* (sugar beans), on the other hand, were consumed by 20% (53) once a week. Most of the other listed legumes were consumed when available.

Although the majority of the respondents ate legumes when they were available, *emantongomane* (groundnuts) and *emabhontjisi* (sugar beans) were consumed more frequently. Traditionally, *emantongomane* (groundnuts) were used as snack by the Swazis (Kgaphola & Viljoen, 2004; Grivetti & Ogle, 2000; Jones, 1963:83). The fact that the respondents consumed sugar beans on a weekly basis underscores the importance of this food and its importance in food consumption patterns of Africans as reported in various other studies (Kepe, 2008; Modi *et al.*, 2006; Raschke *et al.*, 2006; Kgaphola & Viljoen, 2004; Ogle & Grivetti, 2000).

5.4.4.6 Familiarity, preference rating and frequency of consumption of meat

Table 5.12 presents the familiarity, preference ratings and frequency of consumption results of beef, chicken and offal.

- **Familiarity**

The majority of the respondents were familiar with most of the items listed. The exceptions were organ meats *lufu* (tripe), *lubendze* (pancreas) and *liphaphu* (lung) and blood products, such as *bubendze* (cooked blood). The majority had eaten *tintwane* (chicken feet), *tintsamo* (chicken necks), *ematfumbu enkukhu* (chicken intestines), beef (red meat), *lufu* (tripe), *ematfumbu* (intestines) and *sibindzi* (liver).

TABLE 5.12: FAMILIARITY, PREFERENCE RATING AND FREQUENCY OF CONSUMPTION OF BEEF, CHICKEN AND OFFAL

Food Item	Familiarity				Food Preference			Food Frequency											
	Unknown		Never eaten		Median	Mode	Preference rating	Daily		3-4 x weeks		1 x week		<3 x month		Special occasions		When available	
	%	n	%	n				%	n	%	n	%	n	%	n	%	n		n
MEAT																			
<i>Tintwane</i> (chicken feet)	1	3	4	12	4	4	***	3	8	6	16	12	29	14	34	3	8		154
<i>Ematfumbuenkhukhu</i> (chicken intestine)	-	1	3	8	4	4	***	3	8	10	24	14	34	10	24		5		152
<i>Beef</i> (red meat)	1	3	2	5	4	4	***	8	20	21	56	18	48	13	35		20		87
<i>Lufu</i> (tripe)	16	45	12	34	3	4	***	1	1	3	5	7	13	8	14		16		127
<i>Ematfumbu</i> (intestines)	2	5	3	9	3	4	***	2	5	3	7	7	16	11	25		20		163
<i>Sibindzi</i> (liver)	1	4	2	7	4	5	***	4	9	6	15	9	22	13	33		22		145
<i>Tintsamo</i> (chicken necks)	2	5	6	17	3	3	**	1	3	8	17	10	22	13	28		7		65
<i>Tinhlokotetinkhukhu</i> (chicken heads)	2	6	10	31	2	1	*	2	3	3	6	11	21	7	14		13		134
<i>Liphaphu</i> (lung)	9	25	16	44	3	1	*	1	2	3	5	3	4	6	9		20		115
<i>Lubendze</i> (pancrease)	13	36	25	71	2	2	*	2	3	1	1	6	8	8	10		18		88
<i>Bubendze</i> (blood cooked)	11	32	28	81	3	1	*	3	4	1	1	2	3	5	6		29		88

- Preference ratings**

A high preference rating was given to beef, *sibindzi* (liver), *ematfumbu enkhukhu* (chicken intestines), *tintwane* (chicken feet) and *lufu* (tripe). The exception was *tinhloko tenkhukhu* (chicken heads) *lubendze* (pancreas) and *liphaphu* (lung) which was given a low preference rating.

- Frequency of consumption**

Beef was consumed daily by 8% (20) and 21% (56) of the respondents 3-4 times a week and once a week by 18% (48). Most respondents, however, consumed some of the meat items once a week such as *tinhloko tenkhukhu* (chicken heads), *tintwane* (chicken feet), *tintsamo* (chicken necks) *ematfumbu enkhukhu* (chicken intestines) and *sibindzi* (liver). Other meats that were consumed on special occasions included *lubendze* (pancreas) by 14% (18), *bubendze* (blood) by 22% (29), and *liphaphu* (lung) by 13% (20) of the

respondents. The rest of the respondents ($\leq 74\%$) consumed the meats when available. The possible explanation for the infrequent meat consumption could be related to the cost of meat.

The results indicate that there were few respondents who ate meat daily. It is assumed that the respondents who ate meat daily came from families who could afford to buy meat. It was noted that some respondents were not familiar with the internal organs obtained from slaughtered cattle such as *lufu* (tripe), *lubendze* (pancreas), *liphaphu* (lung), and *bubendze* (blood). It could be that these were not commonly consumed in households anymore. A preference and a frequent consumption of selected meat such as *sibindzi* (liver), *inyama yenkhomo* (beef), *inyama yenkhukhu* (chicken), *tintwane* (chicken feet) and *ematfumbu enkhukhu* (intestines) comes to the fore clearly. Chicken is affordable and readily available and this could contribute to the frequency of its use (Swaziland Agriculture Business Yearbook, 2013). The results are similar to a study conducted in South Africa which reported a more frequent consumption of white meat and an infrequent consumption of red meat for all population groups (Taljaard, Jooste & Asfaha, 2006).

5.4.1.7 Familiarity, preference rating and frequency of consumption of insects

Table 5.13 presents the familiarity, preference ratings and frequency of consumption results of insects.

TABLE 5:13: FAMILIARITY, PREFERENCE AND FREQUENCY OF CONSUMPTION OF INSECTS

Food Item	Familiarity				Food Preference			Food Frequency											
	Unknown		Never eaten		Median	Mode	Preference rating	Daily		3-4 x weeks		1 x week		<3 x month		Special occasions		When available	
	%	n	%	n				%	n	%	n	%	n	%	n	%	n	%	n
Insects																			
<i>Tintsetse</i> (grasshopper/locusts)	7	20	27	82	3	1	**	2	3	2	3	4	6	6	9	-	-	86	126
<i>emanyamane</i> (caterpillar)	15	45	37	111	2	1	*	2	2	1	1	4	4	1	1	7	7	85	82
<i>tinhlwa</i> (flying ants)	10	29	34	100	2	1	*	3	3	1	1	4	5	5	6	-	-	87	99

- **Familiarity**

Most of the respondents were familiar with most of the insects. The exception was *emanyamane* (caterpillar) which were unknown to some (45; 15%). They also reported that they had never eaten most of these insects such as *tinhlwa* (flying ants), *emanyamane* (caterpillars), and *tintsentse* (grasshoppers).

- **Preference ratings**

The respondents gave insects a neutral and low preference rating indicating that these food items were not particularly liked.

- **Frequency of consumption**

Tintsetse (grasshoppers) stood out to be the only insects consumed on special occasions by most of the respondents. All the other insects listed were consumed only when available and therefore have a low consumption frequency.

The familiarity, preference rating and frequency of consumption of snack food were also determined and results are given.

5.5 Familiarity, preference ratings, and frequency of consumption snack and fast foods

In order to determine and describe which snack foods were eaten by the study group, commonly eaten snack foods were listed and questions asked on their familiarity, preference rating and frequency of consumption. The same scale was used to measure the familiarity, preference rating and frequency of consumption of snack and fast foods as for the traditional foods, and the analysis was also done as described above (Section 5.4.1). A total of 21 snack foods were listed and grouped into four categories namely: beverages and dairy products, baked products, sweets and savoury snacks.

5.5.1 Snack Foods

The results of the familiarity, preference ratings and frequency of consumption of the snack foods are given in Table 5.14.

Beverages

- **Familiarity**

The majority $\leq 99\%$ (298) of the respondents were familiar with fruit juices (Liqui fruit, fruit punch) and fizzy drinks. Yogi sip was unknown to 17% (48), and dairy fruit beverages (Tropical Krush, Cabanna) were unknown to 12%, (33) of the respondents respectively. Milkshakes were unknown to 12% (34) of the respondents.

TABLE 5.14: FAMILIARITY, PREFERENCE RATING AND FREQUENCY OF CONSUMPTION OF SNACK FOODS

Food Item	Familiarity				Food Preference			Food Frequency												
	Unknown		Never eaten		Median	Mode	Preference rating	Daily		3-4 x weeks		1 x week		<3 x month		Special occasions		When available		
	%	n	%	n				%	n	%	n	%	n	%	n	%	n	%	n	
BEVERAGES AND DAIRY PRODUCTS																				
Yogi sip	17	48	15	43	4	4	***	5	9	4	8	11	20	8	15	7	13	64	117	
Fruit juice (liquid fruit, fruit punch)	1	2	1	2	4	4	***	12	34	19	53	15	42	9	25	8	22	37	103	
Fizzy drinks	1	4	1	4	4	4	***	10	27	15	39	14	37	10	26	11	29	41	110	
Dairy fruit beverage (tropical rush cabanna)	12	33	13	37	4	4	***	6	13	10	20	12	25	11	23	5	11	55	113	
Milk shake	12	34	11	31	4	4	***	4	8	6	13	10	21	12	25	12	25	55	111	
Yoghurt	1	4	3	8	4	5	***	7	18	10	27	11	30	16	43	7	18	48	125	
BAKED PRODUCTS																				
Cakes/confectionery	1	2	1	2	4	4	***	3	8	5	14	8	21	13	34	26	70	45	119	
Biscuits/cookies	-	-	1	3	4	4	***	12	32	14	38	16	44	13	35	8	22	38	105	
SWEETS																				
Sweets/candy	0.4	1	1	3	4	4	***	26	69	13	36	10	27	6	17	6	17	38	101	
Chocolates	-	-	-	-	4	4	***	7	20	14	39	15	41	15	41	7	20	42	118	
SAVOURY SNACKS																				
Nuts	3	8	4	13	4	4	***	11	27	11	29	13	34	11	27	7	18	47	118	
Chips	2	7	5	14	4	4	***	18	46	11	28	12	30	10	26	6	15	42	105	
Cheese curls /cheese puffs	4	10	5	15	4	4	***	9	20	9	23	11	26	16	37	7	17	47	111	
Savoury biscuits	9	25	19	56	3	3	**	5	9	6	11	6	11	13	23	10	17	60	108	

- **Preference rating**

The majority ≥82% of the respondents gave all the beverages a high preference rating.

- **Frequency of consumption**

Dairy fruit juice (Tropical Krush, Cabanna) was consumed daily by 6% (13) and fizzy drinks by (23; 11%) of the respondents. Most of the respondents, 19% (53) consumed fruit juices (Tropical Krush, Cabanna) 3-4 times a week, followed by fizzy drinks (26; 10%). The rest of the beverages were consumed by the majority (117; ≤64%) on special occasions. The results indicate a low consumption of beverages especially fruit juices.

Baked products

- **Familiarity**

The majority ($\geq 99\%$) of the respondents were familiar with and have eaten baked products such as cakes, confectionery, biscuits and cookies.

- **Preference rating**

The majority of the respondents gave the baked foods a high preference rating which indicated that baked products were liked by the respondents.

- **Frequency of consumption**

Biscuits were consumed by some, 16% (44) once a week, another 14%, (38) did so 3-4 times a week, and 12%, (32) did so daily. Most respondents, 26% (70), consumed cakes on special occasions. All the respondents consumed the baked products when available.

Sweets

- **Familiarity**

All the respondents were familiar with had eaten chocolates. The majority ($\geq 99\%$) of the respondents were familiar with and had eaten sweets or candy.

- **Preference rating**

The majority of the respondents gave sweets a high preference rating.

- **Frequency of consumption**

Most of the respondents, 26% (69), consumed sweets/ and/or candy daily and 13%, (36) consumed it 3-4 times a week. There were more than 15%, (41) of the respondents who consumed candy once a week or less than 3 times a month. Most respondents ($\geq 42\%$) consumed sweets or candy when available.

Savoury snacks

- **Familiarity**

The majority of the respondents ($\geq 91\%$) were familiar with and $\geq 95\%$ had eaten savoury snacks. The exception was savoury biscuits that have never been eaten by 19%, (56) of the respondents.

- **Preference ratings**

Most of the respondents gave the savoury snacks a high preference rating. The exception was savoury biscuits which received a low preference rating.

- **Frequency of consumption**

The frequency of consumption of snacks was low as $\leq 18\%$ consumed these daily. Most respondents ($\geq 42\%$) indicated that they consume these snacks when available.

5.5.2 Fast foods

The fast foods listed included meat pie, hamburger, hot dogs, fish and chips, Russian and chips and pizza. Table 5.15 depicts the results.

TABLE 5.15: FAMILIARITY, PREFERENCE RATING AND FREQUENCY OF CONSUMPTION OF FAST FOODS

Food Item	Familiarity				Food Preference			Food Frequency											
	Unknown		Never eaten		Median	Mode	Preference rating	Daily		3-4 x weeks		1 x week		<3 x month		Special occasions		When available	
FAST FOODS	%	n	%	n				%	n	%	n	%	n	%	n	%	n	%	n
Meat pie	10	28	10	28	4	4	***	3	6	6	13	18	39	15	33	9	20	50	111
Hamburger	12	35	13	37	4	4	***	1	3	8	16	13	26	15	30	7	14	56	114
Hot dog	6	16	7	21	4	4	***	3	8	7	17	17	42	13	33	8	19	52	128
Fish and chips	3	8	3	8	4	5	***	2	5	13	34	18	45	13	34	6	15	48	124
Russian and chips	5	15	6	16	4	5	***	2	6	9	23	18	45	13	31	5	13	52	126
Pizza	4	13	8	24	5	5	***	2	6	6	15	7	18	13	31	17	48	54	135

- **Familiarity**

The majority ($\geq 88\%$) of the respondents were familiar with and had eaten the fast foods listed.

- **Preference rating**

The respondents gave all the fast foods listed a high preference rating.

- **Frequency of consumption**

More than 48% of the respondents consumed fast foods when available. The results reveal that the majority of the respondents liked most of the snacks and fast foods and consumed these mainly when available. Among these, fruit juice consumption was low in comparison to fizzy drinks; fish and chips were consumed more often; and ice cream cakes and yoghurt only when available.

5.6 THE INFLUENCES OF EXTERNAL AND INTERNAL ENVIRONMENTS ON THE FOOD HABITS OF THE STUDY GROUP

Introduction

This section covers the last objective (objective 4) of the study, which deals with a discussion on the influence and contribution of the external and internal environments to the current food habits of the study group. Furthermore, the impact that social structural changes has on these environments will also be highlighted with reference to migration, urbanisation, modernisation (Westernisation) and globalisation.

A progressive shift in traditional Swazi food habits to a more Western-orientated food culture and its associated eating practices has been noticed since the 1960s, a trend that seems to be continuing (Kgaphola & Viljoen, 2000; Huss-Ashmore & Curry, 1991; Ogle & Grivetti, 1985; Jones, 1963). This shift appears to be the result of food technology developments that have taken place concurrently with certain social structural changes (Kittler *et al.*, 2011:11-12; Kgaphola & Viljoen, 2004). In the view of Sobal (2000:3) this system of structural and cultural changes is complex with interrelated processes working together as societies move from the traditional to a modern and globalised way of life to effectively bring about development. This is ultimately typified as the way in which food is transformed from being a longstanding traditional eating practice to food becoming merely a modernised commodity. This happens through a set of recognisable stages. The current food consumption patterns of the study group are seen to be reflecting these processes. Significantly, each change affects the acceptability, availability and, affordability of food in many ways.

The migration of people from rural areas to the cities and other densely populated areas gives rise to urbanisation which, in turn, brings about rapid population growth of urban dwellers. This affects food systems as more food has to be transported and distributed to cities and urban areas in order to meet the growing demand for food there (Lane, Hovorka & Legwegoh, 2012). Furthermore, limited food is grown in urban areas due to a scarcity of land for urban cultivation and busy lifestyles. This ultimately causes food shortages and a dependence on processed commercially available foods by those who can afford to purchase them. According to Crush and Frayne (2010) urban dwellers obtain or access food

from hyper-and supermarkets, smaller shops and take-away outlets. This has a major effect on the type of food that is ultimately consumed in households.

Modernised society has thus created and contributed to many changes that have taken place in the food provision system through interaction with the natural/physical and human environments and the subsequent changing socio-cultural norms and standards (Lane *et al.*, 2012; Sobal *et al.*, 1998). A wide range of convenience and processed foods have become available and accessible to the consumer (Sobal, 2006:2; Pelto *et al.*, 2000:6). The consumption of these foods is further based on consumer acceptance and preferences. The politico-economic environment influences food availability through the process of globalisation where food products such as wheat, oats and cherries are obtained through foreign imports and trade (Bryant,*et al.*, 2003:200-2001). These foods are accessible through the retail industry where they are purchased by people who can afford them. Food selection is often influenced by convenience, preference and cost (Lane *et al.*, 2012). These foods are thus produced and distributed through sophisticated modern ways and means with pricing being regulated by economic and/or political forces as well as decisions made by people (Lane *et al.*, 2012). As a result of modernisation, urbanisation, and the changing role of women, changes in the Swazi food system have also taken place (Malaza, 1994:170).

The developmental model of food culture (Figure 5.27) will be used to illustrate how structural changes that have resulted from social developments are paralleled by food culture changes which, in turn, influence and contribute to changes in food and eating habits. This model will be discussed and explained by using examples from this study group's documented food habits to contextualise and further interpret how the influences from the external and internal environments have affected their current food consumption patterns.

5.6.1 The developmental model of food culture

The developmental model of food culture model (Viljoen, 2009:39) is presented as (Figure 5.27). It depicts how certain structural changes in society correspond to changes in food culture. This model is based on the premise that human societies and their culture are dynamic and subject to change. Food habits, as an integral part of culture, are therefore bound to change simultaneously and this has been witnessed over the world for the past two centuries (Ferraro, 2006:19-20; Bryant *et al.*, 2003; Pelto *et al.*, 2000). Food habits have therefore changed and evolved due to certain adaptations made by humans in response to certain environmental and social changes (Pelto *et al.*, 2003).

Although the model has a linear structure (as indicated by the upward direction of the arrows) it needs to be noted that some of the structural changes could concurrently overlap with a previous and/or subsequent structural change. As structural changes take place,

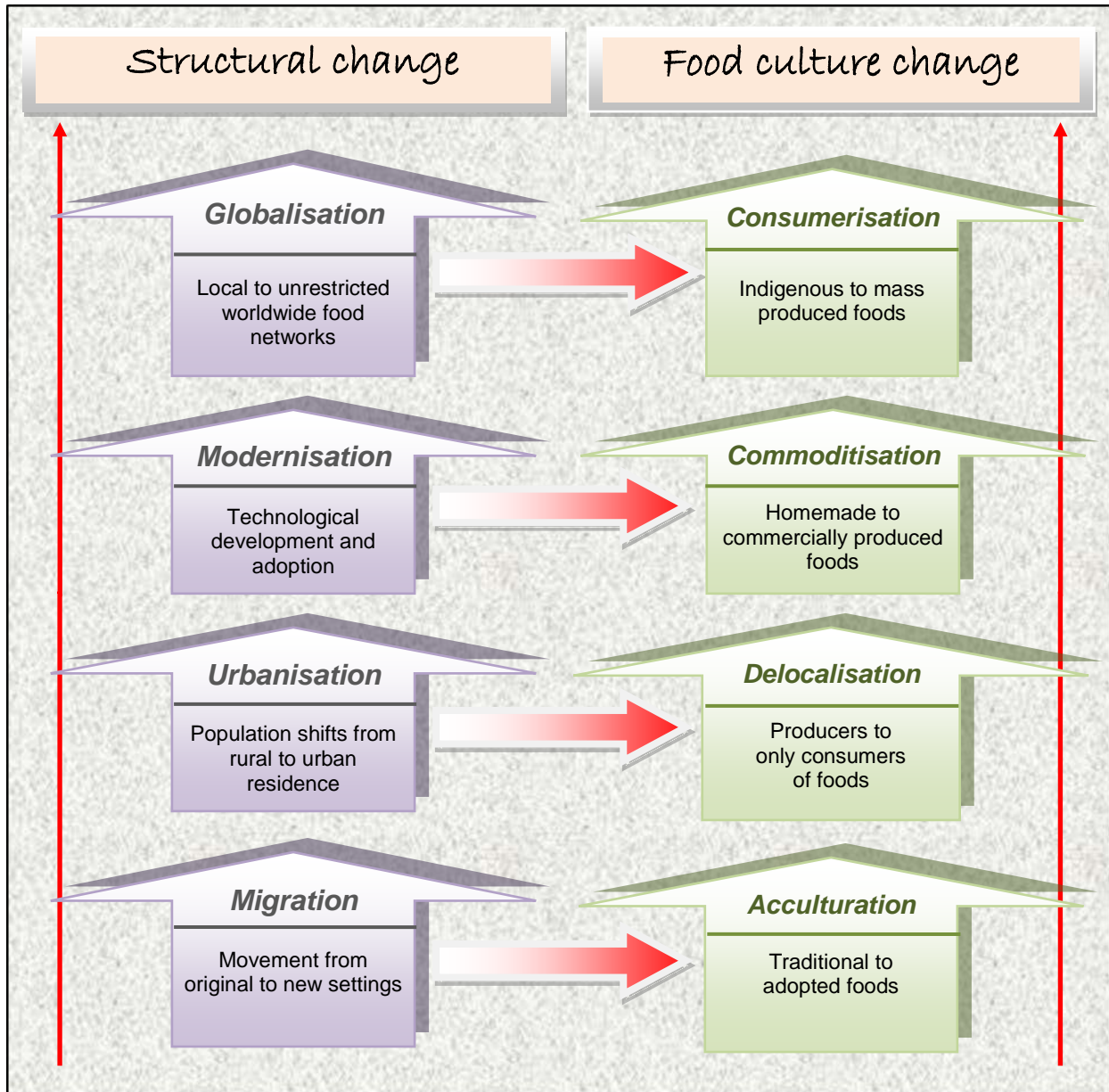


FIGURE 5.27: DEVELOPMENT MODEL OF FOOD CULTURE (Viljoen, 2009:39)

parallel changes in food culture will occur. Similarly, food culture changes do not necessarily follow a strictly linear process either.

An explanation of the structural changes and the corresponding changes in food culture patterns follows. **Migration** is a structural change that occurs when there is a movement of people from their areas of origin to re-settle in new settings such as other rural or urban areas, regions or another country and become part of that nation. In this way, new contacts are created with other cultures or groups and, if prolonged, acculturation could result (Kittler *et al.*, 2011:11-12; Viljoen, 2009:40). **Acculturation**, according to Lee, Sobal and Frongillo (1999) is a multidimensional process of adaptation by groups and individuals to a new society. This adaptation deals with changes that relate not only to cultural, social, psychological, economic and political dimensions, but also to changes in food habits.

Acculturation of food habits can be described as a long-term process that results from the introduction and acceptance of foods from other cultural groups and the movement from the original or traditional foods to the adopted foods (Kittler *et al.*, 2011:11-12; Viljoen, 2009:40; Sobal, 2006:1-7).

It is evident that the acculturation of Swazi food habits due to migration has and still is taking place. People in the urban areas of Swaziland have been exposed to and accepted certain Western-orientated processed and commercial food items as reported by a number of studies since the early 1960s (Kgaphola & Viljoen, 2004; Huss-Ashmore & Curry, 1991; Jones, 1963:150). In the Swaziland Agricultural Business Yearbook (2013) the traditional culture of a total dependence on the traditional staple food, maize, is confirmed as waning and also attributed to the fast emergence and adoption of other more convenient staple foods. The results of this study on a group of adolescents in Manzini, Swaziland, concur with this tendency. The type of foods reported to be consumed as part of the current eating pattern on a typical weekday, included a number of processed and commercial food items such as bread, rice, breakfast cereals, cheese, polony, sweets, biscuits and savoury snacks such as potato crisps (see 5.3.1).

Urbanisation is another structural change that affects food patterns and is the result of people abandoning living in a rural setting in order to settle in a sub-urban or urban environment where food cultivation for own household consumption diminishes (Zingoni, *et al.*, 2009). The food culture change associated with urbanisation is **delocalisation**. Delocalisation indicates a shift from producing food for own consumption by the people who have changed their residential location and are living in a different place, a locality, to meals and food items that are produced and prepared by others in the broader food industry such as in food factories, convenience food markets and fast food restaurants. (Kittler *et al.*, 2011:11-12; Viljoen, 2009:40).

In Swaziland a good education is valued, and this contributes to the process of urbanisation in that many young people live with their parents in the urban locations, get enrolled at the urban schools (some of which are the best performing schools) and later study at tertiary institutions to further their educational goals or to find employment in the cities. Therefore some families may opt to relocate to urban areas so that their children or siblings will be educated in urban or peri-urban schools due to the proximity of these schools to the urban settings of these families and in pursuance of good education from preschool to tertiary levels (Marope, 2010:25-53). This causes the young people to live the urban lifestyle from an early age (Marope, 2010:40).

Many parents, especially women, then join the formal workforce in urban areas. This also brings about changes in the consumption patterns of their families (Mcfadden, 1981). These women now experience severe time constraints as a result of being employed outside the

home on a full-time basis, and rarely have time to cook and prepare meals for their families from scratch. This leads to a reliance on processed and convenience types of foods (foods that are readily available and/ or require minimal preparation time). These foods have become increasingly available in many local and retail stores in Swaziland (FAO/WFP Report, 2007; Malaza, & Howard, 2003: 243-257) and are a convenient option for these working women as they are quick and easy to prepare. This has an influence on the type of food that is prepared or made available for working women particularly those with children (Malaza, & Howard, 2003: 243-257).

In this study the respondents indicated that most of them enjoyed home-cooked meals between five to seven times a week, and meals away from home once or twice a month. The inclusion of processed and convenience-type foods in the eating patterns of the respondents is confirmed by the results on the current eating patterns on weekdays (see section 5.3.1) and the frequency of consumption data as reported in section 5.3.3. Examples of the frequent inclusion of foods such as bread, rice, pasta products, breakfast cereals, cheese, polony, beef, chicken and boerewors as part of the meals consumed at home were given.

Other examples from the present study with regard to the influence of urbanisation and its contribution to food culture change, relate to the patronage of fast food outlets and the frequent inclusion of snack foods as reported in section 5.5. As fast and snack foods are readily available and accessible in urban areas, the opportunity for adolescents to be totally exposed to these types of foods and food products arises. The increase in exposure leads to familiarity, which ultimately contributes to their acceptance and inclusion in their regular eating patterns (see section 5.5). Apart from urbanisation, **modernisation** has also influenced food culture change (Figure 5.27). Modernisation is a structural change that has led to the development of new technologies and shifts in the economy that have significantly brought about changes in people's cultural beliefs, values and ultimate food behaviours` (Uusitalo *et al.*, 2005).

Modernisation contributed to change in the processing, production, distribution and even consumption of food products through, amongst other factors, technological advancements in the food industry (Sobal, 2006:2; Pelto *et al.*, 2000:6). This caused an increase in the availability and accessibility of food. For example, fresh raw milk was a traditionally popular food for the Swazi people (Huss-Ashmore & Curry, 1991; Ogle & Grivetti, 1985; Beemer, 1939). Worldwide, milk in this form, has been replaced by either pasteurized or Ultra Heat Treated (UHT) or long life milk in order to be able to export or ship it to other countries or even sell it on line to consumers who cannot produce or have access to the fresh product (Kittler *et al.*, 2011:12). A similar trend is seen in Swaziland as most retailers sell imported UHT milk. The staple food, maize, is no longer home-grown, but purchased and the same

applies to vegetables and meat, as vegetables are no longer cultivated for their own consumption and cattle and chickens are no longer reared for meat.

Through **commoditisation**, food is treated as an economic object rather than a consumption item (Viljoen, 2009:40; Sobal, 2006:3). This economic interpretation indirectly means that the food purchasing power of the Swazi households themselves ultimately is the dominant influence on their food choices (Feldman, 2005; Messer, 2005). The acceptance and inclusion of these commodities in the food pattern depends on the shared beliefs, values, and attitudes held with regard to these commodities as influenced by modern mass media and/or technological advances used in the promotion of these products. Commoditisation is also evident in the present study, as a frequent inclusion of a large number of purchased food items such as fresh meat and processed meat products, commercially baked bread and other baked products and snack foods are included in the eating patterns of the respondents.

Closely associated with this development is the intensification of consumerisation that is a major characteristic of **globalisation**. Kittler *et al.* (2011:11) define products that are usually subjected to advanced preservation techniques as a way of receiving food from a network of growers and suppliers worldwide, a situation that has arisen as a direct result of global trade developments. Accompanying this trend is the marked **consumerisation** of food culture in which there is a recognisable transition period in which society clearly changes from being producers and consumers of food indigenous to the region of occupation, to becoming consumers that are highly dependent on mass-produced and imported food products (Kittler *et al.*, 2011; Viljoen, 2009:41; Bryant, *et al.*, 2003:71; Sobal, 2000:3).

The structural change brought about by globalisation has contributed to increased availability and accessibility of a large variety of processed and imported foods that were not part of the traditional Swazis eating pattern, for example, processed meats, fish and vegetables, which has led to abandoning the indigenous sources of these food products (Dlamini & Lowrey, 2005).

In this study on the food habits of a group of adolescents in Swaziland, consumerism is also evident in their eating patterns in that they indicated that they still consumed some of the traditional indigenous foods although these are mainly available only at special events (see section 5.4). From the data collected about their daily food consumption patterns, it became clear that a large number of processed and commercially available food items are included and consumed on a daily basis or at a frequency of three to four times a week (see section 5.3). This confirms that modern, globally accessible Western-orientated food items continue to be part and parcel of the food patterns of the youth of Swaziland. This can be attributed to the fact these required food items are all readily available and accessible to this age group at

affordable prices. Moreover, increased exposure to and acceptance of these Western-orientated modern foods has markedly heightened their impact.

5.7 CHAPTER CONCLUSION

This chapter presented and discussed the results of this study as pertaining to the study group's current eating patterns that included the frequency of food usually consumed on weekdays, over weekends and on special occasions attended by the respondents. Attention was also paid to the familiarity, preference ratings and frequency of consumption of traditional and other foods, including snack and fast foods. In the last section of this chapter the food culture model was described to explain the effect and role of the external and internal environments on the availability, accessibility and acceptance of foods. Examples from the results obtained in this study were used to illustrate the exposition. The next chapter presents the conclusions of the study and discusses the achievement of the aims of the study.

Chapter 6: CONCLUSIONS, EVALUATION AND RECOMMENDATIONS FROM THE STUDY

6.1 INTRODUCTION

This chapter presents the conclusions of the study on the food habits of adolescents in the Manzini region, Swaziland. The conclusions are based on the main findings, the limitations of the study and its value of the study to Consumer Science as an academic discipline. Recommendations for future research are also made.

As reported in the extant literature, the worldwide increase in the occurrence of non-communicable diseases (NCDs) is a matter of concern, specifically the increase of problems associated with overweight and obesity among both older and younger people, with a particular interest being shown in in sub-Saharan countries (Popkin *et al.*, 2011; Steyn *et al.*, 2011; Giles, 2010; Popkin, 2006; Mafunda *et al.*, 2006). It is reported to be prevalent as a result of a number of influences such as globalisation, modernisation and other changes that affect food supply and these contribute to changes in food choices. These changes are also witnessed in Swaziland as well, due to the increased availability and accessibility of commercially produced foods at affordable prices to the majority of consumers (FAO/WFP Paper, 2007). A report by Dlamini and Lowrey, (2005) also raises concern about the move away from the traditional to the Western-oriented food culture and practices which seems to have caused the younger generation to neglect Swazi traditional foods. As far as the researcher could ascertain, no recent study has yet been conducted on the food habits of the Swazi youth, and a gap seems to exist in the body of knowledge about what Swazi adolescents actually consume, and to what extent traditional Swazi foods are included in their food consumption patterns.

The purpose of this study, therefore, was to explore and describe the food habits of adolescents (16-19 years) in the semi-urban area of Manzini region of Swaziland, and to determine to what extent traditional, fast and snack foods are included in their food consumption patterns. The objectives of the study were successfully met in terms of the discussion and interpretation of the results, and the conclusions reached as presented in the previous chapter.

In the next section the conclusions coming from the main findings will be presented according to the objectives formulated for the study.

6.2 CONCLUSIVE REMARKS ON THE OBJECTIVES OF THE STUDY

6.2.1 The current food habits of the Swazi adolescents aged 16-19 years in the Manzini Region of Swaziland (*Objective 1*)

This objective included sub-objectives that dealt with the study group's eating patterns on weekdays and weekend days; the frequency of the consumption of foods that were usually part of their regular eating patterns; and the type of foods consumed on special occasions.

Weekday eating patterns: The majority (74%) of the respondents followed the pattern of having three or more meals a day (Figure 5.1). A change from the traditional pattern of two meals a day to three meals a day has been reported as having taken place since the early 1960s (Jones, 1963). In other studies it was confirmed that the trend is continuing (Kgaphola & Viljoen, 2004). Results from this study show too that the pattern of consuming three or more meals a day is followed by the most, although there is a small group (23%) that still adheres to the traditional two-meal a day pattern.

Although elements of the traditional meal composition remain, other modern food items continue to be introduced as part of the consumption pattern. Breakfast could be described as a bread-based meal where a large number of the respondents (49%) include tea as a beverage (Figure 5.2). Although bread is an important component of breakfast, more than a third (35%) of the respondents still had traditional soft maize meal porridge as part of their breakfast meal. Some respondents ($\leq 13\%$) reported that foods such as breakfast cereals, cheese, polony and eggs were part of their breakfast fare.

For the majority of the respondents the meal composition for lunch and supper comprised the traditional staple food, stiff maize-meal porridge served with either beef or chicken, as 53% and 64% respectively of them chose these meats for lunch and supper respectively (Figure 5.3). The traditional staple food, stiff maize-meal porridge, was the most frequently mentioned food item in the reporting on meal composition. This indicates that maize continues to be the staple food of the study group. A large number of the respondents mentioned that rice is served at lunch (38%) and supper (49%). This shows that rice is frequently part of the meal composition of these respondents, a trend similar to what other studies dealing with southern African populations have found (Viljoen *et al.*, 2005; Kgaphola & Viljoen, 2004; Viljoen & Gericke, 2001; Popkin, 1994; Huss-Ashmore & Curry, 1991).

The tendency to include the staple food, stiff-maize meal porridge, and meat, corresponds to the traditional meal composition as reported by Ogle and Grivetti in 1985, and it clearly continues. However, in the reported eating pattern, it was noted that there is an increase in the frequency of consumption of meat. Although meat was often consumed by some (3-4 times a week), which can be accepted as frequent in terms of recognised healthy eating

plans, it was, however, not eaten daily by all (Figure 5.19). Yet it would seem that affordability does play a role as the majority of the respondents came from more affluent families, as gleaned from the socio-demographic profile of the respondents (see Section 5.2), so their families could possibly afford to include meat more regularly in their regular eating pattern.

The limited inclusion of vegetables as part of the weekday meals raises a concern as only 5% and 16% reported that vegetables and salads were consumed as part of lunch and supper respectively. Similarly, fresh fruit and fruit juice were consumed by some, mostly as an in-between meal snack. A low intake is actually evident, as 32% enjoyed them as morning snack and 15% had them as afternoon snack food. It is evident that the respondents included less than the recommended five portions of fruit and vegetables in their daily diet.

The respondents snacked on fresh fruit (32%) and bread (29%) between breakfast and lunch more than any at any other time. They also consumed bread and savoury snacks during snack time. A small per cent (15%) snacked on fresh fruit or fruit juice between lunch and supper. Biscuits were enjoyed by 49% of the respondents after supper, thus it was common for most of them to snack more on biscuits as well as fresh fruit or fruit juices after supper rather than on bread or savoury snacks.

Weekend eating pattern: The weekend meal pattern differed from the weekday pattern as, for the majority (161; 55%) of the respondents, there had been change in the number of meals and types of food consumed during weekends. The Saturday meal composition fell into two distinct groups: those who reported that they consumed more traditional food items and those who included more Western-orientated food items. The majority (82%) enjoyed the Sunday midday meal as the main meal, which included foods such as chicken, rice, salads, meat, baked products and fizzy drinks, representing a more Western-orientated meal composition.

Frequency of consumption of foods: The non-quantitative food frequency questionnaire measured the frequency of the consumption of food usually eaten as part of their regular eating pattern. This served as a cross-check of the foods consumed by the respondents as reported in their current eating patterns.

Maize continues to be the staple food as $\geq 30\%$ of the respondents included it once or more than twice in meals daily. Bread was eaten every day, mainly at breakfast and in-between breakfast and lunch. The popularity of rice is clear as the general frequency of consumption was high (Figure 5.15) throughout the sample. Vegetable consumption frequency is definitely low at lunch and suppertime during the week (Figure 5.17). This is a matter of grave concern considering that the study group had a far lower intake of vegetables than the

recommended daily allowance. A high frequency consumption of chicken (49%) and beef (44%), 3-4 times a week for lunch and supper, is confirmed, indicating that these meats were affordable for the families of the respondents and that they are often eaten.

Processed meats, such as polony, were regularly consumed by the majority (38%) of the respondents, 3-4 times a week. However, meats derived from pork such as bacon and ham were consumed less often (Figure 5.20).

Fish was not eaten often, with the exception of fried fish, which was frequently eaten specifically when served with fried chips (30%). Most respondents (45.26%) never had sardines. The infrequent consumption of fish could be inferred as being either caused by the scarcity and cost of fish in Swaziland, or related to the traditional practice where fish was disliked by the traditional Swazis, as noted by Jones (1963:74).

Egg and egg dishes were frequently enjoyed as the 36% had these food items as often as 3-4 times a week. The notable increase in the consumption of egg dishes accentuates the fact that eggs are nowadays included in the meal patterns of the Swazis far more often, perhaps due to the eradication of a negative traditional belief about eating eggs or attributed to the fact that their increased consumption is the result of the current widespread production of eggs in Swaziland that makes them easily available. In the same way, the noted low frequency of consumption of cheese and dishes prepared with cheese, such as macaroni and cheese, could be attributed to the fact that these were not part of the traditional Swazi diet, or because they are costly items and therefore not served in the households of some of the adolescents. Macaroni and cheese dishes were only eaten by 18% of the respondents once a month. Notable is that cheese, although not a traditional food item is gradually being introduced into the Swazi cuisine most probably due to its increased availability in food stores.

The dairy food products *emasi* (sour milk) and milk were respectively consumed by 40% of the respondents once a week and by 36% daily. This indicates frequent consumption of these food items. Only 23% of the respondents ate cheese, indeed a low frequency of consumption. The two food items, (*emasi* and milk) were regarded as the core of the Swazi diet, as noted by Beemer in (1939) and Jones (1963). As core food items they have resisted dietary acculturation and continue to be included in the Swazi diet on a regular basis.

Forty six per cent of the respondents consumed tea daily, whereas 23% had coffee and 16% milk. Only 25% consumed *emahewu* (fermented mealie meal beverage) once a week. A high tea consumption is noted and a decrease in the consumption of the traditional beverage, *emahewu* (fermented mealie meal beverage) possibly due to the convenience in making tea as opposed to the time it takes to prepare *emahewu* (fermented mealie meal beverage).

Similar results were noted in other South African studies (Viljoen *et al.*, 2005; Kgaphola & Viljoen, 2004; Viljoen & Gericke, 2001).

Except for ice cream, a low frequency of consumption of desserts is reported. Cakes, jelly and custard were mainly available at special occasion events as reported by $\geq 48\%$ of the respondents. Ice cream was always popular (Figure 5.25).

The food frequency results confirm an increased frequency of the inclusion of Western-oriented foods as reported in the eating and meal composition patterns. It seems that the type of foods that were not frequently consumed were those foods that were expensive, suggesting that affordable foods are consumed frequently.

Special occasions: The type of food included for special occasion celebrations, such as weddings and birthdays, were cakes, fizzy drinks, rice, meat, salads and snack foods, whereas traditional foods, such as *emahewu* (fermented mealie meal beverage), beef or beef with porridge formed part of traditional celebrations. The tendency to combine traditional and Western types of foods on these occasions was also reported.

It can be concluded from the results that the steady increase in the inclusion of Western-orientated types of food in the meal patterns continues, although some of these foods are not consumed as frequently as others.

6.2.2 The inclusion of traditional Swazi food in the eating pattern of the study group, including the familiarity, preference rating and frequency of consumption (*Objective 2*)

This objective dealt with the inclusion of traditional Swazi foods in the eating patterns of the study group and to note how familiar they were with traditional Swazi foods. It also sought to identify how they rated their preferences for these foods and how frequently they consumed them. Their opinions regarding the use of traditional Swazi foods and their attitudes towards these foods were also measured. Familiarity, preference rating and frequency of consumption of the seven groups of selected traditional foods were determined and were cereal porridges, fresh or dried mealies, indigenous vegetables, indigenous and other fruits, legumes and dishes prepared from legumes, meat and insects.

With the exception of *sidlwadlwa* (porridge with beef stock) the majority of the respondents (85%) were familiar with the cereal porridges prepared from the staple grains (sorghum and maize). They gave these porridges a neutral or high preference rating and it is noted that they were frequently consumed by most respondents (45%) three to four times a week, although the porridge from pumpkin and melon was only consumed seasonally when available.

The majority of the respondents (86%) were familiar with dishes prepared from fresh or dried mealies (Table 5.8), except for some such as *jece* (steamed mealie bread) *sentangabomu* (fresh mealies with *emaselwa* and *emantongomane*) and *sijabane* (fresh mealies with pumpkin leaves and roasted peanuts). High-preference food items included *sinkhwa sembila* (steamed fresh mealie bread) and *lifutfo* (boiled green mealies) while *emanqobo* (boiled dry kernels) *sentangabomu* (fresh mealies with *emaselwa* and *emantongomane*) received a neutral preference rating and were only consumed when available, possibly due to the seasonal availability of fresh mealies used in the preparation of these dishes.

Traditionally, porridges and the traditional beverage, (*emahewu*), prepared from the staple food, maize, formed an integral part of the Swazi diet (Kgaphola & Viljoen, 2004; Ogle & Grivetti, 1985a; Beemer, 1939). These food items continue to be included frequently in the study group's choices, although not as regularly as was the traditional practice, where some, such as the cereal porridges, were eaten on a daily basis.

The next group of traditional dishes comprised traditional vegetables such as green leafy vegetables, other indigenous vegetables and root vegetables. The majority of the respondents were familiar with the indigenous green leafy vegetables *chuchuza* (black jack), *ligusha* (*corchorus confusus*) and rated them as neutral and high preference items. The bitter tasting vegetables *inkakha* (bitter gourd), *inshubaba* (*momordica involucreta*) and *emahala* (*aloe saponaria/vanbalenii*) were given a low preference rating by those who were familiar with them. The majority ($\geq 85\%$) of the respondents indicated that they consumed indigenous green vegetables including *inkakha* (bitter gourd) when available.

The other listed vegetables were *likhowe* (wild mushroom), *budzibi* (boiled pumpkin snack) and *emahala* (*aloe saponaria/vanbalenii*). Nearly a third of the respondents (31%) were not familiar with *budzibi* (boiled pumpkin snack); 26% with *emahala* (*aloe saponaria/vanbalenii*); and 17% with *likhowe* (mushrooms). With the exception of *likhowe* (wild mushroom), a large number of the respondents were unfamiliar with other vegetables. The majority of the respondents were familiar with *likhowe* (wild mushroom) and rated it a high preference item. *Budzibi* (boiled pumpkin snack) received a neutral preference rating and *emahala* (*aloe*) a low preference item possibly because the latter has a bitter taste. This supports the view of Rieth *et al.* (2012) and Bassett *et al.* (2008) that adolescents are fond of sweet-tasting foods and have a strong aversion to bitter-tasting foods. Another possible explanation could be related to wild vegetables' accessibility as it was not prepared in households as often or was not always available due to its seasonality.

Root vegetables such as *bhatata* (sweet potato), *emathapa* (taro) and *ematabhane* (Zulu potato) were eaten regularly. However, the respondents were not familiar with most of the traditional root vegetables except for *bhatata* (sweet potato) which was known by all the respondents and rated as a high preference item. *Ematabhane* (Zulu potato) was unknown

to 52% and received a neutral preference rating. The majority ($\geq 62\%$) of the respondents consumed root vegetables when they were available.

The frequency of consumption of indigenous traditional vegetables seems to have declined, possibly due to their specific seasonality. Unfamiliarity with some of the vegetables could be attributed to the fact that those varieties were not regularly prepared or available in the households of some of the respondents. It could also be due to lack of space in an urban area as well as a busy lifestyle that urban dwellers tend to have with little time and/or energy for gardening. This continues to be a concern if one considers that the frequency of consumption of the cultivated vegetables was also low. Encouraging urban agriculture is becoming quite an important issue these days, even having a garden on a flat roof house or on balconies in flats. The results indicate that the culture of gathering these wild vegetables, even when they are in season, seems to have declined. The results concur with the findings of Weinberger and Swai (2006:87) as well as Grivetti & Ogle (2000:31) who also noted this as a reason for the decline in the practice of collecting indigenous plants.

With the exception of *vovovo* (aloe flower) which was unknown to 50% (151) of the respondents, all the respondents were familiar with *ligwava* (guavas) and the majority ($\geq 98\%$; 298) had eaten them. The respondents gave the indigenous fruits a neutral and high preference rating. They were consumed when available with the exception of *emaganu* (marula) which was consumed on special occasions by some (10%) of the respondents. The other fruits were unknown and never eaten by $\geq 45\%$ of the respondents. The seasonality of these fruit could be a contributory factor as well as the fact that adolescents attend school for most of the day which would also restricts them from gathering wild fruits that does take quite a bit of extra time.

The low consumption of the indigenous vegetables and fruits can thus be attributed to the erosion of the traditional practice of gathering food. Previous studies attribute this occurrence to the socio-structural changes (globalisation, modernisation, urbanisation and migration) that affect the urban sub-Saharan areas of Africa, southern Africa, including Swaziland (Raschke & Cheema, 2007; Dapi *et al.*, 2007; Kgaphola & Viljoen, 2000).

The familiarity, preference rating and frequency of consumption of legumes were also determined. With the exception of *tinhlumaya* (cowpeas), *mngomeni* (mung beans) and *ludvonca* (sesame seed), $\geq 98\%$ of the respondents were familiar with the legumes. The respondents rated *emantongomane* (groundnuts) and *emabhontjisi* (sugar beans) and *tindlubu* (jugo beans) as high preference items. The exceptions were *tinhlumaya* (cowpeas), *mngomeni* (mung beans) and *ludvonca* (sesame seed), which received a neutral preference rating. *Emantongomane* (groundnuts) and *emabhontjisi* (sugar beans) were frequently consumed by 13% (36) and 12% (32) of the respondents 3-4 times a week respectively. Most of the other listed legumes were consumed when available.

Legumes, such as groundnuts, cowpeas, mung beans, sugar beans and jugo beans are widely cultivated in Swaziland especially the Middleveld Region where the study was conducted (Dlamini & Mdziniso, 2005). The varieties that were unknown to the respondents such as mung beans and sesame seeds are not readily available in all regions of Swaziland, which could explain why the respondents neither knew about them nor had eaten them. Roasted or boiled groundnuts (*umbhonyo*) are commonly sold by most street vendors and are readily available to consumers in Swaziland, which could explain their frequent use. Legumes were an integral part of the traditional Swazi food patterns and continue to be included and liked by the adolescents as they are part of their regular meal patterns.

The familiarity, preference rating and frequency of consumption of meat items were also determined. The respondents were familiar with most of the meat items listed and had eaten these. The exceptions were organ meats such as *lufu* (tripe), *lubendze* (pancreas) and *liphaphu* (lung) and blood products, such as *bubendze* (cooked blood). Although beef was consumed frequently by 21% (56) of the respondents 3-4 times a week, organ meats such as *lubendze* (pancreas), *bubendze* (blood) and *liphaphu* (lung) were consumed on special occasions only. A high preference rating was given to chicken and chicken offal with the exception of *tinhloko tenkhukhu* (chicken heads).

The majority of the respondents were familiar with most of the insects listed, although some had never been eaten by nearly a third of the respondents. Insects received a neutral and low preference rating and were consumed only when available. Traditionally, insects were gathered as a snack food by children (Beemer, 1939).

Overall, adolescents were familiar with and preferred traditional foods as 93% of the respondents knew and consumed them. This observation was supported by the opinions they rendered regarding these foods, which were supported by their particularly positive attitudes towards them. They gave important reasons related to health, taste and cultural heritage as reasons for consuming these foods. It can be concluded that traditional Swazi foods are still eaten regularly and liked by the Swazi adolescents as indicated by the preference ratings shown in Tables 5.7-5.13. The positive responses of the respondents about traditional foods support the views of Kgaphola & Viljoen (2000:70) that traditional food sources continue to form an integral part of the food practices of the Swazi people.

6.2.3 The inclusion of snack and fast foods in the eating patterns of the study group, their familiarity, preference rating and frequency of consumption (*Objective 3*)

This objective dealt with the extent to which snack and fast foods were consumed or included in the eating pattern of the study group. It comprised sub-objectives that dealt with the familiarity, preference rating and frequency of consumption as well as the context in which the study group consumed these foods. The four groups of selected snack foods were beverages, baked products, sweets and savoury snacks.

The majority of the respondents (99%) were familiar with beverages and dairy beverages with the exception of yogi sip which was unknown by some (17%; 48). All the beverages and dairy beverages received a high preference rating from the respondents. The majority consumed these beverages on special occasions.

The respondents were familiar with and had eaten all the listed baked products and gave them a high preference rating. Cakes/confectionery and biscuits were consumed on special occasions by 41% or never. Sweets such as chocolates, boiled sweets or candy were known to the respondents and received a high preference rating. The notable number (42%) of the respondents consumed sweets when available, whereas 26% (69) consumed sweets /candy daily.

The majority ($\geq 91\%$) were familiar with and had eaten all the listed savoury snacks, with the exception of savoury biscuits that 19% of the respondents had never eaten. The respondents gave savoury snacks a neutral and high preference rating with the exception of savoury biscuits that received a low preference rating.

The majority ($\geq 88\%$) were familiar with fast food items: meat pie, hamburger, hot dog, fish and chips, Russian and chips and gave all of these a high preference rating. Meat pies, fish and chips as well as Russian and chips were consumed once a week. With the exception of pizza, which was consumed by some (48; 17%) but only on special occasions. The majority ($\leq 56\%$) of the respondents consumed fast foods when available.

- The study indicates that the respondents were familiar with all the snack foods and gave them a high preference rating. The frequency with which the study group consumed snacks was only 3-4 times a week by a few (19%). From these results it appears that adolescents in Manzini are not as inclined towards snacking on these foods as frequently as reported in other studies in USA, Europe and Africa (Voorend *et al.*, 2012; Sdrali *et al.*, 2010; Seubsman *et al.*, 2009; Olumakaiye *et al.*, 2007; Mattson & Helmersson, 2007; Dapi *et al.*, 2007; Dlamini & Lowrey, 2005; Bower & Sandall, 2002).

6.2.4 The influence of the external and internal environments on the food habits of the study group (*Objective 4*)

This objective dealt with the influence of the various external and internal environmental factors on the food habits of the study group. Sub-objectives addressed how the external environmental factors (natural, economic and socio-cultural environments) influenced or contributed to the food habits of the study group, and how the internal factors such as knowledge, beliefs, attitudes and values influenced or contributed to the development of their food habits.

The contemporary food habits of the adolescents in Manzini have also been shaped by socio- structural changes such as migration, urbanisation, modernisation and globalisation that have impinged on the physical and social environments of the study group, thus bringing about alterations in food culture (Figure 5.27).The various factors from each of the two environments and how they relate to aspects of availability, affordability and acceptability similarly contributed to the formation of their food habits. A brief summarised conclusion about the influences from the external and internal environments on the food habits of the adolescents in Manzini is given.

The physical and natural environments have changed due to technological developments, modernisation and economic influences. These, in turn, have contributed to food culture change. Urban dwellers have gone from being self-sufficient in their food production to becoming dependent on commercially available foods. Many of these foods are processed and are expensive. This has compelled urban dwellers to seek employment in order to procure these food items, bringing about a change in the food compositions and patterns of these people (socio-cultural influences). In summary, these changes in the food systems show an interrelationship between the physical/natural, political/economic as well as the socio-cultural environments, which reciprocally influence the internal/individual environment.

Due to migration people have had the opportunity to interact with different groups of other people and are influenced to change their attitudes values and ideas which, among others, may possibly lead to the adoption of a modern lifestyle. This often includes the adoption of certain foods or eating patterns and food choices of the various groups with whom they interact.

The new foods in their meal composition are mainly processed, convenient types of Western-orientated food items. This ultimately manifests in changed food preferences and acceptance.

6.3 LIMITATIONS AND SHORTCOMINGS OF THE STUDY

The sample was drawn from a specific area in Manzini in Swaziland and the conclusions drawn from the responses cannot be generalised to describe the rest of all the adolescents in Swaziland. The delimitations relate to the fact that the study was confined to the Manzini area due to the convenience and proximity of Manzini to the researcher.

The variable “when available” on the food frequency questionnaire where the respondents had to give the frequency of consumption of traditional and snack and fast foods allowed the respondents to choose this as an easy response option. This explains why the option “when available” was marked most by the respondents. This option should have been replaced with “on occasions” as a frequency option.

6.4 SIGNIFICANCE AND IMPLICATIONS OF THE STUDY

The study sought to fill the gap in knowledge on the contemporary food habits of Swazi adolescents. The results supported the fact that the meal patterns and their composition continue to include Western-orientated foods to an ever-increasing degree thus confirming the trend identified in the literature. Most respondents follow a pattern of three meals a day as opposed to the traditional pattern of two meals a day. The composition of meals reveals the inclusion of more Western-orientated foods such as bread and bread-like products, rice, tea, soft drinks, salads as well as snack and fast foods. However, the staple food, maize-meal porridge, is still important and consumed at least once a day.

The consumption of snack and fast foods is posing a concern globally. Several recent studies report evidence of a prevalent high daily intake in their work. However, in this study the majority of the adolescents in Manzini did not consume fast foods daily, although a quarter (25%) of the respondents consumed these food items 3-4 times a week and 18% only once a week. These results also concur with studies in South Africa (Mcintyre *et al.*, 2012; Van Zyl *et al.*, 2011). Although the results indicate that the study group has a general low intake of fruit and vegetables, this raises a concern as these foods should be eaten daily. Overall, the study group has a fairly good eating pattern although there is still room for improvement.

The extent to which traditional foods are familiar and consumed reveals that positive opinions are held about these foods and that they were eaten on a regular basis. The results confirm that the Swazi adolescents are familiar with these foods, like their taste and have them often as they have been retained in the food patterns that have been evolving. The results also confirm that the eating patterns of the study group include a combination of both traditional and Western-type of foods.

Based on these insights, the following recommendations are made for improving the eating patterns of adolescents in general based on the information gleaned from this study group. The recommendations are grouped in three groups that include preparation measures to increase fruit and vegetable consumption, ways to strengthen the continuation of consumption of traditional foods and caution against a high intake of snacks and fast foods.

Increase in fruit and vegetable consumption:

- The youth in Swaziland should be encouraged by health professionals, educators and other stakeholders through Consumer Science education to eat more fruit and vegetables when they are in season and are readily available, accessible and are affordable.
- Families need to be made aware of the importance of the daily consumption of fruits and vegetables and ensure their inclusion as a priority in family meals.
- Trendy, newer, vegetable recipes should be developed. This could stimulate adolescents to eat them more often.
- The promotion of an increased fruit and vegetable intake should become part of the agenda in Swazi constituencies (*etinkhundleni*).

Ways to strengthen continued inclusion of traditional foods eating patterns

- It is important that the positive attitudes and preferences found towards traditional foods should continue. The continued inclusion of traditional foods should be applauded and encouraged.
- Promotion of the inclusion of indigenous vegetables and legumes such as *ligusha*, (*corchorus confusus*), *chuchuza* (black jack) *imbuya* (pigweed) and *tintsanga* (pumpkin leaves) in family meals should be encouraged.

Caution against high intake of snack and fast foods

- There is a need to educate people, young and old, about the place of the healthy foods in their eating patterns as illustrated in this study and warn them, and adolescents in particular, against over-indulgence and the health consequences of a high intake of food known to be detrimental to their health and well-being.

6.5 SUGGESTIONS FOR FURTHER RESEARCH

Further research opportunities on Swazi food habits could include considering the following:

- Replicate the study to include all four regions of Swaziland in order to extend the results to Swazi adolescents as a group

- Undertake research that will compare the food habits and culinary practices of groups from both rural and urban areas of Swaziland
- A longitudinal study that will look at the food habits of all age groups including children, young adults, adults and older people over time
- A study that will investigate the determinants of food choices based on people's beliefs, attitudes and values
- The culinary practices of Swazi families and the influence that these have on the food choices of adolescents.

6.6 CONCLUDING REMARKS

The study has not only contributed to filling the gap in the knowledge regarding the food habits of the adolescents in the Manzini region, but has also shed some light on culinary practices of the Swazi people. As in other southern African countries, both traditional and Western-orientated foods are consumed. However, it is consoling to note that, although there is an increase in the eating of modern and more Western-orientated foods in the diet of the Swazi youth, the traditional foods have not been discarded, but continue to be consumed regularly. This study confirms that the food habits of the Swazi adolescents are dynamic, complex and continue to evolve and develop.

REFERENCES

- ADLER, A. 2012. Adolescent, Puberty, Cognitive transition, Emotional transition, Social transition, <http://psychology.tran/c.org./pages/14/adolescence.html>. 2012/05/07.
- AKMAN, M., AKAN, H. IZBIRAK, G., TANRIOVER, O. TILEV., S.M. YILDIZ, A. TEKTAS., S. VITRINEL, A. & HAYRAN, O. 2010. Eating patterns of Turkish adolescents: A cross-sectional survey. *Nutrition Journal*, 9 (67):1-5.
- BABIE, E. & MOUTON, J. 2001. *The practice of social research*. South African edition. Cape Town. Oxford University Press.
- BANDORA, M.T. 2010. Complementary Country Analysis Report. Office of the UN Resident Coordinator, Lilunga House, Somhlolo Street. Mbabane. The Kingdom of Swaziland.
- BASSETT, R., CHAPMAN, G.E. & BEAGON, B.L. 2008. Autonomy and control. The construction of adolescent food choice. *Appetite*, 50:325-332.
- BEASLEY, L.J., HACKETT, A.F. & MAXWELL, S.M. 2004. The dietary and health behaviour of young people aged 18-25 years living independently or in the family home in Liverpool, U.K. *International Journal of Consumer Studies*, 28:355-363.
- BEEEMER, H. 1939. Notes on the diet of the Swazis in the Protectorate. *Bantu Studies*, 13:199-236.
- BESTER, G. & SCHNELL, N.D. 2004. Endogenous factors that relate to the eating habits of adolescents. *South African Journal of Education*, 24(3):189-193.
- BIBILONI, M.D.M., MARTINEZ, E., LULL, R., PONS, A. & TUR, J.A. 2011. Western and Mediterranean dietary patterns among Balearic Islands' adolescents: Socio-economic and lifestyle determinants. *Public Health Nutrition*.1-10.
- BLADES, M. 2001. Factors affecting what we eat. *Journal of Nutrition and Food Science*, 31(20):71-74.
- BONNIE, A. & SPEAR, R.D. 2002. Adolescent growth and development. *Supplement to the Journal of the American Dietetic Association*, 102(3):23-29.
- BOTONAKI, A. & MATTAS, K. 2010. Revealing the values behind convenience food consumption. *Appetite*, 55: 629-638.
- BOURNE, L.T., LAMBERT, V. & STEYN, K. 2002. Where does the black population of South Africa stand on the nutrition transition? *Public Health Nutrition*, 5 (1A):157-162.
- BOUTELLE, K.N., FULKERSON, J.A., NEUMARK-SZTAINER, D., STORY, M., FRENCH, S.A. 2007. Fast food for family meals: relationships with parent and adolescent food intake, home availability and weight status. *Public Health Nutrition*, 10 (1): 16-23.

- BOWER, J.A. & SANDALL, L. 2002. Children as consumers-snacking behaviour in primary School Children. *International Journal of Consumer Studies*, 26:15-26.
- BOYDEN, S. & MILLAR, S. 1977. Human Ecology and the quality of life. *Urban Ecology*, 3:263-287.
- BROWN J.E. 2011. *Nutrition through the life cycle*. 4th ed. International edition. Wadsworth.U.S.A.
- BROWN, K., MCLLIVEEN, H. & STRUGNELL, C. 2000. Young consumer's food preferences in selected sectors of the hospitality spectrum. *Consumer Studies & Home Economics*, 24:104-112.
- BRYANT, C., DEWALT, K.M., COURTNEY, A. & SCHWARTZ, J. 2003. *The Culture Feast*. An introduction to food and society. 2nd ed. Belmont. Thomson.
- BUBOLZ, M.M., & SONTAG, M. S. 1993. Human ecology theory. In BOSS, P.G., DOHERTY, W. J., LaROSSA, R., SCHUMM, W.R., & STEINMETZ, S.K. (Eds.). *Sourcebook of family theories and methods*. London. Plenum.
- BURGESS-CHAMPOUX, T.L., LARSON, N., NUEMARK-SZTAINER, D., HANNAN, P.J. & STORY, M. 2009. Are family meal patterns associated with overall diet quality during the transition from early to middle adolescence? *Journal of Nutrition Education and Behaviour*, 41 (2):7-13. 2009.
- CAPPETTA, M. 1983. Notes on diet of the Swazi in the Protectorate. *Bantu Studies*.18:199-236.
- CARDELLO, A.V. 1996. The role of the human senses in food acceptance. In MEISEMAN, H.L & MacFIE, H.J.H. (eds). *Food choice acceptance and consumption*. London. Blackie academic & professional.
- CATALONA, R.F., FAGAN, A.A., GAVINL, L.E., GREENBERG, M.T., IRWIN, C.E., ROSS, D.A. & SHEK D.T.L. 2012. *Worldwide application of prevention Science in adolescent Health series*, 3 (379):1653-1665.
- CAVADINI, C., DECARLI, B., DIRREN, H., CAUDERAY, M., NARRING, F. & MICHUAD, P.A. 1999. Assessment of adolescent food habits in Switzerland. *Appetite*, 32:97-106.
- CHRISTIE, D. & VINER, R. 2005. Adolescent Development. *Clinical Review*. ABC of adolescence. Available at <http://www.bmj.com/content/330/7486/301/>[Accessed:2013-03-10].
- COETZEE, R. 1982. *Funa: Foods from Africa. Roots of traditional food culture*. Pretoria. Butterworths.
- COHUET, S., MARQUER, C., SHEPHERD, S., CAPTIER, V., LANGENDORF, F.A., PHELAN, K., MANZO, M.L. & GRAIS, R.F. 2012. Intra-household use and acceptability of Ready-to-use Supplementary-Foods distributed in Niger between July and December, 2010. *Appetite*, 59:698-705.
- CONNER, M. & ARMITAGE, C.J. 2002. *The social psychology of food*. London. Open University Press.
- CONTENTO, I.R., WILLIAMS, S.S., MICHELA, J.L. & FRANKLIN, A.B. 2006. Understanding the food choice process of adolescents in the context of family and friends. *Journal of Adolescent Health*, 38 (5):575-82.
- CRESWELL, J.W. 2013. *Qualitative Inquiry and Research Design: Choosing among five approaches*. University of Nebraska, Lincoln. Sage.

- CRUSH, J. & FRAYNE, B. 2010. Pathways to insecurity: Food supply and access in Southern African Cities. *Urban Food Security Series No. 3* Cape Town: African Food Security Urban Network.
- DAPI, L.N., OMOLOKO, C., JANLERT, T.U., DAHLGREN, L. & HANGLIN, L. 2007. "I eat to be happy, to be strong and to live" Perceptions of rural and urban adolescents in Cameroon Africa. *Journal of Nutrition Education and Behaviour*, 39 (6):320-326.
- DELISLE, H. 2010. Findings on dietary patterns in different groups of African origin undergoing nutrition transition. *Appl. Nutr. Metab*, 35:224-228.
- DE VOS, A.S., STRYDOM, H., FOUCHE, C. B. & DELPORT, C.S.L. 2005. *Research at Grass roots*. 3rd Pretoria. Van Schaik Publishers.
- DLAMINI, N. & LOWREY, P. 2005. "New ways of saving the old ways helping countries to rescue traditional foods and crops". Luve, Swaziland: FAO information office, Mbabane. Swaziland.
- DLAMINI, A. & MDZINISO, P. 2005. An Inventory of Indegenous crops and wild edible species and their preparation methods: A case study of the Manzini Region. Ministry of Agriculture and Cooperatives.Home Economics Section. Funded by FAO-LINKS. Swaziland.
- DUBE, M.A. & MUSI, P.J. 2002. Analysis of Indigenous Knowledge in Swaziland: Implications for Sustainable Agricultural Development. ATPS Working Paper Series No. 34. Luyengo, Swaziland.
- DORAN, M.H. 1977. Migration for employment project. Swaziland labour migration. Some implications for a national development strategy. Working paper - World Employment Program.
- ECKSTEIN, E. 1983. *Menu planning*. 3rd Westport, Connecticut: AVL. Ecological approach to nutritional anthropology. In A.H. Goodman, D. Dufour, and G.H.Pelto (Eds), *Nutritional anthropology: Biocultural perspectives on food and nutrition* (p1-9). Mountain View, CA. Mayfield.
- FABER, M., OELOFSE, A., VAN JAARVELD, P.J., WENHOLD, F.A.M. & JANSEN VAN RENSBURG, W.S. 2011. African leafy vegetables consumed by households in the Limpopo and KwaZulu-Natal provinces in South Africa. *South African Journal of Clinical Nutrition*, 23 (1):30-38.
- FAO/WFP, 2007. Special Report: FAO/WFP Crop and food supply assessment mission to Swaziland [online] Available from <http://www.fao.org/giews/> [Accessed 2014-04-20].
- FEELEY, A., PETTIFOR, J.M. & NORRIS, S.A. 2009. Fast- Food consumption among 17-year-olds in the Birth to Twenty cohort. *South Africa Journal of Clinical Nutrition*, 22(3):118-123.
- FEELEY, A., MUSENGE, E. PETTIFOR, J.M. NORRIS, S.A. 2011. Changes in dietary habits and eating practices in adolescents living in urban South Africa: "The birth to twenty cohort" *Nutrition*, 28:E1-E6.
- FELDMAN, C. 2005. Roman Taste Food, Culture and Society. *International Journal of Multidisciplinary Research*, 8:7-30.
- FERRARO, G.P. 2006. *The cultural dimensions of international business*. 5th ed. Belmont. Wadsworth.

- FERRARO, G. 2001. *Cultural Anthropology*. An applied perspective. 4th ed. Belmont. Wadsworth.
- FERRARO, G. 1998. *Cultural Anthropology*. An applied perspective. London: Wadsworth.
- FIELDHOUSE, P. 1995. *Food and nutrition customs and culture*. 2nd ed. London: Chapman & Hall.
- FOREHAND, T. 2012. Cognitive development in adolescence. Available at http://teen.lovetoknow.com/cognitive_development_in_adolescence [Accessed 2012-07-05].
- FULKERSON, J.A., STORY, M., MELLIN, A., LEFFERT, N., NEUMARK-SZTAINER, D. & FRENCH, S.A. 2006. Family dinner meal frequency and adolescent development: Relationships with developmental assets and high-risk behaviours. *Journal of Adolescent Health*, 39:337-345.
- FUNKE, O.M. & AJAYI, O.A. 2007. Determination of food choices of Adolescents in South-Western Nigeria. *Ajfaind*, 7 (6):2-6.
- GILES, W.H. 2010. Preventing non-communicable diseases in Sub-Saharan Africa. *Global Health Promotion*, 17:3-10.
- GILLMAN, M., RIFAS-SHIMAN, S. & FRAZIER, A. 2000. Family dinner and diet quality among older children and adolescents. *Family Med*, 9:235-40.
- GOUWS, E., KRUGER, N. & BURGER, S. 2000. *The adolescent*. 2nd ed. Cape Town: Heinemann.
- GRIVETTI, L.E. & OGLE, B.M. 2000. Value of traditional foods in meeting macro-and micronutrient needs: the wild plant connection. *Nutrition Research Reviews*, (13):31-46.
- GROSS, S.M., POLLOCK, E.D. & BRAUN, B. 2010. Family influence: Key to Fruit and Vegetable Consumption among Fourth-and Fifth-grade students. *Journal of Nutrition Education and Behaviour*, 42 (4):235-241. 2010.
- GUERRERO, L., CLARET, A., VERBEKE, W., VANHONACKER, F., ENDERLI, G., SULMONT-ROSSE, C., HERSLETH, M. & GUARDIA, M.D. 2012. Cross-cultural conceptualisation of the words *traditional* and *innovation* in a food context by means of sorting task and hedonic evaluation. *Food quality and preference*, 25 (2012):69-78.
- HALLSTROM, L., VERECKEN, C.A., RUIZ, J.R., PATTERSON, E., GILBERT, C.C., CATASTA, G., DIAZ, L.E., GOMEZ-MARTINEZ, S., GROSS, M.G., GOTRRAND, F., HEGYI, A., LEHOUX, C., MOURATIDOU, T., WIDHAM, K., ASTROM, A., MORENO, L.A. & SJOSTROM, M. 2011. Breakfast habits and factors influencing food choices at breakfast in relation to socio-demographic and family factors among European adolescents. *Appetite*, 56:649-657.
- HAMILTON, J., MCLIVEEN, H. & STRUGNELL, C. 2000. Educating young consumers-a food choice model. *Consumer Studies and Home Economics*, 24 (2):113-123.
- HAUSER, M., JONAS, K. & RIEMANN, R. 2011. Measuring food attitudes and food related values. An elaborated conflicting and interdependent system. *Appetite*, 5:329-338.
- HOLSTEN, J.E., DEATRICK, J.A., KUMANYIKA, S., PINTO-MARTIN, J. & COMPHER, C.W. 2012. Children's food choice process in the home environment: A qualitative descriptive study. *Appetite*, 58 (2012):64-73.

- HUGHES, C. 2000. The acceptability of different types of soya milk available in Cape Town from high-low economic area. *International Journal of Consumer Studies*, 28:40-48.
- HUNT, G., FAZIO, A., MACKENZIE, K. & MOLONEY, M. 2011. Food in the Family Bringing young people back in. *Appetite*, 56:394-402.
- HUSS-ASHMORE, R. & CURRY, J.J. 1991. Diet, Nutrition and Agricultural Development in Swaziland. 2. Patterns of food consumption. *Ecology of Food and Nutrition*, 26:167-185.
- HUSS-ASHMORE, R. & CURRY, J.J. 1994. Diet, Nutrition and Agricultural Development in Swaziland. 3. Household Economics and demography. *Ecology of Food and Nutrition*, 33:107-121.
- JAEGER, S.R., BAVA, C.M., WORCH, T., DAWSON, J. & MARSHALL, D.W. 2011. The food choice Kaleidoscope. A framework for structured description of product, place and person as sources of variation in food choices. *Appetite*, 56:412-423.
- JEROME, N., PELTO, G.H. & KANDEL, R. 1980. An ecological approach to nutritional anthropology. In N. Jerome, R. Kandel, & G. Peltó (Eds), *Nutritional anthropology: Contemporary approaches to diet and culture*. Pleasantville, NJ: Redgrave.
- JOHNSON, C.M., SHARKEY, J.R., DEAN, W.R., MCINTOSH, W.A., & KUBENA, K.S. 2011. "It's who I am and what we eat. Mother's food-related identifies in family food choice. *Appetite*, 57:220-228.
- JONES, S.M. 1963. *A Study of Swazi Nutrition. Report of the Swaziland Nutrition Survey; 1961-1962 for the Swaziland administration*. Institute for Social Research. Durban: University of Natal.
- KEPE, T. 2008. Social dynamics of the value of wild edible leaves (*imifino*) in a South African rural are. *Ecology of Food and Nutrition*, 47:531-558.
- KGAPHOLA, M.S. & VILJOEN, A.T. 2000. Food Habits of Rural Swazi Households: 1939-1999, Part 1: Technological influences on Swazi food habits. *Journal of Family Ecology and Consumer Sciences*, 28:68-74.
- KGAPHOLA, M.S. & VILJOEN, A.T. 2004. Food Habits of rural Swazi Households: 1939-1999. Part 2: Social-structural and ideological influences on Swazi food Habits. *Journal of Family Ecology and Consumer Sciences*, 32:16-25.
- KITTLER, P.G., SUCHER, K. P. & NAHIRIAN-NELMS, M. 2011. *Food and Culture*. 6th ed. Wadworth-Cengage Learning.
- KRUGER, R. & GERICKE, G.J. 2004. A qualitative approach for exploration of feeding practices, knowledge and attitudes on child nutrition framework. *Journal of Family Ecology and Consumer Sciences*, 32:63-45.
- KUBIK, M.Y., LYTLE L.A. & STORY, M. 2005. Soft drinks, candy, and fast food; what parents and Teachers think about the middle school. Food environment. *Journal of the American Dietetic Association*, 105:233-239.
- KUMAR, R. 2011. *Research Methodology*. A step by step guide for beginners. 3rd ed. Sage publications LTD.1 Oliver's yard, 55 City Road. London. ECIY ISP.

- KUNENE, N.W. & FOSSEY, A. 2001. A survey on livestock production in some areas of Northern Kwazulu Natal in South Africa. Department of Agriculture, University of Zululand.
- KUPER, H. 1980. The diets of the Swazi in their Protectorate. *Bantu Studies*, 13:199-236.
- LABADARIOS, D., STEYN, N. P., MAUNDER, E., MACINTYRE, U., GERICKE, G., SWART, R., HUSKISSON, J., DANNHAUSER, A., VORSTER, H.H. NESAMVUNI, A.E. & NEL, J.H. 2005. The national food consumption survey (NFCS): South Africa, 1999. *Public Health Nutrition*, 8 (5):533-543.
- LACHAT, C., BAO KHANH, L., HUYNH, T.T.T., VERSTRAETEN, R., NAGO, E., ROBERFROID, D. & KOLSTEREN, P. 2011. Factors associated with eating out of home in Vietnamese adolescents. *Appetite*, 57:649-655.
- LALLY, P., BARTLE, N. & WARDLE, J. 2011. Social norms and diet in adolescent. *Appetite*, 57:623–627.
- LANE, K. HOVORKA, A. & LEGWEGOH, A. 2012. Urban food dynamics in Botswana: insights from Gaborone's Central Business District, *African Geographical Review*, 31:(2)111-125.
- LARSON, N.I., STORY, M.T & NELSON, M.C. 2009. Neighbourhood Environments. Disparities in Access to Healthy Foods in the U.S. *American Journal of Preventive Medicine*, 36(1):74-81.
- LEVIN, K.A. & KIRBY, J. 2012. Irregular breakfast consumption in adolescence and the family environment: Underlying causes by family structure. *Appetite*, 59 (2012):63-70.
- MACINTYRE, U.E., VENTER, C.S., KRUGER, A. & SERFONTEIN, M. 2012. Measuring micronutrient intakes at different levels of sugar consumption in a population in transition: The transition and Health during Urbanisation in South Africa (Thusa) study. *South African Journal of Clinical Nutrition*, 25 (3):123-133.
- MADANAT, H.N., LINDSAY, R. & CAMPBELL, T. 2010. Young urban women and the nutrition transition in Jordan. *Public Health Nutrition*, 2010.
- MAFUNDA, J., CHATORA, R., RUFARO, P., NDAMBAKUWA, Y., NYARANGO, P., KOSIA, A., CHIFAMBA, J., FILIPE, A., USMAN, A. & SPARKS, H. 2006. Emerging Non-Communicable Disease Epidemic in Africa: Preventive Measures from the WHO Regional Office for Africa. *Ethnicity and Disease*, 16:521-526.
- MALAZA, M.T. 1993. *Food Security in Swaziland: Factors influencing dietary patterns*. A thesis in Rural Sociology submitted in partial fulfilment of the requirements for the Degree of Doctor of Philosophy. Department of Agricultural Economics and Rural Sociology. The Pennsylvania State University.
- MANZINI TOWN PLANNING SCHEME, 2008-2018. Volume 1: Background Study final document-March, 2010. Prepared by Integrated Development & Engineering Consultants. Plot 517, Mbhilibhi Street. Mbabane, H100.
- MARMOT, M., RESNICK, M., FATUSI, A. & CURRIE, C. 2012. *Adolescence and the Social Determinants of Health*, 379(2):1641-1652.
- MAROPE, M. 2010. The Education System in Swaziland. Training and skills Development for Shared Growth and competitiveness. World Bank Working Paper No.188. Africa Human Development Series. Africa Region Human Development Department. The World Bank. Washington, D.C.

- MATLA, M.T.H. 2008. The contribution of food access strategies to dietary diversity of farm worker households on Orange farm in the Fouriesburg district (RSA). Script submitted for a Masters in Consumer Science. University of Pretoria, 2008.
- MATTSON, J. & HELMERSSON, H. 2007. Eating fast food: attitude of high school students. *International Journal of Consumer Studies*, 31:117-121.
- MCDANIEL, T. & ROBIN, R. 2012. *Physical and cognitive development of adolescents*. Available at: www.ehow.com/about/6668490-physical-cognitive-development-adolescents. [Accessed 07 May 2012].
- MCFADDEN, 1981. Women in wage labour in Swaziland: A focus on Agriculture. A Survey on the status of Women in various employment Sectors of Swaziland. October, 1981.
- MCNAUGHTON, S.A. 2011. Understanding the eating Behaviours of Adolescents: Application of Dietary Patterns, Methodology to Behavioural Nutrition Research. *Journal of the American Dietetic Association*, 111(2):226-229.
- MEAD, M. 1945. *Food Habits Research*. Report of the study committee on food habits. Publication 1111. Washington. National Research Council.
- MEISELMAN, H.L. 2008. Dimension of the meal. *Journal of Food Service*, 19:13-21.
- MESSER, E. 2005. *Methods of determinant of food intake*. Centre for advanced study in behaviour Sciences, Stanford, California U.S.A. (handbook).
- MESSER, E. 2007. Cultural factors in food habits: reflections in memory of Christine S. Wilson. *Ecology of Food and Nutrition*, 46:185-204.
- MODI, M., MODI, A.T. & HENDRIKS, S. 2006. Potential Role for wild vegetables in household food security. A preliminary case study in KwaZulu Natal South Africa. *African Journal of Food Agriculture Nutrition and Development*, 6(1):1-6.
- MURCOTT, A. 2000. *Food Choice*. The Social Science and the Nations Diet Research programme in Murcott A. The nation's diet. The Social Science of food choice. Harlow. Addison Wesley. Longman.
- NARSHA, S., STUDERVANT, M.D., BONNIE, A. & SPEAR, R.D. 2002. Adolescent psychosocial development. *Supplement*, 102(3):1-6.
- NEUMAN, W.L. 2011. *Social Research Methods. Qualitative and Quantitative Approaches*. 7th Ed. University of Wisconsin, Whitewater.
- NEUMARK-SZTAINER, D., LARSON, N.I., FULKERSON, J.A. EISENBERG, M.E. & STORY, M. 2010. Family meals and adolescents: what have we learned from project EAT (Eating among teens)? *Public Health Nutrition*, 13(7):113-1121.

NEUMARK-SZTAINER, D., STORY, M., PERRY, C. & CASEY, M.A. 1999. Factors influencing food choices of adolescents: Findings from focus-group discussions with adolescents. *Journal of the American Dietetic Association*, 929-937.

NORRIS, S.A. & PETTIFOR, J.M. 2006. Eating attitudes in a group of 11 year-old urban South African girls. *South African Journal of Clinical Nutrition (SAJCN)*, 19(2):2-11.

NUTRITION COUNCIL (UNICEF) REPORT, 2005. Issue no. 4. Mbabane Swaziland – Macmillan Publishers.

ODHAV, B., BEEKRUM, S., AKULA.U.S. NAIDOO & BAIJNATH, H. 2007. Preliminary assessment of nutritional value of traditional leafy vegetables in KwaZulu-Natal, South Africa. *Journal of food composition and analysis*, 20(6):430-435.

OGLE, B.M. & GRIVETTI, L.E. 1985a. Legacy of the chameleon. Edible Wild Plants in the Kingdom of Swaziland, Southern Africa. A cultural, Ecological, Nutritional study. Part 1. *Ecology of Food and Nutrition*, 17:31-40.

OGLE, B.M. & GRIVETTI, L.E. 1985b. Legacy of the chameleon. Edible Wild Plants in the Kingdom of Swaziland, Southern Africa. A cultural, Ecological, Nutritional study. Part Two. Demographics, Species Availability and Dietary Use, Analysis by Ecological zon. *Ecol.Food Nutri.*, 17: 1-30.

OGLE, B.M. & GRIVETTI, L.E. 1985c. Legacy of the chameleon. Edible Wild Plants in the Kingdom of Swaziland, Southern Africa. A cultural, Ecological, Nutritional study. Part Three. Cultural and Ecological Analysis. *Ecol.Food Nutr*, 17:31-40.

OLUMAKAIYE, M., FUNKE, M. & AJAYI, O.A. 2007. Determinants of food choices of adolescents in South Western Nigeria. *AJFand*, 7(6):2-6. Also available at info@alfand.net.

OLUMAKAIYE, M.F., ATINMO, T. & OLUBAYO-FATIREGUN, M.A. 2010. Food consumption Patterns of Nigerian Adolescents and Effect on Body Weight. *Journal of Nutrition Education and Behaviour*, 42(3):144-151.

OOGARAH-PRATAP, B. 2007. Dietary habits of Mauritius School Adolescents. *Nutrition and Food Science*, 37(6):442-451.

OUDKERK, A.C.F. 1965. Eating habits of urban Bantu, with special reference to the school-going child. *South African Medical Journal*, 39:1148-1150.

PACKARD, L. 2012. *Cognitive Development*. Available at: http://www.Lpch.org/Diseases_health_info/health_library/adolescent/cogdevev.html. [Accessed 05 May 2012].

PARRAGA, I.M. 1990. Determinants of food consumption. *Journal of the American Dietetic Association*, 90(5):661-663.

PEARSON, N., BIDDLE, S.J.H. & GORELY, T. 2008. Family correlates of fruit and vegetable consumption in children and adolescents: A systematic review. *Public Health Nutrition*, 12(2):267-283.

PELTO, G.H., GOODMAN, A.H. & DUFOUR, D.L. 2000. The biocultural perspective and ecological approach to nutrition anthropology. In A.H Goodman., Defour, D. & G.H. Pelto (Eds). *Nutritional anthropology: Biocultural perspective on food and nutrition* (p1-9). Mountain View; C.A Mayfield.

- PELTZER, K. & PENGPID, S. 2010. Fruits and vegetables consumption and associated factors among in-school adolescents in seven African countries. *International Journal of Public Health*, 55(6):669-678.
- PIENAIK, Z., VERBEKE, W., VANHONACKER, F., GUERRERO, L., HERSLETH, M. 2009. Association between traditional food consumption and motives for food choice in six European countries. *Appetite*, 53(1):101-108.
- POPKIN, B.M., ADAIR, L.S. & NG, S.W. 2011. Global Nutrition and the pandemic of obesity in developing countries. *Nutrition Reviews*, 70(1):3-21.
- POPKIN, B.M. 2004. The Nutrition Transition: An overview of World patterns of change. *Nutrition Reviews*, 62(7):140-143.
- POPKIN, B.M. 2006. Global nutrition dynamics; the world is shifting rapidly toward a diet linked with non communicable diseases. *American Society for nutrition*, 2006(84):289-298 Available at www.ajcn.org [Accessed 2012-05-12].
- POPKIN, B.M., ADAIR, L.S. & NG, SW. 2011. Global Nutrition transition and the pandemic of obesity in developing countries. *Nutrition Reviews*, 70(1):3-21.
- RASCHKE, V., OLTERSDFORF, U., ELMADFA, I., WAHLQVIST, M.L., CHEEMA, B.S.B & KOURIS-BLAZOS, A. 2006. Content of a novel collection of traditional food habits (1930's-1960s): data collected by the *Max-Planck-Nutrition Research Unit*, Bumbulu, Tanzania.
- RASCHKE, V. & CHEEMA, B. 2007. Colonisation, the New World Order, and the eradication of traditional food habits in East Africa: historical perspective on the nutrition transition. *Public Health Nutrition*, 11(7):662-674.
- REED, Z., MCLLVEEN-FARLEY, H. & STRUGNELL, C. 2003. Factors affecting consumer acceptance of chilled ready meals on the Island of Ireland. *International Journal of Consumer Studies*, 1(27):2-10.
- RIETH, M.A., MORREIRA, M.B., FUCHS, F.D., MOREIRA, L.B. & FUCHS, S.C. 2012. Fruits and vegetable intake and characteristics associated among adolescents from Southern Brazil. *Nutrition Journal*, 11:95-101.
- ROBINSON, E., BERWEL, H. & HIGGS, S. 2013. Food intake norms and decrease snack intake in a remote confederate study. *Appetite*, 65:20-24.
- ROCKEACH, M. 1970. *Beliefs, Attitudes and Values*. Theory of organisation and change. St. Francisco. Jossey-Bass.
- ROCKEACH, M. 1973. *The Nature of Human Values*. New York. The Free Press. Macmillan Publishing Company.
- ROLFES, S.R. PINNA, K. & WHITNEY, E. 2006. *Understanding Normal and Clinical Nutrition*. 7th ed. United States of America: Thompson Wadsworth.
- ROLFES, S.R. PINNA, K. & WHITNEY, E. 2009. *Understanding Normal and Clinical Nutrition*. 8th ed. United States of America: Thompson Wadsworth.

- ROUTLEDGE, L. 2005. Substance abuse and psychological well-being of South African adolescents in an urban context. Dissertation Master of Arts: Clinical Psychology. Pretoria: University of Pretoria.
- ROZIN, P. 2006. The integration of Biological, Social Cultural and psychological influences on food choice. In SHERPERED, R & RAATS, M. (eds). *The psychology of food choice*, Oxfordshire. CABI.
- RUSSELL, M. 1986. High status, low pay: Anomalies in the position of women in employment in Swaziland. *Journal of Southern African Studies*, 12 (2) April, 1986.
- SAWYER, S.M., AFIFI, R.A., BIAKEMORE, S.J. BRUCE, D., EZEH, A.C. & PATTON, G.C. 2012. Adolescents: a foundation for GC. Future Health series, *Lancet*, 379:1630-1640. Available at: www.thelancet.com. [Accessed 2012-04-28].
- SAELENS B. E., SALLIS J.F., NADER P.R., BROYLES S.L., BERRY C.C & TARAS H.I, 2002. Home environmental influences on children's television watching from early to middle childhood. *Journal of Development and Behavioural Paediatrics*, 23(3):127-132.
- SDRALI, D., ANISIADOU, M., GOUSSIA-RIZOU, M. & COSTARELLI, V. 2010. Adolescents soft drinks consumption in family environment: a case study in Northern Greece. *International Journal of Consumer Studies*, 34(2010):684-690.
- SEILURI, T., LAHELMA, E., RAHKONEN, O. & LALLUKA, T. 2011. Changes in socio-economic differences in food habits overtime. *Public Health Nutrition*, 1-8.
- SEUBSMAN, S., KELLY, M. YUTHAPORNPINIT, P. & SLEIGH, A. 2009. Cultural resistance to fast-food consumption? A study of youth in North Eastern Thailand. *International Journal of Consumer Studies*, 33:(2009) 669-675.
- SHAH, A. 2012. Process of Socialisation. *Azine Articles*. Also available at <http://ezinearticles.com/? Process of socialisation&id=5117232>.
- SHEPHERED, R. & SPARKS, P. 1994. Modelling food choice. In MACFIE, H.J.H. & THOMSON, H.L. & MACFIE, H.J.H.1996. Food choice acceptance and consumption. London. Blackie Academic & Professional.
- SIMS, L.S. & SMICKLAS-WRIGHT, H. 1978. The ecological systems perspective. Its application to nutrition policy, program design and evaluation. *Ecology of Food and Nutrition*, 7:173-179.
- SHISANA, O., LABADARIOS, D., REHELE, T. *et al.* 2013. South African national health and nutrition examination survey (SANHANES-1). Cape Town. HSCR Press.
- SINGWANE, S.S. & ABUL, S. 2007. Socio-Economic constraints on Goat Farming in the Lowveld of Swaziland - A case study of Matsanjeni. *Journal of Sustainable Development in Africa*, 9 (3):37-49. Fayetteville State University, Fayetteville, North Carolina.
- SMITH, L.F. & EYZAGUIRRE, P. 2007. African leafy vegetables: Their role in the World Health Organizations Global fruit and vegetables initiative. *Ajfang*, 7(3):16-25.

- SOBAL, J. & BISOGNI, C.A. 2009. Constructing Food Choice Decisions. *The Society of Behavioural Medicine*, 38(Suppl.1):S37-S46.
- SOBAL, J. 2000. Social change and food ways. Available at <http://food.oregonstate.edu/ref/culture/sobal.html>. [Accessed January, 2009].
- SOBAL, J., BISOGNI, C.A., DEVINE, C.M. & JASTRAN, M. 2006. A conceptual model of the food choice process over the life course. *Division of Nutritional Sciences*. Cornell University, Ithaca, NY.14853, USA.
- SOBAL, J., KHAN, L.K. & BISOGNI, C. 1998. A conceptual model of the food and nutrition system. *Social Science Medical*, 47(7):853-863.
- SPEAR, B.A. 2002. Adolescent growth and development. *Supplement to the Journal of the American Dietetic Association*, 102(3):1-10.
- STEYN, N. 2010. Does dietary knowledge influence the eating behaviour of adolescents? *South African Journal of Clinical Nutrition*, 23(2):62-63.
- STEYN, N.P., BADENHORST, C.J. & NEL, J.H. 1993. The meal pattern and snacking habits of school-children in two rural areas in Lebowa. *The South African Journal of Food Science and Nutrition*, 5(1):5-9.
- STEYN, N.P., LABADARIOS, D. & NEL, J.H. 2011. Factors which influence the consumption of street and fast foods in South Africa-A national survey. *Nutrition Journal*, 2011(10):104. Also available at <http://www.nutritionj.com/content/10/1/104> [Accessed 4 March, 2013].
- STORY, M., NEUMARK-SZTAINER, D. & FRENCH, S. 2002. Individual and environmental influences on adolescent eating behaviours. *Journal of the American Dietetic Association*, 102(3):S40-S51.
- STURDEVANT, N.S. & SPEAR, B.A. 2002. Adolescent Psychosocial Development. *Supplement to the Journal of the American Dietetic Association*, 102 (3):30-31.
- SUBRATTY, A.H. IMRIT, S. & JOHWAHEER, V. 2002. A Web-based survey on adolescents' perceptions of food. *Nutrition and Food Science*, 32(6):210-213.
- SWAZILAND VULNERABILITY ASSESSMENT COMMITTEE (Swazi VAC) 2010. Swaziland Annual Vulnerability Assessment and Analysis Report, July 2010. Mbabane. The Kingdom of Swaziland.
- SWAZILAND ANNUAL VULNERABILITY ASSESSMENT AND ANALYSIS REPORT, March 2008. Mbabane. The Kingdom of Swaziland.
- SWAZILAND BUSINESS YEARBOOK, AGRICULTURE. 2013. Agriculture. Also available at <http://www.swazibusiness.com/sbyb2007/agric.html> [Accessed 24/08/2013].
- TALJAARD, P.R., JOOSTE, A. & ASFAHA, T.A. 2006. Towards a broader understanding of South African consumer spending on meat. *Agrekon*, 45 (2); 214-224. June, 2006 [accessed, 16 May, 2013].
- TEMPLE, J.L., STEYN, N.P., MAYBURGH, N.G & NEL, J.H. 2006. Food items consumed by students attending schools in different socio-economic areas in Cape Town, South Africa. *Nutrition*, 22:252-258.

TRICHOPOULOU, A. SOUKARA, S. & VASILOPOULOU, E. 2007. Traditional foods: A science and society perspective. *Trends in Foods & Technology*, 18:420-427.

TSHIHWANAMBI, T.P. 2007. *Consumption patterns of Vitamin A-rich foods of 10-13 year old children living in a rural area in Venda*. Mcons. Sc. (General) Dissertation.

UNICEF REPORT, 2007. Issue no. 4. Mbabane, Swaziland. Macmillan Publishers.

UUSITALO, U., SOBAL, J., MOOTHOSAMY, L., CHITSON, P., SHAW, J., ZIMMET, P. & TUOMILEHTO, J. 2005. Dietary Westernisation; conceptualisation and measurement in Mauritius. *Public Health Nutrition*, 8(6):608-619.

VAN DER SPUIY, E., DE KLERK, H.M. & KRUGER, R. 2003. The development of a social cognitive model for a better understanding of the female adolescent suffering from anorexia nervosa. *Journal of Family Ecology and Consumer Sciences*, 31:30-40.

VAN ZYL M.K., STEYN, N.P & MARAIS, M.L. 2010. Characteristics and factors influencing fast food intake of young adult consumers in Johannesburg, South Africa. *South African Journal of Nutrition*, 23(3):124-133.

VEREecken, C.A., TODD, J., ROBERTS, C., MULVIHILL, C. & MAES, L. 2009. Television viewing and associations with food habits in different countries. *Public Health Nutrition*, 9(2): 244-250.

VIDEON, T.M. & MANNING, C.K. 2003. Influences on adolescent Eating Patterns. The importance of family meals. *Journal of Adolescent Health*, 32:365-373.

VILJOEN, A.T. & GERICKE, G.J. 1998. Methodology for the collection and application of information on food habits and food preferences in menu planning of heterogeneous groups. *Journal of Family Ecology and Consumer Sciences*, 26(2):89-102.

VILJOEN, A.T. & GERICKE, G.J. 2001. Food habits and food preferences of black South African men in the army (1993-1994). *Journal of family Ecology and Consumer Sciences*, 29:200-115.

VILJOEN, A.T. 2009. *The meaning of the food practices of the peoples of Mmofa, near Pretoria, South Africa*. A socio cultural and socio-psychological approach PhD Consumer Science (Food Management) Thesis. Pretoria: University of Pretoria.

VILJOEN, A.T., BOTHA, P. & BOONZAAIER, C.C. 2005. Factors contributing to changes in food practices of a black South African community. *Journal of Family Ecology and Consumer Sciences*. 2005 (33):46-73.

VINER, R.M., OZER, E.M., DENNIS, S., MARMOT, M., RESNICK, M., FATUSI, A. & CURRIE, C. 2012. Adolescents and the social determination of health. Series 2. *Lancet*, 379:1641-1652. Available at: www.thelancet.com. [Accessed 2012-04-28].

VOOREND, C.G.N., NORRIS, S.A., GRIFFITHS, P.L., SEDIBE, M.H., WESTERMAN, M.J. & DOAK, C.M. 2012 " We eat together; today she buys, tomorrow I will buy the food: adolescent best friend's food choices and dietary practices in Soweto, South Africa. *Public Health Nutrition*: 1-9.

- VORSTER, H.H. 2010. The link between Poverty and Malnutrition: A South African Perspective. *Journal of Interdisciplinary Health Science*, 15(1):1-6.
- VORSTER, H.H., MARGETTS, B.M., VENTER, C.S & WISSING, M.P. 2005. Intergrated nutrition Science from theory to practice in South Africa. *Public Health Nutrition*, 8 (6A):760-765.
- WALLIMAN, N. 2005. *Your Research Project*. 2nd ed. Great Britain. Alden Press, Oxford.
- WEINBERGER, K. & SWAI, I. 2006. Consumption of traditional vegetables in central and north-eastern Tanzania. *Ecology of Food and Nutrition*, 45:87-103.
- WETTER, A., KING, A.B. & BAER, R. 2001. How do individuals make food and physical activity choices? *Nutrition Reviews*, 59 (3):11-20.
- WHO, 2010. Adolescent job aid: a handy desk reference tool for primary level health workers, Geneva. World Health Organisation, 2010.
- WILLIAMS, L.K., THORNTON, L., BALL, K.C & CRAWFORD, D. 2011. Is the objective food environment associated with perceptions of the food environment? *Public Health Nutrition*: 1-8.
- WHITNEY, E. & ROLFES, S.R. 2013. *Understanding Nutrition*. 13th ed. Wadsworth. U.S.A
- WITTENBERG, M. & COLLINSON, M. 2007. Household transitions in rural South Africa, 1996-2003. *Scandanavian Journal of Public Health Suppl*, 69:130-137.
- WORTH, F. 2007. *Socialization Issues*. Available at: <http://homeschooloasis.com/artSocialization>. [Accessed 2012-11-04].
- ZINGONI, C., GRIFFITHS, P.L & CAMERON, N. 2009. Studying a population undergoing Nutrition Transition: A practical case study of dietary assessment in urban South African adolescents. *Biology of Food and Nutrition*, 48:178-198 (2009).
- ZOPIATIS, A. & PRIBIC, J. 2007. College students' dining expectations in Cyprus. *British Food Journal*, 109 (10):765-776.

ADDENDUM A: AUTHORIZATION BY MINISTRY OF EDUCATION: KINGDOM OF SWAZILAND TO DO SURVEY ON STUDENTS IN MANZINI SCHOOLS

MINISTRY OF EDUCATION



Kingdom of Swaziland

P.O. Box 39
Mbabane
Swaziland

Phone 268 404 2491/3
Fax 268 404 3880

15th August 2008

High School Head Teachers
Manzini Region

Dear Sir / Madam

Re: Authorization of Rachel Manana to carry out a Survey on Students in Manzini Schools

This letter serves to inform head teachers in Manzini Schools that the Ministry of Education has authorized Ms Rachel Manana to conduct a survey on High School pupils regarding their traditional nutrition.

You are kindly requested to co-operate with her as this is a requirement in the pursuance of her current educational programme with the University of Pretoria.

Thank you in advance for your anticipated co-operation.

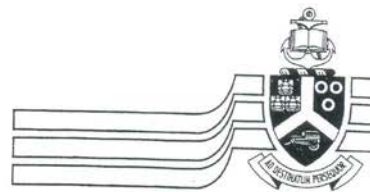
Yours sincerely


B.S. NDLOVU

CHIEF INSPECTOR FOR SECONDARY SCHOOLS



ADDENDUM B: UNIVERSITY OF PRETORIA LETTER TO HEAD TEACHERS



University of Pretoria

Pretoria 0002 Republic of South Africa Tel (012) 4204111
Fax (012) 3625084 <http://www.up.ac.za>

Faculty of Science

16 April 2008

The Head teacher

Dear Sir/madam

I am a teacher by profession and currently pursuing a Master's Degree in Consumer Science with the University of Pretoria (U.P.). I am involved with a comprehensive study on food habits of adolescents in Swaziland. To this end, I am seeking permission to conduct an interview with a selected group of students in your school during lunch time next term. You will be informed of finer details in due course and well in advance.

The study aims at finding out the following:

- i) The extent adolescents still know and consume traditional foods.
- ii) What the preferences for traditional foods are etc.

It is envisaged that the information gained will be used as a guide to future food product development projects on traditional foods in Swaziland and contribute to enhancement of Improved nutritional strategies for this age group.

Your kind response will be highly appreciated.
Thanking you in advance.

Yours Faithfully,

R.H.Manana.

ADDENDUM C: PARENTS CONSENT FORM TO DO SURVEY

CONSENT FORM

Research Project: Masters in Consumer Science

Research on Food habits of adolescents pupils (girls and boys) in the peri-urban schools of the Manzini Region.

A comprehensive study on food habits of adolescents in the Manzini per-urban schools is planned. The study seeks to find out about the food habits of adolescents in Swaziland .It will also determine the familiarity with traditional foods and how often this age group uses them. It is envisaged that the information gained could be used as a guide for food product development projects on traditional foods in Swaziland and also contribute to the planning and enhancement of nutritional curriculums and strategies for adolescents in schools.

To this end, I Rachel Manana, a Consumer Science Masters Student at the University of Pretoria, humbly request you to permit your child to participate in the study of food habits in order to achieve the objectives of this study. If you will permit your child to participate, he/she will be requested to fill out a questionnaire on the following sections in the approved questionnaire:

- Demographic information (general information about the living conditions (i) age, (ii) gender (iii) religion (iv) occupational/ work status of parents/ guardian.
- Food availability (types of food he/she is exposed to and consumes on a regular basis
- Consumption patterns: meal patterns and composition of meals.
- Familiarity with the types of traditional food and the consumption thereof.

The study will be conducted from February 2009 at his or her school premises in the presence of school authorities. Any information acquired from your child, will be treated as confidential and anonymous as there will be no name nor surname attached to his/her answered questionnaire. Permission to conduct this study was granted by the Ethics Committee of the Faculty of Natural and agricultural sciences of the University of Pretoria and the study will strictly apply to the requirements as stipulated by the committee.

ADDENDUM C: PARENTS CONSENT FORM TO DO SURVEY (CONTINUED)

CONSENT FORM

Research Project: Masters in Consumer Science

Research on Food habits of adolescents pupils (girls and boys) in the peri-urban schools of the Manzini Region.

Your decision to allow your child to participate in this study is voluntary. By signing below, you will be giving consent for your child to participate in the study and understand what the study is about.

In the event you or your child may wish to withdraw, you will not be liable to either the researcher or the school authorities since the participation is voluntary.

I (Name of parent/ guardian) ----- hereby give
permission to my child (name of child) -----may partake
in the research project on food habits.

Signature of parent

Date

Signature of Researcher

Date

ADDENDUM D: QUESTIONNAIRE

Respondent Number		V1	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>			

SECTION A: DEMOGRAPHIC INFORMATION

Please answer all questions by **marking** the appropriate number with an x or by **writing your answer in the space** provided.

<p>1. What is your age?</p> <input style="width: 100%;" type="text"/>		V2	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>																
<p>2. What is your gender?</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Male</td> <td style="width: 20%; text-align: center;">1</td> </tr> <tr> <td>Female</td> <td style="text-align: center;">2</td> </tr> </table>	Male	1	Female	2		V3	<input style="width: 30px; height: 20px;" type="checkbox"/>												
Male	1																		
Female	2																		
<p>3. What is your home language?</p> <input style="width: 100%;" type="text"/>		V4	<input style="width: 30px; height: 20px;" type="checkbox"/>																
<p>4. In what form are you?</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Form 3</td> <td style="width: 20%; text-align: center;">1</td> </tr> <tr> <td>Form 4</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Form 5</td> <td style="text-align: center;">3</td> </tr> </table>	Form 3	1	Form 4	2	Form 5	3		V5	<input style="width: 30px; height: 20px;" type="checkbox"/>										
Form 3	1																		
Form 4	2																		
Form 5	3																		
<p>5. To which ethnic group do you belong?</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 80%;">Swazi</td><td style="width: 20%; text-align: center;">1</td></tr> <tr><td>Zulu</td><td style="text-align: center;">2</td></tr> <tr><td>Xhosa</td><td style="text-align: center;">3</td></tr> <tr><td>Indian</td><td style="text-align: center;">4</td></tr> <tr><td>Coloured</td><td style="text-align: center;">5</td></tr> <tr><td>Mozambican</td><td style="text-align: center;">6</td></tr> <tr><td>Zimbabwean</td><td style="text-align: center;">7</td></tr> <tr> <td>Other(please specify)</td> <td style="text-align: center;">8</td> </tr> </table>	Swazi	1	Zulu	2	Xhosa	3	Indian	4	Coloured	5	Mozambican	6	Zimbabwean	7	Other(please specify)	8		V6	<input style="width: 30px; height: 20px;" type="checkbox"/>
Swazi	1																		
Zulu	2																		
Xhosa	3																		
Indian	4																		
Coloured	5																		
Mozambican	6																		
Zimbabwean	7																		
Other(please specify)	8																		
<p>6. To which religious group do you belong?</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 80%;">Christian</td><td style="width: 20%; text-align: center;">1</td></tr> <tr><td>Hindu</td><td style="text-align: center;">2</td></tr> <tr><td>Muslim</td><td style="text-align: center;">3</td></tr> <tr> <td>Other(please specify)</td> <td style="text-align: center;">4</td> </tr> </table>	Christian	1	Hindu	2	Muslim	3	Other(please specify)	4		V7	<input style="width: 30px; height: 20px;" type="checkbox"/>								
Christian	1																		
Hindu	2																		
Muslim	3																		
Other(please specify)	4																		
<p>7. Who is the breadwinner/provider in your household?</p> <input style="width: 100%;" type="text"/>		V8	<input style="width: 30px; height: 20px;" type="checkbox"/>																
<p>8. Does he/she have a job at the moment?</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Yes</td> <td style="width: 20%; text-align: center;">1</td> </tr> <tr> <td>No</td> <td style="text-align: center;">2</td> </tr> </table>	Yes	1	No	2		V9	<input style="width: 30px; height: 20px;" type="checkbox"/>												
Yes	1																		
No	2																		
<p>9. If the answer to question 8 is yes – what kind of job does he/she have?</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 80%;">Doctor/nurse/teacher/professional</td><td style="width: 20%; text-align: center;">1</td></tr> <tr><td>Business/taxi/self employed</td><td style="text-align: center;">2</td></tr> <tr><td>Typist/clerk/assistant/office worker</td><td style="text-align: center;">3</td></tr> <tr><td>Domestic worker/gardener/contract worker</td><td style="text-align: center;">4</td></tr> <tr><td>Hawker/car washer/informal sector</td><td style="text-align: center;">5</td></tr> </table>	Doctor/nurse/teacher/professional	1	Business/taxi/self employed	2	Typist/clerk/assistant/office worker	3	Domestic worker/gardener/contract worker	4	Hawker/car washer/informal sector	5		V10	<input style="width: 30px; height: 20px;" type="checkbox"/>						
Doctor/nurse/teacher/professional	1																		
Business/taxi/self employed	2																		
Typist/clerk/assistant/office worker	3																		
Domestic worker/gardener/contract worker	4																		
Hawker/car washer/informal sector	5																		
<p>10. Does anyone in your household receive any additional grants?</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Yes</td> <td style="width: 20%; text-align: center;">1</td> </tr> <tr> <td>No</td> <td style="text-align: center;">2</td> </tr> </table>	Yes	1	No	2		V11	<input style="width: 30px; height: 20px;" type="checkbox"/>												
Yes	1																		
No	2																		
<p>11. If the answer to question 10 is yes, which grants?</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 80%;">Old age grant</td><td style="width: 20%; text-align: center;">1</td></tr> <tr><td>Pension</td><td style="text-align: center;">2</td></tr> <tr> <td>Other(please specify)</td> <td style="text-align: center;">3</td> </tr> </table>	Old age grant	1	Pension	2	Other(please specify)	3		V12	<input style="width: 30px; height: 20px;" type="checkbox"/>										
Old age grant	1																		
Pension	2																		
Other(please specify)	3																		
<p>12. How many people live in your household?</p> <input style="width: 100%;" type="text"/>		V13	<input style="width: 30px; height: 20px;" type="checkbox"/>																
<p>13. Please indicate which of the following appliances you have in your household. You may mark more than one.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 80%;">Stove</td><td style="width: 20%; text-align: center;">1</td></tr> <tr><td>Refrigerator</td><td style="text-align: center;">2</td></tr> <tr><td>Deep freezer</td><td style="text-align: center;">3</td></tr> <tr><td>Microwave oven</td><td style="text-align: center;">4</td></tr> <tr><td>Television</td><td style="text-align: center;">5</td></tr> <tr><td>Radio</td><td style="text-align: center;">6</td></tr> <tr> <td>Other(please specify)</td> <td style="text-align: center;">7</td> </tr> </table>	Stove	1	Refrigerator	2	Deep freezer	3	Microwave oven	4	Television	5	Radio	6	Other(please specify)	7		V14	<input style="width: 30px; height: 20px;" type="checkbox"/>		
Stove	1																		
Refrigerator	2																		
Deep freezer	3																		
Microwave oven	4																		
Television	5																		
Radio	6																		
Other(please specify)	7																		
		V15	<input style="width: 30px; height: 20px;" type="checkbox"/>																
		V16	<input style="width: 30px; height: 20px;" type="checkbox"/>																
		V17	<input style="width: 30px; height: 20px;" type="checkbox"/>																
		V18	<input style="width: 30px; height: 20px;" type="checkbox"/>																
		V19	<input style="width: 30px; height: 20px;" type="checkbox"/>																
		V20	<input style="width: 30px; height: 20px;" type="checkbox"/>																

14. Indicate which of the following best describe your household Structure. **Mark only one.**

Nuclear family (parents and children)	1
Extended family (parents, children and other family members)	2
Single parent family (father or mother and children)	3
Child headed (no parents only children)	4
Other (please specify) 	5

V21

SECTION B: USUAL EATING PATTERN

In this section information is needed on how you usually eat. Please indicate your eating habits as you would typically eat **(at least 3-4 times per week) at home during weekdays** (Mondays to Fridays).

1. How many meals do you eat a day

One	1
Two	2
Three	3
More than three	4

V22

2. Do you usually eat breakfast?

Yes	1
No	2

V23

3. Please give the reason for your answer to question 2.

V24

4. Please indicate what you **usually (3-4 x per week)** eat or drink at the following times. Please be very specific and indicate the type of food and beverages clearly.

For example:

Breakfast: Soft mealie-meal porridge with milk and sugar
 Brown bread with margarine and jam
 Tea with milk and sugar

In-between: 2 packets of chips
 Fruit juice
 Apple

Time	Food eaten
6-9	Breakfast
9-12	In-between
12-3	Lunch
3-5	In-between
5-8	Supper

V25

V26

V27

V28

V29

V30

V31

V32

V33

V34

V35

V36

V37

V38

V39

V40

V41

V42

V43

V44

V45

V46

V47

V48

Continues ...

8+	After Supper

5. Is there a difference in your eating pattern over weekends?

Yes
No

1
2

V49	<input type="checkbox"/>	<input type="checkbox"/>
V50	<input type="checkbox"/>	<input type="checkbox"/>
V51	<input type="checkbox"/>	<input type="checkbox"/>

6. If your answer is **no** to question 5, **continue with question 7**.
If **yes**, please indicate the **differences** in your eating pattern.

Saturdays	
Sundays	

V52

V53	<input type="checkbox"/>
V54	<input type="checkbox"/>
V55	<input type="checkbox"/>
V56	<input type="checkbox"/>
V57	<input type="checkbox"/>
V58	<input type="checkbox"/>
V59	<input type="checkbox"/>
V60	<input type="checkbox"/>

7. Please indicate how often you consume the following types of food and beverages. Please use the following 4 point scale.

Scale:	5-7 x per week	3-4 x per week	1-2 x per week	Never
Home cooked food	1	2	3	4
Take away or fast food (eg KFC, Nandos, Steers, Chicken Licken)	1	2	3	4
Snack foods (eg chips, chocolates, sweets, popcorn)	1	2	3	4
Soft drinks (eg Coke, Sprite, Fanta)	1	2	3	4
Fruit juice	1	2	3	4

V61

V62

V63

V64

V65

8. When eating with family members please indicate **how the meals are eaten**. Mark the option which **best describes** how the meals are eaten in your family/household

All members of the household eat together at the table	1
Different age and gender groups are formed and eat separately	2

1
2

V66

9. How often do you eat meals **away from home**?

Daily
3-4 x per week
1-2 x per month
Never

1
2
3
4

V67

10. If your answer is **never** to question 9, **continue with question 13**, otherwise **when** do you eat these meals **away from home**?

--

V68

11. If you eat away from home **where** do you eat **most often**?

Mark only one.

Swazi market	1
Street vendors	2
Restaurants	3
KFC	4
Nandos	5
Chicken Licken	6
Wild Wings	7
Supermarkets	8
Other(please specify)	9

1
2
3
4
5
6
7
8
9

V69

12. With whom do you eat these meals?

--

V70

Continues ...

SECTION C: NON-QUANTITATIVE FOOD FREQUENCY QUESTIONNAIRE

1. Please indicate how often you eat the following food items.

FOOD ITEMS	Daily	3-4 x per week	1 x per week	1 x per month	On Special occasions	Never		
BREADS AND BREAD-LIKE								
White bread	1	2	3	4	5	6	V71	<input type="checkbox"/>
Brown bread	1	2	3	4	5	6	V72	<input type="checkbox"/>
Buns, bread rolls	1	2	3	4	5	6	V73	<input type="checkbox"/>
Muffins	1	2	3	4	5	6	V74	<input type="checkbox"/>
Chelsea buns	1	2	3	4	5	6	V75	<input type="checkbox"/>
Swazi buns	1	2	3	4	5	6	V76	<input type="checkbox"/>
Rusks	1	2	3	4	5	6	V77	<input type="checkbox"/>
Other alternatives (please specify)	1	2	3	4	5	6	V78	<input type="checkbox"/>
SPREADS/ACCOMPANIMENTS TO BREAD								
Butter on bread	1	2	3	4	5	6	V79	<input type="checkbox"/>
Margarine on bread	1	2	3	4	5	6	V80	<input type="checkbox"/>
Jam/honey/marmalade	1	2	3	4	5	6	V81	<input type="checkbox"/>
Peanut butter	1	2	3	4	5	6	V82	<input type="checkbox"/>
Cheese	1	2	3	4	5	6	V83	<input type="checkbox"/>
Other spreads (please specify)	1	2	3	4	5	6	V84	<input type="checkbox"/>
CEREALS								
Breakfast (Weet-bix, Corn flakes)	1	2	3	4	5	6	V85	<input type="checkbox"/>
Soft cooked porridge (mealie/oats/mabela)	1	2	3	4	5	6	V86	<input type="checkbox"/>
Stiff mealie-meal porridge	1	2	3	4	5	6	V87	<input type="checkbox"/>
Samp	1	2	3	4	5	6	V88	<input type="checkbox"/>
Mealie rice	1	2	3	4	5	6	V89	<input type="checkbox"/>
Rice	1	2	3	4	5	6	V90	<input type="checkbox"/>
Pasta (macaroni/spaghetti)	1	2	3	4	5	6	V91	<input type="checkbox"/>
Other (please specify)	1	2	3	4	5	6	V92	<input type="checkbox"/>
VEGETABLES								
Green vegetables (Broccoli, Green beans, Cabbage, Peas, Spinach)	1	2	3	4	5	6	V93	<input type="checkbox"/>
Yellow vegetables (Butternut, Carrots, Pumpkin)	1	2	3	4	5	6	V94	<input type="checkbox"/>
Other vegetables (Potato, Cauliflower, Mushroom, Onions, Sweet Potato, Mealies)	1	2	3	4	5	6	V95	<input type="checkbox"/>
Salad (Beetroot, Lettuce, Cucumber, Tomatoes, Sweet pepper)	1	2	3	4	5	6	V96	<input type="checkbox"/>
Other vegetables (please specify)	1	2	3	4	5	6	V97	<input type="checkbox"/>
FRUIT								
Citrus fruit (Oranges, Naartjies, Lemons)	1	2	3	4	5	6	V98	<input type="checkbox"/>
Vit A rich (Yellow peaches, Mangoes, Paw-Paw, Pineapple)	1	2	3	4	5	6	V99	<input type="checkbox"/>
Other fruit (Grapes, Bananas, Apples, Pears, Litchis)	1	2	3	4	5	6	V100	<input type="checkbox"/>
Tinned fruit	1	2	3	4	5	6	V101	<input type="checkbox"/>
Dried fruit	1	2	3	4	5	6	V102	<input type="checkbox"/>
Other fruit (please specify)	1	2	3	4	5	6	V103	<input type="checkbox"/>

Continues ...

FOOD ITEMS	Daily	3-4 x per week	1 x per week	1 x per month	On Special occasions	Never
MEAT AND MEAT DISHES						
Beef (<i>inyama yenkhomo</i>)	1	2	3	4	5	6
Mutton/Lamb (<i>imvu</i>)	1	2	3	4	5	6
Goat meat (<i>imbuti</i>)	1	2	3	4	5	6
Pork (<i>ingulube</i>)	1	2	3	4	5	6
Chicken (<i>inkhukhu</i>)	1	2	3	4	5	6
Bacon	1	2	3	4	5	6
Ham	1	2	3	4	5	6
Boerewors	1	2	3	4	5	6
Russian sausage	1	2	3	4	5	6
Vienna sausages	1	2	3	4	5	6
Polony	1	2	3	4	5	6
Other meat (please specify)	1	2	3	4	5	6
FISH						
Fried fish	1	2	3	4	5	6
Sardines/Pilchards	1	2	3	4	5	6
Fish and Chips	1	2	3	4	5	6
Other fish (please specify)	1	2	3	4	5	6
OTHER PROTEINS						
Eggs, egg dishes	1	2	3	4	5	6
Cooked cheese dishes (Macaroni & Cheese)	1	2	3	4	5	6
Other (please specify)	1	2	3	4	5	6
DAIRY						
Milk	1	2	3	4	5	6
Amasi	1	2	3	4	5	6
Cheese	1	2	3	4	5	6
Other (please specify)	1	2	3	4	5	6
BEVERAGES						
Milk as beverage to drink	1	2	3	4	5	6
Coffee	1	2	3	4	5	6
Tea	1	2	3	4	5	6
Herbal tea	1	2	3	4	5	6
Mageu	1	2	3	4	5	6
Water, bottled	1	2	3	4	5	6
Other (please specify)	1	2	3	4	5	6
PUDDINGS						
Ice cream	1	2	3	4	5	6
Jelly	1	2	3	4	5	6
Custard sauce	1	2	3	4	5	6
Cakes and confectionary	1	2	3	4	5	6
Other (please specify)	1	2	3	4	5	6

V104	<input type="checkbox"/>
V105	<input type="checkbox"/>
V106	<input type="checkbox"/>
V107	<input type="checkbox"/>
V108	<input type="checkbox"/>
V109	<input type="checkbox"/>
V110	<input type="checkbox"/>
V111	<input type="checkbox"/>
V112	<input type="checkbox"/>
V113	<input type="checkbox"/>
V114	<input type="checkbox"/>
V115	<input type="checkbox"/>
V116	<input type="checkbox"/>
V117	<input type="checkbox"/>
V118	<input type="checkbox"/>
V119	<input type="checkbox"/>
V120	<input type="checkbox"/>
V121	<input type="checkbox"/>
V122	<input type="checkbox"/>
V123	<input type="checkbox"/>
V124	<input type="checkbox"/>
V125	<input type="checkbox"/>
V126	<input type="checkbox"/>
V127	<input type="checkbox"/>
V128	<input type="checkbox"/>
V129	<input type="checkbox"/>
V130	<input type="checkbox"/>
V131	<input type="checkbox"/>
V132	<input type="checkbox"/>
V133	<input type="checkbox"/>
V134	<input type="checkbox"/>
V135	<input type="checkbox"/>
V136	<input type="checkbox"/>
V137	<input type="checkbox"/>
V138	<input type="checkbox"/>

Continues ...

SECTION D: TRADITIONAL FOODS

Please indicate if you know and have eaten the food listed. Indicate how much you like them and how often you eat them.

FOOD ITEM	Familiarity		Food Preference					Food Frequency									
	Unknown	Never eaten	Dislike it very much	Dislike it	Neutral	Like it	Like it very much	Daily	3-4 x per week	1 x per week	< 3 x per month	Special occasions	When available				
CERALS/CEREAL PRODUCTS																	
<i>Mabele</i> (mabele/sorghum meal porridge)														V139	<input type="checkbox"/>	V140	<input type="checkbox"/>
<i>Incwancwa</i> (sour fermented mealie or <i>mabele</i> meal porridge)														V141	<input type="checkbox"/>	V142	<input type="checkbox"/>
<i>Ipalishi</i> (stiff maize-meal porridge)														V143	<input type="checkbox"/>	V144	<input type="checkbox"/>
<i>Umnghushu</i> (samp with beans)														V145	<input type="checkbox"/>	V146	<input type="checkbox"/>
<i>Lifutfo</i> (boiled green mealies)														V147	<input type="checkbox"/>	V148	<input type="checkbox"/>
<i>Sinkhwa sembila</i> (steamed fresh mealie bread)														V149	<input type="checkbox"/>	V150	<input type="checkbox"/>
<i>Tinkhobe/emanqobo</i> (boiled dried maize)														V151	<input type="checkbox"/>	V152	<input type="checkbox"/>
<i>Jece</i> (steamed mealie-meal bread)														V153	<input type="checkbox"/>	V154	<input type="checkbox"/>
<i>Emasi lavutjiwe</i> (sour milk and stiff mealie-meal porridge)														V155	<input type="checkbox"/>	V156	<input type="checkbox"/>
<i>Mahewu</i> (fermented mealie-meal beverage)														V157	<input type="checkbox"/>	V158	<input type="checkbox"/>
<i>Sentangabomu</i> (fresh mealies prepared with <i>emaselwa</i> and <i>emantongomane</i>)														V159	<input type="checkbox"/>	V160	<input type="checkbox"/>
<i>Sijabane</i> (Fresh mealies prepared with pumpkin leaves and roasted ground peanuts)														V161	<input type="checkbox"/>	V162	<input type="checkbox"/>
<i>Sidvudvu</i> (pumpkin porridge)														V163	<input type="checkbox"/>	V164	<input type="checkbox"/>
<i>Sidlwadlwa</i> (sorghum porridge prepared with beef stock)														V165	<input type="checkbox"/>	V166	<input type="checkbox"/>
VEGETABLES																	
<i>Ligusha</i> (a slimy wild green leafy vegetable)														V167	<input type="checkbox"/>	V168	<input type="checkbox"/>
<i>Imbuya</i> (pig weed, a wild green leafy vegetable commonly found in fields)														V169	<input type="checkbox"/>	V170	<input type="checkbox"/>
<i>Tintsanga</i> (fresh pumpkin leaves)														V171	<input type="checkbox"/>	V172	<input type="checkbox"/>
<i>Chuchuzza</i> (black jack, a wild green leafy vegetable usually with black thorny flowers)														V173	<input type="checkbox"/>	V174	<input type="checkbox"/>
<i>Inkakhha</i> (a wild green leafy vegetable with a bitter taste)														V175	<input type="checkbox"/>	V176	<input type="checkbox"/>
<i>Inshubaba</i> (a wild plant with bitter leaves normally dried and used in a powdery form)														V177	<input type="checkbox"/>	V178	<input type="checkbox"/>
<i>Emahala</i> (a wild vegetable that has scaly appearance, whitish in colour with a bitter taste)														V179	<input type="checkbox"/>	V180	<input type="checkbox"/>
<i>Budzibi</i> (boiled pumpkin cut in halve and eaten as a snack)														V181	<input type="checkbox"/>	V182	<input type="checkbox"/>
<i>Likhowe</i> (wild mushroom)														V183	<input type="checkbox"/>	V184	<input type="checkbox"/>
<i>Lijoti</i> (melon porridge)														V185	<input type="checkbox"/>	V186	<input type="checkbox"/>
FRUIT																	
<i>Ligwava</i> (guava)														V187	<input type="checkbox"/>	V188	<input type="checkbox"/>
<i>Lihwaba</i> (watermelon)														V189	<input type="checkbox"/>	V190	<input type="checkbox"/>
<i>Ligumence</i> (mulberries)														V191	<input type="checkbox"/>	V192	<input type="checkbox"/>
<i>Tincozi</i> (wild round black berries very juicy fruit)														V193	<input type="checkbox"/>	V194	<input type="checkbox"/>
<i>Umtfundvulukka</i> (sour plum, a wild roundish fruit)														V195	<input type="checkbox"/>	V196	<input type="checkbox"/>
<i>Emaganu</i> (fruit from marula tree. It's juice is usually fermented to make marula beer)														V197	<input type="checkbox"/>	V198	<input type="checkbox"/>
<i>Vovovo</i> (sweet juice from a yellowish aloe flower)														V199	<input type="checkbox"/>	V200	<input type="checkbox"/>
<i>Emakhiwa</i> (figs)														V201	<input type="checkbox"/>	V202	<input type="checkbox"/>
<i>Emantulwa</i> (wild medlar)														V203	<input type="checkbox"/>	V204	<input type="checkbox"/>
<i>Bukhwebeletane</i> (lantana)														V205	<input type="checkbox"/>	V206	<input type="checkbox"/>
<i>Umkhwakhwa</i> (black monkey orange)														V207	<input type="checkbox"/>	V208	<input type="checkbox"/>
<i>Umfomfo</i> (strawberry bush)														V209	<input type="checkbox"/>	V210	<input type="checkbox"/>
<i>Emaselwa</i> (wild melon)														V211	<input type="checkbox"/>	V212	<input type="checkbox"/>
<i>Imfe</i> (sweet sorghum)														V213	<input type="checkbox"/>	V214	<input type="checkbox"/>
LEGUMES																	
<i>Emantongomane</i> (groundnuts)														V215	<input type="checkbox"/>	V216	<input type="checkbox"/>
<i>Tinhlumaya</i> (cow peas)														V217	<input type="checkbox"/>	V218	<input type="checkbox"/>
<i>Mngomeni</i> (mung beans)														V219	<input type="checkbox"/>	V220	<input type="checkbox"/>
<i>Emabhonitjisi</i> (sugar beans)														V221	<input type="checkbox"/>	V222	<input type="checkbox"/>

Tindlubu (jugo beans)															V223	<input type="checkbox"/>	V224	<input type="checkbox"/>
Ludvonca (sesame seeds)															V225	<input type="checkbox"/>	V226	<input type="checkbox"/>
MEATS	1	2	3	4	5	1	2	3	4	5	6							
Tinhloko tenkhukhu (chicken heads)															V227	<input type="checkbox"/>	V228	<input type="checkbox"/>
Tintwane (chicken feet)															V229	<input type="checkbox"/>	V230	<input type="checkbox"/>
Tintsamo (chicken necks)															V231	<input type="checkbox"/>	V232	<input type="checkbox"/>
Ikhukhu ematfumbu (chicken intestines)															V233	<input type="checkbox"/>	V234	<input type="checkbox"/>
Inyama yenkhomo (beef)															V235	<input type="checkbox"/>	V236	<input type="checkbox"/>
Lufu (tripe)															V237	<input type="checkbox"/>	V238	<input type="checkbox"/>
Ematfumbu (intestines)															V239	<input type="checkbox"/>	V240	<input type="checkbox"/>
Sibindzi (liver)															V241	<input type="checkbox"/>	V242	<input type="checkbox"/>
Lubenze (pancreas)															V243	<input type="checkbox"/>	V244	<input type="checkbox"/>
Bubendze (cooked blood eaten alone or with pap)															V245	<input type="checkbox"/>	V246	<input type="checkbox"/>
Liphaphu (lungs)															V247	<input type="checkbox"/>	V248	<input type="checkbox"/>
INSECTS	1	2	3	4	5	1	2	3	4	5	6							
Tintsetse (grasshoppers / locusts)															V249	<input type="checkbox"/>	V250	<input type="checkbox"/>
Emanyamane (caterpillars)															V251	<input type="checkbox"/>	V252	<input type="checkbox"/>
Tinhlwa (flying ants)															V253	<input type="checkbox"/>	V254	<input type="checkbox"/>
ROOTS	1	2	3	4	5	1	2	3	4	5	6							
Bhatata (sweet potato)															V255	<input type="checkbox"/>	V256	<input type="checkbox"/>
Emadumbe (Livingstone potato)															V257	<input type="checkbox"/>	V258	<input type="checkbox"/>
Emathapha (taro)															V259	<input type="checkbox"/>	V260	<input type="checkbox"/>
Matabane (Zulu potato)															V261	<input type="checkbox"/>	V262	<input type="checkbox"/>

SECTION E: TRADITIONAL SWAZI FOODS

1. Do you eat traditional Swazi food?

Yes
No

1
2

V263

2. Please give a **reason** for your answer to question 1.

3. If you answered **yes** to question 2, indicate **when** do you usually eat traditional foods? You **may mark more than one** option.

Weekdays	
Weekends	
Special occasions only	
When available	
Other (please specify)	

1
2
3
4
5

V264

V265

V266

V267

V268

4. How do you feel about traditional Swazi foods? Please give Your personal opinion in 5 to 6 lines.

V269

V270

V271

V272

V273

V274

5. Please indicate your level of agreement with following statements on traditional Swazi foods.

	Strongly disagree	Disagree	Agree	Strongly agree
I like traditional Swazi food	1	2	3	4
Traditional foods are part of our cultural heritage	1	2	3	4
Most traditional foods are tasty	1	2	3	4
We often eat traditional foods at home	1	2	3	4
Traditional foods are essential for good health	1	2	3	4
My religion allows me to use traditional foods	1	2	3	4
Traditional foods are suitable to serve to guests	1	2	3	4
My family enjoy eating traditional food	1	2	3	4

V275

V276

V277

V278

V279

V280

V281

V282

Continues ...

SECTION F: FOOD AT SPECIAL OCCASIONS

This section deals with the food consumed at special occasions

1. Please indicate which special occasions you usually participate in. You may mark **more than one**.

Birthday parties	
Weddings(civil ceremonies)	
Weddings(traditional ceremonies)	
Funerals/Tombstone unveiling ceremony	
Traditional/Ritual ceremonies(e.g. Ancestral Worship)	
Other(please specify)	

1
2
3
4
5
6

V283	<input type="checkbox"/>
V284	<input type="checkbox"/>
V285	<input type="checkbox"/>
V286	<input type="checkbox"/>
V287	<input type="checkbox"/>
V288	<input type="checkbox"/>

2. List the foods that are usually served at the special occasions you indicated.

Birthday parties
Weddings/civil ceremonies (<i>Umshado lomhlophe/wesilumbi</i>)
Weddings/traditional ceremonies (<i>Umtsimba</i>)
Funeral/tombstone unveiling (<i>imingcwabo/kugeza emanti</i>)
Traditional/ritual ceremonies (<i>kuhlabela emadloti</i>)
Other (please specify)

V289	<input type="checkbox"/>	<input type="checkbox"/>
V290	<input type="checkbox"/>	<input type="checkbox"/>
V291	<input type="checkbox"/>	<input type="checkbox"/>
V292	<input type="checkbox"/>	<input type="checkbox"/>

V293	<input type="checkbox"/>	<input type="checkbox"/>
V294	<input type="checkbox"/>	<input type="checkbox"/>
V295	<input type="checkbox"/>	<input type="checkbox"/>
V296	<input type="checkbox"/>	<input type="checkbox"/>

V297	<input type="checkbox"/>	<input type="checkbox"/>
V298	<input type="checkbox"/>	<input type="checkbox"/>
V299	<input type="checkbox"/>	<input type="checkbox"/>
V300	<input type="checkbox"/>	<input type="checkbox"/>

V301	<input type="checkbox"/>	<input type="checkbox"/>
V302	<input type="checkbox"/>	<input type="checkbox"/>
V303	<input type="checkbox"/>	<input type="checkbox"/>
V304	<input type="checkbox"/>	<input type="checkbox"/>

V305	<input type="checkbox"/>	<input type="checkbox"/>
V306	<input type="checkbox"/>	<input type="checkbox"/>
V307	<input type="checkbox"/>	<input type="checkbox"/>
V308	<input type="checkbox"/>	<input type="checkbox"/>

V309	<input type="checkbox"/>	<input type="checkbox"/>
V310	<input type="checkbox"/>	<input type="checkbox"/>
V311	<input type="checkbox"/>	<input type="checkbox"/>
V312	<input type="checkbox"/>	<input type="checkbox"/>

Continues ...

SECTION G: SNACK AND FAST FOODS

FOOD ITEM	Familiarity		Food Preference					Food Frequency						
	Unknown	Never eaten	Dislike it very much	Dislike it	Neutral	Like it	Like it very much	Food Frequency						
								Daily	3-4 x per week	1 x per week	< 3 x per month	Special occasions	When available	
			1	2	3	4	5	1	2	3	4	5	6	
CERALS/CEREAL PRODUCTS														
Meat Pie														
Hamburger														
Hot dog														
Fish and chips														
Russian and chips														
Pizza														
Yoghurt														
Yogi sip														
Fruit juice (eg. Liqui fruit, Fruit Punch)														
Fizzy drinks (eg. Coke, Fanta, Sprite, etc)														
Dairy fruit beverages (eg. Tropica, Krush, Cabanna)														
Milk shakes														
Ice cream														
Cakes and confectionary														
Biscuits, cookies														
Chocolates, chocolate bars														
Sweets, candy														
Nuts														
Chips, crisps														
Cheese curls, Cheese puffs														
Salty biscuits														

V313	<input type="checkbox"/>	V314	<input type="checkbox"/>
V315	<input type="checkbox"/>	V316	<input type="checkbox"/>
V317	<input type="checkbox"/>	V318	<input type="checkbox"/>
V319	<input type="checkbox"/>	V320	<input type="checkbox"/>
V321	<input type="checkbox"/>	V322	<input type="checkbox"/>
V323	<input type="checkbox"/>	V324	<input type="checkbox"/>
V325	<input type="checkbox"/>	V326	<input type="checkbox"/>
V327	<input type="checkbox"/>	V328	<input type="checkbox"/>
V329	<input type="checkbox"/>	V330	<input type="checkbox"/>
V331	<input type="checkbox"/>	V332	<input type="checkbox"/>
V333	<input type="checkbox"/>	V334	<input type="checkbox"/>
V335	<input type="checkbox"/>	V336	<input type="checkbox"/>
V337	<input type="checkbox"/>	V338	<input type="checkbox"/>
V339	<input type="checkbox"/>	V340	<input type="checkbox"/>
V341	<input type="checkbox"/>	V342	<input type="checkbox"/>
V343	<input type="checkbox"/>	V344	<input type="checkbox"/>
V345	<input type="checkbox"/>	V346	<input type="checkbox"/>
V347	<input type="checkbox"/>	V348	<input type="checkbox"/>
V349	<input type="checkbox"/>	V350	<input type="checkbox"/>
V351	<input type="checkbox"/>	V352	<input type="checkbox"/>
V353	<input type="checkbox"/>	V354	<input type="checkbox"/>

- THE END -

THANK YOU!

ADDENDUM E: PHOTOGRAPHS OF SELECTED TRADITIONAL SOURCES FOR SWAZI DISHES

CEREAL PRODUCTS



Incwancwa (sour fermented mealie or mabele meal porridge)



Ipalishi (stiff maize-meal porridge)



Incwancwa (sour fermented mealie or mabele meal porridge)



Mahewu (fermented mealie-meal beverage)



Lifutfo (boiled green mealies)



Sidvudvu (pumpkin porridge)

ADDENDUM E: PHOTOGRAPHS OF SELECTED TRADITIONAL SOURCES FOR SWAZI DISHES

LEGUMES



Emantongomane (ground nuts)



Tinhlumaya (cow peas)



Mngomeni (mung beans)



Emabhontjisi (sugar beans)



Tindlubu (jugo beans)



Ludvonca (sesame seeds)

ADDENDUM E: PHOTOGRAPHS OF SELECTED TRADITIONAL SOURCES FOR SWAZI DISHES

VEGETABLES



Ligusha (a slimy wild green leafy vegetable)



Imbuya (pig weed, a wild green leafy vegetable commonly found in fields)



Lijoti (melon porridge)



Chuchuza (black jack, a wild green leafy vegetable usually with black thorny flowers)



Emahala (a wild vegetable that has scaly appearance, whitish in colour with a bitter taste)



Likhowe (wild mushroom)

ADDENDUM E: PHOTOGRAPHS OF SELECTED TRADITIONAL SOURCES FOR SWAZI DISHES

FRUITS



Umfundvuluka (sour plum, a wild roundish fruit)



Ligumence (mulberries)



Emantulwa (wild medlar)



Emaselwa (wild melon)



Umfomfo (strawberry bush)



Tincozi (wild round black berries, very juicy fruit)

ADDENDUM E: PHOTOGRAPHS OF SELECTED TRADITIONAL SOURCES FOR SWAZI DISHES

MEATS



Tinhloko enkhukhu (chicken heads)



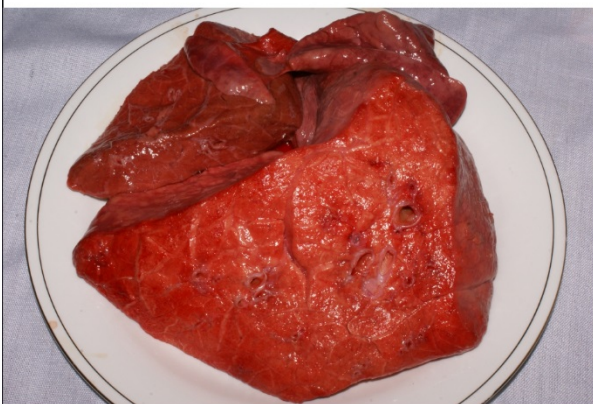
Ematfumbu enkhukhu (chicken intestines)



Lufu (tripe)



Ematfumbu (beef intestines)



Liphaphu (lungs)



Tintsetse (grasshoppers/locusts)